CITY OF PORTLAND, MAINE
PLANNING BOARD



Brandon Mazer, Chair
Maggie Stanley, Vice Chair
Marpheen Chann
Sean Dundon
Bob Dunfey
David Silk
Austin Smith

AGENDA
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a remote meeting on Tuesday, November 10, 2020, 4:00 p.m. This meeting will take place using Zoom.

Virtual meetings are allowed using emergency legislation approved by LD 2167; 1 M.R.S. §403¬A, that authorizes cities and towns to conduct meetings online.

Allow your computer to install the free Zoom app to get the best meeting experience.

For public comment, you will need to use the "raise your hand" feature. To raise your hand via the telephone, please hit *9. You will be un-muted by the host when it is time for public comment.

ZOOM MEETING INSTRUCTIONS
You are invited to a Zoom webinar.
When: Nov 10, 2020 04:30 PM Eastern Time (US and Canada)
Topic: Planning Board Workshop and Public Hearing 11/10/2020

Please click the link below to join the webinar:
https://us02web.zoom.us/j/82143816214

Or iPhone one-tap :
US: +19292056099,,82143816214# or +13017158592,,82143816214#

Or Telephone:
Dial(for higher quality, dial a number based on your current location):
US: +1 929 205 6099 or +1 301 715 8592 or +1 312 626 6799 or +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799

Webinar ID: 821 4381 6214
International numbers available: https://us02web.zoom.us/u/k1soMEerM

For more information on how to use Zoom, please go to:
https://www.portlandmaine.gov/remotePUD

Public comments will be taken for each item on the agenda and written comments should be submitted to planningboard@portlandmaine.gov

WORKSHOP - 4:00 PM

i. Information Session - Street Trees (estimated time 4:00 - 4:30 p.m.)

ii. Zoning Map and Text Amendment/Level III Site Plan and Subdivision; 200 Federal Street; Redfern Downtown, LLC., Applicant. (estimated time 4:30 – 6:00 p.m.) The Planning Board will hold a workshop to consider an amendment to the Downtown Height Overlay Map at 200 Federal Street to allow a maximum of 190 feet in building height and to remove the 40-foot architectural cap allowance while retaining the 90 foot maximum street wall height and the 100 foot offset from Federal Street. The application also proposes a text amendment to Land Use Code Section 14-220 (j)(1) to remove elevator shafts and stairways from net floor area calculations for portions of structures exceeding 125 feet in height. At the workshop, the Planning Board will also consider a related development proposal for an 18 story, 180,000 square foot mixed use building with 266 residential units and ground-floor commercial space. The subject property is 55,321 square feet in size, is zoned B-3 Downtown Business, and is located within the Congress Street Historic District.

PUBLIC HEARING - 6:00 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON OCTOBER 27, 2020

Afternoon Workshop
52 Hanover Street: Chann, Dundon, Dunfey, Mazer, Silk and Smith present; Stanley recused.
12 White Birch Lane: Chann, Dundon, Dunfey, Mazer, Silk, Smith and Stanley present.
Evening Hearing
75 Chestnut Street: Chann, Dundon, Dunfey, Mazer, Silk, Smith and Stanley present.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON OCTOBER 27, 2020

i. Level III Site Plan Amendment; 75 Chestnut Street; Procopio Co., Applicant. Stanley moved and Silk seconded a motion to approve the amendment to the Inclusionary Zoning Conditional Use approval with one condition of approval. Vote 5-2, Chann and Dunfey opposed.

5. NEW BUSINESS

i. Level III Site Plan; 25 Bedford Street; The University of Southern Maine, Applicant. (estimated time 6:00 – 7:30 p.m.) The Planning Board will hold a remote public hearing to consider a new 43,000 square foot student center, a new 580-bed, 220,000 square foot residence hall, and associated campus improvements. The subject property is 15.4 acres in size, is zoned B-2, and is located within the USM overlay zone.

ii. Level III Site Plan; 60 Merrymeeting Drive; Fallbrook Properties, LLC., Applicant. (estimated time 7:30 p.m.) The Planning Board will hold a remote public hearing to consider a proposal for a 90-bed, 58,197 square foot nursing care facility at 60 Merrymeeting Drive. The subject property is 12.78 acres in size and is zoned R-3.

Att. 1

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

200 Federal Street - Initial comments

1 message

Mike Tremblay <mtremblay@portlandmaine.gov> Wed, Nov 4, 2020 at 3:51 PM
To: Caitlin Cameron <ccameron@portlandmaine.gov>

Caitlin,

Here are my initial comments on 200 Federal Street:

- As discussed in Tom's comments, it is likely that this project will require a TMP. Trip generation information should be provided for the AM and PM peak hours. If a TMP is triggered, a scoping meeting will follow. The results of a traffic study/TMP will inform further comments at a later date.

- There does not appear to be a designated loading area for the retail zones or for residential deliveries, or for solid waste pickup. The applicant should specify where this activity will occur.

- The Applicant should work with the City Arborist, Jeff Tarling, on the appropriate material for the tree pit. He indicated that granite is desirable. DPW encourages sloped granite for a more forgiving edge of pedestrian path.

- Given the new column locations in the parking area, turn templates should be provided for spaces that may be difficult to access or egress. Similarly, turn templates should be provided for the USPS loading area.

- The accessible parking space provided in the parking area has a column in the clear area. The ADA space must be 8 feet wide with an 8-foot clear area free of obstruction.

- The proposed curb extensions must be approved by the DPW Director. Curb extensions are only permitted where they are necessary to construct ADA ramps, or in other specific circumstances.

- The curb extension, if it remains, should be reduced in size. The extension of the curb should extend no further than 6 feet off the typical curb line, Larger curb extensions make parking and winter maintenance more difficult. Along Temple Street, the curb extension should be reduced in length, and reduced in width to accommodate a parking lane on Temple Street (a shift in the centerline on Temple Street will also be required to add parking).

- Per the above comment, street parking on Temple Street will help to serve the proposed retail space, or provide a loading area for the building. It should be added if possible. Note that the amount of parking/size of the curb extension should be informed by queue lengths at Temple/Congress.

- Driveway aprons should be designed on the site plan as shown in the detail sheets. It is currently unclear how the driveway aprons are designed. Bugs should be used if possible.

- Temple Street is under a 5-year pavement moratorium, which expires on June 10, 2021. Any disturbance of this pavement should be delayed until that date, or a moratorium repair will be required.

- There are a significant amount of new trenches on Federal Street. Per the Rules and Regulations for Excavation Activity, trenches within 6 feet of one another should be repaired as one trench.

- If the retail space may contain a restaurant, a grease trap will be required.

- The Water Resources division indicated that draining stormwater into the Temple Street sewer main may be preferable to Federal Street, as Temple Street stormwater is more likely to be separated from sewer in the foreseeable future. The Applicant should work with Brad Roland to confirm that the sewer on Temple Street has sufficient capacity for stormwater, and resolve any other such issues.

- The CM plan shows sidewalk closures on both Federal and Temple streets. The Applicant should provide detailed pedestrian detour plans. The CM plan, or the ped detour plan, should clearly show which signs will be mounted, and where, to facilitate this detour. The Applicant is urged to use temporary walkways in the street if possible, though it appears that construction will require a significant width of the roadways. All detours shall follow ADA-compliant routes.

- This is a heavily traveled pedestrian area; clear, MUTCD-compliant detour signage shall be in place for the duration of closures. Closures shall not last longer than required.

- "Sidewalk closed ahead" signs should be placed just beyond the last possible pedestrian access point along a sidewalk. For example, on Federal Street, keeping the sidewalk open for ~40+ feet is not necessary because there are no pedestrian destinations along this sidewalk along the portion proposed to stay open. Closure of the sidewalk directly at the ramp provides clear instruction to cross where a ramp/crosswalk is provided.

- The Applicant should discuss in detail how USPS operations will continue during construction, and where employees and patrons will be directed to park.

Mike Tremblay, P.E.
Senior Engineer
Engineering Division
Department of Public Works
City of Portland, ME
mtremblay@portlandmaine.gov
P. 207.874.8881 F. 207.874.8852

Att. 2

Portland Maine | Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

200 Federal Street Comments

Lauren Swett <lswett@woodardcurran.com> Fri, Nov 6, 2020 at 8:56 AM
To: Caitlin Cameron <ccameron@portlandmaine.gov>

Hi Caitlin,

I have completed a preliminary review of the plans and stormwater management plan for 200 Federal Street.

- The site, grading, and utility plans all show a landscaped planter design at the northwest corner of the site that differs from the Landscape Plan and the area considered as part of the stormwater management plan. The final design should be coordinated between the plans.
- Site stormwater from the north courtyard in the site will be directed off site via stormdrain piping to be installed beneath the building. The Applicant should confirm that adequate headspace is provided for maintenance of the stormdrain system within the building.
- Near the southeast corner of the building, in the sidewalk, the plans identify a location where roof leaders and foundation drains connect to a 6" stormdrain pipe that connects to the main in the street. I suggest that the Applicant consider the size of the stormdrain pipe, relative to the roof size. I do not see any other roof drain connections called out on the site. I would also recommend that they consider installing a structure of some kind at this connection point, to provide a means for cleanout and maintenance of the proposed backflow preventer. I also see a roof leader callout at the center of the building, but it is unclear what this connects to.
- The project is required to comply with the Maine DEP Chapter 500 and City of Portland's Section 5 of the Technical Manual for stormwater management. This requires compliance with the Basic, General, and Flooding Standards. The Applicant has provided a detailed Erosion and Sedimentation Control plan to meet the Basic Standards. The stormwater management report identifies that this is a Redevelopment project, but that it will also create 3,500 SF of new impervious surface on the site. Based on Section 5 of the City of Portland Technical Manual, the City has required any project to comply with the General and Flooding Standard if they create greater than 1,000 SF of new impervious surface. On tight urban sites like this where it is not anticipated that any flooding control is needed due to the proposed change, this has been done in the past using in-line roof filters, pervious pavers, or free-box filters.
- The Applicant has reached out to utilities for confirmation of ability to serve, and will be providing responses as available.
- Based on my own experience, I would suggest some thought be put into the electrical infrastructure required for the lighting in the sidewalk. The electrical conduit should be installed to avoid other utility infrastructure and trees. Also, one of the proposed street lights appears to be in conflict with the proposed water service.
- One additional comment, just based on my own observation and confusion – I'd suggest the Applicant review the grading plan for some clarity in a few areas. As this plan identifies piping and structures for the sewer system, those should be easier to see with the shading. I'd also recommend the Applicant consider some nomenclature changes – I was confused initially with the "FD" labels for both foundation drain and floor drain, but eventually figured it out!

If you have any questions, please let me know.

Thanks,

Lauren

All Woodard & Curran consulting employees are currently working from home. I do not have regular access to mail or other deliveries made to the office. You can still reach me via email or at my direct or cell phone numbers.

Lauren Swett, P.E.*

Technical Manager

Woodard & Curran

41 Hutchins Drive

Portland, Maine 04102

Phone: (207)558-3763 (direct)

(207)219-3591 (cell)

(800)426-4262 (office)

Email: lswett@woodardcurran.com

*Licensed in Maine and Wisconsin

Commitment & Integrity Drive Results

www.woodardcurran.com

M.ASCE

Chair, Leader Training Committee

American Society of Civil Engineers

http://regions.asce.org/leader-training-committee/

CITY OF PORTLAND
MEMORANDUM

TO: Caitlin Cameron, Urban Designer

FROM: John Peverada, Parking Division Director

DATE: October 28, 2020

RE: 200 Federal Street

I think this development will be an exciting addition to the downtown, however I am opposed to reducing the off street parking requirement for this building below what the zoning ordinance requires. Most landlords that I talk to say that most of their tenants have 2 or more cars, and in many cases two families are sharing one apartment, or teenagers have cars, and others have overnight guest. I realize that this building will have mostly one bedroom units, and it is within walking distance of many amenities of the downtown, most people want access to a car ie need for parking.

Without adequate parking, residents will be more apt to be towed for street sweeping or snow bans, and emergency vehicles will have a more difficult time maneuvering. Landlords will also have a harder time retaining tenants, even though they followed the requirements outlined in the ordinances. The congestion and turnover in Parkside is a good example.

I fully understand that more housing on the peninsula could be beneficial, however I think that everyone (City, landlord & tenants) could benefit if the off street parking demand is satisfied.

If more residents are forced to park on the street there will be more conflict between the neighborhood residents, businesses and emergency vehicles.

Due to the lack of 1 and 2 hour parking spaces in this area, **I would like to have a condition of approval be added that residents of this property will not be eligible for residential parking permits,** similar to what was done for the Avesta project at 72 Oak St., and Pearl Place II.

Finally, I think a building this size should have a off street loading dock for deliveries and move ins and outs.

Please pass this along to the Planning Board & Council for their consideration.
Thanks
John

Att. 4

Portland Maine | Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

Projects

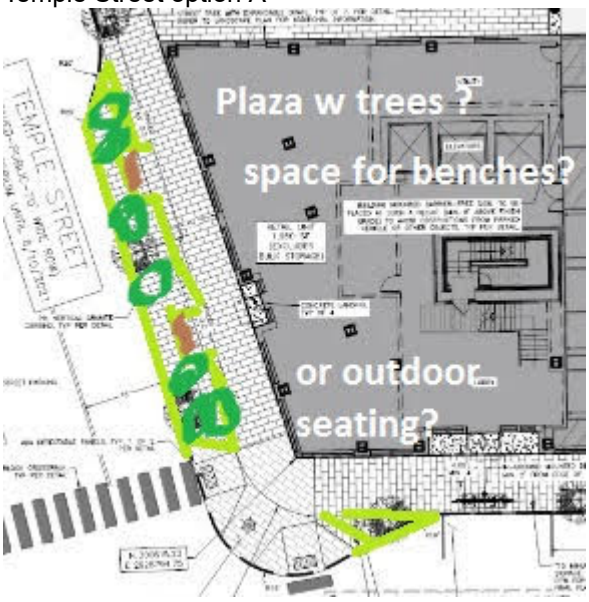
Jeff Tarling <jst@portlandmaine.gov> Fri, Oct 30, 2020 at 3:37 PM
To: Caitlin Cameron <ccameron@portlandmaine.gov>
Cc: Andrew Tufts <atufts@portlandmaine.gov>

Hi Caitlin -

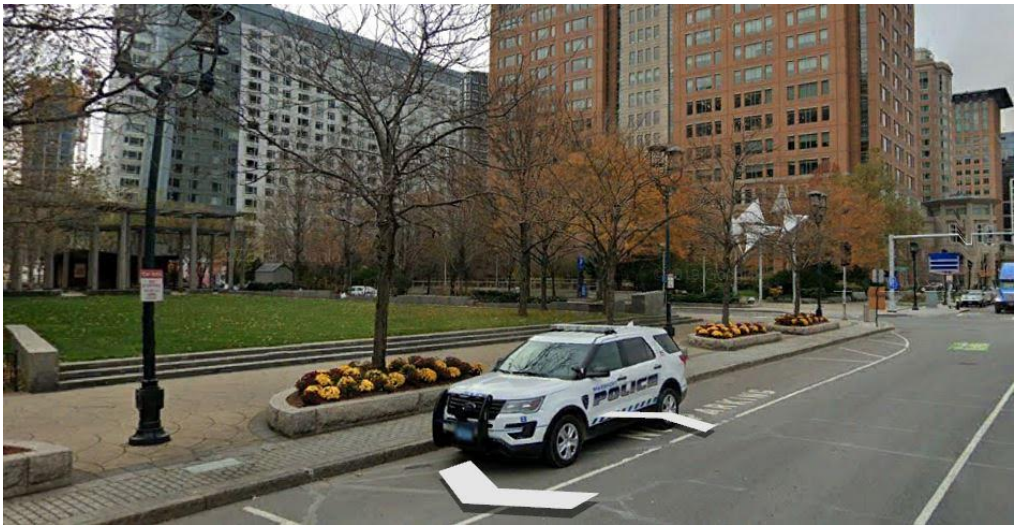
Wanted to get your thoughts on the Temple Street sidewalk bump out, should we increase the tree & landscape features, looking across the street the new plaza on the opposite corner in time will have a line of trees. Thinking about the loss of the existing plaza with the large Pin Oaks and the size of the proposed project. Thinking it could have other features in addition to landscape for seating or other activities.

Not to emulate the Boston Seaport District, but I like their creative streetscape ideas, although their scale is much larger than ours. see below. Hopefully something better than just a couple trees and lots of brick !

Temple Street option A -



Tree & Landscape planters -



Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
212 Canco Road - Suite A
Portland, ME. 04103
(207) 808-5400
jst@portlandmaine.gov

[Quoted text hidden]

BostonSeaport2.pdf
594K

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

200 Federal Street - Initial Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com> Wed, Nov 4, 2020 at 9:19 AM
To: "Cameron, Caitlin" <ccameron@portlandmaine.gov>
Cc: Mike Tremblay <mtremblay@portlandmaine.gov>

Hi Caitlin – I have reviewed the application materials and have the following initial traffic comments.

- The applicant shall conduct a trip generation estimate, with supporting documentation, to determine the need for a Traffic Movement Permit and/or preparation of a traffic study. Following receipt of this information (and parking supply source as noted below) the need for a traffic study will be determined. An analysis of the Congress Street/Temple Street intersection will be required to inform the design of Temple Street between Federal Street and Congress Street.
- The applicant has conducted a parking study for the project and estimates a need for 125 parking spaces. In general, I find the methods in estimating the parking demand to be reasonable, although I continue to review the information in greater detail. I would note that the applicant shall provide details on parking supply for assessing potential traffic impacts.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY·LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Instagram

Att. 6

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

200 Federal Street: Inclusionary Zoning

1 message

Victoria Volent <vvolent@portlandmaine.gov> Tue, Nov 3, 2020 at 1:40 PM
To: Caitlin Cameron <ccameron@portlandmaine.gov>

Hi Caitlin,

200 Federal Street proposes the creation of 266 units of rental housing. The project would include 118 studio units, 146 one-bedroom units, and 2 two-bedroom units.

This project triggers Inclusionary Zoning as it would create ten or more new dwelling units through new construction.

Based on the aforementioned information, the developer would comply with Division 30, section 148-487 by either:
1) providing 27 workforce units with 12 studio units and 15 one-bedroom units;
2) providing 26 workforce units and paying a fraction fee-in-lieu of $65,271.60 (.6 x 108,786); or
3) providing a fee-in-lieu of $2,893,707.60 (26.6 x $108,786).

The applicant has chosen to provide 27 workforce rental units composed of no less than 15 one-bedroom units and the appropriate number of corresponding studio units.

Thank you,

Victoria

Victoria Volent
Housing Program Manager
Housing and Community Development
Phone: 207-482-5028
www.portlandmaine.gov

Memorandum
Planning and Urban Development Department
Planning Division

To:	Brandon Mazer, Chair and Members of the Portland Planning Board
From:	Caitlin Cameron, Urban Designer
Date:	Friday, November 6, 2020
Re:	B-3 Text Amendment, Downtown Height Overlay Map Amendment; 200 Federal Street; Level III Site Plan, Subdivision, and Inclusionary Zoning Conditional Use application
Project #:	ZN-001230-2020; PL-001235-2020
CBL:	032 G001001
Meeting Date:	November 10, 2020

I. INTRODUCTION

Redfern Downtown, LLC. (dba Redfern Properties) requests a discussion of a possible B-3 Downtown Business Zone text amendment and Downtown Height Overlay Map amendment for the block at 200 Federal Street as well as a Level III Site Plan, Subdivision, and Inclusionary Zoning Conditional Use application for the property to be designated as 201 Federal Street W. These actions would facilitate the development of an 18-story, 180,000 square foot mixed use building with 266 residential units, ground-floor commercial space, amenity spaces for the residents, and 21 surface parking spaces.

The workshop for both applications was noticed to 96 neighbors and interested parties, and the public notice appeared in the *Portland Press-Herald* on October 30th and 31st 2020. The applicant held a Neighborhood Meeting on October 6, 2020 for the zoning application, application ZN-001230-2020, with notes included with this memorandum. As of the writing of this report the Planning Division had not received any public comment. For application PL-001235-2020, the site plan application, the applicant will hold a Neighborhood Meeting on November 18, 2020, with notes to be included for the public hearing report. As of the writing of this report the Planning Division has received one public comment.

Applicant: Redfern Downtown LLC (represented by Jonathan Culley)
Agent and Civil Engineer: Acorn Engineering (Faith Thomas)
Architect: Ryan Senatore Architecture, LLC (Ryan Senatore)



Figure 1 Zoning Map (applicant's property outlined)

The zoning map and text amendment application requests the following regarding the parcel within their ownership and the adjoining parcels that comprise the block:

- Amendment to the Downtown Height Overlay Map to remove the architectural cap designation and increase the maximum height to 190'
- B-3 Text amendment to Sec. 14-220 Dimensional requirements clarifying how to define maximum floor area allowed above 125' in height

As mentioned above, the site plan application includes a new mixed use tower with 266 residential units on the upper floors, ground floor commercial spaces, amenity spaces for the residents, and 21 surface parking spaces for the US Postal Service (USPS) facility, which abuts the development site. The required 27 workforce housing units will be provided on-site. Residential parking is proposed to be provided off-site in a garage. The proposal is at the corner of Temple and Federal streets, is within the B-3 zone, and is within the Congress Street Historic District.

II. PROJECT DATA

Required reviews and requested waivers:

Applicant's Proposal	Applicable Standards
New construction over 20,000 sf	Sec 14-526 Level III Site Plan Review, B-3 Design Review, HP Certificate of Appropriateness
Subdivision (266 dwelling units)	Sec 14-497 Subdivision Review
Multi-family Residential >10 units	Sec 14-487 Inclusionary Zoning Conditional Use
Parking Requirement Reduction (47%)	Ch 14 Div. 20 Off-street Parking/B-3 Zone
Waivers	**Citation**
none	

I. PROJECT DATA

SUBJECT	*DATA*
Total area of the site	55,321 sq ft
Total Disturbed Area	42,800 sq ft
Existing Zoning	B-3
Existing Use	Commercial buildings, surface parking, postal facility, bank with drive-thru
Proposed Use	Residential, Commercial/Retail, surface parking
Impervious Surface Area **--Existing** **--Proposed** **--Net Change**	 50,555 sq ft 53,083 sq ft +2,528 sq ft
Building Footprint **--Existing** **--Proposed** **--Net Change**	 18,663 sq ft 32,850 sq ft +14,187 sq ft
Building Floor Area **--Existing** **--Proposed**	 142,916 sq ft 335,591 sq ft

-Net Change	+192,675 sq ft
Proposed Bedroom Mix -Efficiencies -One-bedroom -Two-bedroom -Three-bedroom	266 total 117 146 2 0
Parking Spaces	21 (on-site) + 125 (off-site); 266 spaces required
Bicycle parking Spaces	12 (2 existing)

III. BACKGROUND AND EXISTING CONDITIONS

a. Current Land Uses and Zoning

The site is at the heart of Portland's walkable downtown, proximate to some of the tallest structures in the city. An existing parcel is being divided to create the new property at 201 Federal Street W at the corner of Temple and Federal streets behind the existing USPS building. The site is located in the B-3 zoning district. The B-3 zoning district is a high-density commercial, residential, and mixed-use zoning district mapped throughout the City's downtown. Maximum building heights are regulated by the Downtown Height Overlay Map and vary between 45-feet up to 210-feet. In certain locations an architectural cap allowance is permitted and allows for an additional 40 feet above the designated height limit.

The applicant's property currently includes a plaza space, surface parking, and an entrance to the USPS facility. Within the same block is the 1950 USPS building facing Congress Street and two historic office buildings fronting on Exchange Street. The surrounding blocks below Congress Street within the same streetscape as this proposal include more recent buildings such as the high rise office buildings One City Center and Two Monument Square, and the Temple Street Parking Garage; the maximum height allowed in these blocks is 150' plus up to 40' for an architectural cap (Figure 3). The site is not be immediately located on the historic, smaller-scale streetscapes of Congress or Exchange streets and instead has a more immediate relationship to tall, more contemporary structures.

b. Historic Resources

The block being considered is also within the Congress Street Historic District. The proposed new construction will be reviewed by the Historic Preservation Board for design. The block includes three existing buildings, two of which are contributing structures facing Exchange Street. Exchange Street is an important historic street in the downtown with smaller scale, historic buildings and a high volume of tourist foot traffic.

IV. PROPOSED DEVELOPMENT

The proposed building is shown in the Plan set and described in the applicant's submittal. The new construction includes an 18-story high-rise building to include rental apartments, ground floor commercial/retail, tenant amenity spaces, and surface parking to be maintained for the USPS use. The proposed project would also reduce the existing open space and construct a new plaza that will include landscaping and benches between the new tower and the USPS building. The elevation below (Plan P27) shows the Federal Street facade. The application materials do not include renderings of the project in its context to provide a sense of scale in comparison with the existing built environment.

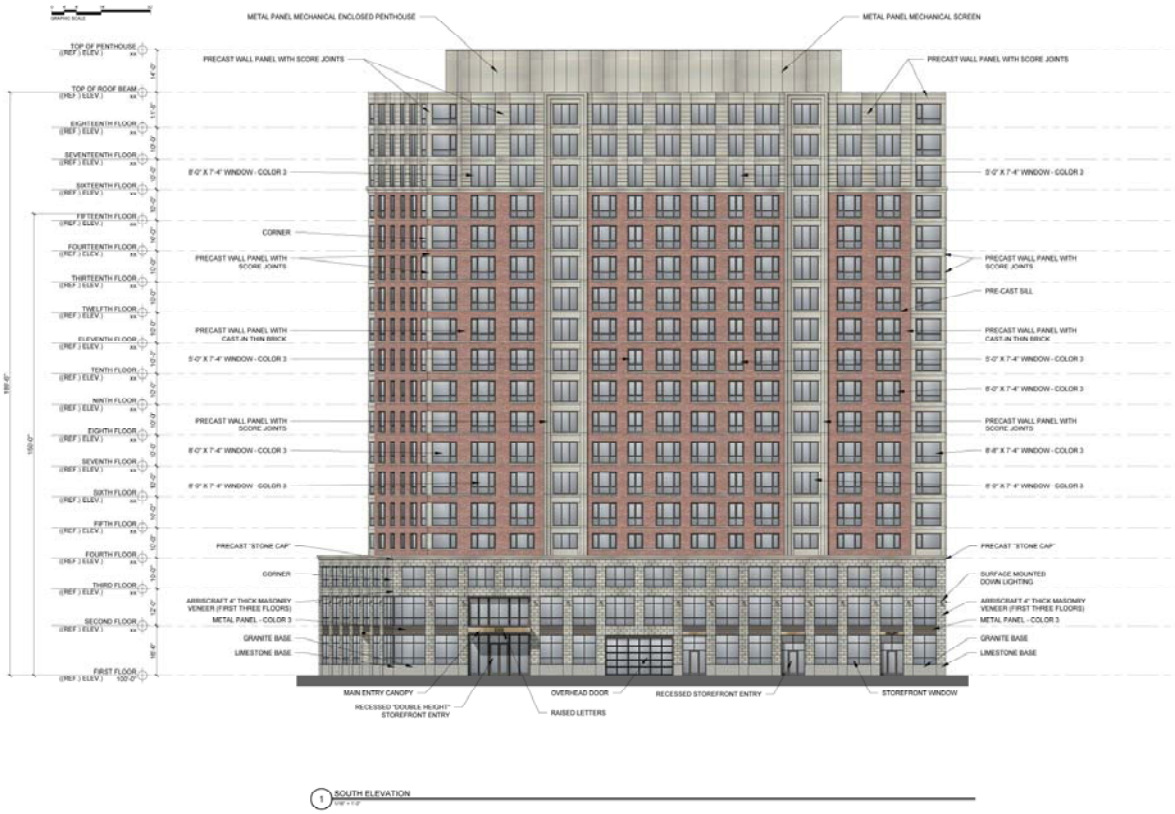


Figure 2 Proposed Development (applicant)

The proposal includes:

- 266 rental apartments
    - 27 workforce housing units are required by Inclusionary Zoning – provided on-site
- Parking for 21 vehicles (surface) on-site
- Residential parking off-site
- Ground floor commercial space less than 2,000 sf
- Tenant amenities – fitness, community room, lounges, storage, and work space
- Urban plaza

V. HEIGHT MAP AMENDMENT PROPOSAL

The applicant's property will be a new parcel created within the block at 200 Federal Street behind the USPS building. The Downtown Height Overlay Map would be modified to remove the 40' Architectural Cap (described in below in staff analysis) and increase the maximum building height to 190'. The 90' street wall maximum would be maintained along with the requirement to step back the building 15' after that 90' height is met. The 100' offset preserving lower heights on the more sensitive Exchange Street would remain. The applicant's submittal describes the rationale for requesting the ability to build occupied floor space up to 190' (Attachment A).

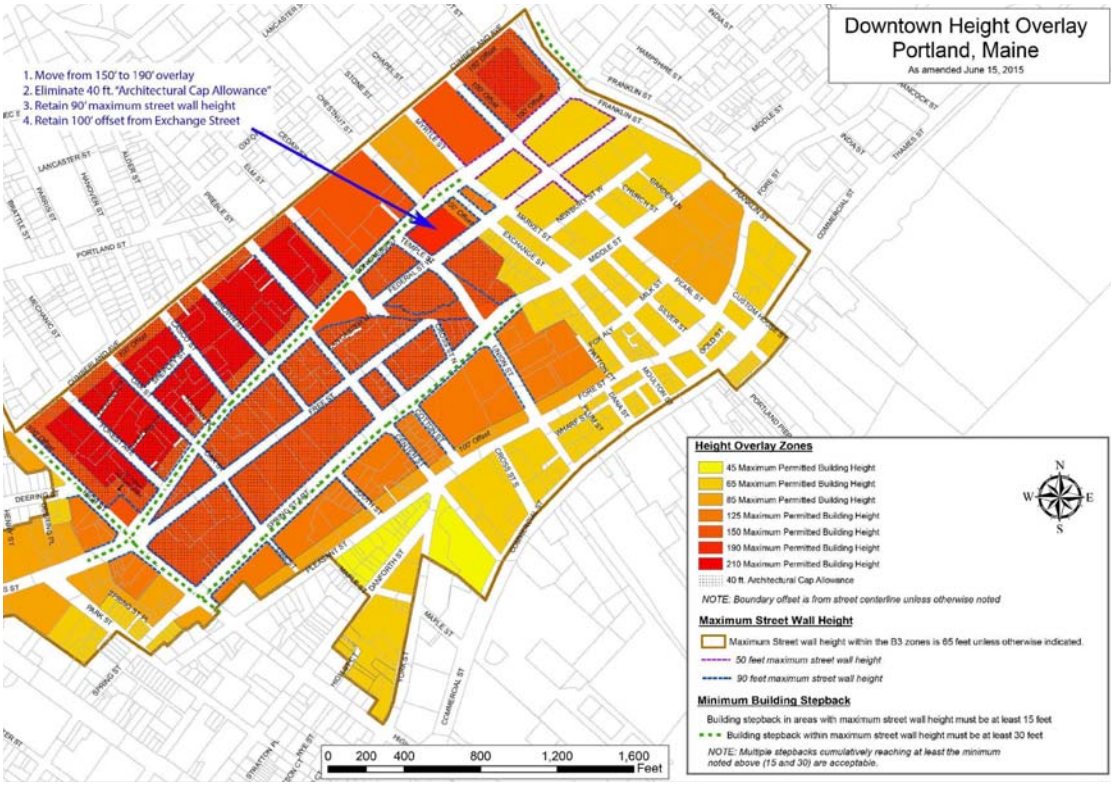


Figure 3 Proposed Height Map Overlay Amendment (applicant's proposal)

Staff Policy Analysis

The overall maximum height and massing allowed on this block will not change. Currently on this block, buildings may occupy floor area up to 150' in height with the ability to build as tall as 190' by incorporating a 40' architectural cap above and beyond that 150' maximum. The 40' architectural cap is intended for these purposes (from the B-3 zone text *14-220 Dimensional requirements. (i) maximum height of structures 3.*):

1) providing a distinctive graduated design for an architectural building top
2) to enclose rooftop appurtenances

The architectural cap may include habitable space in the following circumstances as a public good:
14-220 Dimensional requirements. (i) maximum height of structures 3. . . . No habitable floor area shall be developed within the building envelope permitted by the additional forty (40) feet, unless at least fifty (50) percent of such habitable floor area is devoted exclusively to one (1) or more publicly accessible uses, such as eating or drinking establishments, an observatory, community meeting rooms or halls available to the public or such other uses that make reasonable accommodation for public use at reasonable times, on a

nonmembership basis at no cost or at a cost that will not exclude use by the general public, and provided that such floor area is incidental to the primary design intent of the space to achieve the standards of this section.

Potential implications of the height amendments:

- Scale: The overall scale and massing implications do not change with this proposed amendment. The maximum building wall of 90 feet remains the same producing the same sense of scale of the building at the pedestrian level. The overall height to which a building structure can rise also remains the same – totaling 190 feet.
- Rooftop Appurtenances: The intent of the architectural cap is to integrate the design of rooftop systems and appurtenances with the overall building form. However, Division 25 of Chapter 14 currently exempts rooftop appurtenances from height maximums. Staff do not find any language within the B-3 zone or the Downtown Height Overlay Map that override this exemption. Therefore, though the stated intent of the cap is to house rooftop appurtenances, they are currently and would continue to be allowed above and beyond the maximum height allowance.
- Provision of Housing: The height amendment allows for potential additional housing to be provided on the site. Approximately sixty-four (64) additional housing units are provided in the applicant's proposal as a result of being able to occupy the floor area above 150'. However, the amendment does not guarantee additional housing will be provided because a future building proposal could potentially occupy that floor space with any use allowed in the B-3 zone (such as office or hotel).
- Parking: The proposed zoning amendments would allow additional habitable floor area in a physically constrained urban infill lot. The increase in habitable floor area also means an increase in required parking. This will need to be accommodated off-site or through the fee-in-lieu given the physical limitations of the site. Traffic and parking implications should be considered. At this time, the applicant proposes to reduce the parking requirement and provide residential parking off-site in an existing garage.

VI. ZONING TEXT AMENDMENT PROPOSAL

The applicant proposes to amend Land Use Code *Chapter 14 Section 14-220. Dimensional requirements.*

(j) Maximum building area and floor area for buildings which exceed one hundred twenty-five (125) feet in height:

1. *For portions of structures which exceed one hundred twenty-five (125) feet in height, the maximum horizontal building coverage at one hundred twenty-five (125) feet or higher shall not exceed twenty-five (25) percent of the site area, except that no floor area shall be required to be less than ten thousand (10,000) square feet, net of elevator shafts and stairways.*
2. *The maximum gross floor area for each floor located above one hundred twenty-five (125) feet in height shall not exceed fifteen thousand (15,000) square feet.*

Staff Policy Analysis

Staff support the addition of the clarifying language. Paragraph (j)1. interprets the intent that floor area is intended to be **net** as distinguished from **gross** because the paragraph 2. discusses maximum gross floor area. The interpreted intent of these standards is to mitigate the scale impacts of buildings above 125 feet in height; if the intent is to regulate building scale and footprints, elevators and stairways should be

included in the calculation as they contribute to the footprint area. By specifying either net or gross floor area, the intent of the code is more easily interpreted in the future for staff or applicants.

Staff recommend the following revision to the proposed text amendment to not exclude elevators and stairs from the calculated floor area:

1. *For portions of structures which exceed one hundred twenty-five (125) feet in height, the maximum horizontal building coverage at one hundred twenty-five (125) feet or higher shall not exceed twenty-five (25) percent of the site area, except that no floor area shall be required to be less than ten thousand (10,000) square feet, net as measured from face of interior walls.*

VII. STAFF REVIEW

A. RIGHT, TITLE, AND INTEREST

The applicant submitted a deed and land option agreement for a new parcel at 200 Federal Street, (Attachment C). The applicant has a Joint Development Agreement with PO Square Building, LLC to incorporate through-access to the post office and bank buildings. The applicant is showing site plan improvements on property not within their right, title, and interest – the applicant is requested to provide evidence of an agreement to modify this adjoining property.

B. ZONING ASSESSMENT

General Assessment: The proposed building is located in the B-3 zone and includes two street frontages. The both project frontages are designated as Pedestrian Activities District Encouragement streets – the façade designs will be evaluated against those criteria while the project undergoes design review.

The purpose statement for the B-3 zone includes the following relevant to the proposal:

(2) Enhance and promote the orderly expansion of retail and service businesses downtown, satisfying the related needs of the city's resident, working and visitor populations;

(3) Encourage increased housing opportunity downtown for a diverse residential population;

(4) Enhance the pedestrian environment through the encouragement of intensive mixed-use activities, through the enhancement and maintenance of public and private open space, and through the enlivenment and increased attractiveness of the street environment;

The zoning dimensional requirements are permissive in this urban downtown zone – in most cases the requirements are intended to create dense, taller buildings that fill the site and maintain a street wall line. Regarding height for this block, there is a minimum of 35' and 150' maximum (Downtown Height Overlay map). The project meets zoning except for the items noted below for Board discussion.

	Required	Proposed
Lot Size (minimum)	none	55,321 sf
Street Frontage (minimum)	15'	91.51' Temple; 189.85' Federal
Build-to Line	5'	Met on all streets
Lot Width (minimum)	0'	122.82'; 110.84; 175.16'
Blank Wall (maximum)	30'	No blank walls
Height (min)	35'	190'
Height (max)	150'	190'*
Rear Setback	-	-

Side Setback	-	-
Side Setback	-	-
Lot coverage (max 100%)	unknown parcel area** (100%)	32,850 sf (?%)**
Impervious	-	53,083 sf
Floor area above 125'	10,000 sf or 25% site area; 15,000 sf max.	10,000 sf (?%)**
Parking	266 residential	125 residential; 21 post office
Bike Parking	53	12
*dependent on height map amendment		
**additional information needed from applicant showing parcel data		

Parking Requirement Reduction – The Applicant seeks Planning Board approval for a reduced parking requirement. A minimum of 266 residential spaces (1 per 1 residential unit) are required by Division 20 Off-Street parking. The applicant has provided a Transportation Demand Management plan, traffic analysis, and parking analysis (Attachment R). Staff request additional information before being able to make a recommendation regarding the reduced parking requirement. The B-3 zone allows for parking requirements to be met by a variety of methods – fee-in-lieu, off-site parking, car share. See comments below in the Site Plan review for additional staff comment.

The planning board may establish a parking requirement that is less than the normally required number of spaces upon a finding of unique conditions that result in a lesser parking demand, such as housing for persons who cannot drive, housing that participates in a travel demand management program, availability of transit . . . etc.

C. SUBDIVISION STANDARDS

(14-497(a). Review Criteria)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's subdivision ordinance. Staff comments are below and in *Attachments 1-5.*

1. Water, Air Pollution

The project is not anticipated to result in undue air or water pollution.

2 & 3. Adequacy of Water Supply

The applicant is awaiting evidence of capacity from the Portland Water District *(*Attachment P*)*.

4. Soil Erosion

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated given the infill site. Site Plan (Plan P5) and Grading & Drainage Plan (Plan P9) provide information about stabilizing the site during and after construction.

5. Impacts on Existing or Proposed Highways and Public Roads

The applicant provided a traffic and parking assessment and Transportation Demand Management (TDM) Plan (Attachment R) in which they propose future trip reductions as well as a demand of .48 parking spaces per residential unit. It is likely the project will meet the 100 trips threshold to require a

Traffic Movement Permit (TMP) – staff request additional trip generation information to confirm. Tom Errico, the city's consulting traffic engineer, had the following comments regarding traffic impacts (Attachment 5):

- *The applicant shall conduct a trip generation estimate, with supporting documentation, to determine the need for a Traffic Movement Permit and/or preparation of a traffic study. Following receipt of this information (and parking supply source as noted below) the need for a traffic study will be determined. An analysis of the Congress Street/Temple Street intersection will be required to inform the design of Temple Street between Federal Street and Congress Street.*

Temple Street is under moratorium until June 2021 – work in that roadway will need to follow moratorium repairs or commence after June 2021.

6. Sanitary Sewer/Stormwater Disposal

Two 12-inch sewer lines are proposed to service the building and would outlet downhill to Federal Street. The applicant received a wastewater capacity letter from Department of Public Works (Attachment M). Storm drain also connects to existing Federal Street infrastructure. Senior Engineer Mike Tremblay had additional comments (Attachment 1):

- *If the retail space may contain a restaurant, a grease trap will be required.*
- *The Water Resources division indicated that draining stormwater into the Temple Street sewer main may be preferable to Federal Street, as Temple Street stormwater is more likely to be separated from sewer in the foreseeable future. The Applicant should work with Brad Roland to confirm that the sewer on Temple Street has sufficient capacity for stormwater, and resolve any other such issues.*

7. Solid Waste

The applicant proposes a trash and recycling room at the ground level adjacent to the parking. The applicant is asked to provide more information about the disposal plan. The project is not anticipated to cause an unreasonable burden on the ability of the city to dispose of solid waste.

8. Scenic Beauty

This proposal is not deemed to have an adverse impact on the scenic beauty of the area. The project is within the historic district and includes a Historic Preservation Board review.

9. Comprehensive Plan

Portland's Plan 2030

The project is in keeping with the stated goals around affordability, equity, authenticity (preserving the historic building), and furthers the policy of creating complete neighborhoods. The project takes advantage of a central, downtown location near transit and walkable services. See Section IX. Comprehensive Plan Analysis.

10. Financial and Technical Capacity

As noted above, the applicant has provided evidence of financial and technical capacity (Attachment G).

11. Wetland/Water Body Impacts

Project is not located within a watershed of any pond or lake or within 250 feet of any wetland, great pond or river.

12. Groundwater Impacts
There are no anticipated impacts to groundwater supplies.

13. Flood-Prone Area
Per the FEMA flood maps, the site is not located in a flood zone.

14. Wetland/Water Body Impacts
No potential wetlands within the proposed subdivision.

15. Wetland/Water Body Impacts
No river, stream or brook within or abutting the proposed subdivision.

(14-497(c) Conformity with Code) Any proposed subdivision shall be in conformity with all relevant provisions of this Code. Project has been reviewed for conformity with the zoning code – see staff analysis below.

D. SITE PLAN STANDARDS

Traffic - Access, Circulation, Loading and Servicing
The current proposal keeps two curb cuts onto Federal Street for entry/exit to the two surface parking areas. One existing curb cut is being closed with the creation of two new on-street parking spaces. Staff request more information regarding loading – the applicant proposes two on-street, 15-minute spaces to meet this need for residents as well as surrounding businesses. Full staff analysis is pending. Parking Division Director John Peverada had the following comment (Attachment 3):

- *A building this size should have an off street loading dock for deliveries and move ins and outs.*

Sidewalks – The sidewalks will be rebuilt on Federal and Temple streets. The applicant proposes curb extensions at the intersection and extending up Union Street. Curb extensions require review and approval by the City Manager and Department of Public Works with justification for the area to be extended. Staff will need to assess the proposal with a queuing analysis and may recommend revisions to this design as described below by Senior Engineer, Mike Tremblay (Attachment 1):

- *The proposed curb extensions must be approved by the DPW Director. Curb extensions are only permitted where they are necessary to construct ADA ramps, or in other specific circumstances.*
- *The curb extension, if it remains, should be reduced in size. The extension of the curb should extend no further than 6 feet off the typical curb line, Larger curb extensions make parking and winter maintenance more difficult. Along Temple Street, the curb extension should be reduced in length, and reduced in width to accommodate a parking lane on Temple Street (a shift in the centerline on Temple Street will also be required to add parking).*
- *Per the above comment, street parking on Temple Street will help to serve the proposed retail space, or provide a loading area for the building. It should be added if possible. Note that the amount of parking/size of the curb extension should be informed by queue lengths at Temple/Congress.*

Public Transit Access - No transit shelter is required. The project is within a quarter mile of several existing bus stops (Routes 1, 9A, 9B, 21).

Parking – The zoning requires 266 parking spaces for the residential project; the retail space is under the 2,000 sf threshold and thus does not require off-street parking. The B-3 zone allows for several options to meet the parking requirement including off-site parking, fee-in-lieu, carshare equivalent (8 spaces). The project's parking is proposed to be provided off-site though a lease that has not been submitted.

The applicant requests Planning Board approval of a parking requirement reduction from 266 to 125 (47%). The Land Use Code gives the Planning Board the discretion to approve a reduced number based on the information provided by the applicant. Staff request backup data to support the parking demand of 125 spaces stated in the TDM plan.

Tom Errico, the city's consulting traffic engineer, had the following comments regarding traffic impacts (Attachment 5):

- *The applicant has conducted a parking study for the project and estimates a need for 125 parking spaces. In general, I find the methods in estimating the parking demand to be reasonable, although I continue to review the information in greater detail. I would note that the applicant shall provide details on parking supply for assessing potential traffic impacts.*

Parking Division Director John Peverada had the following comments (Attachment 3):

- *I am opposed to reducing the off street parking requirement for this building below what the zoning ordinance requires.*
- *Due to the lack of 1 and 2 hour parking spaces in this area, **I would like to have a condition of approval be added that residents of this property will not be eligible for residential parking permits,** similar to what was done for the Avesta project at 72 Oak St., and Pearl Place II.*

Snow Storage – None shown

Transportation Demand Management – A TDM plan is included in the submission. Staff request additional information related to the assessment before providing comment.

The post office visitor parking will be accommodated with 21 spaces under and behind this new building. Two new 15-minute parking spaces can be added at the closure of an existing curb cut on Federal Street. The applicant proposes these as pick up/drop off locations for residents and neighboring businesses. Residential parking will be provided off-site; residential leasing will be exclusive of parking.

- The applicant requests a parking requirement reduction to 125 residential spaces.
- The applicant needs to provide evidence of off-site parking lease for the approved number of spaces

Landscape Preservation / Site Landscaping and Screening – There are no significant landscape or natural features to preserve. The majority of the open space is paved, hardscape rather than landscape. Landscape buffer is provided to screen the surface parking from the sidewalk. The plaza area includes trees and benches, however, this area will be in shade much of the time.

The City Arborist would like to see an increase in tree & landscape features within the expanded sidewalk area given the loss of the existing plaza space and mature trees.

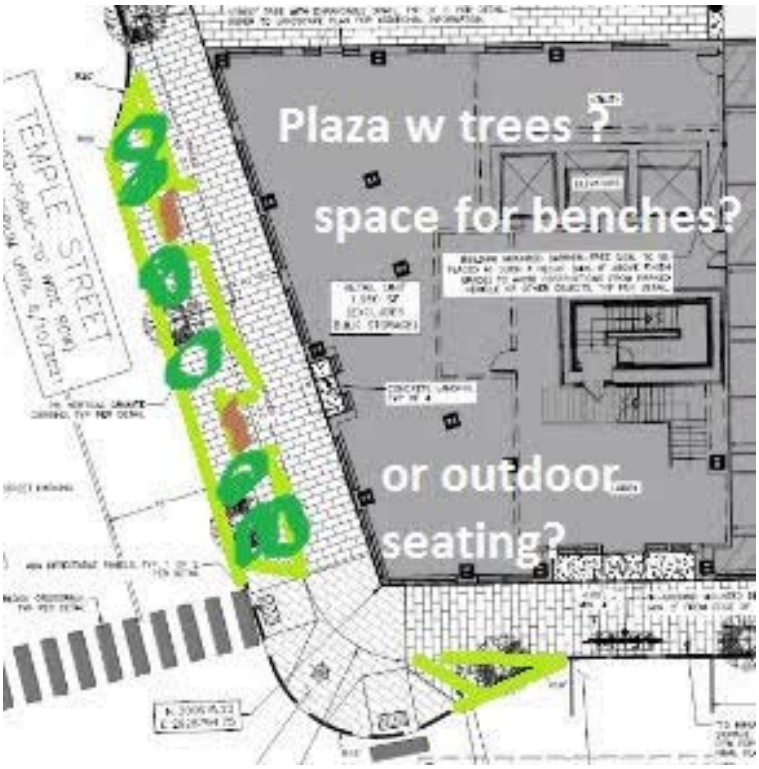


Figure 4 Suggested Landscape Improvements

Landscape Plan – The plan shows a new urban plaza between the new construction and existing building. Landscape is also provided as a buffer between the sidewalk and surface parking areas. The City Arborist would like to see an increase in the number of street trees provided given the extended sidewalk design. The street tree contribution will be significant given the limited ability to provide trees/landscape on this dense, urban infill site.

Water quality, Stormwater Management and Erosion Control - See additional comments from Civil Engineer (Attachment 2).

- *The project is required to comply with the Maine DEP Chapter 500 and City of Portland's Section 5 of the Technical Manual for stormwater management. This requires compliance with the Basic, General, and Flooding Standards. The Applicant has provided a detailed Erosion and Sedimentation Control plan to meet the Basic Standards. The stormwater management report identifies that this is a Redevelopment project, but that it will also create 3,500 SF of new impervious surface on the site. Based on Section 5 of the City of Portland Technical Manual, the City has required any project to comply with the General and Flooding Standard if they create greater than 1,000 SF of new impervious surface. On tight urban sites like this where it is not anticipated that any flooding control is needed due to the proposed change, this has been done in the past using in-line roof filters, pervious pavers, or free-box filters.*

Public Safety - The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial

reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime.

The final submission will be evaluated for the lighting and safety. The building is built to the property line; two parking areas will need to be gated or well-lit. The plaza space is narrow and deep with trees in the center – adequate lighting will be necessary to provide visibility into the space at night.

Fire Prevention and Public Utilities – The applicant has yet to provide the letter from the Water District and Department of Public Works showing capacity to serve. There are no additional comments or concerns from the Fire Department at this time. Lauren Swett, P.E., civil engineering peer reviewer, (Attachment 2) raises the following concern:

- *I would suggest some thought be put into the electrical infrastructure required for the lighting in the sidewalk. The electrical conduit should be installed to avoid other utility infrastructure and trees. Also, one of the proposed street lights appears to be in conflict with the proposed water service.*

Massing, Ventilation and Wind Impact and Shadows: Generally addressed in the Design Review. The project is not adjacent to any public park or open space. The height of the structure is comparable to surrounding buildings and will cast some afternoon shadow onto the USPS building and Congress Street behind. The private plaza area will often be in shadow.

Historic Resources – The project is within the Congress Street historic district and subject to Historic Preservation Review for the design review.

Exterior Lighting incl Street Lighting – Staff will evaluate the photometric plan. Decorative street lights are required on both streets.

Noise and Vibration – The final submissions should clarify where the HVAC will be located and how it will be screened from the public ROW even if the exact specifications are submitted later.

Construction Management Plan – Staff provided preliminary comment (Attachment 1):

- *The CM plan shows sidewalk closures on both Federal and Temple streets. The Applicant should provide detailed pedestrian detour plans.*
- *The Applicant should discuss in detail how USPS operations will continue during construction, and where employees and patrons will be directed to park.*

VIII. INCLUSIONARY ZONING CONDITIONAL USE

The applicant is required by Division 30, Section 14-487 to provide twenty-seven (27) workforce housing units (on-site or off-site) or pay the fee-in-lieu. The applicant has proposed to provide all of these units on-site and meet the requirements. The Housing Program Manager has the following comments (Attachment 6):

- *Based on the aforementioned information, the developer would comply with Division 30, section 148-487 by either:*
  - *providing 27 workforce units with 12 studio units and 15 one-bedroom units;*
  - *providing 26 workforce units and paying a fraction fee-in-lieu of $65,271.60 (.6 x 108,786); or*
  - *providing a fee-in-lieu of $2,893,707.60 (26.6 x $108,786).*

- *The applicant has chosen to provide 27 workforce rental units composed of no less than 15 one-bedroom units and the appropriate number of corresponding studio units.*

IX. COMPREHENSIVE PLAN ANALYSIS

Portland's Plan 2030

Comprehensive Plan goals and policies (state and local) relevant to the proposed map amendment are included below. The map and text amendments align with these vision statements and goals by adding infill, residential units within a dense, downtown location currently on an under-developed surface parking lot. The increase in height allows for an increase in dwelling units within a walking and transit-oriented site. Increasing the viability of downtown, infill sites potentially reduces new construction in green field or outlying areas. In addition, the map amendment would allow for a higher number of residential units providing more housing; in this instance, the units are proposed to be market-rate rental apartments and the required workforce units will be provided on-site.

Vision Statements

- Equity: We will be a state and national leader in achieving a more equitable city.
- Equity: We will incorporate the needs of all our residents in planning for our future.
- Sustainable: Portland has been built and rebuilt to endure; we will balance our historic fabric, sound infrastructure, and the best of new technology and design for the future.
- Sustainable: Portland will grow in order to sustain our community, infrastructure, and economy.
- Sustainable: Growth should respect and seek to preserve our spectacular natural resources.
- Secure: We will be committed to accessible housing and healthy food for all our residents.

Environment

- Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation.
    - Continue to develop land use policies which support complete neighborhoods.

An Enduring City – Historic Preservation

- Stabilize and enhance historic areas of the city by ensuring quality investment in existing structures and compatible infill development.
- Ensure an appropriate balance of continuity and change as Portland grows and evolves.

A Livable City: Housing

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents
- Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.
- Pursue policies to enable people who work in Portland to have the option to live in Portland.
- Encourage quality, sustainable design in new housing development.
    - Remove housing barriers
    - Leverage underused properties
    - Support age-friendly housing options
    - Adapt affordable housing

An Accessible City – Transportation

- Promote multi-modal accessibility, enabling residents and visitors of all ages and abilities to participate fully in the social and economic life of the community.
    - Enhance the pedestrian realm

Future Land Use

- Complete Neighborhoods
- Reinforce the Center

X. PUBLIC COMMENT

As of the writing of this memo, no public comments have been submitted concerning the zone amendments. The Neighborhood Meeting for ZN-001230-2020 had no attendance (Attachment K, L). One public comment was received regarding the Site Plan application (PC1) from an Exchange Street property owner who is opposed to the project due to the traffic and parking impacts in the block and the stress on the already dense area.

XI. NEXT STEPS

- Zone Amendments
    - Advise on the proposed height map amendment
    - Advise on the proposed B-3 text amendment
    - Advertise and hold a public hearing
- Site Plan, Subdivision, IZ Conditional Use application
    - Planning Board to provide preliminary comments/questions
    - Evaluate proposal against PAD guidelines
    - Applicant to provide the following:
        - Transportation and Parking
            - Provide trip generation analysis
            - Provide evidence of lease for off-site parking or plan for parking supply
            - Provide traffic queuing analysis at Temple intersection for curb extension
            - Provide justification for the necessity of the curb extensions
            - Turning templates for structured parking spaces
        - Site Design
            - Revise street tree design, raised granite, double planters

        - Update ramp details at intersection to reflect recent changes
        - Identify snow storage areas
        - Address CPTED concerns regarding plaza visibility
    - Subdivision
        - Solid Waste plan/loading area
    - Right, Title, and Interest
        - Boundary survey showing extents of new parcel for 201 Federal Street W
        - Evidence of agreement to make improvements to neighboring property
    - Zoning
        - Parcel area to calculate impervious area and lot coverage
    - Construction Management Plan
        - Address interim operation plan for USPS

ATTACHMENTS

ZN-001230-2020
Applicant Submittals

0. Cover Letter
A. Project Description
B. Consistency with Comprehensive Plan
C. Text Amendment
D. Right, Title, and Interest
E. Vicinity Map
F. Proposed Map Amendment
G. Civil Site Plan
H. Architectural Elevations
I. Neighborhood Meeting Packet

PL-001235-2020
Attachments to Memorandum

1. Department of Public Works
2. Civil and Stormwater
3. Parking
4. Landscape
5. Traffic
6. IZ Conditional Use

Public Comment
PC1 Joseph Palacci 11/3/20

Applicant's Submittal
A. Cover Letter
B. Application
C. Right, Title, and Interest
D. Zoning Assessment
E. Easements
F. Request for Waivers

G. Financial Capacity
H. Technical Capacity
I. Conformity with City Master Plans
J. Stormwater Management Report
K. Erosion and Sedimentation Control Report
L. Fire Department Letter
M. Wastewater Application
N. Lighting
O. Architectural Design Narrative
P. Utilities
Q. Construction Management Plan
R. Traffic & Parking Assessment

Plans

P1 Cover Sheet
P2 General Notes
P3 Boundary & Topographic Survey
P4 Construction Management Plan
P5 Site Plan
P6 Landscape Plan
P7 Utility Plan 1
P8 Utility Plan 2
P9 Grading & Drainage Plan
P10 Site Details 1
P11 Site Details 2
P12 Landscape Details
P13 Utility Details 1
P14 Utility Details 2
P15 Utility Details 3
P16 Drainage Details
P17 Erosion Control Notes
P18 Erosion Control Details
P19 Photometric Plan
P20 Architectural Cover Sheet
P21 First Floor Plan
P22 Second Floor Plan
P23 Third Floor Plan
P24 Fourth Floor Plan
P25 Eighteenth Floor Plan
P26 Roof Plan
P27 South Elevation
P28 North Elevation
P29 East & West Elevations

P.O. Box 8816
Portland, ME 04104
Office: 207-776-9715
www.redfernproperties.com

Planning and Urban Development Department
Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

July 24, 2020

Subject: Zoning Map & Text Amendment Application – 200 Federal Street

To Whom It May Concern,

Redfern Downtown, LLC, dba Redfern Properties is pleased to submit the accompanying package of submission materials for the proposed Zone Map and Text amendment related to the property located at 200 Federal Street.

The project is an 18-story residential building with ground level retail will include roughly 264 rental apartments, including 27 onsite Workforce Housing Units as required by the City's Inclusionary Zoning Ordinance.

We seek modest zoning relief through a Map Amendment and a Text Amendment. Currently, the Downtown Height Overlay Map allows for a 150' tall main structure with a 40' 'appurtenance' for an overall height limit of 190'. However, per current Zoning, the 'appurtenance' cannot be used exclusively for housing, a concept based on a more than 30 year-old study. The building we propose is 190' to the roof beam, and thus the change we seek to the Downtown Height Overlay Map is subtle.

The Text Amendment refers to calculation of floor area and is similarly minor. Chapter 14 limits floor area above 125' in height to 10,000sf. Depending on the method of calculation, the floor plate for our proposed building is between 9,905sf and 10,490sf, and our text amendment attempts to clarify to ensure our compliance.

As you will see in the attached analysis, the proposal is entirely consistent with the City's comprehensive plan. First and foremost, the project provides badly needed rental housing in precisely the right place, within walking distance to downtown jobs and amenities. The aforementioned 27 units that would be deed-restricted as Workforce Housing would been the most meaningful contribution of Workforce Housing since the City's Inclusionary Zoning Ordinance was adopted in 2015.

This submission package is intended to meet the City's Submission Requirements for Map and Text Amendment applications. The following documents and drawings are to be uploaded onto the City's electronic submission site per the procedure outlined in the application:

Documents:

- A. Project Description
- B. Consistency with Comprehensive Plan
- C. Proposed Text Amendment
- D. Right, Title, and Interest (Land Option Agreement)

Drawings:

- E. Vicinity Map
- F. Proposed Map Amendment
- G. Civil Site Plan
- H. Architectural Elevations

Redfern Properties, LLC and the design team look forward to your review of this project. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

Jonathan Culley
Redfern Properties LLC
Redfern Downtown LLC

Cc (Cover Letter Only): Christine Grimando
Mayor Kate Snyder
Councilor Belinda Ray

Attachment A
Project Description

ACORN ENGINEERING, INC.

Planning and Urban Development Department
Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

August 20, 2020

Subject: Project Description – 200 Federal Street

To Whom It May Concern,

The proposed project site is comprised of a single parcel, Chart 32, Block G, Lot 1, encompassed by Congress, Temple, Federal, and Exchange Streets. The property is located in the B3 Downtown Business Zoning District, Downtown Entertainment Overlay Zone, Downtown Height Overlay and Congress Street Historic District. The site is currently comprised of two existing mixed-use buildings, which will remain, surface parking and underutilized patio area.

The project proposes to redevelop the surface parking and patio area into an 18-story, predominately residential building with ground level retail and enclosed parking. The 18-story building will include 118 studio units, 146 one-bedroom units, 2 two-bedroom units, with associated common areas, office, and fitness area. On the ground floor, the project proposes a 2000+ sf retail space.

The property has been surveyed by Owen Haskell, Inc., geotechnical engineering explorations performed by Summit Geoengineering Services and traffic studies by Traffic Solutions & Cushman Transportation Consulting, which includes a robust Transportation Demand Management Plan.

Sincerely,

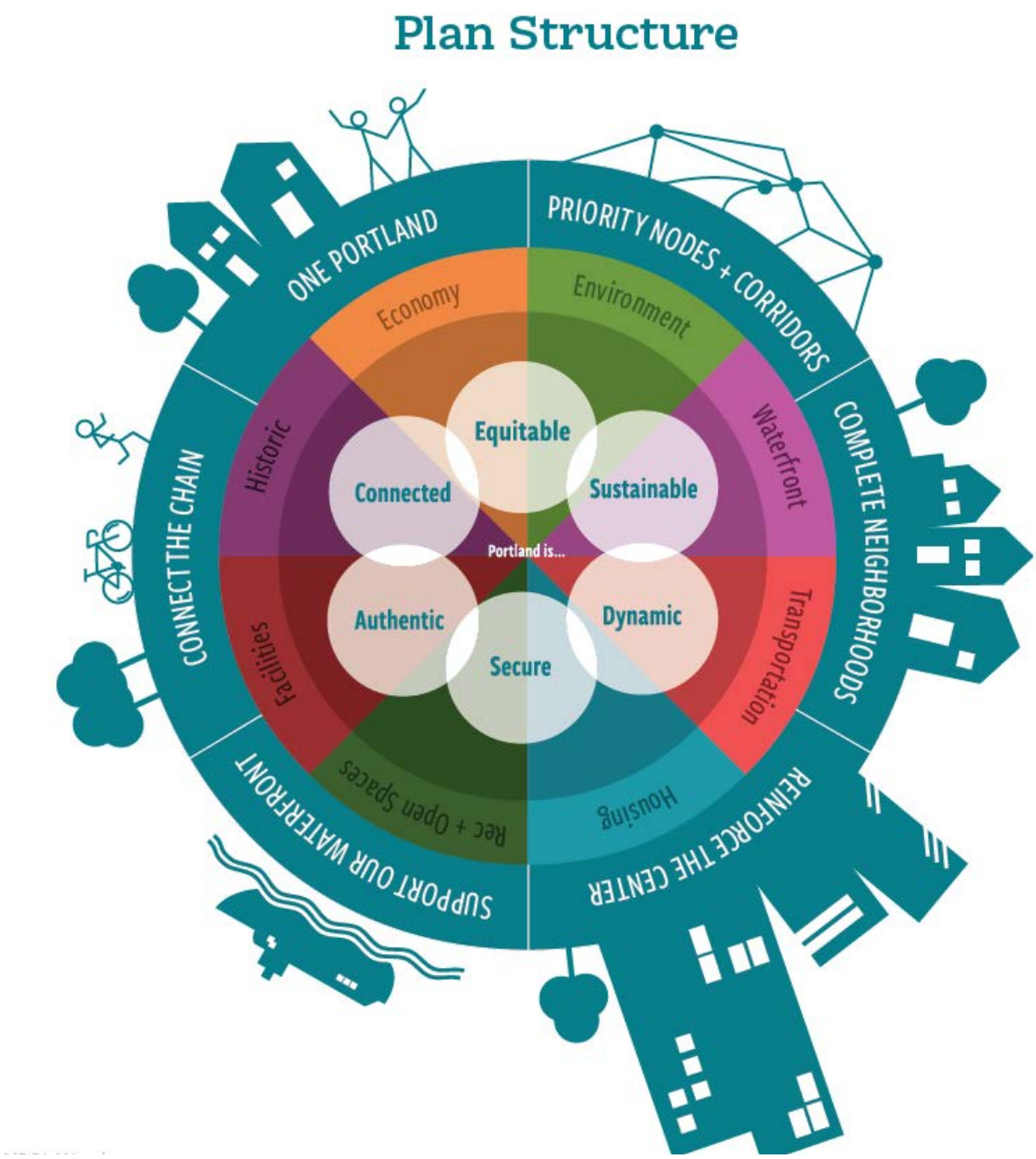
William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

Attachment B
Consistency with Comprehensive Plan

The 2017 Comprehensive Plan has a number of policy goals related to sustainable development and housing. This request to revise the height limits in this downtown location helps meet those goals.

The Plan's Executive Summary emphasizes the need to "Reinforce the Center" through better housing and transportation. This location, right in the heart of downtown Portland and one block from the METRO Pulse, is extremely well located for housing that takes advantage of multimodal transportation options. By locating housing near job opportunities and other commercial activities, it also emphasizes downtown walkability. This strategy is emphasized later in the Future Land Use section as well.

This proposal also meets specific goals in the Plan's policy guides.



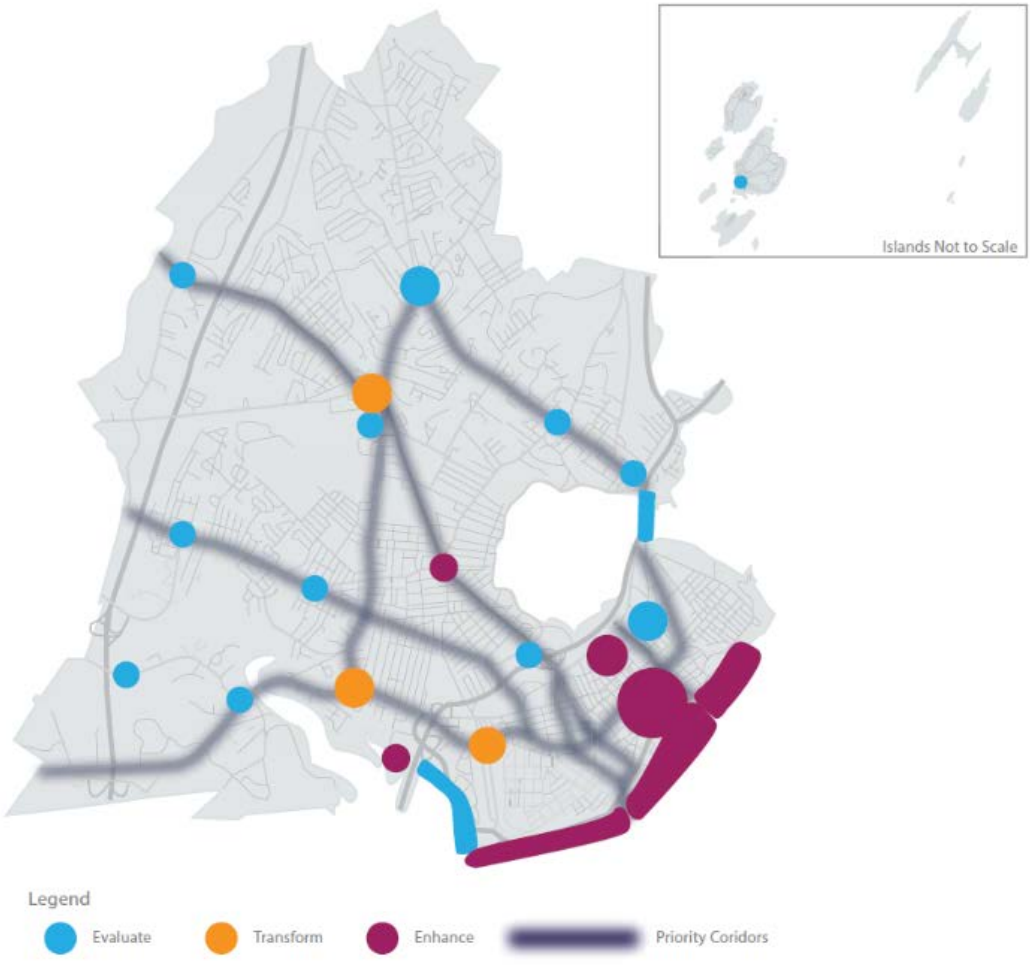
MEETING THE CITY'S HOUSING PRODUCTION GOALS

At the core of Portland's Plan is housing production. The Plan calls for production of a variety of housing types and locations, with a focus on key nodes and corridors. The largest node of development is Downtown Portland. The Plan further sets a specific, but achievable, goal of reaching a population of 72,000 by 2027. That target will require production of 2,557 housing units, or almost 300 per year. While a change in the height allowance in this location will not met that goal by itself, it is part of an overall strategy to produce housing in a sustainable way that supports this primary development node.

OTHER POLICY GOALS

Economy: A Vibrant City
The Economy Policy Guide says that the City actions should: *"Evaluate zoning and the condition of existing infrastructure in priority areas — downtown, identified neighborhood nodes, and along transit corridors — to ensure that employment and housing growth can be supported."*

The current zoning in this area, while allowing for some height, falls a little short of the heights needed to make housing developments viable with private financing. By moving the height limit up slightly, the economics of a project change and a significant housing development can be supported.



Housing: A Livable City

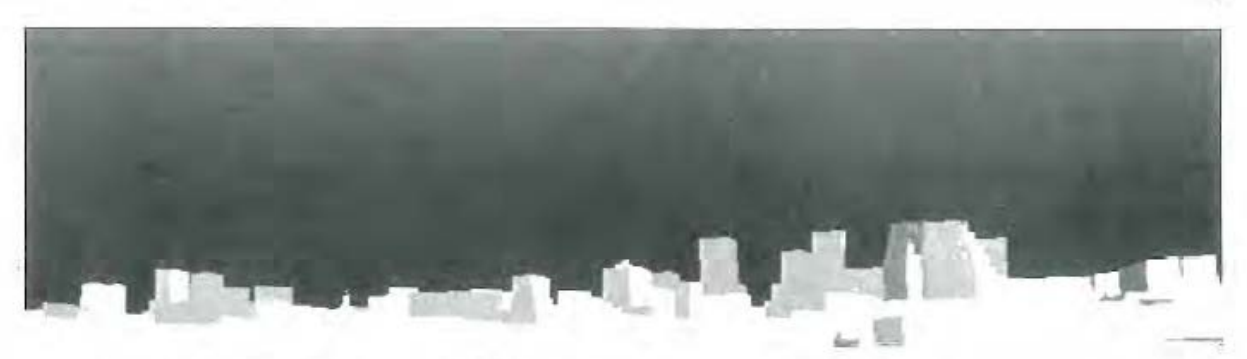
The Housing Policy Guide similarly calls for City actions to: *"Evaluate whether current zoning allows for new development consistent with historic patterns of form, density, and/or use, as well as whether it allows for priority growth areas."* In order to support the priority growth area of downtown Portland with private financing, some additional height is needed. This policy guide also states that those who work in Portland should be able to live in Portland. Production of housing at this location will make this goal economically feasible by allowing for production of new units immediately downtown, near employment opportunities.

OTHER PLANS

The requested map change is also generally consistent with planning related to downtown heights.

Downtown Height Study (1989)
The existing downtown height overlay is generally based on the *Downtown Height Study*, by Carr, Lynch and Sandell, as further reiterated in the *Downtown Vision: A Celebration of Urban Living and a Plan for the Future of Portland, Maine's Center for Commerce and Culture* (1991). The height study used early computer models to estimate the impacts of three height scenarios for downtown Portland, evaluated in terms of urban design factors.

The Height Study is over 30 years old, but remains the basis for the downtown height overlay district. The study suggested a specific height regime using a hybrid of the "Growth District" and "High Spine" scenarios.



25 Projected Skyline with Recommended Height Limits

Since that time, changes have been made to this overall regimen. Most notably, the heights permitted in the West Bayside area were significantly increased from the 65' proposed in this study. That change was based on further planning in the 2000 "New Vision for Bayside" that called for additional development that was financially feasible and allowed for infill development in this redevelopment district.

Other changes were made in the area around City Hall and to the east on the "Top of the Old Port" site. Those changes were made as thinking progressed on best practices and further study was done in those areas.

On this particular site, the study suggested a height of 150' with an additional 40' allowance for an "architectural cap," for an overall height of 190'. In the current height overlay, the additional height is subject to these limits:

> "Where the downtown height overlay map depicts a height plus forty (40) feet, the building form may extend up to forty (40) feet above the designated height limit for the purpose of providing a distinctive graduated design for an architectural building top and to enclose rooftop appurtenances as required by section 14-526(d) 9 of article V (site plan) and the City of Portland Design Manual. No habitable floor area shall be developed within the building envelope permitted by the additional forty (40) feet, unless at least fifty (50) percent of such habitable floor area is devoted exclusively to one (1) or more publicly accessible uses … and provided that such floor area is incidental to the primary design intent of the space to achieve the standards of this section." (14-220 (i) 3)

These goals, while laudable, eliminate the financial feasibility of providing this additional space. Such "caps" work on much taller buildings, such as the cap on 111 Huntington Avenue in Boston (a 36 story, 550-foot-tall residential building completed in 2002, capped by an open-frame dome and crown.) However, the economics of providing such a cap on a 10 to 12 story building are very challenging, and generally it is not feasible to construct such a cap on a building of this size without public subsidy.

The height study also suggests limiting the size of floorplates over a certain height in order to allow buildings to "taper" as they get taller. Specifically, it suggests that the upper floors of buildings should be limited to 25% of the parcel size, or 10,000 square feet, whichever is greater. It does not specify whether those 10,000 square feet are net or gross, however. Nor does it outline how to view a building on a larger parcel, as is the case in this project. This suggestion was carried forward in section 14.220 (j) of the current code, again, without clarification as to whether the 10,000 sf. is net or gross, and without guidance on how to view larger parcels.

We believe that the intent was for the 10,000 sf. to be net of stairs and elevators, which would be the case for our proposed project. Further, it seems that in a case such as this one, with a 56,000 sf. parcel, it seems that we would not be limited to 10,000 sf. regardless. However, in order to clarify the language, we are suggesting that, if needed, the 10,000 sf. be refined as "net of elevator shafts and stairways." Providing livable space at those heights will not be feasible without netting out these areas, which do not contribute to leasable space. We are not proposing netting out other circulation areas.

<u>Downtown Vision (1991)</u>

The 1991 *Downtown Vision: A Celebration of Urban Living and A Plan For The Future of Portland - Maine's Center For Commerce And Culture* outlines a multi-pronged strategy for downtown development beyond the physical recommendations in the height study.

The Vision promotes downtown housing as having a beneficial effect on downtown's businesses and overall vitality:

"Promote a mix of housing options within the Downtown and surrounding neighborhoods relative to cost, ownership, unit type and size. … Existing building codes and zoning ordinances should be evaluated to assure adequate support for residential uses. Amendments should be proposed that increase housing opportunity without compromising basic health and safety concerns."

Interestingly, in addition to reiterating the height study findings, the Downtown Vision suggests that taller buildings should not always follow a clean set of height guidelines:

> *"As the City evolves, a bold urban statement can be made with larger-scaled buildings representing a strong business climate. … The variation of building forms and heights that currently exists should continue to be encouraged. This includes slender elements which pierce the skyline as well as blockier background elements, providing a rhythm of light and building."*

CONCLUSION

The current height limit on this site, developed in 1989, does not factor in policies and goals more recently outlined in current plans. *Portland's Plan 2030* makes urban design as an important public goal. For example, in the Transportation Policy Guide, it says to *"Invest in a walkable city through sidewalk maintenance, accessibility improvements, trail and path connections, snow clearance, lighting, landscaping, traffic calming, enhanced street crossings, strong urban design, artistic elements, and wayfinding."*

There is also a sidebar that emphasizes the goal of density through quality design. However, at no point does Portland's Plan suggest that heights should continue to be limited solely through the recommendations of the 1989 study.

The specific housing production and sustainability goals of the 2017 Plan, which were not factors in the 1989 study, deserve serious consideration as the City looks at its overall height limits, especially downtown. Some additional height is needed to meet those goals, both due to space limitations and financial feasibility.

In order to make housing development downtown feasible, we proposed replacing the 40' allowance for an architectural cap on this site with a simple 190' height limit, retaining the 90' street wall limit and the limits on height within 100' of Exchange Street. This change will make workforce housing production economically feasible. If the current language restricts rooftop appurtenances, such as elevator overrides, we request that they explicitly be permitted above that additional 40', provided they are adequately screened and designed to fit in with a high-quality overall building design.

We are not suggesting that the limits created in 1989 be entirely dismissed. Instead, they should be thoughtfully modified in the context of the newer goals, as all good planning goals should be.

Fortunately, the 2017 Plan provides guidance on how to look at plans developed prior to 2017, and how to reconcile potential disparities:

> *"There are a number of neighborhood, subject area, and hybrid plans that have been adopted over time as elements of the previous comprehensive plan. Some are quite recent, some decades old, some may be partially implemented and some are not be entirely current, but they each retain valuable information as previously adopted plans. Previously adopted plans are not incorporated into the new comprehensive plan but remain adopted policy and will continue to provide valid guidance for the City. … Existing plans should always be considered in the context of their date of adoption and their*

anticipated role in guiding City planning and policies. Portland's Plan is the prevailing policy document and shall provide guidance as to how to resolve any inconsistencies that may arise between these various plans." (p. 14.)

In other words, while the Downtown Height Study provides some useful policy guidance, it is not part of the Comprehensive Plan. The recommendations of the Study need to be viewed in light of the much more recent policy goals of Portland's Plan regarding housing production and sustainable development.

For these reasons, there is a solid planning argument to be made for allowing for a variation from the strict numerical recommendations made in 1989. In this case, the variations being requested are minor – going from 190' including an architectural cap to 190' including livable space, permitting mechanicals to be on the roof, and clarifying the language in 14.220 (j) related to upper story floorplates. The policies outline in the 1989 study need to be updated to allow for the achievement of current policy goals related to housing production.

Attachment C
Proposed Text Amendment

Text Amendment

Sec. 14-220. Dimensional requirements.

…

(j) Maximum building area and floor area for buildings which exceed one hundred twenty-five (125) feet in height:

1. For portions of structures which exceed one hundred twenty-five (125) feet in height, the maximum horizontal building coverage at one hundred twenty-five (125) feet or higher shall not exceed twenty-five (25) percent of the site area, except that no floor area shall be required to be less than ten thousand (10,000) square feet, net of elevator shafts and stairways.

2. The maximum gross floor area for each floor located above one hundred twenty-five (125) feet in height shall not exceed fifteen thousand (15,000) square feet.

Attachment D
Right, Title & Interest;
Land Option Agreement

QUITCLAIM DEED
(WITH COVENANT)

MAINE REAL ESTATE TAX PAID

KNOW ALL PERSONS BY THESE PRESENTS, That **A & M PARTNERS, INC.**, a Maine corporation, whose mailing address is 120 Exchange Street, Portland, Maine 04101, (Grantor) does hereby remise, release, bargain, sell and convey, and forever **quitclaim with covenants** to **PO SQUARE BUILDING LLC,** a Maine Limited Liability Company, whose mailing address is 120 Exchange Street, Portland, Maine 04101 (Grantee) the land and buildings located in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit "A"

Being the same premises conveyed to Grantor by deed dated March 16, 1993, and recorded in the Cumberland County Registry of Deeds in Book 10603, Page 113.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be signed and sealed on 13th May, 2019

A & M PARTNERS, INC. a Maine corporation.

Witness

Louis C. Wood, its President

State of Maine
County of Cumberland, ss

May 13, 2019

Then personally appeared before me the above named Louis C. Wood in his said capacity and acknowledged the foregoing to be his free act and deed and the free act and deed of said corporation, A & M PARTNERS, INC.

Before me,

Notary Public/Attorney at Law

Martin J. Foley

EXHIBIT A

396 Congress Street a/k/a 400 Congress Street, Portland

A certain parcel of land situated on the southerly side of Congress Street, the westerly side of Exchange Street, the northerly side of Federal Street and the easterly side of Temple Street in the City of Portland, County of Cumberland, and State of Maine, bounded and described as follows:

Beginning at the point of intersection of the assumed easterly sideline of Temple Street and the assumed southerly sideline of Congress Street;

Thence, N 63° 04' 40" E by Congress Street 325.52 feet to the westerly side of Exchange Street;

Thence, S 38° 44' 13" E by Exchange Street 180.90 feet to the northerly side of Federal Street;

Thence, S 64° 10' 36" W by Federal Street 313.07 feet to the easterly side of Temple Street;

Thence, N 43° 04' 34" W by Temple Street 178.09 feet to the point of beginning.

The above description is based on an ALTA/NSPS Land Title Survey prepared by Owen Haskell, Inc. entitled "396 Congress Street (aka 400 Congress Street), Portland, Cumberland County, Maine" made for PO Square Portland LLC and its assigns, dated April 4, 2019 and revised through May 8, 2019.

SUBJECT TO THE FOLLOWING:

Cable Television Installation Agreement by and between Public Cable d/b/a Time Warner Cable and A&M Partners, Inc. dated October 21, 1999 and recorded in Book 15936, Page 274.

Received
Recorded Register of Deeds
May 13,2019 02:46:50P
Cumberland County
Nancy A. Lane

OPTION AGREEMENT

200 Federal Street, Portland Maine

OPTION granted as of this 24th day of July, by **PO Square Building LLC**, a Maine limited liability company whose mailing address is 120 Exchange Street, Portland Maine (hereinafter called "Optionor or Owner"), to **Redfern Downtown LLC**, a Maine limited liability company whose mailing address is PO Box 8816, Portland Maine 04104 (hereinafter called "Optionee").

RECITALS

WHEREAS, Optionor presently is the owner of certain property in the vicinity of 200 Federal Street, Portland Maine as shown on the sketch or map attached as Exhibit A (the "Premises"), being a portion of the property acquired by Owner from A & M Partners by Quitclaim Deed with Covenant dated May 13, 2019 and recorded in the Cumberland County Registry of Deeds as Book 35640, Page 071; and

WHEREAS, Optionor desires to grant, and Optionee desires to acquire, an option on the terms provided by this Option Agreement to acquire the Premises.

AGREEMENT

1. Grant. Optionor hereby grants to Optionee the exclusive right and option to purchase the Premises, together with such easements and parking arrangements between the parties and over the remaining property of Owner as may be necessary for office building tenants, pedestrian and vehicular access.

2. Option Price and Purchase Price. Within ten (10) days from the date of this Agreement, Optionee shall pay Optionor the Option Price in the amount of [redacted] The Purchase Price, upon exercise of this Option and full execution of other documents associated with the sale transfer, shall be equal to the sum of [redacted]. All payments from Optionee to Optionor shall be payable at closing, unless otherwise agreed upon between the parties. The Option Price shall be credited towards the Purchase Price in the event Optionee exercises this option.

3. Term. Optionee may exercise this option by notice delivered in the manner described below on or before [redacted].

4. Notice of Exercise. This Option may be exercised by Optionee giving written notice to Optionor in person or by U.S. mail, fax or overnight delivery service prior to the expiration of the option term, at the address set forth above.

5. **Closing.** Specific closing terms to be more further defined in a Purchase and Sale Agreement and shall occur at a date and time reasonably specified by Optionee, and subject to written agreement by Optionor. Title shall be conveyed by Optionor by Quitclaim Deed with Covenant and any other assignment documents required, conveying good and marketable title to the Premises free from all encumbrances and claims of others. In the event that it is necessary for the Premises to be conveyed as a condominium unit as a result of the physical configuration of the Premises, Optionee and Optionor agree to enter into all necessary condominium documentation on commercially reasonable terms at or prior to Closing. Real estate taxes shall be pro-rated. Unless Optionee shall waive any defect in title, Optionor shall make reasonable efforts to remove such defect in title. In case Optionor, after 45 days, or such greater period that Optionee may permit, shall have failed to do so, Optionee may elect to (a) terminate, in which case Optionor shall return the Option Price without further recourse to either party, or (b) waive such defect by notice in writing. In the event Optionee exercises this Option and fails to close for reasons not attributable to default by Optionor, Optionor shall, as Optionor's sole remedy, be entitled to retain the Option Price as liquidated damages without further recourse.

6. **Parking.** If Optionee exercises this Option, Optionor agrees to enter into a lease or other arrangement of parking spaces on other property owned by Optionor on commercially reasonable terms to provide sufficient parking to meet municipal and other governmental parking requirements for the use to be made of the Premises by Optionee.

7. **Failure to Exercise.** If Optionee fails to exercise this Option, any payments made under this Option Agreement shall be retained by Optionor, and neither party shall have any further rights or claims against the other. The Optionee may fail or refuse to exercise this Option for any reason whatsoever, including without limitation that the Optionee determines, or is notified that, the Property is not able to be permitted and approved for a residential multi-family development of a size, scale and cost acceptable to Optionee, or other due diligence investigations prove unsatisfactory.

8. **Inspections.** Optionee shall have reasonable access to the Premises to conduct such surveys, tests, and inspections as it may deem necessary during the Option term or after exercise of the Option. Optionee shall provide reasonable notice to Optionor, shall enter at its sole risk and shall restore the premises substantially to its prior condition.

9. **Successors and Assigns.** This Agreement is binding upon and shall inure to the benefit of the parties hereto and their personal representatives, heirs, successors and assigns. This Agreement may not be assigned by Optionee without the written approval of Optionor.

IN WITNESS WHEREOF, the undersigned have executed this Option Agreement as of the day and year first above stated.

WITNESS:

PO Square Building LLC

By: Drew Sigfridson
Its: Manager

Redfern Downtown, LLC

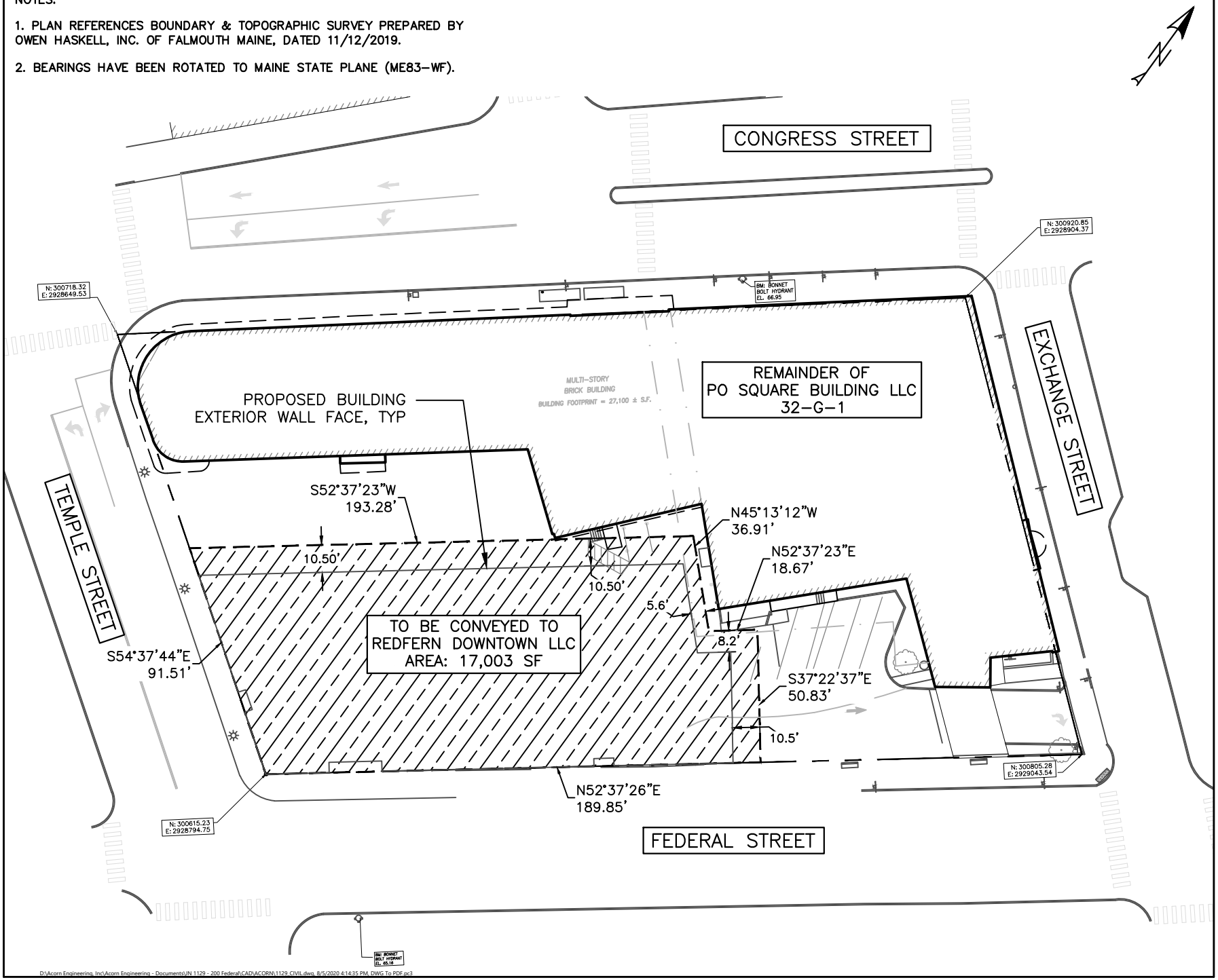
By:
Its: Jonathan Culley, Manager

EXHIBIT A

NOTES:

1. PLAN REFERENCES BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY OWEN HASKELL, INC. OF FALMOUTH MAINE, DATED 11/12/2019.

2. BEARINGS HAVE BEEN ROTATED TO MAINE STATE PLANE (ME83–WF).



ISSUED FOR	BY DATE
RECORDING	WHS 8/5/2020

DRAWING NAME: EXHIBIT A

PROJECT NAME: 200 FEDERAL STREET REDEVELOPMENT

CLIENT: REDFERN DOWNTOWN LLC

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372 PORTLAND, MAINE 04104 (207) 775–2655

FILE:	1129_CIVIL
DATE:	7/24/2020
JN:	1129
SCALE:	1":50'
DESIGN BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS

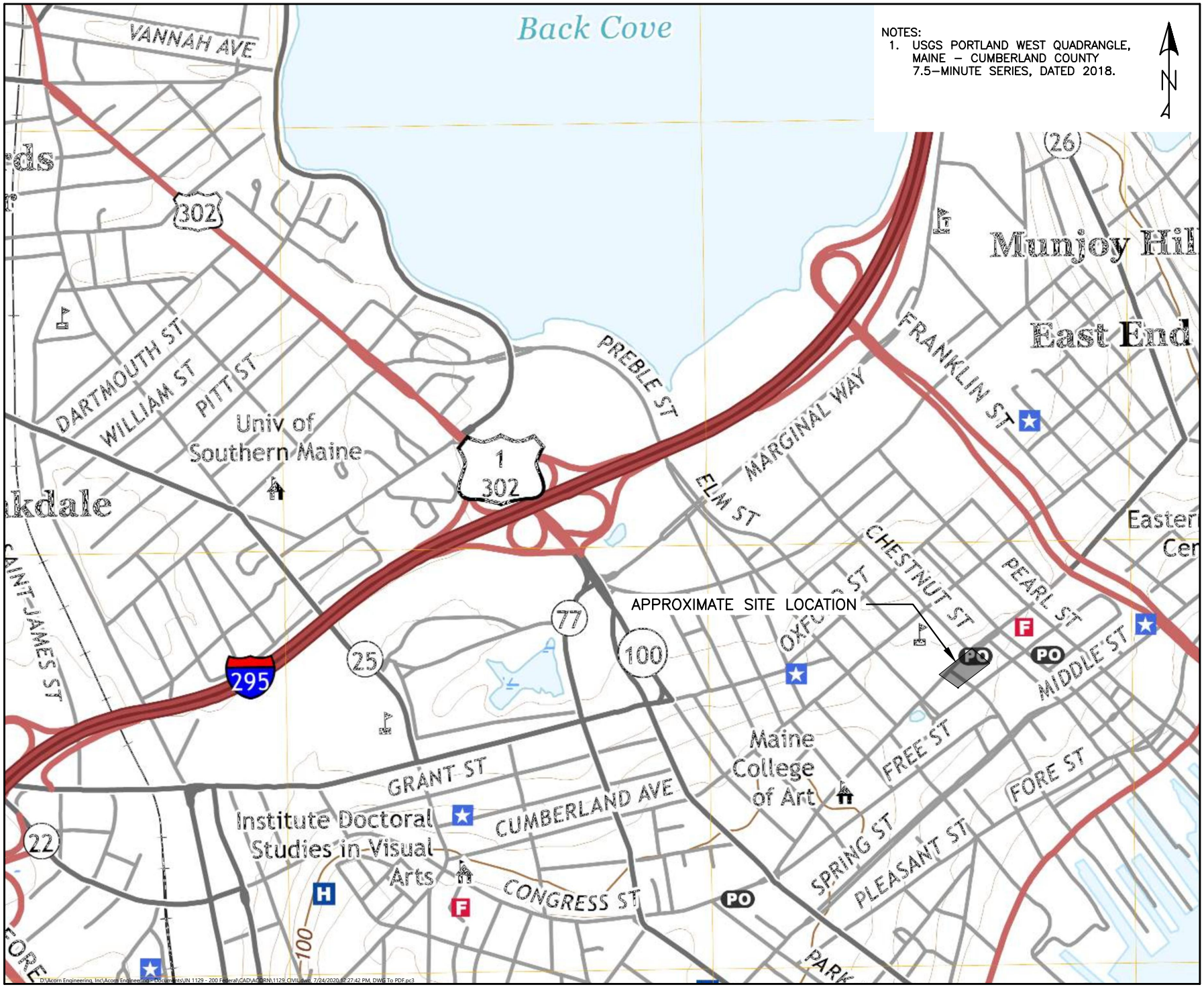
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.

EX–A

D:\Acorn Engineering, Inc\Acorn Engineering - Documents\JN 1129 - 200 Federal\CAD\ACORN\1129_CIVIL.dwg, 8/5/2020 4:14:35 PM, DWG To PDF.pc3

Attachment E
Vicinity Map



NOTES:
1. USGS PORTLAND WEST QUADRANGLE, MAINE – CUMBERLAND COUNTY 7.5–MINUTE SERIES, DATED 2018.

N

ISSUED FOR	BY DATE
MAP AMENDMENT	WHS 7/24/2020

DRAWING NAME: VICINITY MAP

PROJECT NAME: 200 FEDERAL STREET REDEVELOPMENT

CLIENT: REDFERN DOWNTOWN LLC

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372 PORTLAND, MAINE 04104 (207) 775–2655

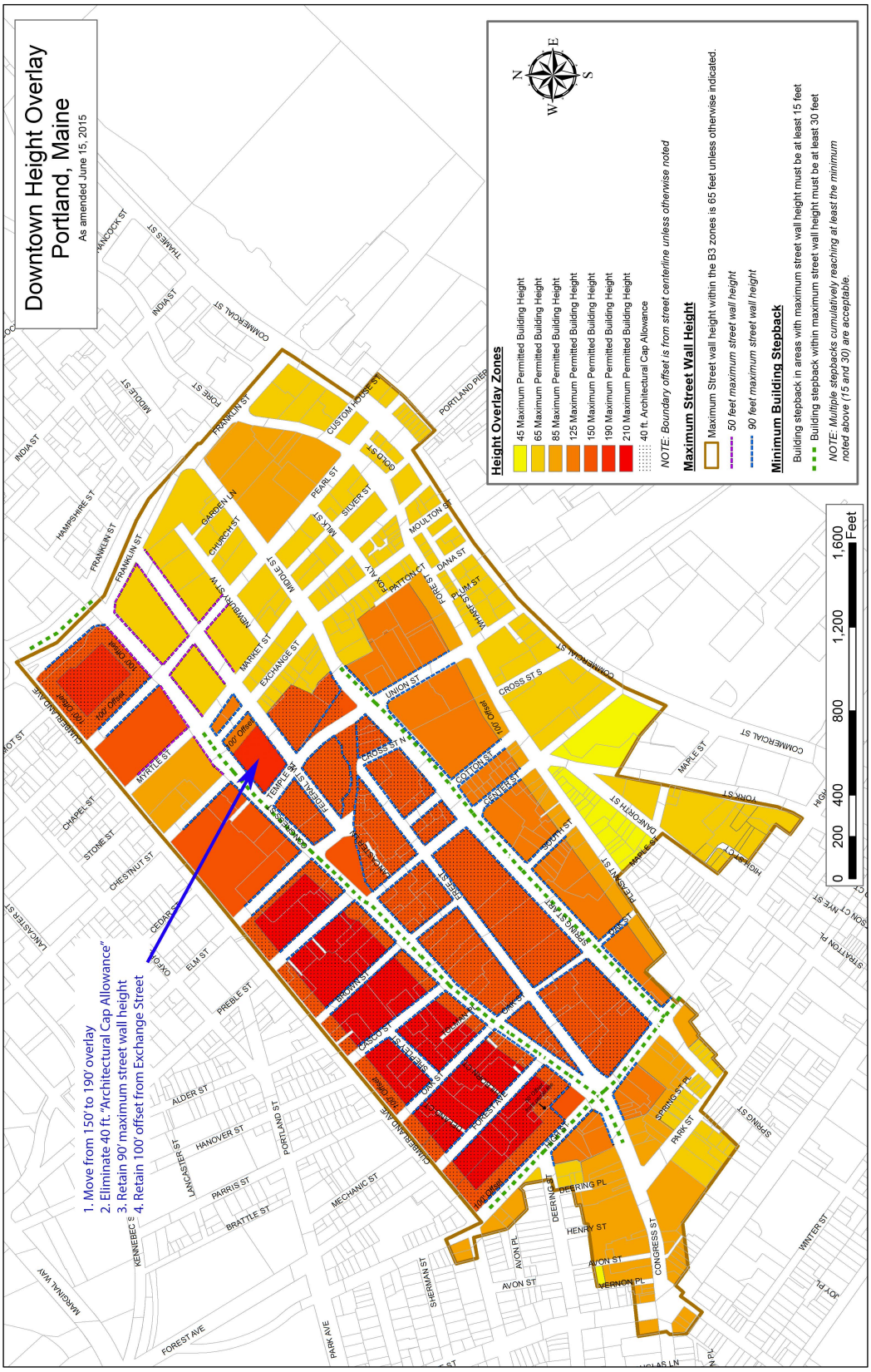
FILE:	1129_CIVIL
DATE:	7/24/2020
JN:	1129
SCALE:	1":1000'
DESIGN BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.
EX–1

D:\Acorn Engineering, Inc\Acorn Engineering - Documents\JN 1129 - 200 Federal\CAD\ACORN\1129_CIVIL.dwg, 7/24/2020 12:27:42 PM, DWG To PDF.pc3

Map Amendment



GENERAL NOTES:

1. BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. RAMPS MUST CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT FOR A MAXIMUM RISE OF 30-INCHES.
5. SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
6. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
7. PAVEMENT JOINTS MUST BE SAWCUT & TACK COATED PRIOR TO PAVING TO PROVIDE A DURABLE & UNIFORM JOINT

IMPERVIOUS AREA WITHIN PROPERTY

LOCATION	EXISTING (SF)	PROPOSED (SF)
ROOF	27,703	41,803
STAIRS/RAMP	172	121
PAVEMENT	14,394	7,756
BRICK	6,718	2,619
CURB & LANDINGS	980	298
CONCRETE	588	487
TOTAL (EXCL. ROOF)	22,852	11,281
TOTAL (INCL. ROOF)	50,555	53,084

SPACE AND BULK STANDARDS

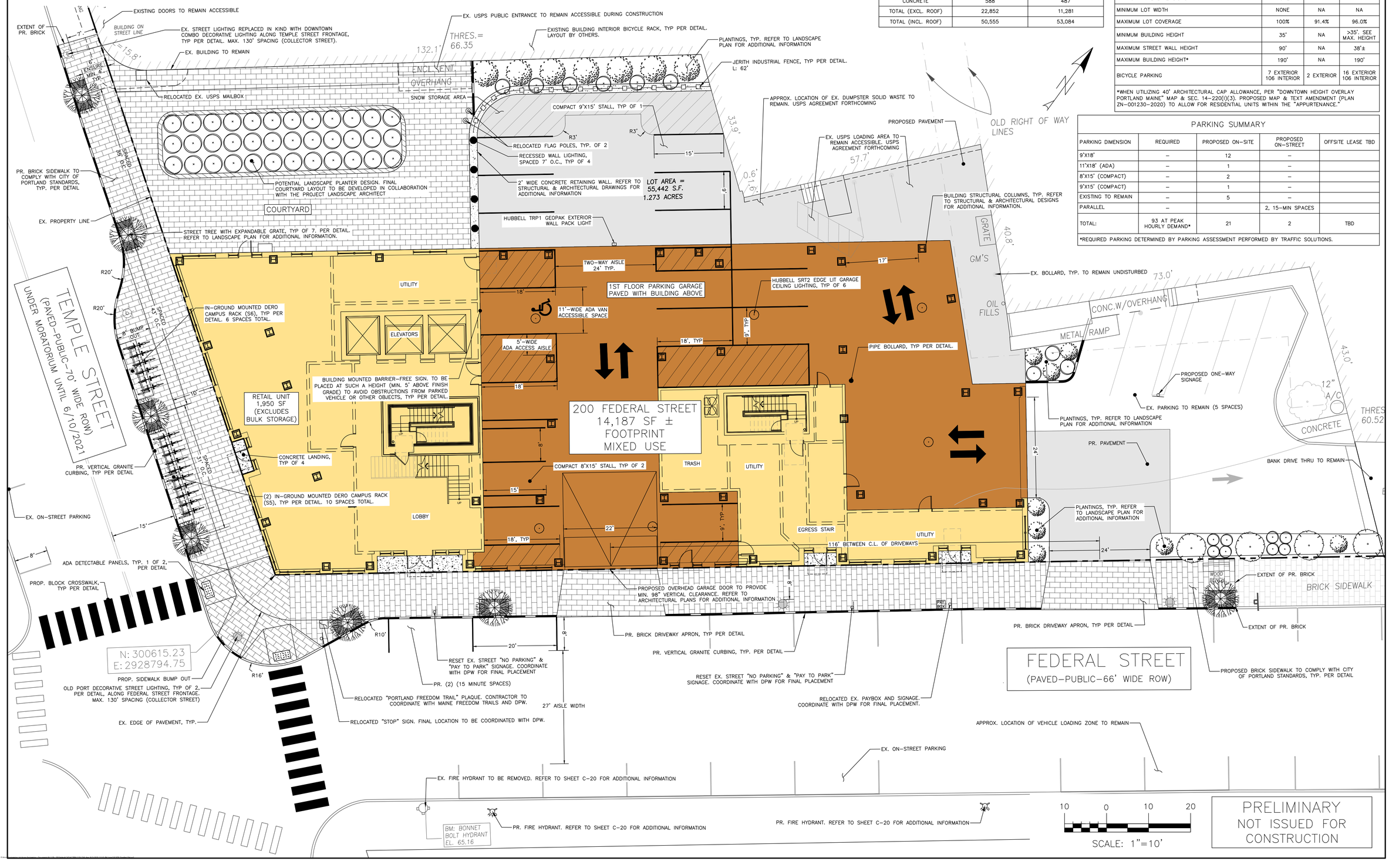
B3 DOWNTOWN BUSINESS, DOWNTOWN ENTERTAINMENT OVERLAY ZONE, DOWNTOWN HEIGHT OVERLAY, CONGRESS STREET HISTORIC DISTRICT	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	NONE	1.27 AC	1.27 AC
MINIMUM STREET FRONTAGE	15'	998'	998'
MAXIMUM STREET WALL BUILD-TO LINE	5'	NA	0'
MINIMUM YARD DIMENSIONS	NONE	NA	NA
MINIMUM LOT WIDTH	NONE	NA	NA
MAXIMUM LOT COVERAGE	100%	91.4%	96.0%
MINIMUM BUILDING HEIGHT	35'	NA	>35'. SEE MAX. HEIGHT
MAXIMUM STREET WALL HEIGHT	90'	NA	38'±
MAXIMUM BUILDING HEIGHT*	190'	NA	190'
BICYCLE PARKING	7 EXTERIOR 106 INTERIOR	2 EXTERIOR	16 EXTERIOR 106 INTERIOR

*WHEN UTILIZING 40' ARCHITECTURAL CAP ALLOWANCE, PER "DOWNTOWN HEIGHT OVERLAY PORTLAND MAINE" MAP & SEC. 14-220(I)(3). PROPOSED MAP & TEXT AMENDMENT (PLAN ZN-001230-2020) TO ALLOW FOR RESIDENTIAL UNITS WITHIN THE "APPURTENANCE."

PARKING SUMMARY

PARKING DIMENSION	REQUIRED	PROPOSED ON-SITE	PROPOSED ON-STREET	OFFSITE LEASE TBD
9'X18'	–	12	–	
11'X18' (ADA)	–	1	–	
8'X15' (COMPACT)	–	2	–	
9'X15' (COMPACT)	–	1	–	
EXISTING TO REMAIN	–	5	–	
PARALLEL	–		2, 15-MIN SPACES	
TOTAL:	93 AT PEAK HOURLY DEMAND*	21	2	TBD

*REQUIRED PARKING DETERMINED BY PARKING ASSESSMENT PERFORMED BY TRAFFIC SOLUTIONS.



10 0 10 20

SCALE: 1"=10'

PRELIMINARY NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
TDM	WHS 11/8/19
COST ESTIMATE	WHS 11/15/19
PRECON DESIGN	WHS 11/20/19
PRE-APP MEETING	WHS 12/11/19
CSS MAP & TEXT AMENDMENT	WHS 7/24/2020
CSS SITE PLAN	WHS 8/4/2020
PRELIM PRICING	WHS 8/7/2020
MAP & TEXT AMENDMENT	WHS 8/21/2020

DRAWING NAME: SITE PLAN

PROJECT NAME/ ADDRESS: FEDERAL STREET DEVELOPMENT, 200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC, PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING, INC.
ACORN ENGINEERING, INC.
PO BOX 7183 FALMOUTH, MAINE 04101
(207) 775-2655

THESE PLANS SHALL NOT BE MODIFIED WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THESE PLANS WITHOUT SUCH PERMISSION SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

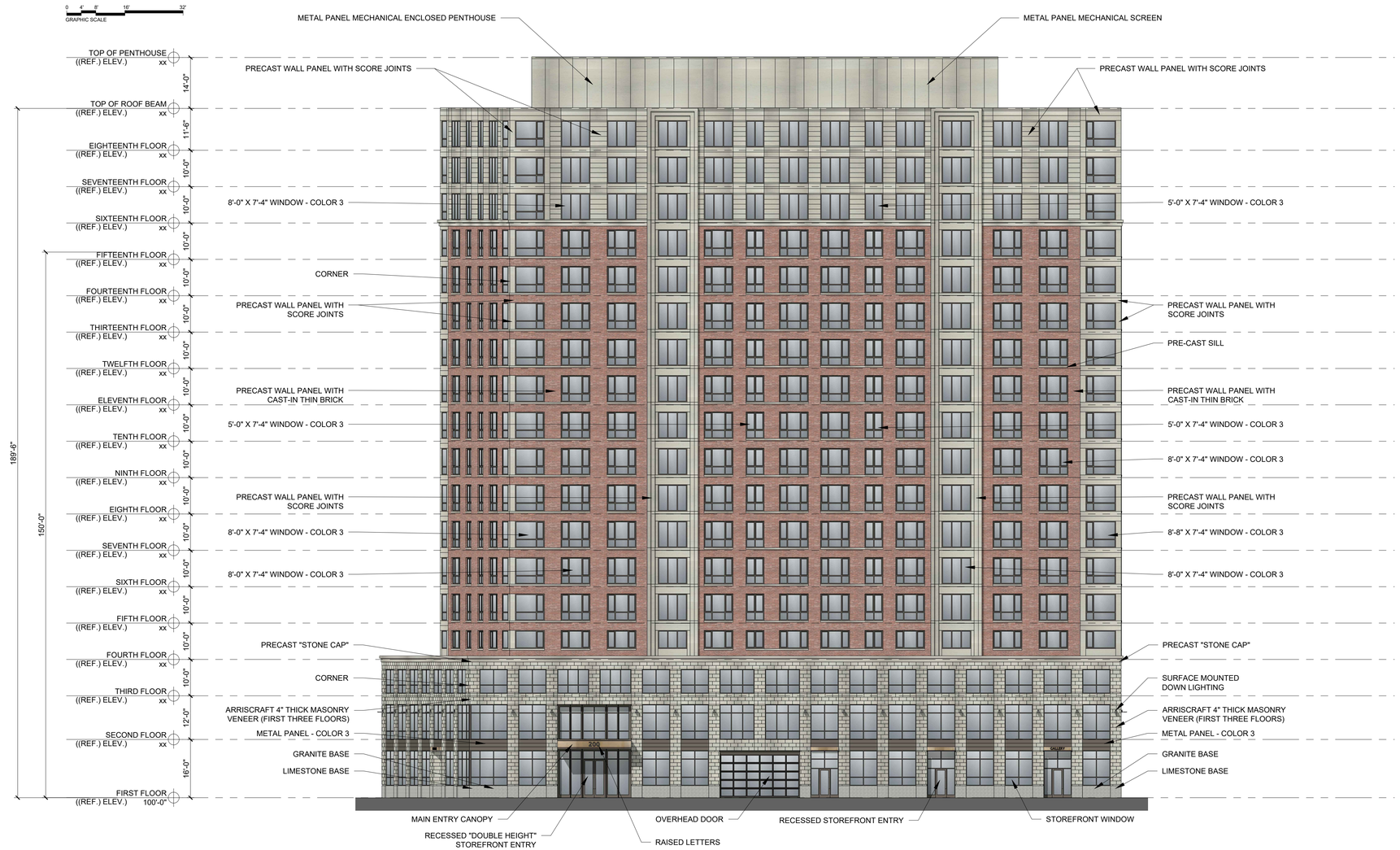
FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11415 — 8-4-20 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO. C-10

200 FEDERAL STREET

JULY 20, 2020



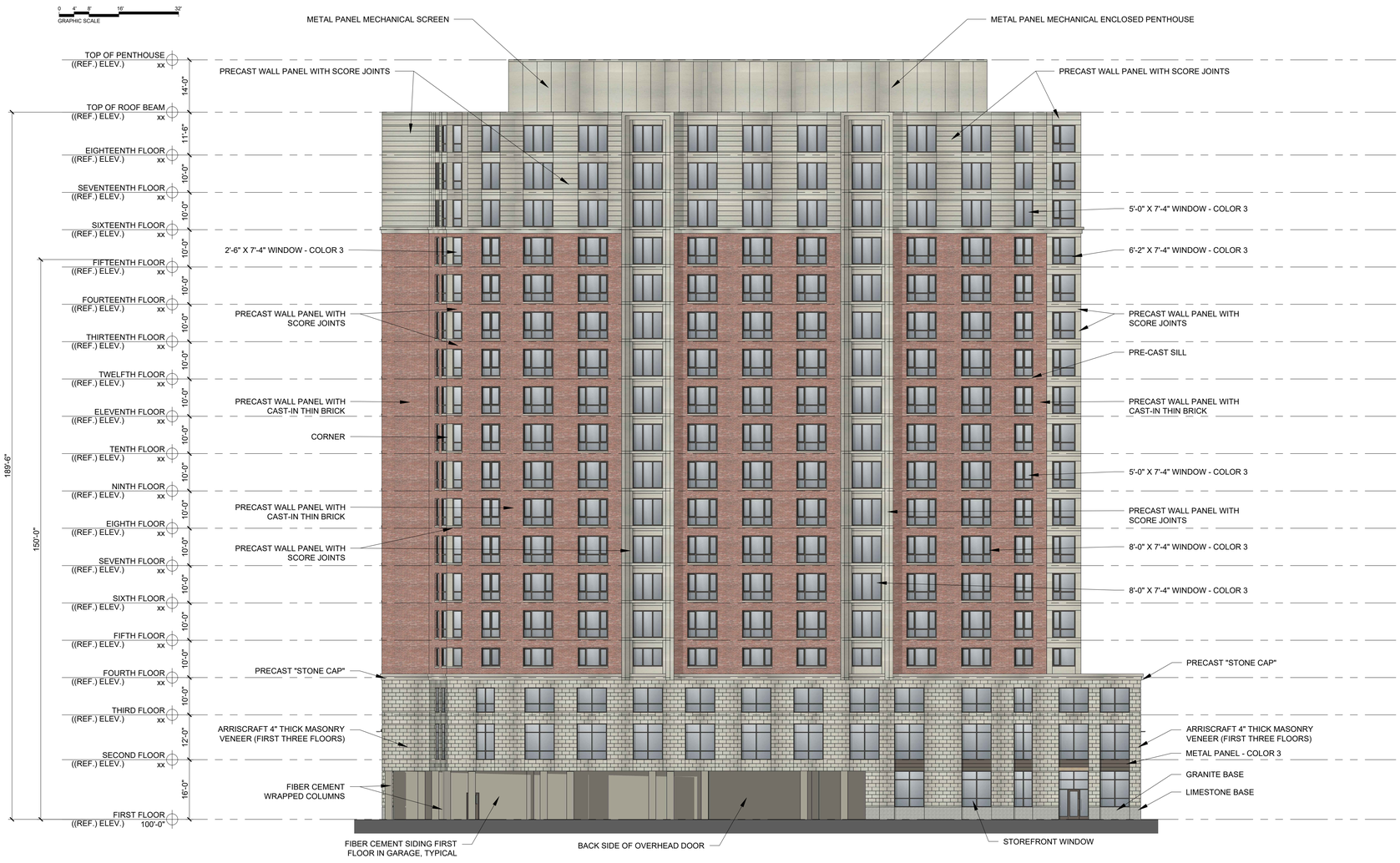
1 SOUTH ELEVATION
1/16" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

200 FEDERAL STREET

JULY 20, 2020



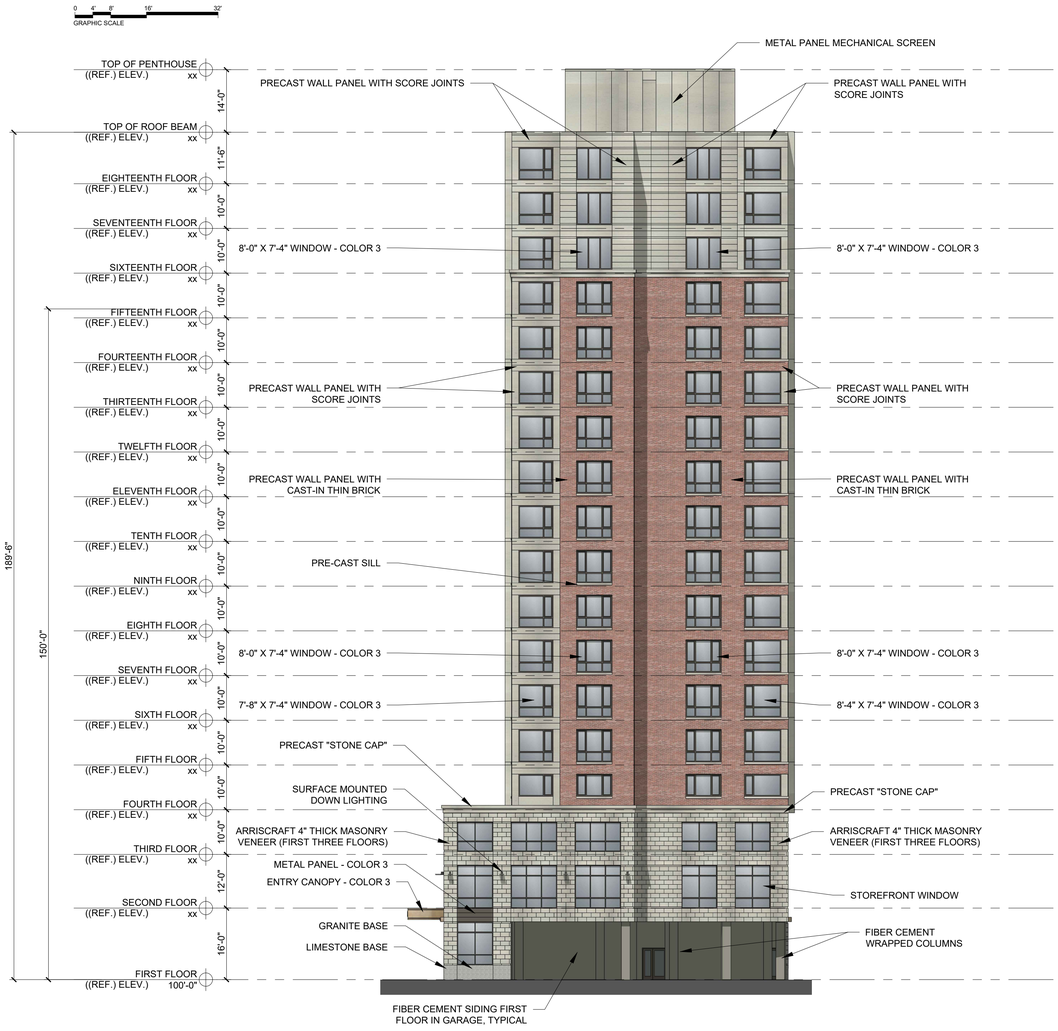
1 NORTH ELEVATION
1/16" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

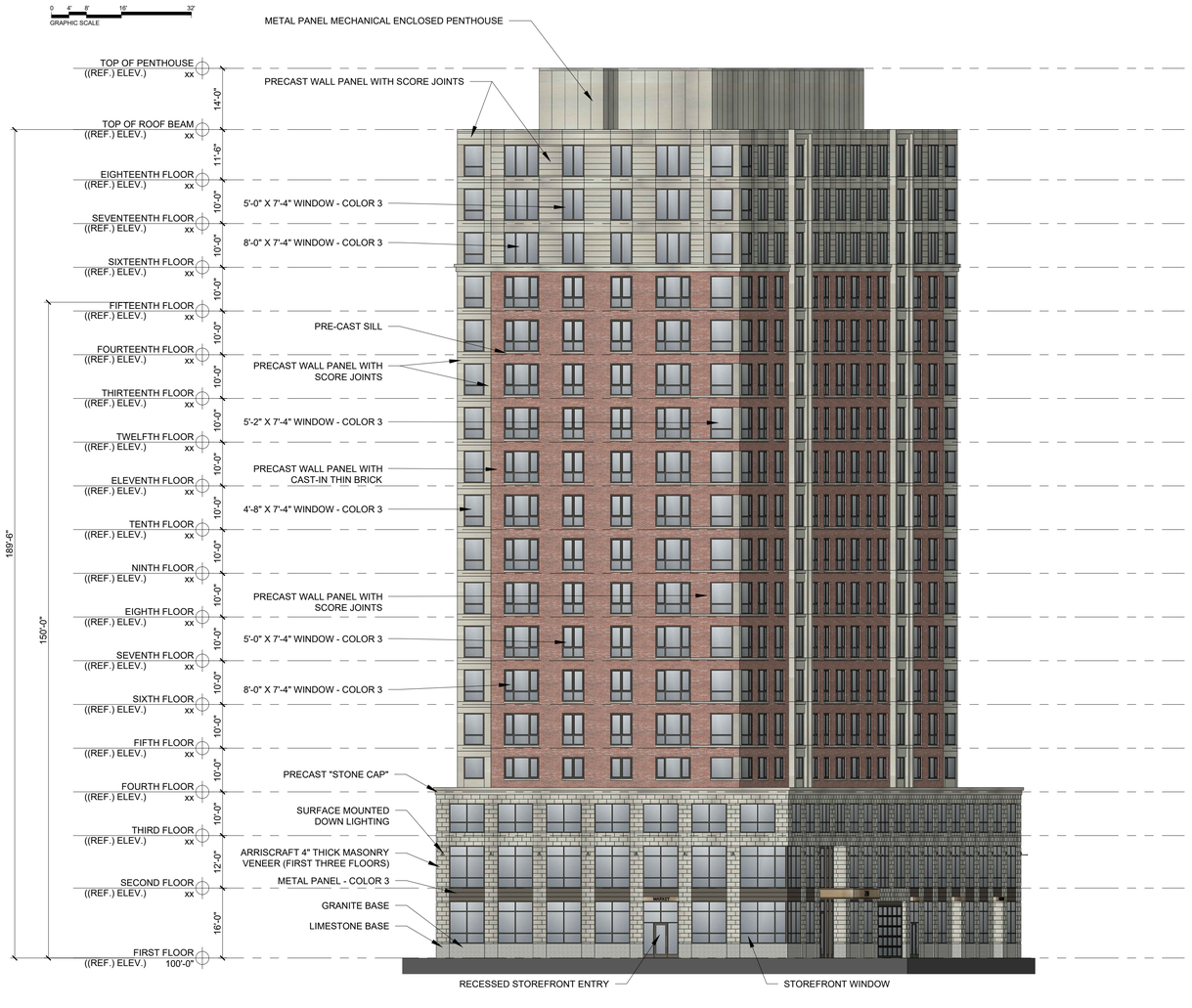
RYAN SENATORE **ARCHITECTURE**

200 FEDERAL STREET

JULY 20, 2020



1 EAST ELEVATION
1/16" = 1'-0"



1 WEST ELEVATION
1/16" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

ACORN ENGINEERING, INC.

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

October 7, 2020

Subject: 200 Federal Street (ZN-1230-2020) Neighborhood Meeting

I, Will Savage, hereby certify that a remote neighborhood meeting was held on October 6, 2020 via Zoom at 5:30 pm.

I also certify that on September 24, 2020, invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.

2. Residents on the "interested parties" list.

Sincerely,

Will Savage, P.E.
Principal-Project Manager
Acorn Engineering, Inc.

Included with this certification are as follows:

1. Copy of the invitation sent
2. Attendee sign-in sheet
3. Meeting Minutes

ACORN ENGINEERING, INC.

Dear Neighbor: September 22, 2020

On behalf of Redfern Downtown LLC, we are pleased to invite you to a virtual neighborhood meeting to discuss a proposed Zoning Map & Text Amendment related to the property located at 200 Federal Street (Chart 32, Block G, Lot 1). The proposed project is an 18-story residential building with ground level retail & 266 rental apartments, including 27 onsite Workforce Housing Units as required by the City's Inclusionary Zoning Ordinance. Currently, the Downtown Height Overlay Map allows for a 150' tall main structure with a 40' 'appurtenance' for an overall height limit of 190'. However, per current Zoning, the 'appurtenance' cannot be used exclusively for housing, a concept based on a more than 30 year-old study. The building proposed is 190' to the roof beam, and thus the change sought is subtle.

Meeting: Held **remotely & recorded via Zoom** according to state and local requirements regarding social distancing and will be available for public viewing and participation. **To attend, please email admin@acorn–engineering.com to request a link or phone number to join the meeting.** You may also call the office line (listed below) to request this information.

Date/Time: Tuesday, October 6, 2020 at 5:30 p.m.

The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list" be invited to participate in a neighborhood meeting. Both the sign-in sheet and recorded meeting minutes will be submitted to the Planning Board. If you have any questions, please do not hesitate to call the office at (207) 775–2655. We look forward to seeing you at the meeting.

Sincerely,

William H. Savage, P.E. - Acorn Engineering, Inc..

Sign-In Sheet

10/6/2020
200 Federal Street Portland, ME 04101

Members of the Public in Attendance:

NAME	EMAIL
1. None	

Developer and Consultant Team in Attendance:

NAME	EMAIL
1. Jonathan Culley – Redfern Properties	jonathan@redfernproperties.com
2. Ryan Senatore – Ryan Senatore Architecture	ryan@senatorearchitecture.com
3. Will Savage – Acorn Engineering, Inc.	wsavage@acorn-engineering.com
4. Faith Thomas – Acorn Engineering, Inc.	fthomas@acorn-engineering.com
5. Faye Johnson – Acorn Engineering, Inc.	admin@acorn-engineering.com

200 Federal Street Redevelopment
Zoning Map & Text Amendment

Neighborhood Meeting Minutes
October 6, 2020 / 5:30 pm
Remote meeting via Zoom

Project Team Attendees:

Jonathan Culley: Developer (Redfern Properties)

Will Savage: Civil Engineer (Acorn Engineering)

Faith Thomas: Civil Engineer (Acorn Engineering)

Faye Johnson: Office Administrator (Acorn Engineering)

Ryan Senatore: Architect (Ryan Senatore Architecture)

Meeting started at 5:30 pm and ended at 5:37 pm.

Presentation:

One member of the public RSVP'd but subsequently declined prior to the meeting, resulting in no public attendees or meeting minutes.

Recorded by,

Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.
fthomas@acorn-engineering.com

ACORN ENGINEERING, INC.

Planning and Urban Development Department
Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

September 4, 2020

Subject: Level III Site Plan/Subdivision Application – 200 Federal Street

Dear Christine Grimando,

On behalf of Redfern Downtown LLC, dba Redfern Properties, we are pleased to submit the accompanying package of submission materials related to the proposed redevelopment at 200 Federal Street.

The proposed project site is comprised of a single parcel, Chart 32, Block G, Lot 1, encompassed by Congress, Temple, Federal and Exchange Streets. The property is located in the B3 Downtown Business Zoning District, Downtown Height Overlay, Pedestrian Encouragement Zone, Downtown Entertainment Overlay Zone and Congress Street Historic District. The site is currently comprised of two existing mixed-use buildings with surface parking, landscaping and a brick patio area.

The project proposes to redevelop a portion of the existing lot into an 18-story, predominantly residential building with ground level retail with enclosed screened parking. The 18-story building will include 118 studio units, 146 one-bedroom units and 2, 2-bedroom units for a total of 266 residential units with associated common areas, office, and fitness area. On the ground floor, the project proposes a 2,000 ± square-foot retail space. This application package is intended to meet the City's Submission Requirements as outlined in the Level III Site Plan & Subdivision Application procedures.

We are pleased to submit this application which will increase the available housing stock consistent with the City's Comprehensive Plan, provide onsite Workforce Housing, improve the streetscape with a street front-facing building, sidewalk reconstruction, decorative street lighting, street tree plantings and the closure of an existing curb cut on Federal Street.

Redfern Downtown LLC and the design team look forward to your review of this project. If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

William H. Savage, P.E.
Project Manager
Acorn Engineering, Inc.

Documents:

- Section A: Cover Letter
- Section B: Level II & III Final Site Plan Application & Checklist
- Section C: Right, Title, Interest (Land Option Agreement)
- Section D: Zoning Assessment
- Section E: Easements
- Section F: Waivers
- Section G: Financial Capacity
- Section H: Technical Capacity
- Section I: Conformity with Land Use Ordinance
- Section J: Stormwater Management Report
- Section K: Erosion & Sedimentation Control Report
- Section L: Fire Department Letter
- Section M: Wastewater Capacity Letter
- Section N: Lighting
- Section O: Architectural Design Narrative
- Section P: Utilities
- Section Q: Construction Management Plan
- Section R: Solid Waste
- Section S: Traffic & Parking Analysis

Drawings:

- Civil Plan Set, Dated 9/4/2020
- Architectural Plan Set, Dated 8/20/2020

Section B:
Level II & III Site Plan Application & Checklist

CITY OF PORTLAND
Planning & Urban Development Department

LEVEL II and LEVEL III SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST
Please submit each document as a separate PDF file
Please confirm by electronically checking the boxes to the left

** PLEASE FILL OUT AND UPLOAD SEPARATELY THE ZONING TABLE AND WAIVER TABLE AS NOTED BELOW **

GENERAL APPLICATION DOCUMENTS	
Yes ☑ NA ☐	**Project Description** • Cover Letter with detailed project description
Yes ☑ NA ☐	**Completed Checklist – Level II and Level III Site Plan** (this document)
Yes ☑ NA ☐	**Right, Title and Interest** • Deeds, leases, or purchase and sales agreements
Yes ☐ NA ☑	**Evidence of State or Federal Approvals** • Permits or letters of non-jurisdiction, if applicable
Yes ☑ NA ☐	**Zoning Assessment** • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes ☑ NA ☐	**Existing and/or Proposed Easements or Covenants, applicable.** • Evidence of existing easements and any proposed easements
Yes ☑ NA ☐	**Waiver Requests** • Written request for waiver describing request and reason Waiver Table
Yes ☑ NA ☐	**Financial Capability** • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes ☑ NA ☐	**Technical Capability** • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN
STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable
Please Submit each document as a separate PDF file

TRANSPORTATION

Yes	NA	
☑	☐	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable
☑	☐	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable
☐	☑	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable
☑	☐	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
☐	☑	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter
☑	☐	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
☑	☐	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)
☑	☐	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan
☑	☐	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES	
Yes ☐ NA ☑	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes ☑ NA ☐	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes ☑ NA ☐	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes ☐ NA ☑	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes ☑ NA ☐	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable
ENVIRONMENTAL AND STORMWATER	
Yes ☑ NA ☐	**Water Quality, Stormwater Management and Erosion Control (14-526 (b)3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY	
Yes NA ☑ ☐	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA ☑ ☐	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA ☑ ☐	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable
SITE DESIGN	
Yes NA ☑ ☐	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA ☑ ☐	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA ☑ ☐	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA ☑ ☐	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appen. 1)

Yes	NA	
☑	☐	**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
Yes	NA	
☑	☐	**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
Yes	NA	
☑	☐	**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
Yes	NA	
☑	☐	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
Yes	NA	
☑	☐	**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
Construction Management Plan		
Yes	NA	
☑	☐	**Construction Management Plan** • Construction Management Document and Plan

LEVEL II AND LEVEL III SITE PLAN
DRAWINGS CHECKLIST

Please upload the following DRAWINGS with the listed details into e-Plan as separate pdfs

RECENT BOUNDARY SURVEY (stamped by Maine Licensed Surveyor)

- ☑ Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

Existing Conditions

- ☑ Approximate location of structures on abutting property
- ☑ Topography
- ☑ Locate water courses
- ☑ Delineate wetlands
- ☑ Zone lines

Proposed Site Plan

- ☑ Ground floor area, and grade elevations for all buildings

Access, Circulation, and Parking

- ☑ Streets and intersections adjacent to site, any proposed geometric modifications
- ☑ Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- ☑ Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- ☑ Location and dimensions of proposed loading areas
- ☑ Existing and proposed transit infrastructure with dimensions/ engineering specifications
- ☑ Location of vehicle and bicycle parking with dimensions and engineering specifications

Site Considerations

- [x] Identify snow storage areas
- [x] Location of fire hydrants
- [x] Location of solid waste management facilities

UTILITY PLAN including:

- [x] Existing utilities on site and within public streets
- [x] Location, sizing and directional flows of all existing and proposed utilities
- [x] Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- [x] Electric utility infrastructure

GRADING AND DRAINAGE PLAN including:

- [x] Existing grades and drainage
- [x] Proposed grades
- [x] Proposed stormwater management meeting Technical Manual (Section 5), standards
- [x] Location and proposed alteration of a water course
- [x] Preservation or alteration of wetlands

EROSION CONTROL

- [x] Must be in compliance with Technical Manual, Section 5

LANDSCAPE PLAN including:

- [x] Existing vegetation to be preserved and preservation measures
- [x] Proposed landscaping and buffers
- [x] Planting schedule

RECORDING PLAT, if applicable

- [x] If Subdivision, must be in compliance with requirements of Section 14-496 (b)

ARCHITECTURAL PLANS AND RENDERINGS including:

- [x] Exterior building elevations, color renderings, illustrations of all sides
- [x] Location and dimensions of all existing and proposed HVAC and mechanical equipment, all proposed screening
- [x] Provide context drawings, if applicable (Design Manual, page 1)
- [x] Floor plans

Section C:
Right, Title, Interest
(Land Option Agreement)

QUITCLAIM DEED
(WITH COVENANT)

MAINE REAL ESTATE TAX PAID

KNOW ALL PERSONS BY THESE PRESENTS, That **A & M PARTNERS, INC.**, a Maine corporation, whose mailing address is 120 Exchange Street, Portland, Maine 04101, (Grantor) does hereby remise, release, bargain, sell and convey, and forever **quitclaim with covenants** to **PO SQUARE BUILDING LLC,** a Maine Limited Liability Company, whose mailing address is 120 Exchange Street, Portland, Maine 04101 (Grantee) the land and buildings located in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit "A"

Being the same premises conveyed to Grantor by deed dated March 16, 1993, and recorded in the Cumberland County Registry of Deeds in Book 10603, Page 113.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be signed and sealed on 13th May, 2019

A & M PARTNERS, INC. a Maine corporation.

Witness

Louis C. Wood, its President

State of Maine
County of Cumberland, ss

May 13, 2019

Then personally appeared before me the above named Louis C. Wood in his said capacity and acknowledged the foregoing to be his free act and deed and the free act and deed of said corporation, A & M PARTNERS, INC.

Before me,

Notary Public/Attorney at Law

Martin J. Foley

EXHIBIT A

396 Congress Street a/k/a 400 Congress Street, Portland

A certain parcel of land situated on the southerly side of Congress Street, the westerly side of Exchange Street, the northerly side of Federal Street and the easterly side of Temple Street in the City of Portland, County of Cumberland, and State of Maine, bounded and described as follows:

Beginning at the point of intersection of the assumed easterly sideline of Temple Street and the assumed southerly sideline of Congress Street;

Thence, N 63° 04' 40" E by Congress Street 325.52 feet to the westerly side of Exchange Street;

Thence, S 38° 44' 13" E by Exchange Street 180.90 feet to the northerly side of Federal Street;

Thence, S 64° 10' 36" W by Federal Street 313.07 feet to the easterly side of Temple Street;

Thence, N 43° 04' 34" W by Temple Street 178.09 feet to the point of beginning.

The above description is based on an ALTA/NSPS Land Title Survey prepared by Owen Haskell, Inc. entitled "396 Congress Street (aka 400 Congress Street), Portland, Cumberland County, Maine" made for PO Square Portland LLC and its assigns, dated April 4, 2019 and revised through May 8, 2019.

SUBJECT TO THE FOLLOWING:

Cable Television Installation Agreement by and between Public Cable d/b/a Time Warner Cable and A&M Partners, Inc. dated October 21, 1999 and recorded in Book 15936, Page 274.

Received
Recorded Register of Deeds
May 13,2019 02:46:50P
Cumberland County
Nancy A. Lane

OPTION AGREEMENT

200 Federal Street, Portland Maine

OPTION granted as of this 24th day of July, by **PO Square Building LLC**, a Maine limited liability company whose mailing address is 120 Exchange Street, Portland Maine (hereinafter called "Optionor or Owner"), to **Redfern Downtown LLC**, a Maine limited liability company whose mailing address is PO Box 8816, Portland Maine 04104 (hereinafter called "Optionee").

RECITALS

WHEREAS, Optionor presently is the owner of certain property in the vicinity of 200 Federal Street, Portland Maine as shown on the sketch or map attached as Exhibit A (the "Premises"), being a portion of the property acquired by Owner from A & M Partners by Quitclaim Deed with Covenant dated May 13, 2019 and recorded in the Cumberland County Registry of Deeds as Book 35640, Page 071; and

WHEREAS, Optionor desires to grant, and Optionee desires to acquire, an option on the terms provided by this Option Agreement to acquire the Premises.

AGREEMENT

1. Grant. Optionor hereby grants to Optionee the exclusive right and option to purchase the Premises, together with such easements and parking arrangements between the parties and over the remaining property of Owner as may be necessary for office building tenants, pedestrian and vehicular access.

2. Option Price and Purchase Price. Within ten (10) days from the date of this Agreement, Optionee shall pay Optionor the Option Price in the amount of [redacted] The Purchase Price, upon exercise of this Option and full execution of other documents associated with the sale transfer, shall be equal to the sum of [redacted]. All payments from Optionee to Optionor shall be payable at closing, unless otherwise agreed upon between the parties. The Option Price shall be credited towards the Purchase Price in the event Optionee exercises this option.

3. Term. Optionee may exercise this option by notice delivered in the manner described below on or before [redacted].

4. Notice of Exercise. This Option may be exercised by Optionee giving written notice to Optionor in person or by U.S. mail, fax or overnight delivery service prior to the expiration of the option term, at the address set forth above.

5. **Closing.** Specific closing terms to be more further defined in a Purchase and Sale Agreement and shall occur at a date and time reasonably specified by Optionee, and subject to written agreement by Optionor. Title shall be conveyed by Optionor by Quitclaim Deed with Covenant and any other assignment documents required, conveying good and marketable title to the Premises free from all encumbrances and claims of others. In the event that it is necessary for the Premises to be conveyed as a condominium unit as a result of the physical configuration of the Premises, Optionee and Optionor agree to enter into all necessary condominium documentation on commercially reasonable terms at or prior to Closing. Real estate taxes shall be pro-rated. Unless Optionee shall waive any defect in title, Optionor shall make reasonable efforts to remove such defect in title. In case Optionor, after 45 days, or such greater period that Optionee may permit, shall have failed to do so, Optionee may elect to (a) terminate, in which case Optionor shall return the Option Price without further recourse to either party, or (b) waive such defect by notice in writing. In the event Optionee exercises this Option and fails to close for reasons not attributable to default by Optionor, Optionor shall, as Optionor's sole remedy, be entitled to retain the Option Price as liquidated damages without further recourse.

6. **Parking.** If Optionee exercises this Option, Optionor agrees to enter into a lease or other arrangement of parking spaces on other property owned by Optionor on commercially reasonable terms to provide sufficient parking to meet municipal and other governmental parking requirements for the use to be made of the Premises by Optionee.

7. **Failure to Exercise.** If Optionee fails to exercise this Option, any payments made under this Option Agreement shall be retained by Optionor, and neither party shall have any further rights or claims against the other. The Optionee may fail or refuse to exercise this Option for any reason whatsoever, including without limitation that the Optionee determines, or is notified that, the Property is not able to be permitted and approved for a residential multi-family development of a size, scale and cost acceptable to Optionee, or other due diligence investigations prove unsatisfactory.

8. **Inspections.** Optionee shall have reasonable access to the Premises to conduct such surveys, tests, and inspections as it may deem necessary during the Option term or after exercise of the Option. Optionee shall provide reasonable notice to Optionor, shall enter at its sole risk and shall restore the premises substantially to its prior condition.

9. **Successors and Assigns.** This Agreement is binding upon and shall inure to the benefit of the parties hereto and their personal representatives, heirs, successors and assigns. This Agreement may not be assigned by Optionee without the written approval of Optionor.

IN WITNESS WHEREOF, the undersigned have executed this Option Agreement as of the day and year first above stated.

WITNESS:

PO Square Building LLC

By: Drew Sigfridson
Its: Manager

Redfern Downtown, LLC

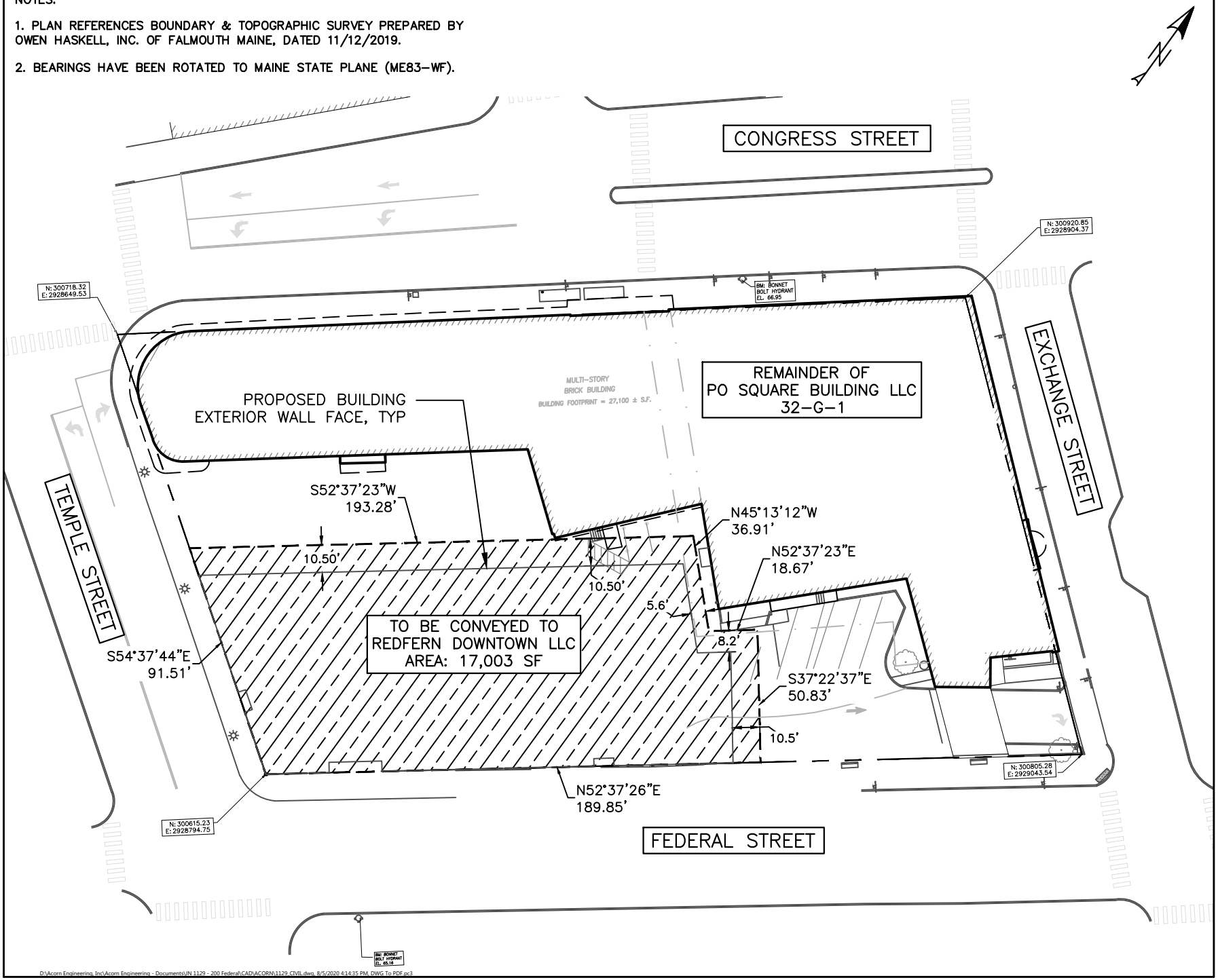
By:
Its: Jonathan Culley, Manager

EXHIBIT A

NOTES:

1. PLAN REFERENCES BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY OWEN HASKELL, INC. OF FALMOUTH MAINE, DATED 11/12/2019.

2. BEARINGS HAVE BEEN ROTATED TO MAINE STATE PLANE (ME83–WF).



ISSUED FOR	BY DATE
RECORDING	WHS 8/5/2020

DRAWING NAME: EXHIBIT A

PROJECT NAME: 200 FEDERAL STREET REDEVELOPMENT

CLIENT: REDFERN DOWNTOWN LLC

ACORN ENGINEERING, INC
ACORN ENGINEERING, INC. P.O. BOX 3372 PORTLAND, MAINE 04104 (207) 775–2655

FILE:	1129_CIVIL
DATE:	7/24/2020
JN:	1129
SCALE:	1":50'
DESIGN BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

DRAWING NO.

EX–A

D:\Acorn Engineering, Inc\Acorn Engineering - Documents\JN 1129 - 200 Federal\CAD\ACORN\1129_CIVIL.dwg, 8/5/2020 4:14:35 PM, DWG To PDF.pc3

Section D:
Zoning Assessment

ZONING ANALYSIS Relevant Zone(s) B3 Downtown Business, Downtown Height Overlay , Pedestrian Encouragement, Downtown Entertainment Overlay, Congress Street Historic District

All Projects:

	Required	Proposed
Lot Size	NONE	1.27 AC
Area Per Dwelling Unit	NONE	N/A
Minimum Street Frontage	15 FT	998 FT
Front Yard Minimum	NONE	N/A
Front Yard Maximum	5 FT	0 FT
Rear Yard	NONE	N/A
Yard Right	NONE	N/A
Yard Left	NONE	N/A
Side Street Setback	NONE	N/A
Step Back	NONE	N/A
Maximum Lot Coverage	100%	96%
Minimum Lot Coverage	NONE	N/A
Maximum Height	190'	190'
Open Space	NONE	N/A
Maximum Impervious Area	N/A	N/A
Pavement Setback	(35 FT - SURFACE PARKING)	76.9 FT
Floor Area Ratio	NONE	N/A
Off Street Parking Spaces	20, PER USPS LEASE	21
Loading Bays	0	0
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	N/A	N/A
Minimum Lot Area per Dwelling	N/A	N/A
Maximum # Units per Building	N/A	N/A
Maximum Building Length	N/A	N/A
Maximum Accessory Building Length	N/A	N/A
Minimum Setbacks	N/A	N/A
Minimum Building Separation	N/A	N/A
Minimum Open Space	N/A	N/A

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density	N/A	N/A	N/A
Height	N/A	N/A	N/A
Setback Reduction	N/A	N/A	N/A
Recreation Space	N/A	N/A	N/A
Maximum Accessory Building Length	N/A	N/A	N/A
Minimum Setbacks	N/A	N/A	N/A
Minimum Building Separation	N/A	N/A	N/A
Minimum Open Space	N/A	N/A	N/A
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

Section E:
Easements

Summary of Written Easements

Existing Easements

- The following agreement is listed within the deed recorded at the Cumberland County Registry of Deeds Book 35640, Page 72.

    - Cable Television Installation Agreement by and between Public Cable d/b/a Time Warner Cable and A&M Partners, Inc. dated October 21, 1999 and recorded in Book 15936, Page 274.

Proposed Easements – There are no proposed easements at this time.

Section F:
Waivers

Request for Waivers

There are no current waiver requests.

Section G:
Financial Capacity

Financial Capacity

Please refer to attached letter from the Applicant's bank confirming financial capacity.

BAR HARBOR
BANK & TRUST

July 28, 2020

City of Portland
Planning Division
389 Congress Street, 4th Floor
Portland, ME 04101

RE: 200 Federal Street Apartments - Financial Capacity Letter

To Whom It May Concern:

I am pleased to provide this financial capacity letter in support of Redfern Properties, LLC & affiliates, developer of the above reference project. Based on my longstanding relationship with the developer, it is my opinion that this group has the financial resources, technical expertise and management capability to complete the project as presented.

While a formal commitment cannot be issued until full approvals are received, Bar Harbor Bank & Trust has issued a term sheet for the project and is looking forward to more substantive conversations as the project progresses.

Sincerely,



Joe Delano
Senior Vice President

Technical Capacity

Redfern Downtown, LLC, dba Redfern Properties is a Portland-based development firm, whose Principals include Jonathan & Catherine Culley of Redfern Properties.

Redfern Properties develops, owns, and operates a portfolio of properties that includes the highest quality rental apartments in Portland. Redfern Properties is committed to developing innovative residential properties, and focuses on infill and other "smart-growth" development in creating unique residences and commercial spaces, while making neighborhoods and communities more vibrant and sustainable.

Ryan Senatore Architecture has designed several important multifamily residential projects in Southern and Central Maine, including the nine-story, 139-unit, concrete and steel framed high-rise apartment building known as the Hiawatha (for Redfern Properties). RSA's residential clients include private developers as well as public housing authorities, and completed projects include both new construction and adaptive reuse of existing historic structures.

Acorn Engineering specializes in providing urban redevelopment, civil/site design, environmental services, municipal consulting and construction administration. Together, Acorn Engineering, Inc. and Ryan Senatore Architecture have successfully designed and permitted more than 20 level II/III projects in Portland during the past 5 years, including four for Redfern Properties: Munjoy Heights, East Bayside Lofts, The Hiawatha, and 70 Anderson.

ALA is a process-driven, landscape architecture and urban design firm committed to thoughtful, creative intervention at the intersection of environment, economics, art, and culture. ALA has worked on a number of important projects throughout Maine and the U.S. Locally, ALA has been the prime design consultant for the redevelopment of the 500-acre Scarborough Downs property in addition to numerous public and private development projects across Maine. ALA's clients include private developers, housing authorities, and municipalities.

Section I:
Conformity with Land Use Ordinance

Conformity with Land Use Ordinance

The following outline is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526 as well as the City of Portland Technical Manual, Chapter 14 Standards for Local Site Location of Development Review.

OVERVIEW

The proposed 18-story building addition has been designed to conform to City standards where possible as well as improve upon existing non-conformities. This project conforms with the majority of the applicable standards of Portland's Land Use Ordinance Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

   The site is located at the corner of the intersection of Temple Street and Federal Street. Temple Street is classified as a major urban collector with an average annual daily traffic volume of approximately 6,100 vehicles per day. Federal Street is classified as a local urban road with an average annual daily traffic volume of approximately 1,600 vehicles per day. The project site design provides twenty-one parking spaces internally with resident parking accommodated in the nearby Chestnut Street parking garage. It is expected that residents will utilize non-vehicular modes of travel (i.e. walking, bicycling, public transit, etc) as further outlined in the attached Section S: Traffic & Parking Assessment.

2. Access and Circulation:

   a. Site Access and Circulation:

      This project conforms with the design standards of Section 14-526 as demonstrated in the following narrative unless a waiver is otherwise noted. If a waiver is requested, please refer to Section F: Request for Waivers for additional information.

      (i) The development will provide safe access and internal circulation for both pedestrians and vehicles as indicated on the Site Plan (Sheet C-10) as found in the Civil Plan Set accompanying this application.

      (ii) The proposed entrances have been located to provide ample site distance from oncoming traffic.

      (iii) The site does not feature additional drive-up service features. Existing bank drive-up services are proposed to remain.

   b. Loading and Servicing:

      (i) It is anticipated that deliveries accessing the retail space along will temporarily load from either the 15-minute parking spaces along Federal Street or Temple Street. USPS bulk deliveries will be temporarily re-routed, as identified on the Construction Management Plan (Sheet C-03) of the Civil Plan Set, with a permanent delivery location forthcoming.

c. Sidewalks:

(i) It is proposed to replace to City Standards, all disturbed existing brick sidewalks along Federal Street & Temple Street as part of the project.

(ii) It is not proposed to repair or replace existing Federal Street & Temple Street sidewalks unless disturbed as part of the project.

(iii) Primary building entrances will be accessed from the Federal Street & Temple Street sidewalks.

3. Public Transit Access:

a. Existing Metro transit facilities at Monument Square (900-feet ±) and the Metro Pulse at Elm Street (700-feet ±) are located less than ¼ mile from the project site, as measured along rights-of-way. As a result, no transit facility is required for the project.

b. Not applicable. See a above.

c. Not applicable. See a above.

4. Parking:

a. Location and Required Number of Vehicle Parking Spaces:

(i) Please refer to attached Section S: Traffic & Parking Assessment.

(ii) Please refer to attached Section S: Traffic & Parking Assessment.

(iii) The amount of parking does not exceed the minimum requirement by more than 10%.

(iv) The parking space & aisle dimensions are in conformance with the Technical Standards, as shown on Sheet C-10.

(v) The driveway apron and parking areas proposed are to be constructed with pavement & brick, per City standards.

b. Location and Required Number of Bicycle Parking Spaces:

(i) Per Sec 14-332(h): Retail Stores, the requirement criteria begin with first floor areas larger than 2,000 square feet not used for bulk storage. The proposed retail space floor area is less than 2,000 square feet, when excluding bulk storage areas, resulting in no required vehicular parking spaces & no bicycle parking spaces. However, given the urban fabric and vision for the project, the site has been designed to include four exterior bicycle hitches within the Federal Street sidewalk, for a total of eight spaces.

c. Motorcycles and Scooter Parking:

(i) There are no areas designated for motorcycles or scooters at this time; however, adequate room exists for the storage of these motor vehicles.

d. Snow Storage:

(i) Please refer to Sheet C-10 for identified snow storage area. When necessary, the Owner may have snow removed from the site.

(ii) The snow storage area has been located to avoid adversely impacting the site's functionality.

5. Transportation Demand Management (TDM):

a. Please refer to attached Section S: Traffic & Parking Assessment
b. Please refer to attached Section S: Traffic & Parking Assessment

(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:

a. Not applicable.

b. Not applicable.

2. Landscaping and Landscape Preservation:

a. Landscape Preservation.

(i) The disturbance of existing trees and vegetation that are not proposed to be removed will be limited to the greatest practical extent possible.

(ii) Per the Boundary & Topographic Survey, three of the existing eight trees within the property to be removed are between 10"-16" DBH. If the Landscaping Plan, forthcoming by Aceto Landscape Architecture, does not replace all three removed trees, the applicant will work with the City Arborist to pay a fee-in-lieu.

(iii) It is not anticipated that the project will necessitate any tree protection.

(iv) Please refer to (ii) above for additional information surrounding existing vegetation compromising site development.

(v) Not applicable.

b. Site Landscaping.

(i) Landscaped Buffers:

a. Not applicable. There are no proposed loading and servicing areas, exterior dumpsters, storage areas and utility structures visible from public sidewalks, streets and adjacent properties.

b. The project includes a total of approximately 365 ft of frontage improvements along Federal and Temple Streets. If the Landscaping Plan, forthcoming by Aceto Landscape Architecture, does not meet the requirements, the applicant will work with the City Arborist to pay a fee-in-lieu.

c. Not applicable.

d. Not applicable.

(ii) Parking Lot Landscaping:

a. If the Landscaping Plan, forthcoming by Aceto Landscape Architecture, does not meet the requirement, the applicant will work with the City Arborist to pay a fee-in-lieu.

b. Not applicable.

c. Not applicable.

d. Not applicable.

e. Not applicable

(iii) Street Trees:

a. Street trees are to be provided every 30 to 45 feet along the street frontage. A total of approximately 365 ft of frontage improvements along Federal and Temple Streets are included within this project, which equates to a minimum of eight street trees. If the Landscaping Plan, forthcoming by Aceto Landscape Architecture, does not meet the requirement, the applicant will work with the City Arborist to pay a fee-in-lieu.

b. Please refer to forthcoming Landscaping Plan.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

(i) The site drainage will not be directed to flow or pond onto adjacent lots. The drainage patterns will be altered to intercept roof & parking area runoff, with the addition of stormwater management practices to attenuate the flows.

(ii) Stormwater that flows onto adjacent lots will not exceed the pre-development flows.

(iii) The runoff from the site into the City property will not increase from the pre-development condition.

(iv) Not applicable.

b. A site-specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic standards of MEDEP Chapter 500. Please refer to sections J and K, the Stormwater Management and Erosion & Sedimentation Control Plans, respectively, for additional information.

c. The project is not located in a watershed of an urban impaired stream as listed by the MEDEP.

d. Not applicable.

e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project will be serviced by a public wastewater system.

f. The development will provide for adequate and sanitary disposal of sewage in accordance with

Section 2 of the Technical Manual.

(c) Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans:

   a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.

   b. Not applicable.

2. Public Safety and Fire Prevention:

   a. The site has been designed to promote safe and inviting public access.

   b. Adequate emergency access has been provided on two sides of the proposed building via Federal Street and Temple Street.

   c. Per the Boundary & Topographic Survey, an existing fire hydrant is located on Federal Street, approximately 66-feet from the Southwesterly corner of the proposed building. Per a site visit performed by Acorn Engineering, an additional fire hydrant was observed on Federal Street, approximately 61-feet from the Southeasterly corner of the proposed building.

3. Availability and Adequate Capacity of Public Utilities:

   a. Ability to Serve letters have been sent to the respective companies. Responses that have been received are included in the submission.

   b. The electrical service will be underground through coordination with the Mechanical/Electrical/Plumbing designer & CMP.

   c. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual.

   d. The project will be served by connection to the public combined sewer system within Federal Street.

   e. The sanitary sewer collection system meets applicable sections of the Technical Manual. The stormwater management system is designed to meet Chapter 500 standards.

   f. Temporary storage and timely removals of trash and recyclable materials will be provided by the applicant.

(d) Site Design Standards

1. Massing, Ventilation and Wind Impact:

   a. Please refer to attached Section O: Architectural Design Narrative

   b. Please refer to attached Section O: Architectural Design Narrative

   c. Please refer to attached Section O: Architectural Design Narrative

2. Shadows:

    a. Please refer to attached Section O: Architectural Design Narrative

3. Snow and Ice Loading:

    a. The structures will not distribute snow and ice onto adjacent properties.

4. View Corridors:

    a. Please refer to attached Section O: Architectural Design Narrative

5. Historic Resources:

    a. Please refer to attached Section O: Architectural Design Narrative

    b. Please refer to attached Section O: Architectural Design Narrative

    c. There are no known archaeological resources at the site.

6. Exterior Lighting:

    a. Site Lighting.

        (i) Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. A photometric plan has been included in the Civil Plan Set accompanying this submission.

        (ii) Lighting that may adversely impact the abutting residential properties will feature house-side shielding.

    b. Architectural and Specialty Lighting.

        (i) No architectural or specialty lighting is proposed.

        (ii) No up-lighting is proposed.

    c. Street Lighting.

        (i) Street lighting will conform to specific lighting district requirements, as specified in Section 10 of the Technical Manual.

7. Noise and Vibration:

    a. Please refer to attached Section O: Architectural Design Narrative & Architectural Plan Set

8. Signage and Wayfinding:

    a. Street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

        (i) The project is in the Congress Street Historic District.

(ii) Please refer to the attached Section O: Architectural Design Narrative

(iii) Street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

9. Zoning Related Design Standards:

   a. The project has been designed to meet the standards set forth in the B3 zone, Downtown Height Overlay Zone, Downtown Entertainment Overlay Zone and Congress Street Historic Districts. Please refer to Sheet C-10 for more information on the Space & Bulk Standards & attached Section D: Zoning Assessment

   b. Not Applicable

Section J:
Stormwater Management Report

ACORN ENGINEERING, INC.

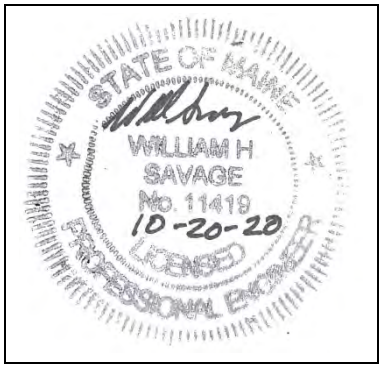
STORMWATER MANAGEMENT REPORT

Prepared For:

Redfern Downtown LLC
dba Redfern Properties
PO Box 8816
Portland, ME 04104

Prepared By:

Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104



October 2020

INTRODUCTION

Acorn Engineering, Inc. has been retained by Redfern Downtown LLC, dba Redfern Properties, to provide civil engineering services for a proposed redevelopment project at 200 Federal Street in Portland. The project proposes to redevelop a portion of the existing lot into an 18-story, predominantly residential building with ground level retail, enclosed screened covered parking, surface parking & landscape improvements. Pedestrian access to the site will be provided via brick sidewalks on Federal Street & Temple Street. The development is intended to be serviced by Portland Water District (PWD), CMP (electric), Unitil (natural gas), Charter (cable), Fairpoint (telephone) and City of Portland (sanitary sewer and stormwater).

A stormwater analysis has been prepared to demonstrate that the project will meet the following requirements of the City of Portland (the City):

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (F) Level III Site Plan Review
- City of Portland Technical Manual; Section 5 – Portland Stormwater Management Standards
- Maine DEP Chapter 500 Stormwater Management

EXISTING CONDITIONS

A Boundary & Topographic survey was prepared by Owen Haskell, Inc. of Falmouth, Maine signed on October 13, 2020.

The property is in the B3 Downtown Business Zoning District, Downtown Height Overlay, Pedestrian Encouragement Zone, Downtown Entertainment Overlay Zone & Congress Street Historic District. Approximately 91% of the site is existing impervious in the form of roofing, pavement, brick, or concrete. The existing site has relatively flat slopes, apart from an accessible ramp from Temple Street to the existing USPS public entrance. The majority of existing stormwater runoff from the subject site drains to the combined sanitary & stormwater system within Federal Street.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting and existing impervious surfaces, a field inventory of significant natural features was not undertaken. The site is not within a watershed classified as an Urban Impaired Stream as defined by the Maine DEP Chapter 502.

PROPOSED DEVELOPMENT

The proposed project, as outlined in the introduction above, increases the site's total impervious area by approximately 3,500-square feet, but remains below the Redeveloped Project standards for non-roof impervious area threshold of 5,000-square feet. Therefore, per Section 5(II)(D) of the City's Technical Manual, water quality treatment is not required & has not been designed. The project will comply with the Basic Erosion and Sedimentation Control Standards per the DEP Chapter 500.

Stormwater in the site will be managed with the implementation of a series of foundation drain, catch basins, storm drains & landscaping. Please refer to the Grading & Drainage Plan (Sheet C-30) & Site & Planting Plan (L 1-00) for additional information.

SOILS

Onsite soil information has been derived from the following sources:

- United States Department of Agriculture Web Soil Survey (WSS)
- Soil Boring Log performed by Summit Geoengineering Services, dated 10/26/2019

Per the WSS report, the entirety of the soils on site are Hinckley Loamy Sand (0%-8% slopes) which are in the hydrologic soil group A. Soils assigned to the hydrologic soil group A have a high infiltration rate (low runoff potential) when thoroughly wet, consisting mainly of deep, well drained to excessively drained sands or gravelly sands, with a high rate of water transmission.

The susceptibility for soil erodibility (rock free) is indicated on a relative "Kf" scale of values over a range of 0.02 to 0.69, with higher "Kf" values indicating more erodible soils. "Kf" values are empirical measures which are impacted by inherent soil properties such as soil detachability, infiltration & runoff and the transportability of the sediment eroded from the soil.

The "Kf" values for the 200 Federal Street project are unavailable from the USDA WSS, so the value listed in Table 1 below has been referenced from another project with Hinckley Loam Sand located at Seven Congress Square as an estimate.

Table 1

Soils Type	Depth	Kf Value
Hinckley Loamy Sand	Whole soil	0.1

The "Kf" value for the soil, listed above, shows a low susceptibility to erosion; however, the implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance to provide proper site stabilization.

Conclusion

The proposed redevelopment was designed to meet the requirements set forth in *Section 5 – Portland Stormwater Management Standards* in the City's Technical Manual. The proposed project as designed is anticipated to largely maintain existing drainage patterns, while decreasing the overall volume and flowrate of stormwater runoff through the addition of foundation drains, stormwater structures, landscaping, etc. The

As a result, the design of the proposed development and stormwater system is not anticipated to create erosion, drainage or runoff problems in the development or with respect to adjacent properties.

Attachments

Attachment A: Soil Boring Log
Attachment B: USDA WSS Soils Map
Attachment C: Redevelopment Exhibit

Attachment A:
Soil Boring Lot

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	New Multi Story Building	Boring #:	B-1
Location:	Federal Street	Project #:	19346
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services
Driller:	S. Floyd
Summit Staff:	B. Peterlein, P.E.
Boring Elevation:	
Reference:	
Date started:	10/26/2019 Date Completed: 10/26/2019

DRILLING METHOD	SAMPLER
Vehicle: Tracked	Length: 24" SS
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID
Method: 2-1/2" H.S.A.	Hammer: 140 lb
Hammer Style: Auto	Method: ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/26/2019			Hole caved at 4.7 ft

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1	S-1	24/12	0.5 to 2.5	9		Brown SAND, little Gravel, trace Silt, moist, compact, SP		FILL
				10				
2				10				
				7				
3	S-2	24/15	2.5 to 4.5	9		Brown SAND, trace Gravel and Silt, dry, loose, SP		
				6				
4				4				
				3				
5								
	S-3	24/15	5 to 7	1		Brown SAND, trace Gravel, dry, very loose, SP		
6				1				
				1				
7				1				
	S-4	24/6	7 to 9	WH		Dark brown SAND mixed with traces of brick, ash,		
8				WH		and bedrock fragments, moist, very loose, SP		
				1				
9				6				
10								
	S-5	2/2	10 to 10.2	50 for 2"		Weathered Bedrock		WEATHERED ROCK
11						End of Boring at 10.2 ft on Auger and Spoon Refusal		BEDROCK
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SOIL BORING LOG

SUMMIT GEOENGINEERING SERVICES

Project:	New Multi Story Building	Boring #:	B-2
Location:	Federal Street	Project #:	19346
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services
Driller:	S. Floyd
Summit Staff:	B. Peterlein, P.E.
Boring Elevation:	
Reference:	
Date started:	10/26/2019 Date Completed: 10/26/2019

DRILLING METHOD	SAMPLER
Vehicle: Tracked	Length: 24" SS
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID
Method: 2-1/2" H.S.A.	Hammer: 140 lb
Hammer Style: Auto	Method: ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/26/2019	11.4 ft		Hole caved at 11.9 ft

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						4" Pavement		
1	S-1	24/12	0.5 to 2.5	9		12" Brick layer overlying brown Silty SAND, trace		FILL
				8		Gravel, dry, compact, SM		
2				11				
				8				
3	S-2	24/12	2.5 to 4.5	4		Brown Silty SAND, trace Gravel, moist, loose, SM		
				3				
4				1				
				4				
5								
	S-3	24/6	5 to 7	5		Brick with mortar in tip of spoon		
6				7				BRICK
				3		Difficult drilling		
7				3				
	S-4	24/4	7 to 9	4		Brick in tip spoon		
8				21				
				20				
9				7				
10								FILL
	S-5	24/8	10 to 11.8	2		Dark brown Sandy SILT with brick, mortar, and		
11				3		gravel, wet, SM		
				2				
12				50 for 4"				
						End of Boring at 11.8 ft Auger Refusal		BEDROCK
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	New Multi Story Building	Boring #:	B-3
Location:	Federal Street	Project #:	19346
City, State:	Portland, Maine	Sheet:	1 of 1
		Chkd by:	

Drilling Co:	Summit Geoengineering Services
Driller:	S. Floyd
Summit Staff:	B. Peterlein, P.E.
Boring Elevation:	
Reference:	
Date started:	10/26/2019 Date Completed: 10/26/2019

DRILLING METHOD	SAMPLER
Vehicle: Tracked	Length: 24" SS
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID
Method: 2-1/2" H.S.A.	Hammer: 140 lb
Hammer Style: Auto	Method: ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/26/2019			None Observed

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						Bricks at Surface		
1	S-1	24/6	0.5 to 2.5	4		Brown SAND, little Silt and Gravel, trace Ash, dry,		
				8		compact, SM		FILL
2				8				
				4				
3								
4								
5								
	S-2	24/8	5 to 7	2		Silty fine SAND with mortar and bricks, dry, loose, SM		
6				5				
				4				
7				2				
	S-3	24/15	7 to 9	2		Brown Silty SAND, trace Gravel, trace mortar and ash,		
8				3		damp, loose, SM		
				2				
9				8				
10								
	S-4	10/10	10 to 10.9	20		Weathered Bedrock		WEATHERED ROCK
11				50 for 4"				
						End of Boring at 10.8 ft Spoon and Auger Refusal		BEDROCK
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-4**

Project:	New Multi Story Building	Project #:	19346
Location:	Federal Street	Sheet:	1 of 1
City, State:	Portland, Maine	Chkd by:	

Drilling Co:	Summit Geoengineering Services	Boring Elevation:	
Driller:	S. Floyd	Reference:	
Summit Staff:	B. Peterlein, P.E.	Date started: 10/26/2019	Date Completed: 10/26/2019

DRILLING METHOD		SAMPLER	
Vehicle:	Tracked	Length:	24" SS
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID
Method:	2-1/2" H.S.A.	Hammer:	140 lb
Hammer Style:	Auto	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
10/26/2019			None Observed

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1						Brick Surface		
	S-1	24/12	1 to 3	13		Light brown Silty SAND, fractured rock in tip of spoon,		FILL
2				11		dry, dense, SM		
				26				
3				15				
	S-2	24/15	3 to 5	13		Layered weathered rock, dry, very dense (see photo)		
4				49				
				17				
5				32				
	S-3	24/6	5 to 7	24		Brown SAND with bedrock fragments, dry, compact, SP		
6				11				
				12				
7				15				
						Very slow difficult drilling		
8								
9								
						End of Boring on Auger on Refusal at 9 ft		BEDROCK
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								



Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

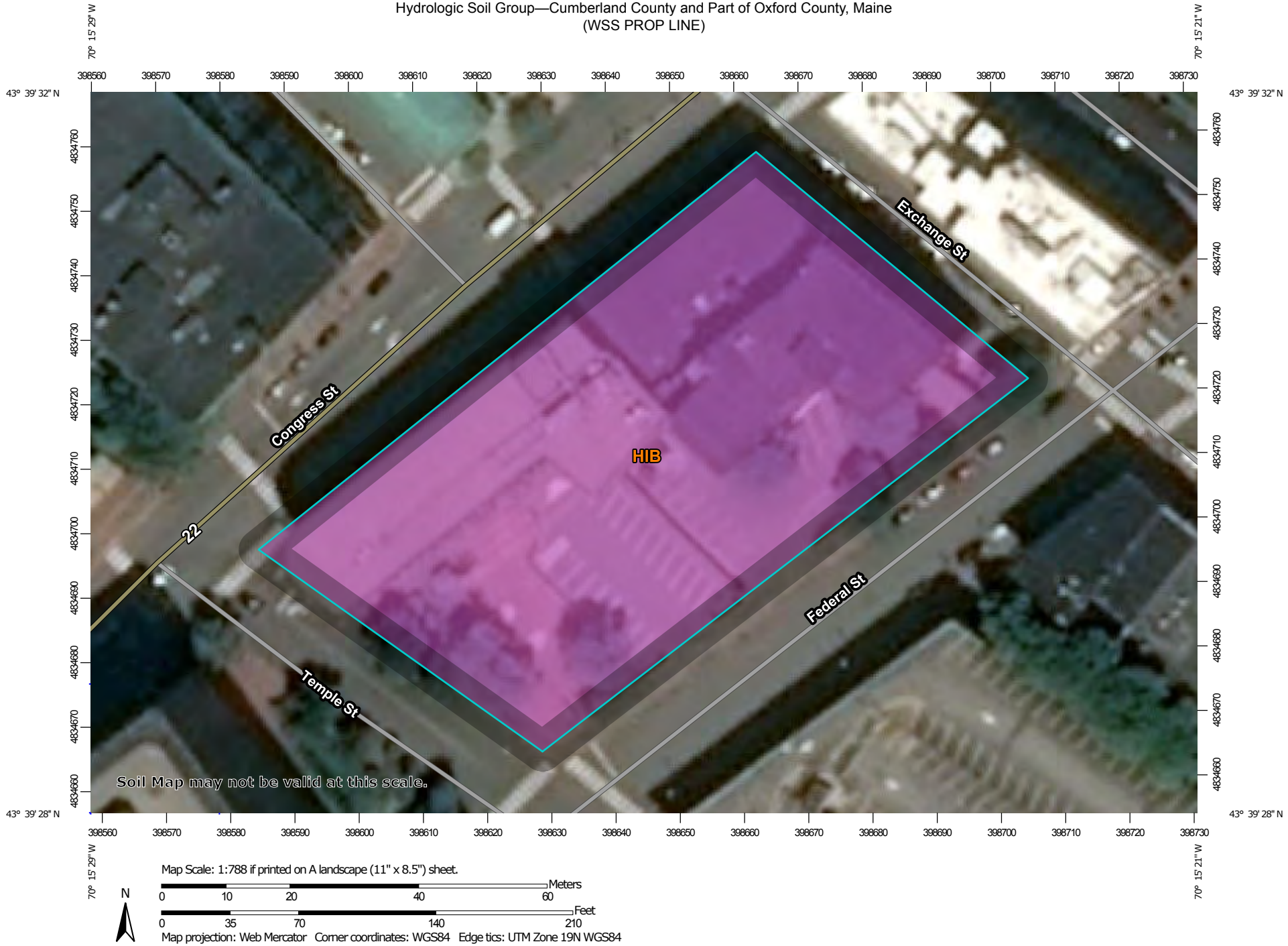
NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test
Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

Attachment B:
USDA WSS Soils Map

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine
(WSS PROP LINE)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
HIB	Hinckley loamy sand, 3 to 8 percent slopes	A	1.3	100.0%
Totals for Area of Interest			**1.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

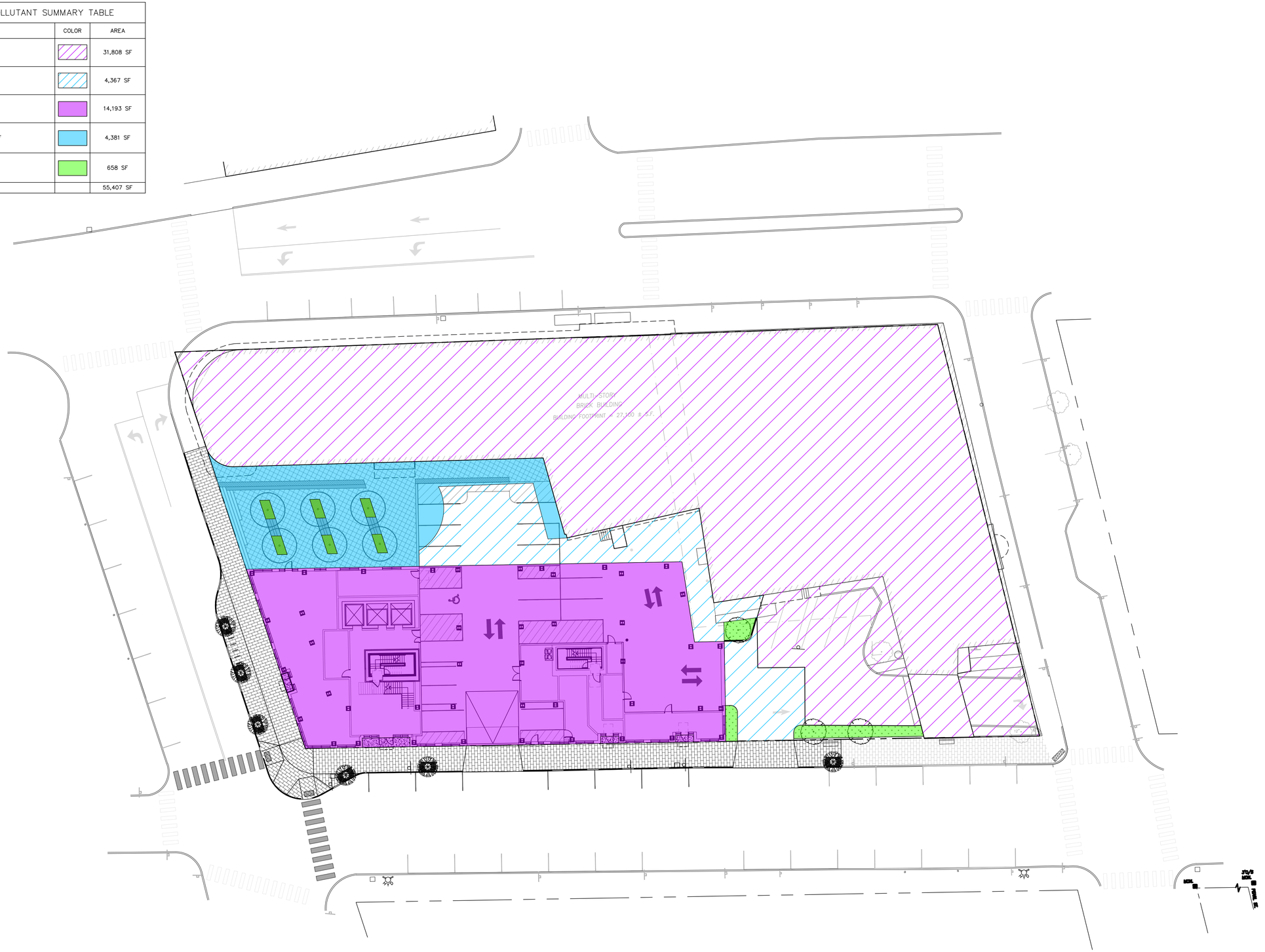
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment C:
Redevelopment Exhibit

LAND USE AND POLLUTANT SUMMARY TABLE

LAND USE	COLOR	AREA
UNDISTURBED AREA		31,808 SF
MAINTENANCE AREA		4,367 SF
REDEVELOPED IMPERVIOUS, ROOF		14,193 SF
REDEVELOPED IMPERVIOUS, NON-ROOF		4,381 SF
REDEVELOPED LANDSCAPED AREA		658 SF
TOTAL		55,407 SF


MULTI-STORY
BRICK BUILDING
BUILDING FOOTPRINT = 27,100 ± S.F.
STOP
CURB
CURB
CURB

Section K:
Erosion & Sedimentation Control Report

ACORN
ENGINEERING, INC.

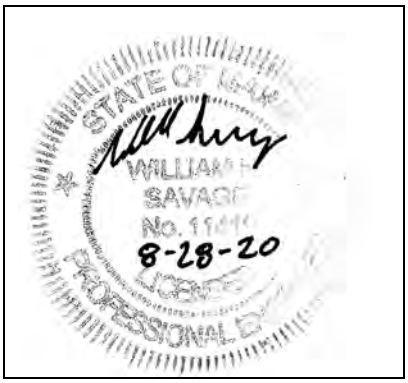
EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

Redfern Downtown, LLC
P.O. Box 8816
Portland, Maine 04104

Prepared By:

Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101



September 2020

INTRODUCTION

Acorn Engineering, Inc. has been retained by Redfern Downtown, LLC. to provide civil engineering services for a proposed development at 200 Federal Street in Portland, ME. The project proposes to construct a new, 18-story, mixed-use building with interior ground level parking. The proposed building will be constructed on a portion of the parcel currently comprised of surface parking, landscaping and a brick patio area.

A stormwater analysis has been prepared to demonstrate that the project will meet the following requirements of the City of Portland (the City):

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (E) Level II Site Plan Review.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

EXISTING CONDITIONS

The proposed project is located at 200 Federal Street in Portland. A Boundary & Topographic Survey has been prepared by Owen Haskell, Inc. of Falmouth, Maine dated November 12, 2019, Revised September 2, 2020.

The property is in the B3 Downtown Business Zoning District, Downtown Height Overlay, Pedestrian Encouragement Zone, Downtown Entertainment Overlay Zone and Congress Street Historic District. The majority (approximately 91%) of the site is impervious in the form of brick, pavement, or roof cover.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting, and existing impervious surfaces, a field inventory of significant natural feature was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream, as depicted on the Maine DEP "Urban Impaired Streams Watersheds" GIS Map, dated 5/31/18.

Existing Soils

Onsite soil information has been obtained from the following:

- United States Department of Agriculture Web Soil Survey
- "Soil Boring Log – New Multi Story Building Federal Street" dated 10/26/19 performed by Summit Geoengineering Services

There is no proposed onsite wastewater disposal; therefore, the applicant does not intend to perform a more intense hydric soil boundary delineation because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

According to the USDA WSS report generated for the parcel, the area within and surrounding the project includes the soil type listed in the table below. The erosion factor, "K", indicates the susceptibility of soils to sheet and rill erosion by water erosion. The estimated "K" factor shown below is based on a percentage of silt, sand and organic matter as well as soil structure and saturated hydraulic conductivity. Values of "K" have a range of 0.02 to 0.69. Higher "K" values indicate a higher susceptibility to sheet and rill erosion by water.

Table 1 - "K" Value		
Soils Type	**Subsurface**	**Substratum**
Hinckley	0.17	0.17

The soil "K" value listed above, shows a low susceptibility to erosion. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained 12% slopes throughout the site.

1.1 Existing Erosion Problems

There are no existing signs of erosion.

1.2 Critical Areas

Critical areas that would require special attention during construction include, but are not limited to, the existing structures, the drainage network within Federal Street & Temple Street, abutting properties to the east and north, shared driveways, slope stabilization during trenching & additional areas located within the vicinity during earthwork and foundation construction.

1.3 Protected Natural Resource

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting, and existing impervious surfaces, a field inventory of significant natural feature was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream, as depicted on the Maine DEP "Urban Impaired Streams Watersheds" GIS Map, dated 5/31/18.

1.4 Previous Construction Activity (5 years)

Acorn Engineering, Inc. is not aware of any construction related activities within the project limits within the past 5 years.

1.5 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 FODS Trackout Control Entrance (urban alternative to typical crushed stone stabilized construction entrance) be placed at all access points to the project site where there are disturbed areas. The following specifications must be followed at a minimum:

- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
- The contractor to follow the most recent version of manufacturer's specifications.
- FODS Trackout Control Mat System: Manufacturer FODS, (844) 200-3637
- Examine area where tracking pad will be placed, to determine what preparation is needed.
- Examine panels as they arrive on the site to verify they are undamaged and suitable for intended purpose.
- Grade topsoil to ensure that installation site is flat, without unneeded high spots or low spots.
- If necessary, remove unsuitable material and replace with material capable of supporting construction loads. Compact as required.
- If substrate has a CBR of 4 or less, incorporate aggregate, geotextile or geogrid into the supporting strata.
- Install culvert, if needed, before installing tracking pad. Backfill to adequately support minimum H-20 traffic loading.
- Install tracking pad to the approximate lines and grades indicated on the drawings. Size shall be as indicated on the drawings, or, if no size is indicated, pad length shall be the greater of" 35 feet; or 3 times the circumference of the largest tire that will cross is during the project.
- Provide number of individual panels of tracking pad to make up the size required. Adjacent panels shall be butted together and be at approximately the same elevation. Anchor panels against sliding according to manufacturer's recommendations.
- Place H-bracket between first and second mat, and all adjacent mats.
- Connect mats together using long steel straps per manufacturer's instructions.
- Anchor mats to surface per manufacturer's specifications per substrate.

- Provide extra panels for turning radii, if needed to prevent trucks from running off the pad during turns.
- Clean dirt and debris from tracking pad as often as necessary or once debris has reached 2.5-inches in the lane of travel. Properly dispose of material removed so it does not leave the site or enter ditches of stormwater pipes.
- Once the site is stabilized, or when the project moves into a new phase such that the tracking pad is no longer required, remove tracking pad, taking care to properly dispose of dirt and debris, and restore the area as described in section 31 25 01.

2.1.2 Siltation fence, erosion control berm, or filter socks shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch, including hydro seeding, is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 Federal Street & Temple Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways prior to rain events.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediment shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed and tributary areas stabilized prior receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included in the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 90% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 90% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 90% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch,

anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following actions shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 90% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist of 0.5 inches of rain within a 24-hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are

signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 FODS Trackout Control Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Commence installation of drainage infrastructure.
4. Install all other erosion control devices as necessary throughout the remainder of this schedule.
5. Commence earthwork operations, associated with the roadway construction.
6. Commence installation of utilities.
7. Continue earthwork and grading to subgrade as necessary for construction.
8. Complete installation of drainage infrastructure, as well as other utility work.
9. Complete remaining earthwork operations.
10. Install sub-base and base gravels in paved areas.
11. Install paving, curbing and brickwork.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete, remove all temporary erosion control measures.
14. Touch up areas without a vigorous catch of grass with loam and seed.
15. Complete site signage and striping.
16. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The

contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.5	Aug-15 to Oct-1
Oats	1.8	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.9	Apr-1 to Jul-1
Sudangrass	0.9	May-15 to Aug-15
Perennial	0.9	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

Section L:
Fire Department Letter

ACORN ENGINEERING, INC.

Chief Keith Gautreau
City of Portland Fire Department
380 Congress St.
Portland, ME 04101

September 4, 2020

Subject: 200 Federal Street – Fire Department Checklist

On behalf of Redfern Downtown LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of Applicant:
   Redfern Downtown, LLC
   jonathan@redfernproperties.com
   (207) 776-9715

2. Name address, telephone number of Architect:
   Ryan Senatore Architecture
   Ryan Senatore
   ryan@senatorearchitecture.com
   (207) 650-6414

3. Proposed uses of any structures [NFPA and IBC classification
   Please refer to attached Section O: Architectural Design Narrative

4. Square footage of all structures
   The existing parking lot, landscaping & brick patio area are to be removed to facilitate the proposed structure with a gross floor area of 192,375 square feet. Please refer to attached Architectural Plan Set for additional information.

5. Elevation of all structures
   Based upon the average grade plane defined by the IBC, the proposed building height is approximately 190'. Please refer to attached Architectural Plan Set for additional information.

6. Proposed fire protection of all structures
   Please refer to attached Section O: Architectural Design Narrative with includes a Fire Protection/Life Safety Code Report prepared by Code Red Consultants.

7. Hydrant locations
   Two existing hydrants are located on Federal Street, one of which is approximately 66 feet from the southwesterly side of the proposed building & the other at 61 feet from the southeasterly side of the proposed building. Once received, hydrant flow data requested

from the Portland Water District may be made available to the Fire Department upon request. The applicant is working with Portland Water District on Federal Street main, hydrant & service modifications.

8. Water main size and location

   The redevelopment will be serviced by a new, 12" ductile iron water main within Federal Street. An 8" sprinkler service line will extend from the proposed water main to the building fire suppression system. Please refer to Utility Plan – 1 (C-20) & Utility Plan – 2 (C-21) in the Civil Plan Set accompanying the submission for additional information.

9. Access to all structures [min. 2 sides]
   Access to the proposed structure is provided directly on the southeast along Temple Street and southwest along Federal Street.

10. Please refer to attached Section O: Architectural Design Narrative for code summaries.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The portion of the parcel to be developed has frontage along both Federal Street and Temple Street, with the following public street widths available:

- Federal Street (Southeast): 66 feet
- Temple Street (Southwest): 70 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 feet of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety
3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: Please refer to #9 above.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Response: The building will be provided with exterior doors within 50' of a Fire Department access route, namely Federal Street & Temple Street.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: There are no proposed overhead obstructions between the street and proposed building.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: Please refer to attached Section O: Architectural Design Narrative

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The applicant will work with the City's Public Works Division to assign street addresses and numbering to meet City Standards.

Thank you for your review. Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Department of Public Works
Attn: Brad Roland
212 Canco Road
Portland, Maine 04103

November 8, 2019
Revised November 2, 2020

Subject: 200 Federal Street Redevelopment
Re: Ability to Serve

Brad:

On behalf of Redfern Downtown, LLC, we are pleased to submit the following request for Portland Department of Public Work's ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with ~~260~~ *266* residential units comprised of roughly ~~133~~ *118* residential studio units, ~~125~~ *146* one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,000± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

There is currently no known sewer infrastructure on site. It is proposed to tap a 12" sanitary service line off the 24" main within Federal Street to the proposed building. ~~The project team is working with Bala Consulting Engineers on the Mechanical, Electrical, Plumbing and Fire Protection for the proposed development.~~

Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules and architectural plans to date, the structure will be comprised of ~~133~~ *118* studio units, ~~125~~ *146* one-bedroom units and 2 two-bedroom units; in addition, a 2,000± square foot retail space, fitness room and office. As a result, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Parking Lot	N/A	N/A	0	0
Total Gallons per Day (Existing)				**0**
Proposed Flow				
Residential Units	Studio	~~133~~ *116*	120	~~15,960~~ *13,920*

Residential Units	1-Bedroom	~~125~~ *146*	120	~~15,000~~ *17,520*
Residential Units	2-Bedroom	2	210	420
Retail	4-Employees	1	325+4*12	373
Office	2 Employees	1	12*2	24
Total Gallons per Day (Proposed)				~~31,777~~ *32,257*
Net Change				~~**+31,777**~~ ***32,257*** **GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWTAER DISPOSAL RULES, most recent edition				

The proposed project is anticipated to increase the net flow by approximately ~~31,777~~ *32,257* gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. Additionally, the number of bedrooms per unit may change later in the design process. We will provide any changes to the anticipated sewage demand.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Federal Street, Temple Street & Exchange Street and confirmation of the location and size of the services to the existing property and the size and material of the main within Federal Street, Temple Street & Exchange Street.
2. DPW's proposed infrastructure improvements within the project vicinity.
3. DPW's ability to serve the project.
4. Any project related offsite sewer main improvements.

I have attached an existing ALTA/NSPS Land Title Survey created by Owen Haskell, Inc to facilitate your review, as well as a proposed ~~preliminary~~ utility plan developed by our office. Please do not hesitate to contact me or the office for any questions or clarifications.

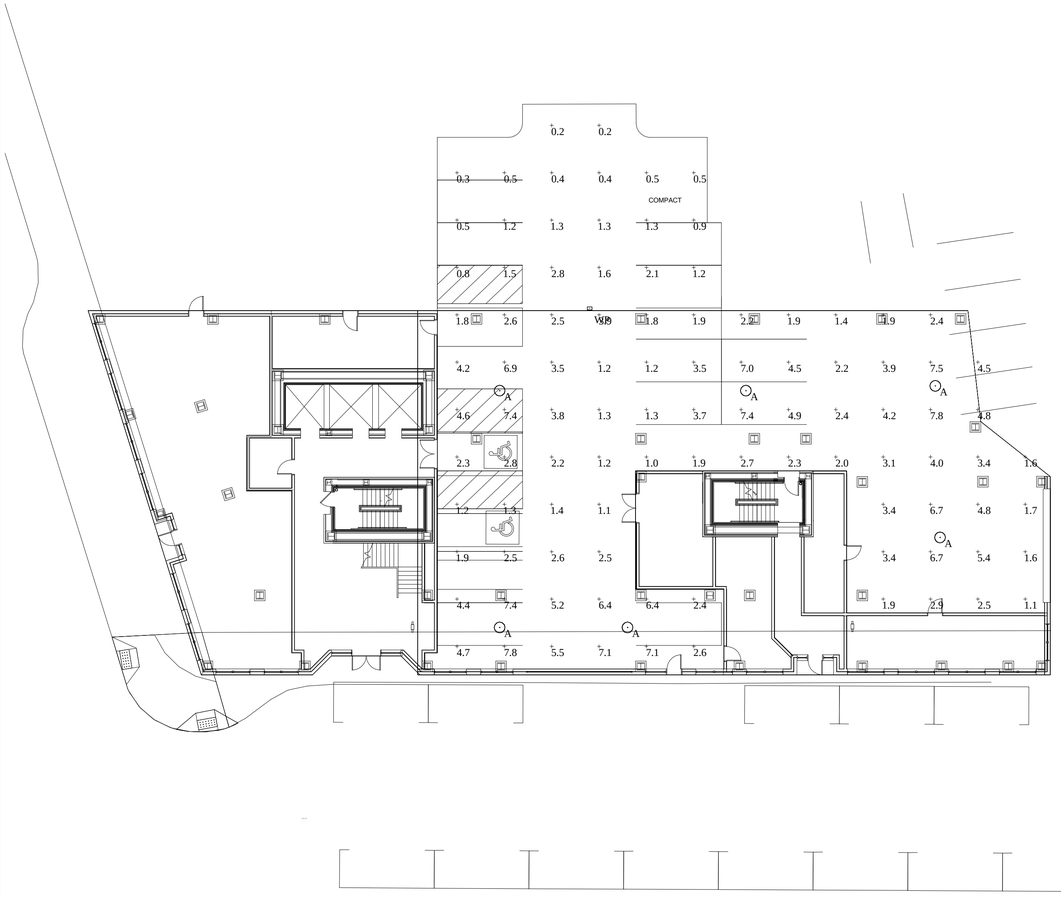
Sincerely,

Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.

Section N:
Lighting

Lighting

Please find the attached photometric plan and cut sheets prepared by Swaney Lighting Associates.



Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
⊙	6	A	9' - 0" AFG	0.900	6089	51.2	SRT2-50-4K7-5QW
▭	1	WP	12' - 0" AFG	0.900	2789	28	TRP1-12L30-4K7-4

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Overall Area	Illuminance	Fc	3.02	7.8	0.2	15.10	39.00

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON AIRE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

FEDERAL STREET DEVELOPMENT
PORTLAND, ME
SITE PHOTOMETRIC PLAN

REVISED FROM DRAWING NUMBER(S):

HUBBELL®
Hubbell Lighting, Inc.
701 MILLENNIUM BLVD.
GREENVILLE, SC 29607

DN BY:	DATE:	CHK BY:
DHK	11/14/19	N/A
REV. BY:	DATE:	SCALE:
		AS NOTED
QUOTE:	DRAWING / DESIGN NO.:	
N/A	1925339	

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

SRT2 EDGE-LIT

CEILING/SURFACE/GARAGE

FEATURES

- Edge-lit optical assembly delivers exceptional uniformity over the entire lens with indirect illumination that reduces glare and improves visual comfort
- Low profile housing intended for 8' - 20' mounting heights for surface, trunnion/yoke or pendant mounting
- Applications include parking garage, walkway or building canopies, corridors, tunnels, large stairwells and other interior applications
- Multiple optical distributions are available making the Beacon Edge-Lit luminaire both versatile and functional
- UL/cUL listed for wet locations, IP65 and 3G vibration rated
- Ambient temperatures of up to 40°C

CONTROL TECHNOLOGY

NX DISTRIBUTED INTELLIGENCE™ wiSCAPE™



RELATED PRODUCTS

Drive Edge-Lit SRT1 | Arceos™ ARS Surface | Endura

SRT1 PSG PAGE

SRT2 PSG PAGE

SRT BROCHURE

SPECIFICATIONS

HOUSING

- Die-cast aluminum housing ensures long electrical component life and luminaire performance
- Corrosion resistant powder coat finish both protects and provides architectural appearance
- One piece molded silicone gasket ensures weather proof seal
- Thermally isolated driver mounted to dedicated bracket reduces operating temperatures and increases driver life and reliability

OPTICS

- Edge-lit acrylic light guide provides blended non-pixelated light for unprecedented visual comfort
- Choice of multiple light outputs with lumen range of 4,000–16,000
- Five distribution types: Type V Square, Type V Rectangular, Type V Concentrated, Type V Wide or Asymmetric (Type 3/4)
- Wide variety of CCT's and CRI's offered: 3000K (70CRI), 3000K (80CRI), 3500K (80CRI), 4000K (70CRI), 4000K (80CRI) or 5000K (70 CRI) CCT

ELECTRICAL

- 120V–277V 50/60Hz with 347V and 480V available
- 0-10V dimming drivers are RoHS compliant and IP66
- Surge protection – Standard 10kA with optional end of life LED indicator

INSTALLATION

- Standard quick mount plate over standard 4" square junction box or octagonal box and allows for simplified fixture installation.
- Standard luminaire accepts a rigid or free-swinging 3/4" NPT stem for pendant mount via wet location j-box (by others)
- Optional bird deterrent shroud available for field installation
- Optional trunnion/yoke mount available for field installation

OPTIONS/CONTROLS

- Standalone occupancy sensor available for on/off or dimming operation
- NX Distributed Intelligence™ available with in fixture wireless control module, features dimming and occupancy sensor
- wiSCAPE® available with in fixture wireless control module, features dimming and occupancy sensor
- UL924 device available for standalone and wireless control override during power interruptions
- Uplight option provides approximately 800 lumens and consumes only 8 additional watts
- Integral battery backup option available with and without heater. Rated for 0°C (without heater) and -30°C (with heater)
- Emergency lighting relay available for generator or central inverter supplied lighting
- Vandal resistant wire guard available as an option for factory installation or as an accessory for field installation

CERTIFICATIONS

- Listed to UL1598 for use in wet location, listed for -40°C to 40°C applications
- IDA approved with zero uplight for 3000K and warmer CCTs
- IP65

WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	4000–16000
Wattage Range	30–140
Efficacy Range (LPW)	110–135
Reported Life (Hours)	L70>50K
Weight lbs. (kg)	15 (5.8)

© 2019 Beacon Products, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Boulevard • Greenville, SC 29607 • Phone 864.678.1000 / Website www.beaconproducts.com

HUBBELL Lighting

BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

SRT2 EDGE-LIT

CEILING/SURFACE/GARAGE

ORDERING GUIDE

Example: SRT2 30 3K7 5QW UNV GT WG

CATALOG # _____ – _____ – _____ – _____ – _____ – _____ – _____

Series		Engine		CCT		Distribution		Voltage		Color/Finish		Options	
SRT2	Edge-Lit Parking Garage Size 2	**30**	30W Nominal 4000 lm	**3K7**	3000K, 70 CRI	**5QW**	Type Square Wide[1]	**UNV**	120V-277V	**BL**	Textured Black	**CD**	Continuous Dimming[6]
		50	50W Nominal 6000 lm	**3K8**	3000K, 80 CRI	**5RW**	Type 5 Rect. Wide[1]	**120**	120V	**DB**	Textured Dark Bronze	**WG**	Wire Guard
		65	65W Nominal 8000 lm	**35K8**	3500K, 80 CRI	**5C**	Type 5 Concentrated	**208**	208V	**GT**	Graphite Textured	**UD**	Uplight Module[3]
		85	85W Nominal 10000 lm	**4K7**	4000K, 70 CRI	**5W**	Type 5 Wide[4]	**240**	240V	**GYS**	Smooth Gray	**F**	Single Fuse (120, 277, 347V)[2]
		100	100W Nominal 12000 lm	**4K8**	4000K, 80 CRI	**ASY**	Asymmetric (Type 4)[1]	**277**	277V	**PS**	Smooth Plat. Silver	**F**	Double Fuse (208, 240, 480V)[2]
		120	120W Nominal 14000 lm	**5K7**	5000K, 70 CRI			**347**	347V	**WH**	Textured White	**E**	EM Battery Pack (0°C)[2]
		140	140W Nominal 16000 lm					**480**	480V	**CC**	Custom Color	**EH**	EM Battery w/Heater (-30°C)[2]
												ELR	Emergency Lighting Relay[3]
												LD3	36" Lead Length[5]
												LD6	72" Lead Length[5]
												LD9	108" Lead Length[5]
												SP10K	10kA Surge Protection with End of Life LED Indicator
												LMB	Less Mounting Bracket

Control Options

NX Standalone

NXOS-12F	NX Distributed Intelligence™, PIR Occ. Sensor, Dimming Daylight Harvesting, up to 12' MH
NXSP-30F	NX Distributed Intelligence™, PIR Occ. Sensor, Dimming Daylight Harvesting, up to 30' MH
NXOS924-12F	NX Distributed Intelligence™, PIR Occ. Sensor with UL924 dimming bypass module for controls override, up to 12' MH[3]
NXSP924-30F	NX Distributed Intelligence™, PIR Occ. Sensor, with UL924 dimming bypass module for controls override, up to 30' MH[3]

NX Networked – Wireless[1]

NXWE	NX Distributed Intelligence™ Wireless Enabled (module + radio)
NXOSW-12F	NX Distributed Intelligence™ Wireless, PIR Occ. Sensor, Dimming Daylight Harvesting, up to 12' MH
NXSPW-30F	NX Distributed Intelligence™ Wireless, PIR Occ. Sensor, Dimming Daylight Harvesting, up to 30' MH
NXWE924	NX Distributed Intelligence™ Wireless Enabled with UL924 dimming bypass module for controls override[3]
NXOSW924-12F	NX Distributed Intelligence™ Wireless, PIR Occ. Sensor with UL924 dimming bypass module for controls override, up to 12' MH[3]
NXSPW924-30F	NX Distributed Intelligence™ Wireless, PIR Occ. Sensor with UL924 dimming bypass module for controls override, up to 30' MH[3]

wiSCAPE® – Wireless[1]

WIR	Wireless Controls, wiSCAPE®
WIRSC	wiSCAPE® + occupancy sensor
WIR924	Wireless Controls, wiSCAPE® with UL924 dimming bypass module for controls override[3]
WIRSC924	wiSCAPE® + occupancy sensor with UL924 dimming bypass module for controls override[3]

Sensor Controls

SCP-8F	Remote control programmable line voltage sensor (8-12' recommended MH)
SCP-20F	Remote control programmable line voltage sensor (12-20' recommended MH)
SCP924-8F	Programmable sensor with UL924 dimming bypass module for controls override (8-12' recommended MH)[3]
SCP924-20F	Programmable sensor with UL924 dimming bypass module for controls override (12-20' recommended MH)[3]

Accessories (Order Separately)

☐	**SRT2-WG**	Wire Guard for SRT2 version
☐	**SRT-MB**	Mounting bracket for pre-installation
☐	**SRT2-BRD**	Bird deterrent shroud for SRT2 version, not available with uplight or trunnion mount
☐	**SRT2-TM**	Trunnion/Yoke accessory for SRT2 version
☐	**SCP-REMOTE**	Remote control for SCP option; order at least on per project to program and control

Notes:

1 Up to 85W light engines only
2 Must specify voltage, 120V or 277V for E and EH
3 Universal voltage only
4 100–140W light engines only
5 Standard wire lead length 24"
6 Specify when using external 0-10V dimming system

© 2019 Beacon Products, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Boulevard • Greenville, SC 29607 • Phone 864.234.4000 / Website www.beaconproducts.com

HUBBELL Lighting

BEACON
design . performance . technology

DATE: LOCATION:

TYPE: PROJECT:

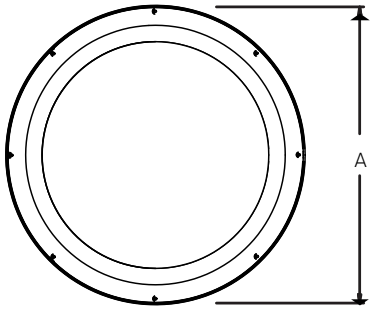
CATALOG #:

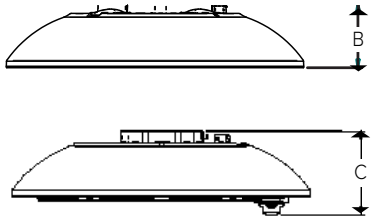
SRT2 EDGE-LIT

CEILING/SURFACE/GARAGE

DIMENSIONS

SRT2

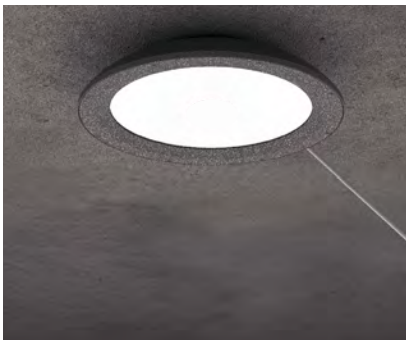




A	B	C	Weight
18.5" (469mm)	4.0" (1mm)	5.2" (132mm)	15bs (6.8kg)

ADDITIONAL INFORMATION

MOUNTING



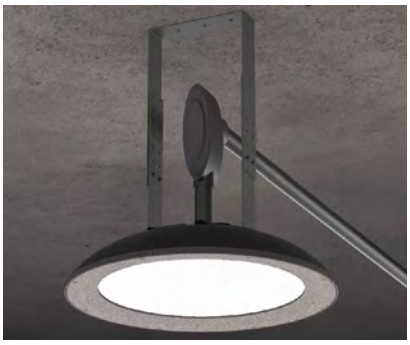
Surface Mount

Mounting plate with “quick mount” hanger for one person simple installation.



Pendant Mount

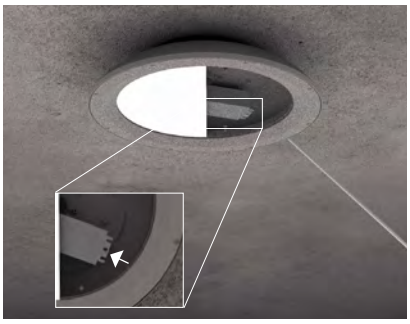
Standard 3/4" threaded entry for pendant applications.



Trunnion/Yoke Mount

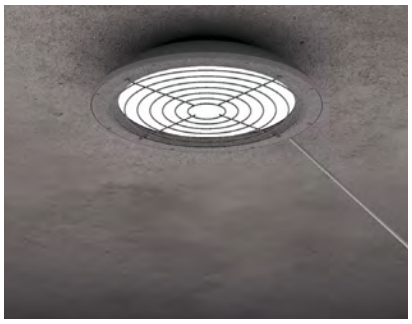
Multiple position trunnion mount adjusts 9" up and down for positioning in 1" increments.

ACCESSORIES AND SERVICES



Battery Backup

Integral battery backup option available on SRT2 version.



Wire Guard

An optional wire guard can be specified at the factory or as an accessory for field installation.



Bird Deterrent

An optional bird shroud deterrent can be specified at the factory or as an accessory for field installation.

© 2019 Beacon Products, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Boulevard • Greenville, SC 29607 • Phone 864.678.1200 / Website www.beaconproducts.com

HUBBELL Lighting

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

SRT2 EDGE-LIT

CEILING/SURFACE/GARAGE

ADDITIONAL INFORMATION (CONT'D)

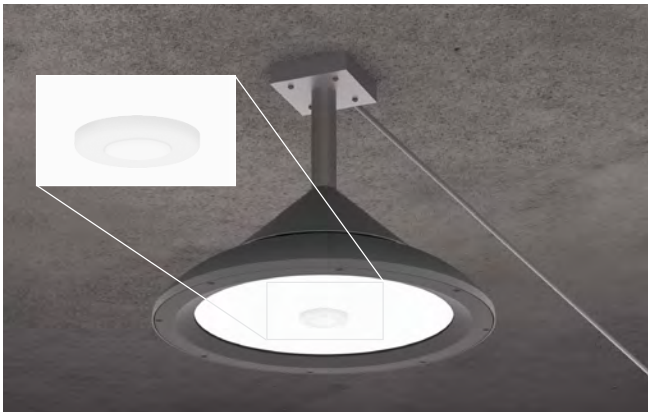
UPLIGHT

Optional uplight module provides 800 lumens of indirect illumination for improved visual quality while eliminating cave effect.



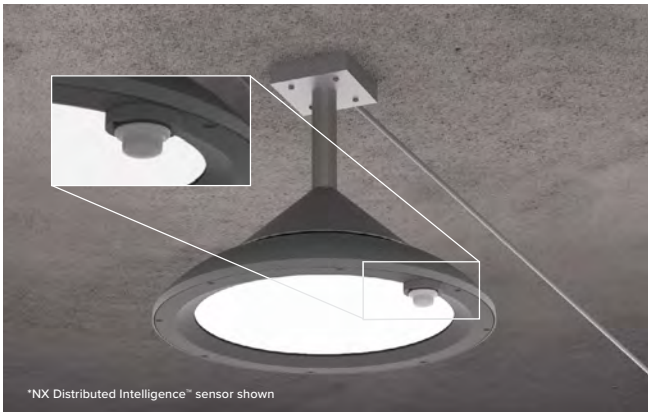


CONTROLS



Standalone Controls

Optional passive infrared sensors are available for basic occupancy and daylight sensing. Programmable via remote or Bluetooth® phone app.



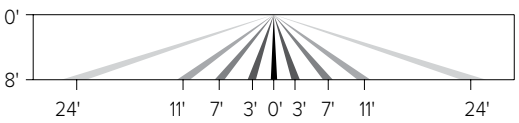
Wireless Controls

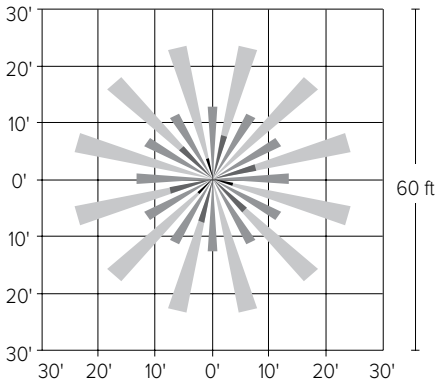
NX DISTRIBUTED™ INTELLIGENCE

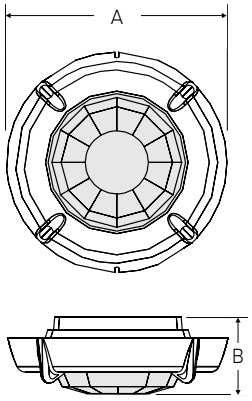
wiSCAPE™ WIRELESS OUTDOOR LIGHTING SYSTEM

Optional NX Distributed Intelligence™ and wiSCAPE® wireless controls are available for SRT2 versions (with or without occupancy sensing).

SCP-8F







A	B
2.3" (59mm)	.8" (20mm)

© 2019 Beacon Products, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Boulevard • Greenville, SC 29607 • Phone 864.678.1000 / Website www.beaconproducts.com

HUBBELL Lighting

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

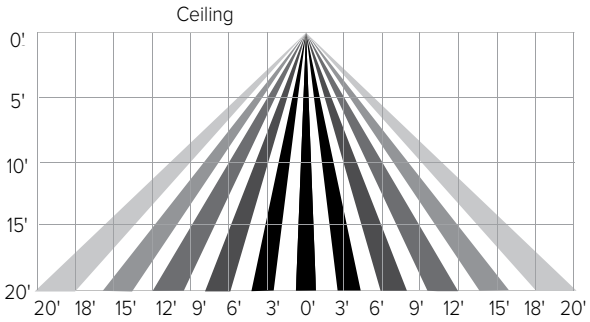
SRT2 EDGE-LIT

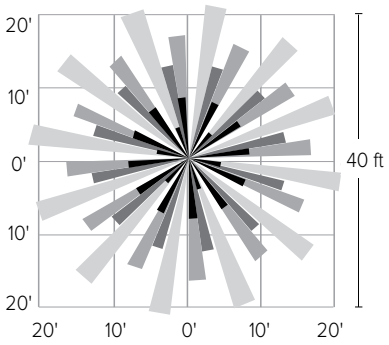
CEILING/SURFACE/GARAGE

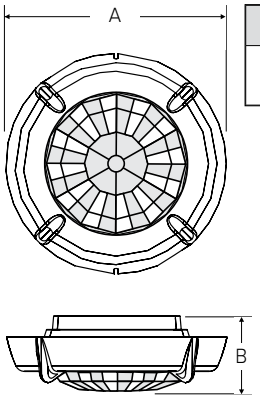
ADDITIONAL INFORMATION (CONT'D)

CONTROLS (CONT'D)

SCP-20F

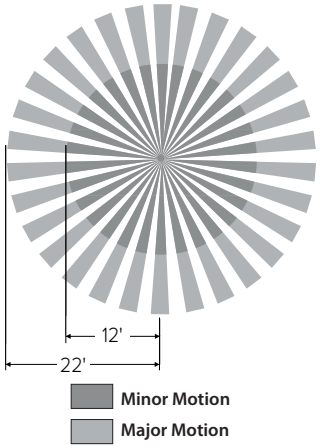


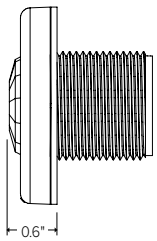


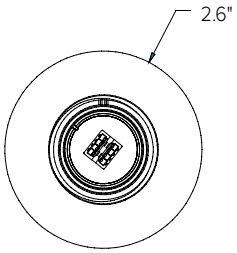


A	B
2.3" (59mm)	.8" (20mm)

NXOS12F

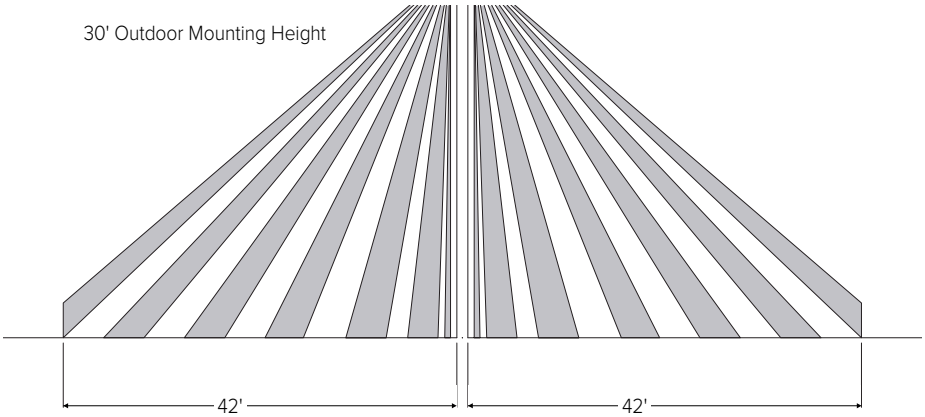


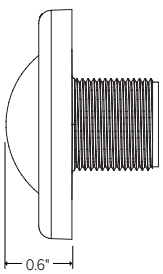


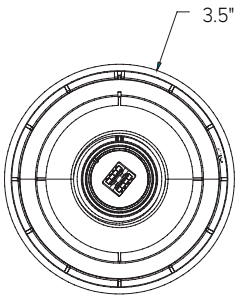


NXSMP-OMNI Range

NXSP30F







USE OF TRADEMARKS AND TRADE NAMES

All product and company names, logos and product identifies are trademarks ™ or registered trademarks ® of Hubbell Lighting, Inc. or their respective owners. Use of them does not necessarily imply any affiliation with or endorsement by such respective owners.

© 2019 Beacon Products, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Boulevard • Greenville, SC 29607 • Phone 864.678.1000 / Website www.beaconproducts.com

HUBBELL Lighting

GEOPAK SERIES SIZE 1 LED

Architectural Wallpack

TRP1/RDI1/QSP1

NEW

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

APPLICATIONS

- Small sized architectural wallpacks in three stylish shapes with molded contours to accentuate building architecture. Provides excellent illumination in energy-saving LED systems.
- Back box accessory available for surface conduit application.

Construction:

- Housing is made from die-cast aluminum with a hinged back-plate for ease of installation and maintenance.
- The LED bezel and trim-plate are made of stainless steel.
- Five powder coat standard finishes, plus custom color options.
- Wet Location Listed to UL924 and UL1598 Standard.

LED:

- 12 high power LEDs delivering up to 3,000 lumens.
- Up to 118 lumens per watt
- Type II, III and IV distributions for a wide variety of applications.
- Zero uplight (U0), dark sky, neighbor friendly

Electrical:

- 120-277 operation, 50/60Hz
- 0-10V dimming driver standard
- 10kA surge protector
- Photocell and occupancy sensor options available for complete on/off and dimming control

Battery Backup:

- Intergral Battery Backup provides emergency lighting for the required 90 minute path of egress.
- Includes a long-life Lithium Iron Phosphate battery with optional battery heater for cold temperature application.
- Utilizes 4 LEDs in emergency mode with 657 lumens. Each of the 4 LEDs in emergency are designed to function independently in the unlikely event of a single LED malfunction
- Spectron® self-testing/self-diagnostic electronics are included standard
- Independent dedicated driver and LED array for battery/emergency mode operation.

Installation:

- Universal plate for mounting to standard 3 1/2" and 4" square electrical boxes. All connections are made from connections at the rear of the unit.
- Optional back-box accessory available for surface conduit application. See BB-Geo accessories.

Listings:

- UL 1598 listed for use in wet locations
- Drivers IP66 and RoHS compliant
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org

Warranty:

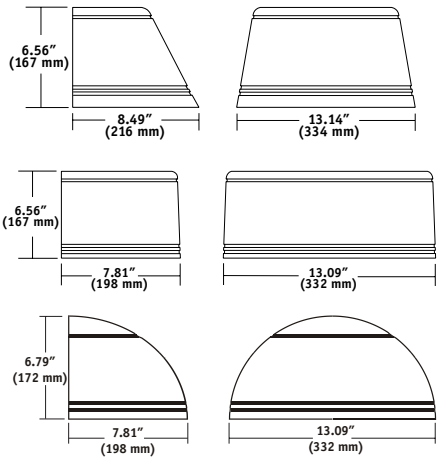
- For more information visit:

http://www.hubbelloutdoor.com/resources/warranty/

PRODUCT IMAGE(S)



DIMENSIONS



SHIPPING INFORMATION

Catalog Number	Weight (lbs)	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
TRP1	11.5	17.0	9.9	10.0
RDI1	11.5	18.0	11.0	9.25
QSP1	10.5	17.0	9.6	10.5

CERTIFICATIONS/LISTINGS

C SA US

*3000K and warmer CCTs only

ORDERING INFORMATION

ORDERING EXAMPLE: TRP-12L-20-4K-3-1-BL-SCP-EH

HOUSING	VERSION	WATTAGE	CCT/CRI	DISTRIBUTION	VOLTAGE	FINISH	CONTROL OPTIONS	OPTIONS
TRP1 Trapezoid	12L 12 LEDS	15 15 watts	3K7 3000K, 70CRI	2 Type II	U 120-277	BL Black	PCU Button Photocell	F[4] Fusing (only available with STD fixture configuration, 120-277V only)
RDI1 Radius		20 20 watts	4K7 4000K, 70CRI	3 Type III	1 120	DB Bronze	SCP[2,3] Programmable Motion Sensor	E[1] Battery Pack (0˚C)
QSP1 Quartersphere		30 30 watts	5K7 5000K, 70CRI	4 Type IV	2 208	GR Gray	SPECIFY SCP HEIGHT: 8F Up to 8ft mount height; 20F Up to 20ft mount height	EH[1] Battery Pack (-30˚C) with heater
					3 240	PS Platinum		
					4 277	WH White		
						CC Custom		

[1] Voltage specific (120 or 277V only)
[2] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only
[3] PCU option not applicable, included in sensor
[4] Must specify input voltage (120, 208, 240 or 277)

Due to our continued efforts to improve our products, product specifications are subject to change without notice.
© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA

ACCESSORIES - Order separately

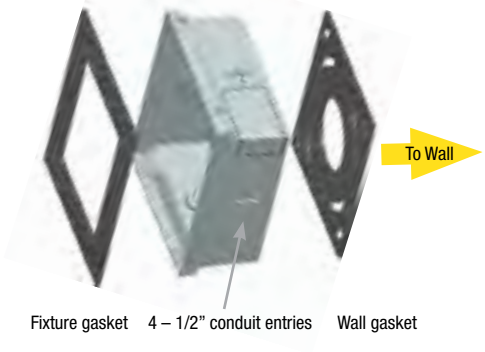
Catalog Number	Description
SCP-REMOTE[2]	Remote control for SCP option. Order at least one per project to program and control.
BB-GEO-XX	Back box with 4 - 1/2" threaded conduit holes, specify finish by replacing "XX" with finish selection, eg. Dark Bronze "DB"

[2] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V-277V only



BB-GEO-XX – Mounted to luminaire

BB-GEO-XX



PERFORMANCE DATA (AC/Standard Configurations)

				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
12	350mA	13.9	2	1635	118	1	1	1	1577	113	1	1	1	1497	108	1	1	1
			3	1613	116	1	0	1	1556	112	1	0	1	1477	106	1	0	1
			4	1607	116	0	0	1	1550	111	0	0	1	1471	106	0	0	1
	500mA	19.9	2	2268	114	1	1	1	2176	109	1	1	1	2077	104	1	1	1
			3	2245	113	1	0	1	2140	108	1	0	1	2049	103	1	0	1
			4	2229	112	0	0	1	2150	108	0	0	1	2041	103	0	0	1
	700mA	28.2	2	2942	104	1	1	1	2885	102	1	1	2	2721	96	1	1	1
			3	2912	103	1	0	1	2836	101	1	0	1	2685	95	1	0	1
			4	2892	103	1	0	1	2789	99	1	0	1	2674	95	1	0	1

Electrical Data

Input Power Consumption

Drive Current (mA)	Input Voltage (V)	System Power (w)	Current (Amps)
350mA	120	13.9	0.12
	277		0.05
500mA	120	19.9	0.17
	277		0.07
700mA	120	28.2	0.24
	277		0.10

Battery backup units consume additional power during charging (maximum 32.2 watts for E, 50.7 watts for EH)

Projected Lumen Maintenance

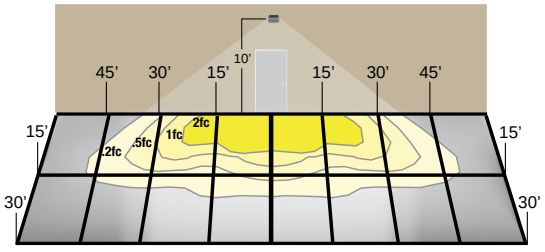
Ambient Temp.	Operating Hours 0	25,000	50,000	TM-21-11[1] 60,000	100,000	L70 (hours)
25°C/77°F	1.00	0.98	0.97	0.95	0.91	>345,000
40°C/104°F	1.00	0.96	0.95	0.92	0.87	>268,000

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

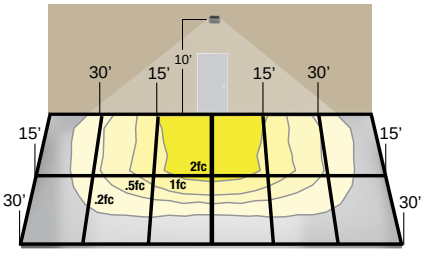
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

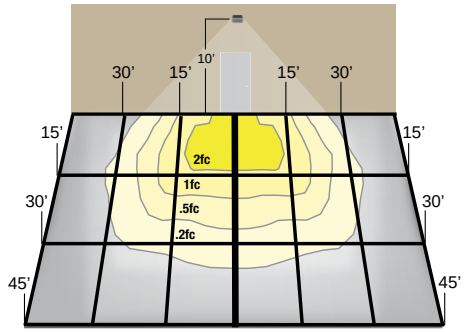
PHOTOMETRIC REPORTS
(30w, 4000K shown)



TYPE II



TYPE III



TYPE IV (Forward throw)

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

GeoPak - Battery Back Up

Functional Circuitry: Transient surge protection device on AC input. Upon failure of the normal utility power, an LED driver is automatically activated to power the emergency LEDs. Upon resumption of normal utility power, the LED driver is turned off, and the battery is recharged through a micro-controller based 3-stage charger. The battery is a maintenance-free Lithium Iron Phosphate (LiFePo) type. A low voltage battery disconnect (LVD) feature protects the battery from severe damage during prolonged power failures. Manual testing is available at any time using the push-to-test button. The optional heater features a heating wrap and thermostat to maintain optimal battery temperature during charge or discharge. The GeoPak includes the following features:

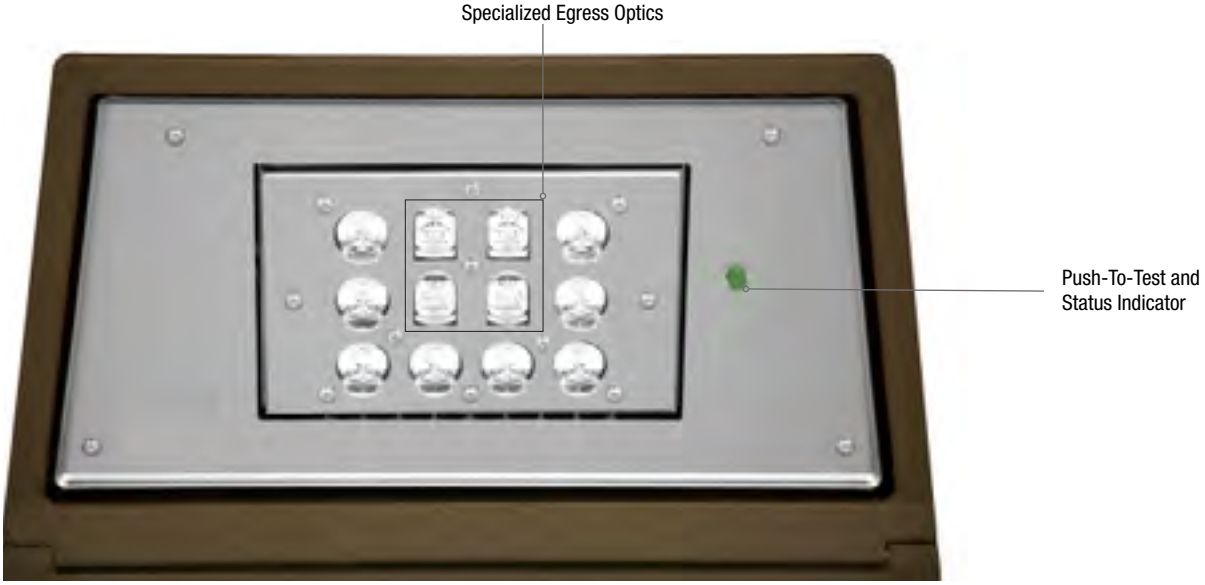
- Battery re-charge within 24 hours
- AC Lock-out circuit
- Self-diagnostics monitors LED status, LED driver circuit, battery capacity and charger function and displays any fault detection by means of a flashing code.
- Self-Test feature runs a 1 minute test once a month and an alternating 30 or 60 minute test once every 6 months. Multi-color LED indicator provides visible fault detection and charging status.
- User initiated 1, or 90-minute system test feature
- 15 minute re-transfer delay
- Automatic unit transfer in brown-out conditions (below 80% of nominal AC input voltage).
- Battery backup units consume 6 watts when charging a dead battery and 2 watts during maintenance charging. EH (units with a heater) consume up to an additional 8 watts when charging if the battery temp is lower than 10°C

Emergency Photometric Performance (1 fc average .1 fc minimum)

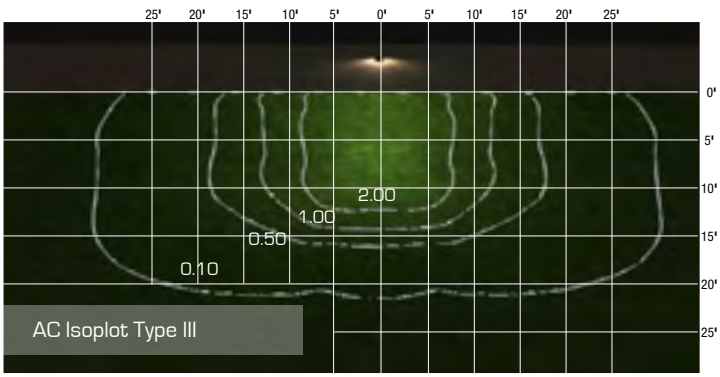
28’ multi-unit spacing at 10’ MH with 0/30/10 reflectances on a 6’ path

26’ x 10’ single unit coverage at 10’ MH with 0/30/10 reflectances

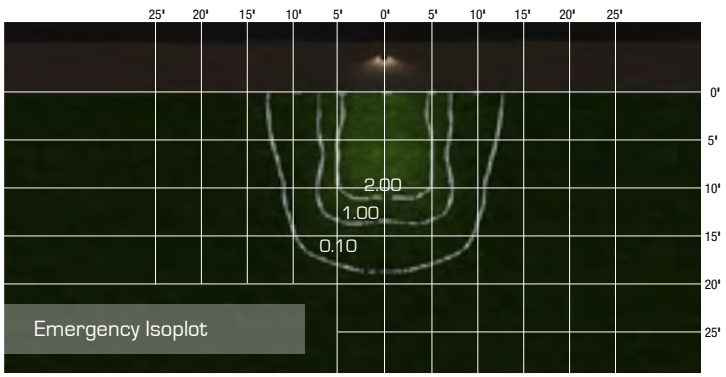
6’ x 19’ forward throw coverage at 10’ MH with 0/30/10 reflectances



Normal Mode



Emergency Mode



Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions.

Diagrams for illustration purposes only, please consult factory for application layout.

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

© 2016 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: **www.hubbelloutdoor.com** • Printed in USA

Section O:
Architectural Design Narrative

August 5, 2020

Caitlin Cameron
Urban Designer
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: 200 Federal St. - Design Narrative

The proposed building to be located on 200 Federal Street in Downtown Portland consists of 265 residential market rate apartment units and first floor retail suites. The building is an 18 story structure sited on the corner of Federal and Temple Streets.

Prior to developing the building concept we spent much time walking the streets of the surrounding neighborhood, analyzing existing streetscapes, building massing, forms, materials and textures. This approach allowed us to develop a design concept that is grounded by the existing neighborhood context and also reflects our contemporary time. As seen in the aerial rendering and streetscape photos the predominant exterior materials in the neighborhood and along the Congress Street corridor are red brick and a lighter stone or cast stone material. We have utilized these materials and colors to help integrate 200 Federal Street into the existing Architectural fabric.

The building is a taller structure along the Congress Street corridor, to scale the building design from longer views we have designed a building cap material transition at the 16th floor which is a similar datum to the adjacent One City Center building. This visually lighter color building cap also helps the building meet the sky gracefully. The main body of the building is primarily brick clad with a high percentage of punched openings, this facade pattern creates nice light filled residential units but also a strong vertical and horizontal grid that provide the facade a nice order. The order is then balanced by vertical breaks in the brick with the lighter material, this scales the facades horizontally and visually breaks the building massing on the longer facades. The building has a strong base which is three stories in height, this base is pronounced by its larger width than the body of the building but also

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

by its materiality. The base is a cast masonry unit material with a light limestone like coloring. A similar material coloring is found in many of the adjacent larger neighboring building's, bases. The masonry unit is 24"x12" with a clean joint system, we have created a facade rhythm at the base with large expanses of glass for porosity and a strong pilaster order. The base design creates a scaled transition from the pedestrian level up to the main body of the building above.

200 Federal Street is a simple yet elegant structure that will add to the City of Portland's diverse skyline and it will contribute to the positive energy building within the surrounding neighborhood.

We look forward to discussing the project at the upcoming Planning Board workshop.

Sincerely,



Ryan Senatore, AIA LEED AP

Principal

207-747-5159

senatorearchitecture.com

ryan@senatorearchitecture.com

500 Congress Street, Suite 2
Portland, Maine 04101

CODE RED CONSULTANTS
154 TURNPIKE ROAD SUITE 200, SOUTHBOROUGH MA 01772
WWW.CRCFIRE.COM

Fire Protection/Life Safety Code Report

Project:
Mixed Use-High Rise
200 Federal Street
Portland, ME 04101

March 18, 2020

Prepared for:
Ryan Senatore Architecture
500 Congress Street, Second Floor
Portland, ME 04101

Zach Blanchard, P.E. (MA)

Carl Nelson, P.E. (MA)

DRAFT

© 2020 Code Red Consultants, LLC. All Rights Reserved.

Table of Contents

1. Introduction & Project Description 3
1.1 Introduction 3
1.2 Project Description 3
2. Applicable Codes 4
3. Fire Protection/Life Safety Analysis 5
3.1 Use and Occupancy Classification 5
3.2 Special Use and Occupancy 5
3.3 Interior Walls and Partitions 7
3.4 Vertical Openings 12
3.5 Interior Finishes 12
3.6 Fire Protection Systems 12
3.7 Emergency Systems 13
3.8 Standby/Emergency Power 15
3.9 Fire Department Access 16
3.10 Means of Egress 16
3.11 Accessibility 22
3.12 Plumbing Fixtures 22

DRAFT

1. Introduction & Project Description

1.1 Introduction

Ryan Senatore Architecture has retained Code Red Consultants to provide fire protection and life safety code consulting services for the design and construction of the Federal Street Mixed Use project located in Portland, ME.

This report addresses the key fire protection and life safety features of the codes and standards referenced in Section 2 of this report. The primary intent of this document is to (1) coordinate the fire protection and life safety approach between all design disciplines, (2) demonstrate building, fire and life safety code compliance to the Authorities Having Jurisdiction, and (3) serve as a record document for the building owner. Details of compliance are left to the construction documents and the contractors. This report is intended to address code requirements as enforced by Authorities Having Jurisdiction only. It is the responsibility of the design team to ensure that any owner or insurance carrier requirements, which may exceed the provisions of the applicable codes and standards, are met.

1.2 Project Description

The project consists of the construction of a new 18-story mixed-use high-rise building (with a penthouse) consisting primarily of residential dwelling units (for rent). The building has an aggregate area of approximately 180,000 SF and a maximum footprint area of approximately 10,000 SF. The floor uses consist of the following:

- First Floor: Mixed-use consisting of parking garage, retail, and a two-story main lobby for the apartment complex;
- Second Floor: Residential units, fitness center, mail/package room, private offices, and lounge;
- Third through Seventeenth Floors: Residential Units
- Eighteenth Floor: Residential units, community room, and sky lounge
- Mechanical Penthouse

DRAFT

2. Applicable Codes

Building	MUBC – Maine Uniform Building Code, which is the portion of the Maine Uniform Building and Energy Code (MUBEC) that does not contain energy code requirements and is an amended version of the 2015 International Building Code (IBC).
Life Safety	2018 Edition of NFPA 101, *Life Safety Code* (LSC) as adopted and amended by the Rules of the State Fire Marshal and City of Portland Code of Ordinances Chapter 10 Article I
Fire	2015 Edition of NFPA 1, *Fire Code* as adopted by the MUBC 2018 Edition of NFPA 1, *Fire Code* as adopted by the City of Portland Code of Ordinances Chapter 10 Article II 2018 Edition of NFPA 1, *Fire Code* as adopted by the Rules of the State Fire Marshal *Where one edition is more stringent, the specific edition will be identified as the code reference.
Electrical	2017 NFPA 70, National Electric Code
Elevator	Maine Elevator & Tramway Rules & Laws, an amended version of the 2013 ASME A.17.1, Safety Code Fore Elevators And Escalators
Energy Code:	MUBEC – Maine Uniform Building and Energy Code, an amended version of the 2009 International Energy Conservation Code
Mechanical	2013 ASHRAE 62.1, Ventilation for Acceptable Indoor Air Quality 2015 International Mechanical Code (IMC) as adopted by the City of Portland
Plumbing	Maine State Plumbing Code which adopts and amends the 2015 Uniform Plumbing Code (UPC)
Accessibility Regulations	2009 ICC A117.1, Accessible And Usable Buildings and Facilities 2010 ADA Standards for Accessible Design Fair Housing Act Design Manual
Other	Various National Fire Protection Association (NFPA) codes and standards as referenced by the codes listed above

DRAFT

3. Fire Protection/Life Safety Analysis

The following sections describe the code compliance approach for the building.

3.1 Use and Occupancy Classification

3.1.1 Primary Occupancies

Table 1 indicates the primary occupancies within the building (MUBC Chapter 3).

Description	Occupancy Classification
Fitness Center, Lounge (< 50 occupants)	Group A-3
Residential (Apartments)	Group R-2
Retail (Market)	Group M
Offices	Group B
Parking Garage Storage, MEP, Building Support	Group S-2

TABLE 1: PRIMARY OCCUPANCY CLASSIFICATION

The building is classified as non-separated mixed-use occupancy (MUBC 508.3).

3.2 Special Use and Occupancy

3.2.1 High-Rise

The building is classified as a high-rise, as the height of the building is more than 75 feet above grade plane (MUBC 202). The building is required to comply with the following requirements, as well as the specific high-rise requirements provided in their corresponding sections throughout this report.

The highest occupiable floor is greater than 120 feet above the lowest level of fire department vehicle access. Therefore, fire service access elevators are required to be provided in accordance with MUBC Section 3007 (MUBC 403.6.1).

3.2.2 Parking Garage

The design and construction of the parking garage is required to be in accordance with the below requirements. Additional features required for enclosed parking garages including fire protection systems are incorporated throughout this report.

- The parking garage is required to be provided with a mechanical ventilation system in accordance with the 2015 IMC (MUBC 406.6.2).
- The clear height is required to be at least 7 feet in vehicle and pedestrian traffic areas (MUBC 406.4.1).
- Vehicle ramps are not permitted to be considered as required exits unless pedestrian facilities (e.g. raised sidewalks or guards) are provided (MUBC 406.4.4).

- Ramps that are used for vertical circulation and for parking are not permitted to exceed a slope of 1:15 (6.67 percent).
- Parking surfaces are required to be of concrete or similar noncombustible and nonabsorbent materials. Asphalt surfaces are permitted at ground level (MUBC 406.4.5).
- Vehicle ramps are not permitted to exceed a slope of 6.67% (MUBC 406.4.5).

3.2.3 Construction Type

The building is 18 stories in height and contains a total height less than 420 feet. Therefore, the building is permitted to be Type IA Modified High-Rise construction. (MUBC 403.2.1.1(1), 504, 506).

3.2.4 Fire-Resistance Ratings of Building Elements

The following table indicates the minimum fire-resistance ratings required for building elements in Type IA Modified High-Rise construction with the allowable reductions to Type IB (except for columns) applied (MUBC 403.2.1.1(1), 602.1).

Fire-Resistance Ratings of Building Elements	
Building Element	**Fire-Resistance Rating (Hours) Type IA Modified**
Primary structural frame - columns	3
Primary structural from – other than columns	2
Exterior bearing walls	2
Interior bearing walls	2
Nonbearing exterior walls	See Section 3.2.8
Floor construction and secondary members	2
Roof construction and secondary members	1

TABLE 2: FIRE-RESISTANCE RATINGS – TYPE IA MODIFIED

3.2.5 Height and Area

The proposed building height and area are as follows:

- Building Height: 18 stories above grade, approximately 289.5’ to roof
- Building Footprint Area: 10,000 sf
- Building Aggregate Area: 180,000 sf

For non-separated mixed-use buildings, the allowable height and area of the building are based on the most restrictive allowances for the occupancy groups under consideration (MUBC 508.3.2).

Buildings classified as Type IA Modified High-Rise Construction are permitted to be unlimited in height and area (MUBC 504 & 506).

3.2.6 Penthouse

The building includes a rooftop structure above Level 18. The structure is less than one-third of the area of the supporting roof deck and is not used for any purpose other

than the sheltering dedicated mechanical equipment. Therefore, the rooftop structure is classified as a penthouse (MUBC 1510.2).

3.2.7 Spray Applied Fire-Resistant Materials (SFRM)

The bond strength of SFRM installed throughout the building is required to have a minimum bond strength of 430 psf (MUBC 403.2.4).

3.2.8 Exterior Walls & Openings

Table 3The following table indicates the fire-resistance ratings and opening limitations required for nonbearing exterior walls based on fire separation distance (MUBC 602; 705.8).

Fire Separation Distance	Fire Resistance Rating		Allowable area of Openings[1]
	Group M	Group A-3, R-2, S-2	
0 to less than 3 feet	2 Hour	1 Hour	Not Permitted
3 feet to less than 5 feet	2 Hour	1 Hour	15%
5 feet to less than 10 feet	1 Hour	1 Hour	25%
10 feet to less than 15 feet	1 Hour	1 Hour	45%
15 feet to less than 20 feet	1 Hour	1 Hour	75%
20 feet or greater	0 Hour	0 Hour	No Limit

TABLE 3: FIRE-RESISTANCE RATINGS AND OPENING LIMITATIONS FOR EXTERIOR WALLS

Fire separation distance is required to be measured at right angles from the face of the building to either the closets interior lot line, the centerline of a street, alley, or public way, or an imaginary lot line between two buildings on the same property (MUBC 202).

3.3 Interior Walls and Partitions

3.3.1 Fire/Smoke Resistive Assemblies

Table 4 indicates the interior walls and partitions that are required to be constructed as fire/smoke resistive assemblies.

Type of Assembly	Construction	Code Reference
Dwelling Unit Separations		
Separation walls	1-hour fire partition	MUBC 420.2, 708
Horizontal separation	1-hour horizontal assembly	MUBC 420.3, 711
Corridors		
Serving Group R Occupancies	½-hour fire partition	MUBC 1020.1 NFPA 101, 30.3.6.1.2
Special Rooms/Incidental Uses		
Dry type transformer room > 35,000 V	3-hour fire barrier	NFPA 70, 450.42

[1] Based on building being fully sprinkler protected and unprotected openings.

Emergency generator room[2]	2-hour fire barrier	NFPA 110, 7.2.1.1
Electrical rooms containing emergency power feed circuits	2-hour fire barrier	NFPA 70, 700.10
Non-sprinklered electrical room	2-hour fire barrier	NFPA 13, 8.15.10.3
Elevator machine room/controls room	2-hour fire barrier	MUBC 3005.4
Fire pump room	2-hour fire barrier	MUBC 913.2.1
Exit Passageways	2-hour fire barrier	MUBC 1024.3
Trash chute termination room	2-hour fire barrier	MUBC 713.13.4
Fire Command Center	1-hour fire barrier	MUBC 911.1.2
Trash chute access room/Collection Room	1-hour fire barrier	MUBC 713.13.3; NFPA 101, 30.3.2.1.1
Dry type transformer room > 112.5 kVA	1-hour fire barrier	NFPA 70, 450.21(B)
Boiler room where the largest piece of equipment is > 15 psi and 10 horsepower	Smoke-tight wall	MUBC 509
Furnace room where any equipment is > 400,000 BTU per hour input	Smoke-tight wall	MUBC 509
Fire Service Access Elevator Lobby (with protected path)	1-hour smoke barrier	MUBC 3007.6.2
Shafts		
Shafts connecting any number of stories	2-hour fire barrier	MUBC 713.4 NFPA 101, 8.6.5

TABLE 4: FIRE/SMOKE RESISTIVE ASSEMBLIES

Type of Assembly	Description
Fire Barrier (MUBC 707.5) (NFPA 101, 8.3)	Wall construction is required to extend from the floor or foundation below to the underside of the floor or roof sheathing, slab or deck above. They are required to be continuous through concealed spaces, such as those above ceiling. Openings are required to comply with MUBC 716 (see Section 3.3.4).
Fire Partition (MUBC 708.4)	Wall construction is required to extend from the top of the floor or foundation to the underside of the floor or roof sheathing above. The supporting construction is required to afford the required fire-resistance rating of the fire partition. Openings are required to comply with MUBC 716 (see Section 3.3.4).
Smoke Barrier – Fire Service Access Elevator Lobby (MUBC 709.4.2) (NFPA 101, 8.5.2)	Wall construction for fire service access elevator lobbies is required to form an effective membrane enclosure that terminates at a fire barrier wall having a fire protection rating not less than 1 hour, another smoke barrier wall, or an outside wall. Walls are required to be continuous from outside wall to outside wall, from a floor to a floor, or from a smoke barrier to a smoke barrier (or a combination thereof). Smoke barriers are required to be continuous through all

[2] Fuel line supplying a generator inside the building are required to be separated from areas of the building, other than the generator room, by an approved assembly having a fire-resistance rating not less than 1-hour (MUBC 403.4.8.2).

DRAFT

	concealed spaces, such as those found above a ceiling, including interstitial spaces.
Smoke Tight (MUBC 509.4.2) (NFPA 101, 8.4.2)	Walls are required to extend from the top of the foundation or floor below to the underside of the floor or roof sheathing, deck or slab above or to the underside of ceiling membrane that is constructed to limit the transfer of smoke.

TABLE 5: FIRE/SMOKE RESISTIVE ASSEMBLY TYPES

3.3.2 Identification

All fire walls, fire barriers, fire partitions, smoke barriers, and smoke partitions, or any other wall required to have protected openings or penetrations will be permanently identified with signs/stenciling (MUBC 703.7). Identification will:

- Be located in accessible concealed floor, floor-ceiling, or attic spaces.
- Be located within 15 feet of the end of each wall and at intervals not exceeding 30 feet measured horizontally along the wall or partition.
- Include lettering not less than 3 inches in height with a minimum 3/8-inch stroke in a contrasting color incorporating the suggested wording "FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS".

3.3.3 Structural Integrity

Exit enclosures and elevator hoistways are required meet the structural integrity requirements of MUBC Section 403.2.3.

Concrete or masonry walls are deemed to satisfy the requirements for structural integrity (MUBC 403.2.3.3).

3.3.4 Doors and Fire Shutters

Doors, fire shutters, and their corresponding components are required to have fire-resistance ratings and meet the required testing standards as specified in Table 6. All doors and fire shutters required to be fire-resistance-rated must be designed, installed, and labeled in accordance with NFPA 80 (MUBC 716.5).

Wall Type	**Required Wall Rating**	**Minimum Fire Door Rating**	**Performance Criteria for Doors/Shutters[3]**	**Code Reference**
Fire barriers have 2-hour rating	2-hours	1½-hours	NFPA 252 or UL 10C	MUBC 716.5
Fire partitions: Corridor walls	½-hour	1/3 hour	NFPA 252 or UL 10C UL 1784	
Fire Service Access Elevator Lobbies – Smoke Barrier	1-hour	3/4-hour	UL 1784	MUBC 3007.6.3

[3] All doors are required to be self- or automatic closing and provided with an active latch bolt that will secure the door when it is closed
(MUBC 716.5.9.1).

Other smoke barriers (protected path)	1-hour	1/3-hour	NFPA 252 or UL 10C	MUBC 716.5, 3007.6.3
Smoke-tight walls	No rating	No rating	No air transfer openings, max 3/4" undercut	MUBC 509.4.2
Smoke Partitions in Elevator Lobbies			Limit the transfer of smoke per UL 1784	MUBC 3006.3

TABLE 6: FIRE DOOR AND SHUTTER REQUIREMENTS

3.3.5 Elevator Lobbies

Since the building has occupiable floors located more than 120 feet above the lowest level of fire department access, at least two fire service access elevators are required to be provided and serve every floor and must open into a fire service access lobby except at the level(s) of exit discharge (MUBC 403.6.1 & 3007.6). Major requirements include:

- Direct access to an exit stairway (MUBC 3007.4.1).
- Exit stairs containing standpipes must have access to the floor without passing through the fire service access elevator lobby (MUBC 3007.9.1)
- Be enclosed with construction complying with Table 4 (MUBC 3007.4.2).
- Be a minimum of 150 square feet in area with a minimum dimension of 8 feet (MUBC 3007.4.4).

Other elevators are required to be equipped with lobbies on each floor, except the level(s) of exit discharge, that are constructed in accordance with Table 4 (MUBC 3006.2). As an alternative, the lobbies can be omitted if the shafts are pressurized.

3.3.6 Penetrations

Penetrations of fire-resistance-rated walls and horizontal assemblies that are not protected with dampers or a shaft are required to comply with this section. Ducts and air transfer openings that are protected by dampers are required to comply with Section 3.3.8 of this report.

Through and membrane penetrations of fire-resistance-rated walls and fire- resistance-rated horizontal assemblies are required to be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (MUBC 714.3 & 714.4). Penetrations of fire-resistance-rated walls must have an F rating of not less than the required fire-resistance rating of the wall penetrated (MUBC 714.4.1). Penetrations of fire-resistance rated horizontal assemblies must have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated (MUBC 714.4.1.2).

Voids created between the fire resistance–rated floor assembly and the exterior curtain wall shall be protected with a perimeter joint system that is designed and tested in accordance with ASTM E 2307 (MUBC 715.4). The system is required to have an F rating for a time not less than the rating of the floor assembly.

3.3.7 Third Party Firestopping Special Inspections

MUBC Section 1705.17 requires a special inspector for through-penetrations, membrane penetration firestops, fire-resistance joint systems, and perimeter fire barrier systems since the building is a high-rise.

All penetrations of fire-resistance rated walls and floors are subject to MUBC 1705.17, which requires a special inspector for through-penetrations, membrane penetration firestops, fire-resistant joint systems, and perimeter fire barrier systems.

The inspections are required to be performed in accordance with ASTM E2174 for penetration firestop systems and ASTME E2393 for joint systems, including the following:

- The inspector is to witness the installation of 10% of each type of firestop system or perform destructive testing of 2% of each type of firestop system per floor or for each area of a floor when a floor is larger than 10,000 ft^2.
- Complete submittals showing all listed firestop assemblies are required to be provided to the inspector before they perform their inspections. This includes any engineering judgements that may be needed for assemblies that don't meet all the details of a listed assembly.
- The specifications should indicate that special inspections are required for all penetration firestop systems and fire-resistant joint systems.

3.3.8 Ducts and Air Transfer Openings

Fire and smoke dampers are required where ducts and air transfer openings penetrate walls as specified in MUBC and NFPA 101. Where dampers are installed, they are required to be listed and bear the label of an approved testing agency (MUBC 717.3.1). Fire dampers must be tested in accordance with UL 555 and smoke dampers must be tested in accordance with UL 555S. Combination fire/smoke dampers must comply with both test standards.

Fire dampers are required to be rated for 1.5 hours, unless they are installed in a 3-hour or greater assembly, in which case they are required to be 3-hour rated (MUBC 717.3.2.1). For this project, all fire dampers are expected to be 1.5 hour since there are no 3-hour fire resistance rated walls. Smoke damper leakage ratings must be Class I or II. Elevated temperature ratings must not be less than 250°F (MUBC 717.3.2.2). Combination fire/smoke dampers must comply with both rating requirements (MUBC 716.3.2.3). Refer to MUBC 716.3.3 for required damper actuation methods.

Fire, smoke, and fire/smoke dampers are required to be provided with an approved means of access that permits inspection and maintenance of the damper and its operating parts (MUBC 717.4). Access points are required to have permanent labels

with letters that are not less than ½ inch in height that reads "FIRE/SMOKE DAMPER, SMOKE DAMPER, or FIRE DAMPER".

3.4 Vertical Openings

3.4.1 Floor Openings

Floor openings are required to be enclosed in shafts in accordance with Section 3.3.1 of this report unless otherwise specified below (MUBC 713.4 & NFPA 101, 8.6).

3.4.2 Convenience Openings

The main lobby in the building includes a 2-story unenclosed vertical opening that connects the First and Second Floors. The opening is permitted as the following will be met (MUBC 712.1.9, NFPA 101, 8.6.8.2):

- Does not connect more than two adjacent stories.
- Is separated from corridors by a smoke partition.
- Is not concealed within the building construction.
- Is not serving as a required means of egress.
- Is separated from floor openings serving other levels.

3.5 Interior Finishes

3.5.1 Wall and Ceiling Finishes

Interior wall and ceiling finish ratings are classified in accordance with ASTM E 84 or UL 723 based on flame spread and smoke-developed indices (MUBC 803.1.2). Interior finish classifications are required to be in accordance with those specified in the following table based on the occupancy classifications (MUBC 803.11).

Occupancy Classification	Exit Enclosures	Corridors, Exit Access Stairways/Ramps	Rooms and Enclosed Spaces
A-3	B	B	B
R-2 / S-2	C	C	C
M	B	C	C

TABLE 7: INTERIOR WALL & CEILING FINISH REQUIREMENTS

3.5.2 Interior Floor Finish

Floor finishes and coverings of a traditional type, such as wood, vinyl, linoleum or terrazzo, and resilient floor covering materials that are not comprised of fibers are permitted throughout (MUBC 804.1 Exception). Other interior floor covering materials are required to comply with the requirements of the DOC FF-1 "pill test" (CPSC 16 CFR Part 1630) (MUBC 804.4.1).

3.6 Fire Protection Systems

3.6.1 Automatic Sprinkler Systems

An automatic sprinkler system designed in accordance with NFPA 13 is required throughout the building (MUBC 403.3; 903.2).

DRAFT

A secondary water supply is required for the building if the building is assigned Seismic Design Category C, D, E, or F (MUBC 403.3.3).

3.6.2 Standpipe Systems

A Class I standpipe system is required to be installed throughout the building in accordance with NFPA 14 as the floor level of the highest story is more than 30 feet above the lowest level of fire department vehicle access (MUBC 905.3.1(1)).

Class I standpipe hose connections are required to be provided in all of the following locations (MUBC 905.4):

- In every required stairway, hose connections are required to be located at an intermediate floor level between floors for every floor level above or below grade.
- In every exit passageway, at the entrance from the exit passageway to other areas of a building.
- On the roof of the building as the roof has a slope less than 33.3%.

3.6.3 Fire Pump Room

The fire pump room is required to be protected by 2-hour fire barriers and horizontal assemblies (MUBC 403.3.4 & 913.2.1).

The fire pump room is required to be located such that is accessible directly from the outside of the building or through a fire-rated corridor from an enclosed stairway or exterior exit. The enclosed passageway is required to have a fire-resistance rating not less than that of the fire pump room (NFPA 20, 4.13.2).

3.6.4 Fire Extinguishers

Portable fire extinguishers are required in all occupancies within the building and are required to be selected and installed in accordance with NFPA 10 (MUBC 906.1)

Fire extinguishers are required to be installed in locations designated by MUBC Section 906.

3.7 Emergency Systems

3.7.1 Fire Alarm and Detection Systems

The building is required to be provided with a fire alarm system throughout (MUBC 907.2). The fire alarm system is required to provided with emergency voice/alarm communication capabilities (MUBC 403.4.4).

An automatic smoke detection system is required to be installed in the following locations:

- At the fire alarm control unit(s) (NFPA 72, 10.4.4)
- In each mechanical equipment, electrical, transformer, telephone equipment, or similar room which is not provided with sprinkler protection (MUBC 907.2.13.1.1(1)).

- In each elevator machine room and in elevator lobbies (MUBC 907.2.13.1.1(2)).
- On each floor level at the entrance to smokeproof enclosures/pressurized stairs (MUBC 909.20.6).

Single- or multiple-station smoke alarms are required to be installed within the dwelling units in accordance with MUBC Section 907.2.11.2.

The building is required to be provided with carbon monoxide detection in accordance with the requirements of MUBC Section 908.7 and 915.2. The carbon monoxide detection is required to be installed in accordance with NFPA 720 (2009) (Rules of the State Fire Marshal and City of Portland Code of Ordinances Chapter 10 Article I (l)).

Duct smoke detectors complying with MUBC Section 907.3.1 are required to be installed in the following locations (MUBC 907.2.13.1.2):

- In the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than 2,000 cfm. Such detectors are required to be located in a serviceable area downstream of the last duct inlet.
- At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system. In Group R-2 occupancies, a smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm and serving not more than 10 air-inlet openings.

3.7.2 Fire Command Center

A fire command center complying with MUBC 911 is required in a location approved by the fire department (MUBC 403.4.5). The fire command center is required to be separated from the remainder of the building with 1-hour fire barriers (MUBC 911.1.2). The room is required to be a minimum of 200 square feet with a minimum dimension of 10 feet (MUBC 911.1.3). The fire command center is required to comply with NFPA 72 and contain the following features (MUBC 911.1.6):

- The emergency voice/alarm communication system control unit.
- The fire department communications system.
- Fire detection and alarm system annunciator.
- Annunciator unit visually indicating the location of the elevators and whether they are operational.
- Status indicators and controls for air distribution systems.
- Fire-fighter graphic control panel for smoke control systems installed in the building.
- Controls for unlocking stairway doors simultaneously.
- Sprinkler valve and waterflow detector display panels.
- Emergency and standby power status indicators.
- A telephone for fire department use with controlled access to the public telephone system.
- Fire pump status indicators.
- Schematic building plans indicating the typical floor plan, building core, means of egress, fire protection systems, fire-fighting equipment and fire department

access, and the location of fire walls, fire barriers, fire partitions, smoke barriers, and smoke partitions.
- An approved Building Identification Card.
- Work table.
- Generator supervision devices, manual start and transfer features.
- Elevator fire recall switch in accordance with the elevator code.
- Elevator emergency or standby power selector switch(es).
- Continuous monitoring of the fire service access elevator by a standard emergency service interface system meeting the requirements of NFPA 72 (MUBC 3007.6).
- Manual and override controls for smokeproof enclosure mechanical system(s) (MUBC 909.16).
- Storage unrelated to operation of the fire command center is not permitted.

3.7.3 Smoke Control System

Exit stairways serving high-rise floors are required to be designed as smokeproof enclosures designed in accordance with MUBC Sections 909.20 and 1023.11 (MUBC 403.5.4).

The smokeproof enclosures are required to be pressurized to a minimum of 0.10 inches of water and a maximum of 0.35 inches of water in the shaft relative to the building measured with all stairway doors closed under maximum anticipated conditions of stack effect and wind effect (MUBC 909.20.5).

The smokeproof enclosure ventilation systems are required to be independent of other building ventilation systems (MUBC 909.20.6.1). The equipment, control, wiring, power wiring, and ductwork is required to be designed and installed in accordance with MUBC Section 909.20.6.1. Where equipment, control wiring, power wiring, and ductwork are located inside of the building, they are required to be separated from adjacent building areas and other mechanical equipment by 2-hour fire barriers.

3.7.4 Post-Fire Smoke Removal System

To facilitate smoke removal in post-fire salvage and overhaul operations, the building is required to be provided with a natural or mechanical post-fire smoke removal system (MUBC 403.4.7).

3.7.5 Emergency Responder Radio Coverage

Emergency responder radio coverage is required to be provided in the building in accordance with MUBC Section 916.1 and IFC Section 510 (MUBC 403.4.5).

3.8 Standby/Emergency Power

Throughout the building, a standby/emergency power system is required to serve the following building features (MUBC 403.4.8.4; 2702.2):

Emergency

- Exit signage

- Means of egress illumination
- Fire alarm and detection systems
- Emergency voice/alarm communication systems
- Electrically powered fire pumps
- Elevator car lighting

Standby

- Smoke control system
- Emergency responder radio coverage
- Elevators required for accessible egress
- Power and lighting for the fire command center

3.9 Fire Department Access

3.9.1 Fire Apparatus Access Roads

A fire apparatus access road is required to be provided such that any portion of an exterior wall of the first story of the building is not more than 450 feet from the access road as measured by an approved route around the exterior of the building (NFPA 1, 18.2.3.2.2.1).

The fire apparatus access road is required to meet the following specifications:

- **Dimensions.** The access road is required to have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13'6" (NFPA 1, 18.2.3.4.1.1 & 18.2.3.4.1.2).
- **Surface.** The surface of the access road is required to be designed and maintained to support the imposed loads of fire apparatus and provide all-weather driving capabilities (NFPA 1, 18.2.3.4.2).
- **Turning Radius.** The required turning radius of the access road is to be specified by the AHJ (NFPA 1, 18.2.3.4.3).
- **Dead Ends.** Dead-end access roads in excess of 150 feet in length are required to be provided with an approved area for turning around fire apparatus (NFPA 1, 18.2.3.4.4).
- **Grade.** The grade of the access road is required to be within the limits established by the AHJ based on the fire department's apparatus (NFPA 1, 18.2.3.4.6.1).
- **Angles of Approach and Departure.** The angles of approach and departure for access roads shall not exceed 1 ft drop in 20 ft or the limits established by the AHJ based on the fire department's apparatus (NFPA 1, 18.2.3.4.6.2).
- **Markings.** Approved signs or other approved notices or markings including the word are to be provided where required by the AHJ (NFPA 1, 18.2.3.5).

3.10 Means of Egress

3.10.1 Occupant Load

DRAFT

The number of occupants is computed at the rate of one occupant per unit of area as prescribed in the following table (MUBC 1004.1.2; NFPA 101, 7.3.1.2). Program loads are not permitted to be used (MUBC 1004.1.2).

Function of Space	Occupant Load Factor (ft²/occupant)
Assembly – Tables & Chairs	15 net
Sales Area (on street floor)	30 gross
Exercise Rooms (with equipment)	50 gross
Residential	200 gross
Parking Garage	200 gross
Commercial Kitchens	200 gross
Storage & MEP	300 gross

TABLE 8: OCCUPANT LOAD FACTORS

3.10.2 Egress Capacity

The required egress capacity for any means of egress component is based on the capacity factors given in the following table (MUBC 1005.1; NFPA 101, 7.3.3.1):

Stairways (inches of width per person)	All Other Components (inches of width per person)
0.3	0.2

TABLE 9: EGRESS WIDTH FACTORS

3.10.3 Number of Exits

The number of exits required from every story cannot be less than that specified in the following table (MUBC 1006.3.1).

Occupant Load	Number of Exits Required
1 – 500	2
501 – 1,000	3
> 1,000	4

TABLE 10: MINIMUM NUMBER OF EXITS REQUIRED

A single exit is permitted to serve the penthouse. One stair is required to extend to the roof if elevator equipment that must be accessed for maintenance is present on the roof (MUBC 1011.12).

3.10.4 Exit Access

Two exits or exit access doorways are required to be provided from any space where the occupant load or common path of travel exceeds the value specified in Table 11 (MUBC 1006.2.1).

Occupancy	Occupant Load	Common Path of Travel
A-3, M	49	75
R-2	20	125

B	49	100
S-2	29	100

TABLE 11: SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

Where two exits or exit access doorways are required from any portion of the exit access, the exits or exit access doorways are required to be placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the building or area served (MUBC 1007.1.1(2)).

Two exit access doorways are required in boiler, incinerator, and furnace rooms where the area is over 500 square feet and any fuel-fired equipment exceeds 400,000 British thermal unit input capacity (MUBC 1006.2.2.1).

For these rooms, the exit doors are required to be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the room (MUBC 1006.2.2.1).

Interior exit stairways in high-rise buildings are required to be separated by a distance not less than 30 feet or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less (MUBC 403.5.1).

3.10.5 Exit Enclosures

Exit enclosures are not permitted to be used for any purpose other than means of egress (MUBC 1023.1).

Penetrations into and openings through an exit enclosure are prohibited except for required exit doors and equipment serving the stair (MUBC 1023.4).

Exit passageways must comply with MUBC Section 1024 and must not be used for any purpose other than as a means of egress. Exit passageways are utilized to achieve exterior discharge of an exit stair. Exit passageways are constructed as fire barriers, providing a fire resistance rating of not less that that required by the stair to which it is connected (MUBC 1024.3). Openings in an exit passageway are limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway (MUBC 1024.5). Penetrations into or through an exit passageway are prohibited except as specifically identified in MUBC Section 1024.6.

The exit passageway is required to be a smokeproof enclosure in accordance with Section 3.7.3 as there are openings into the exit passageway (MUBC 1023.11.1 Ex. 1).

3.10.6 Stairs

Stairs are required to have sufficient capacity to serve the calculated occupant load, with a minimum width of not less than 44 inches (MUBC 1011.2).

Stair risers heights are required to be a maximum of 7 inches and minimum of 4 inches. Tread depths are required to be 11 inches minimum (MUBC 1011.5.2).

Stair treads and risers are required to be uniform in size and shape (MUBC 1011.5.4). Open risers are not permitted (ADA 504.3).

3.10.7 Doors

Doors are required to be a minimum of 32 inches in clear width and are not permitted to have a swinging door leaf greater than 48 inches in nominal width (MUBC 1010.1.1).

Egress doors are required to be of the pivoted or side-swinging type (MUBC 1010.1.2), unless within a single dwelling unit. Doors are required to swing in the direction of egress travel where serving an occupant load of 50 or more persons (MUBC 1010.1.2.1).

The distance between two doors in series is required to be 48 inches minimum plus the width of a door swinging into the space. Doors in series are required to swing either in the same direction or away from the space between the doors. The distance between horizontal sliding doors is not permitted to be less than be 48 inches (MUBC 1010.1.8).

Stairway doors other than the exit discharge door are permitted to be locked from the stairway side, provided they are capable of being unlocked simultaneously, without unlatching, upon a signal from the fire command center where the fire command center is continuously staffed during any occupancy, or upon power failure. Where the fire command center is not continuously staffed during occupancy, the stairways doors are required to unlock upon activation of the building fire alarm system or upon power failure (MUBC 403.5.3).

Doors serving rooms or spaces with an occupant load of 50 or more in a Group A occupancy are not permitted to be provided with a lock or latch unless it is panic or fire exit hardware (MUBC 1010.1.10.1).

3.10.8 Travel Distances

Exit access travel distances must not exceed the maximum values specified in Table 12 (MUBC 1017; NFPA 101, 7.6).

Occupancy	Maximum Exit Access Travel Distance
A-3	250 feet
B	300 feet
R-2	325 feet
M	250 feet
S-2	400 feet

TABLE 12: EXIT ACCESS TRAVEL DISTANCES

3.10.9 Corridors

Corridors serving group R-2 occupancies are required to have a ½-hour rating. Corridors serving other occupancies are permitted to be nonrated unless they serve as required exits from Group R spaces (MUBC 1020.1).

Corridor width is required to comply with Table 13 (MUBC 1020.2):

Occupancy	Maximum Exit Access Travel Distance
Access to and utilization of MEP equipment	24 inches
With a required occupancy capacity < 50 people	36 inches
Within dwelling units	36 inches
Any areas not listed above	44 inches

TABLE 13: MINIMUM CORRIDOR WIDTH

Where more than one exit or exit access doorway is required, the exit access is required to be arranged such that dead ends in the corridors do not exceed the maximum allowable distances specified in Table 14 (MUBC 1020.4).

Occupancy	Maximum Dead End Distance
A	20 feet
R-2, M, and B	50 feet
S-2	50 feet

TABLE 14: MAXIMUM DEAD END DISTANCES

3.10.10 Exit Discharge

Exits are required to discharge directly to the exterior, except where permitted below (MUBC 1028.1).

A maximum of 50 percent of the number and capacity of exit enclosures are permitted to egress through either (1) areas on the level of exit discharge or (2) a vestibule (MUBC 1028.1). The combined use of these two exceptions is not permitted to exceed 50 percent to the number and capacity of the required exits.

Where exit enclosures egress through areas on the level of exit discharge, the following are required to be met (MUBC 1028.1(1); NFPA 101, 7.7.2):

- Occupants are provided with a free and unobstructed path of travel to an exterior egress door and such exits are readily visible and identifiable from the point of termination of the exit enclosure;
- The entire area of the level of exit discharge is separated from areas below by construction having a fire rating equivalent to the exit enclosure served (not applicable as no areas below); and
- All portions of the egress path are sprinkler protected.

3.10.11 Exit Signage

Exit and exit access doors are required to be marked by approved exit signs readily visible from any direction of egress travel (MUBC 1013.1). The path of egress travel to exits and within exits are required to be marked by readily visible exit signs to clearly indicate the direction of egress travel where the exit or path of travel is not immediately visible. Exit signs within corridors and exit passageways are required to be placed such that no point is more than 100 feet or the listed viewing distance for the

sign, whichever is less, from the nearest visible exit sign. Exit signs are not required in the following locations:

- In rooms or areas that require only one exit or means of exit access.
- Main exterior exit doors that are obviously and clearly identifiable as exits where approved by the building official.

3.10.12 Luminous Egress Markings

Approved luminous egress path marking are required to be provided in exit enclosures, including vertical exit enclosures and exit passageways, in accordance with MBC 1025.2.1 through 1025.2.6 (MUBC 403.5.5). Locations include steps, landings, handrails, perimeter demarcation lines, obstacles, and doors within the exit path.

3.10.13 Egress Illumination

The means of egress, including the exit discharge, are required to be illuminated at all times the building served by the means of egress is occupied (MUBC 1008.1). The illumination level is not permitted to be less than 1 footcandle at the walking surface (MUBC 1008.2)

In the event of power supply failure, an emergency electrical system is required to automatically illuminate all of the following areas (MUBC 1008.3):

- Aisles in rooms and spaces that require two or more means of egress.
- Corridors, exit enclosures, and exit passageways.
- Exterior egress components at other than the level of exit discharge until exit discharge is accomplished.
- Interior exit discharge elements.
- Exterior landings for exit discharge doorways.
- Electrical equipment rooms.
- Fire Pump rooms.
- Generator rooms.
- Public restrooms greater than 300 ft^2.

The emergency power system is required to provide power for a duration of not less than 90 minutes and is required to consist of storage batteries, unit equipment, or an on-site generator (MUBC 1008.3.4). The initial illumination is required to be an average of 1 footcandle and a minimum at any point of 0.1 footcandle measured along the path of egress at the floor level. Illumination levels are permitted to decline to 0.6 footcandle average and a minimum of 0.06 footcandle at the end of the emergency lighting time duration (MUBC 1008.3.5).

3.10.14 Accessible Means of Egress

Accessible means of egress are required to be provided from all accessible spaces within the building. Where more than one means of egress is required from any accessible space, the space is required to be served by not less than two accessible means of egress (MUBC 1009.1).

Not less than one of the accessible means of egress is required to an elevator (MUBC 1009.4). The elevator is required to be provided with standby power and comply with the emergency operation and signaling device requirements of the MUBC.

A two-way communication system is required to be provided at the elevator landing on each accessible floor that is one or more stories above the level of exit discharge (MUBC 1009.8).

Exit stairways will serve as the other accessible means of egress from the stories located above or below the level of exit discharge. The stairs are not required to have 48" between handrails, nor are they required to be accessed from an area of refuge in order to be considered as an accessible means of egress since the building will be fully sprinkler protected (MUBC 1009.3(2&4)).

3.11 Accessibility

3.11.1 General

The building is subject to compliance with the Fair Housing Act, the 2010 ADA Standards, and ICC A117.1 (MUBC 1101.2).

At least 2% of the dwelling units are required to be Type A units. The Type A units are required to be dispersed among the various classes of units (MUBC 1107.6.2.2.1). All other units are required to be Type B units, unless qualifying for one of the reductions in MUBC Section 1107 (MUBC 1107.6.2.2.2).

Specific requirements regarding the units are located in ICC A117.1 Sections 1003 and 1004.

3.12 Plumbing Fixtures

3.12.1 Required Number

When calculating the required number of plumbing fixtures, it is appropriate to assume that 50% of the building population is male and 50% is female, calculated by the total occupant load (UPC 422.1). The appropriate number of fixtures need to be provided based on the following factors and occupancies present (UPC 422.1). Where multiple occupants are present, the fractional numbers shall be summed and then rounded to the next whole number.

DRAFT

Use	Toilets		Urinals	Lavatories		Drinking Fountain	Service Sink
	F	M		F	M		
Assembly	1: 1-25 2: 26-50 3: 51-100 4: 101-200	1: 1-100 2: 101-200	1: 1-100 2: 101-200	1: 1-100 2: 101-200	1: 1-200	1: 1-250 2: 251-500	1 service sink or laundry tray
Mercantile[4]	1: 1-100	1: 1-100	0: 1-200	1: 1-200	1: 1-200	1: 1-250	
Storage	1: 1-100	1: 1-100	-	1: 1-200	1: 1-200	1: 1-250	
Residential	1 water closet, lavatory, and bathtub/shower fixture per apartment. 1 kitchen sink per apartment 1 laundry tray or 1 automatic clothes washer connection per unit or 1 automatic clothes washer connection for each 12 units						

TABLE 15: PLUMBING FIXTURE FACTORS

Where separate facilities are required, and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities are permitted to replace the required separate toilet facilities (UPC 422.2.1).

DRAFT

[4] Where a total occupant load is 50 or less for a mercantile occupancy, one toilet facility, designed for use by no more than one person at a time, shall per permitted for use by both sexes (UPC 422.2 ex. 3)

Section P:
Utilities

Utilities

The proposed project will include installation of multiple utility services to the new building. Please refer to the Utility Plan – 1 (Sheet C-20), Utility Plan – 2 (Sheet C-21) & Grading Plan (Sheet C-30) for additional information.

Water:

It is proposed to tap an 8" ductile iron sprinkler service line off the new 12" ductile iron main within Federal Street. Additionally, a 6" ductile iron domestic line is proposed to be tapped off the main with a separate 1" domestic service for the ground level retail.

Sewer:

Two 12" PVC laterals are proposed to drain via gravity to the combined main within Federal Street.

Stormwater:

The proposed measures to handle runoff include a series of foundation drains, roof leaders and catch basins. These networks will connect to a separated 6" & 12" PVC storm drain line that connect to the existing 24" combined main within Federal Street..

UGE/T/C:

The abutting buildings on site are currently serviced by underground electric. An additional service is proposed to be routed underground from the existing underground service in Federal Street.

Gas:

The existing gas service line to an abutting building on site is expected to be rerouted. It is proposed to install a new tap for the proposed building off the existing 4" main in Federal Street.

Ability to serve letters were sent out to the respective utility companies on October 18, 2019 in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Responses that have been received from the utility companies can be found attached to this section.

ACORN ENGINEERING, INC.

Charter Communications
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

November 8, 2019

Subject: 200 Federal Street Redevelopment
Re: Ability to Serve

Mr. Pelletier:

On behalf of Redfern Downtown, LLC, we are pleased to submit the following request for Charter Communications' ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 260 residential units comprised of roughly 133 residential studio units, 125 one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,000± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

We anticipate new electrical network transformers and other additional infrastructure to be installed as part of the project.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Temple Street.
2. Any easements for services currently crossing the proposed development.
3. Alternative connection locations from the property to the existing communication system.
4. Charter's proposed infrastructure improvements within the project vicinity.
5. Charter's ability to serve the project.

I have attached an existing ALTA/NSPS Land Title Survey created by Owen Haskell, Inc to facilitate your review, as well as a proposed preliminary utility plan developed by our office. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.

Faith Thomas

From: Read, Scott H <Scott.Read@charter.com>
Sent: Friday, November 8, 2019 3:57 PM
To: Faith Thomas; William Savage
Cc: Pelletier, Mark
Subject: RE: Ability to Serve - Confidential

Hi Faith-

This proposed project will indeed be within Charter/Spectrum's service area but before we can serve it the owner/developer would need to do paperwork with our Community Solutions team. Who can we put them in touch with?

Thanks,
Scott

From: Pelletier, Mark
Sent: Friday, November 8, 2019 3:39 PM
To: Read, Scott H <Scott.Read@charter.com>
Subject: FW: Ability to Serve - Confidential

FYI

Mark Pelletier
Construction Coordinator III, Northern New England
118 Johnson Rd Portland ME 04102
207-253-2324
Mark.pelletier@charter.com

From: Faith Thomas [mailto:fthomas@acorn-engineering.com]
Sent: Friday, November 8, 2019 2:22 PM
To: Pelletier, Mark <Mark.Pelletier@charter.com>
Cc: William Savage <wsavage@acorn-engineering.com>
Subject: Ability to Serve - Confidential

Afternoon Mark,

We're reaching out for an Ability to Serve notice for a parcel located at 200 Federal Street in Portland. The attached document includes a project narrative as well as an existing conditions plan & conceptual utility plan.

None of the proposed work has been announced publicly and is confidential at this time.

We look forward to hearing back from you.

Thanks & have a great weekend,

Faith Thomas, EI
Project Engineer

Licensed in Maine

Acorn Engineering, Inc
PO Box 3372
Portland, Maine 04104
B. 207.775.2655 C. 413.770.9524
Website | Instagram | LinkedIn

This electronic communication, which includes any files or attachments thereto, contains proprietary or confidential information and may be privileged and otherwise protected under copyright or other applicable intellectual property laws. All information contained in this electronic communication is solely for the use of the individual(s) or entity to which it was addressed. If you are not the intended recipient(s), you are hereby notified that distributing, copying, or in any way disclosing any of the information in this e-mail is strictly prohibited. If you have received this e-mail in error, please notify the sender immediately, and destroy the communication and any files or attachments in their entirety, whether in electronic or hard copy format. Since data stored on electronic media can deteriorate, be translated or modified, Acorn Engineering, Inc., and/or affiliates will not be liable for the completeness, correctness or readability of the electronic data. The electronic data should be verified against the hard copy.

The contents of this e-mail message and any attachments are intended solely for the addressee(s) and may contain confidential and/or legally privileged information. If you are not the intended recipient of this message or if this message has been addressed to you in error, please immediately alert the sender by reply e-mail and then delete this message and any attachments. If you are not the intended recipient, you are notified that any use, dissemination, distribution, copying, or storage of this message or any attachment is strictly prohibited.

A C O R N
ENGINEERING, INC.

Central Maine Power Company
Attn: Mr. Jamie Cough
162 Canco Road
Portland, Maine
04103

November 8, 2019

Subject: 40 Free Street Development
Re: Ability to Serve

Mr. Cough:

On behalf of Redfern Downtown, LLC, we are pleased to submit the following request for Charter Communications' ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 260 residential units comprised of roughly 133 residential studio units, 125 one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,000± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

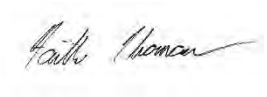
It is proposed to install of transformer vault(s), secondary vaults and duct banks to connect to CMP's primary and secondary grids on the existing in-town network.

The developer plans to serve the proposed building with a 3-phase electric service. On behalf of the client we are requesting the following information:

1. Any additional information, such as additional utility mapping confirming single and three-phase power locations within Federal Street, Temple Street, Congress Street and Exchange Street.
2. Any easements for underground services currently crossing the proposed development.
3. Alternative connection locations from the development to the existing system.
4. CMP's proposed infrastructure improvements within the project vicinity.
5. CMP's ability to serve the project.
6. Any input on the proposed location of the transformer and offsets, including offsets from adjacent buildings and windows, as well as transformer and pad sizes. If required, other options such as in-ground mounting within the sidewalk location may be explored.
7. Whether CMP allows for secondary distribution line to be run within the basement of the facility, up support columns, and/or within ceiling conduit.
8. Access requirements to the CMP meters.
9. Metering options to reduce the necessary wall space.

I have attached a boundary survey and a preliminary utility plan to facilitate your review. Electrical loading computations and final metering will be performed by the electrical engineer, at a later date. Please let me know if you have any further questions.

Sincerely,



Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.

Faith Thomas

From: Cough, Jamie <Jamie.Cough@cmpco.com>
Sent: Friday, November 15, 2019 7:52 AM
To: Faith Thomas
Subject: CMP Ability to Serve Request and Three Phase Service Process 210 Federal St Portland
Attachments: Easement_Information_Worksheet.doc; Standard Easement Sample.pdf; Draft April 2019 EDET.XLSX

Categories: Red category

11/15/2019

Faith Thomas, EI
Project Engineer
Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104

RE: **CMP Ability to Serve Request and Three Phase Service Process 210 Federal St Portland**
Request for Ability to Serve Letter

SAP Notification Permanent is TBD (please set this up asap)

Project Description:

The project is located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 260 residential units comprised of roughly 133 residential studio units, 125 one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,000± square foot retail space.

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Handbook of Standard Requirements. If you have any questions on the process, or need help in completion of the documents, **please contact me at 207-629-1489.**

Here is our typical process for getting your three phase or CT rated single phase service installed. If you have any questions, please let me know. The underlined links will redirect you to the appropriate site for additional information. If this is a single phase service with all self-contained metering, the process is simplified, but still begins with a call to CMP.

Service Milestones for Three Phase Services and CT Rated Single Phase Services. Please refer to CMP Installation Checklists for other installations.

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

- Call 1-800-565-3181 to establish a new account (if needed) and an SAP work order. Please provide both of these to me.
- Submit Load information. Please complete the attached EDET (excel file) using load information. . Please complete this and email back to me.
- Submit the easement information worksheet. Please complete this form and either email or fax back to me.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
- Preliminary meetings with CMP Advisor and Engineer to determine details of job (I will need to schedule with your electrician/contractor-please let me know who this is)
- Field planner design appointment to cost out job and develop CMP Invoice. The invoice is typically generated 5-6 weeks after the design appointment. This expires after 90 days from the invoice date.
- CMP submits invoice to the customer for payment (typically via email). Payment received from customer.
- Easements (based on easement information worksheet) sent out, signed and originals returned to CMP.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer or materials delivery, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

Please complete the attached forms (the specific instructions are on each form) and email them back to me at your earliest convenience.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements: CMP Handbook of Standard Requirements

You will be responsible for installing the customer connections, conduits, and metering in accordance with the CMP Handbook of Standard Requirements. The transformer will be sized based on your submitted load sheets.

Your deposit amount will be typically based on an estimated two month bill, calculated from your completed load sheet unless otherwise determined by CMP.

Metering:

All metering (including locations) must be preapproved by CMP.

Chapter 324 Interconnections:

Please be advised that if you plan to install solar/wind/hydro generation, you must complete an application under the MPUC mandated Chapter 324 Interconnection Standards. If you go to Chapter 324 Interconnection Standards and follow the instructions for the Small Generator Interconnection Procedures, CMP can do this work in parallel to your service request that will be handled by me. If you project is under 660 KW You will be able to have a Customer Net Energy Billing contract. Information concerning Customer Net Energy Billing can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing

Reallocation/Line Extensions:

Recently, changes were made to the three-phase construction policy, which require CMP to reallocate construction costs paid by customers. If applicable, those projects identified as “developments” do not qualify for reallocation of funds. Please see this document at our website for details about the reallocation conditions. Any reallocation charges will be specifically denoted on your invoice. The website address for this is: PolyphaseLineExtension .

This document was created by an application that isn’t licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

This line extension will be part of Central Maine Power's distribution system. In the event the property served under this Agreement is sold or otherwise conveyed, all rights and obligations of the Agreement shall stay with the property. Please note that if you rent or lease this property to another and you want to receive the reimbursement payments, you must make special arrangements with the Central Maine Power Company. Otherwise, any reimbursement payments will be sent to the "Customer" taking service at the service location.

Electricity Supplier Information:

Central Maine Power Company (CMP) will provide your facility with electric delivery service. If you don't already have a provider, you will need to make arrangements with a competitive electricity provider in order to receive electricity supply for your facility. In the event you fail to choose a competitive electricity provider, you will receive Standard Offer service arranged by the Maine Public Utilities Commission. If you wish to be served by a competitive electricity provider immediately upon establishment of delivery service, you must arrange for this service directly through your chosen competitive electricity provider, who must enroll your account no later than 5 PM on the business day prior initiation of delivery service by CMP. An up-to-date list of competitive suppliers can be found at the:

1) Maine Public Utilities Commission (MPUC) web site- **Maine PUC**
2) By calling the MPUC at (207) 287-3831

Attachments:

Excel Load Sheet (EDET)
Easement Worksheet and Sample Standard Easement

Regards,

Jamie

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-629-1489 office

CENTRAL MAINE POWER

==========

Please consider the environment before printing this email.

If you have received this message in error, please notify the sender and immediately delete this message and any attachment hereto and/or copy hereof, as such message contains confidential information intended solely for the individual or entity to whom it is addressed. The use or disclosure of such information to third parties is prohibited by law and may give rise to civil or criminal liability.

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

The views presented in this message are solely those of the author(s) and do not necessarily represent the opinion of Avangrid Networks, Inc. or any company of its group. Neither Avangrid Networks, Inc. nor any company of its group guarantees the integrity, security or proper receipt of this message. Likewise, neither Avangrid Networks, Inc. nor any company of its group accepts any liability whatsoever for any possible damages arising from, or in connection with, data interception, software viruses or manipulation by third parties.

==========

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

ACORN ENGINEERING, INC.

Consolidated Communications
Attn: Mr. Patrick Morrison
5 Davis Farm Road
Portland, Maine 04103

November 8, 2019

Subject: 200 Federal Street Redevelopment
Re: Ability to Serve

Mr. Morrison:

On behalf of Redfern Downtown, LLC, we are pleased to submit the following request for Consolidated Communications' ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 260 residential units comprised of roughly 133 residential studio units, 125 one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,000± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

We anticipate new electrical network transformers and other additional infrastructure to be installed as part of the project.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Temple Street.
2. Any easements for services currently crossing the proposed development.
3. Alternative connection locations from the property to the existing communication system.
4. Consolidated's proposed infrastructure improvements within the project vicinity.
5. Consolidated's ability to serve the project.

I have attached an existing ALTA/NSPS Land Title Survey created by Owen Haskell, Inc to facilitate your review, as well as a proposed preliminary utility plan developed by our office. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Department of Public Works
Attn: Brad Roland
212 Canco Road
Portland, Maine 04103

November 8, 2019

Subject: 200 Federal Street Redevelopment
Re: Ability to Serve

Brad:

On behalf of Redfern Downtown, LLC, we are pleased to submit the following request for Portland Department of Public Work's ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 260 residential units comprised of roughly 133 residential studio units, 125 one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,000± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

There is currently no known sewer infrastructure on site. It is proposed to tap a 12" sanitary service line off the 24" main within Federal Street to the proposed building. The project team is working with Bala Consulting Engineers on the Mechanical, Electrical, Plumbing and Fire Protection for the proposed development.

Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules and architectural plans to date, the structure will be comprised of 133 studio units, 125 one-bedroom units and 2 two-bedroom units; in addition, a 2,000± square foot retail space, fitness room and office. As a result, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Parking Lot	N/A	N/A	0	0
Total Gallons per Day (Existing)				**0**
Proposed Flow				
Residential Units	Studio	133	120	15,960

Residential Units	1-Bedroom	125	120	15,000
Residential Units	2-Bedroom	2	210	420
Retail	4-Employees	1	325+4*12	373
Office	2 Employees	1	12*2	24
Total Gallons per Day (Proposed)				31,777
Net Change				**+31,777 GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWTAER DISPOSAL RULES, most recent edition				

The proposed project is anticipated to increase the net flow by approximately 31,777 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. Additionally, the number of bedrooms per unit may change later in the design process. We will provide any changes to the anticipated sewage demand.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Federal Street, Temple Street & Exchange Street and confirmation of the location and size of the services to the existing property and the size and material of the main within Federal Street, Temple Street & Exchange Street.
2. DPW's proposed infrastructure improvements within the project vicinity.
3. DPW's ability to serve the project.
4. Any project related offsite sewer main improvements.

I have attached an existing ALTA/NSPS Land Title Survey created by Owen Haskell, Inc to facilitate your review, as well as a proposed preliminary utility plan developed by our office. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.

ACORN ENGINEERING, INC.

Portland Water District
Attn: MEANS Department
225 Douglass Street
Portland, Maine 04104

October 18, 2019

Subject: 200 Federal Street Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Portland Water District's ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 124 residential studio units, 125 one-bedroom units and 2 two-bedroom units, with associated common areas, office and fitness facility. The street level will include a 2,065± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

There is currently no known water infrastructure on site. It is proposed to tap an 8" fire water service line off the water main within either Federal Street or Temple Street to the proposed building. A separate 6" domestic service will serve the apartments with a 1" child connection for domestic service to the ground level retail. The domestic water system will include backflow prevention and a triplex booster pump system at the base of the building to provide adequate system pressure throughout the building. The fire protection system will include backflow prevention and an electric fire pump with generator back-up power. The project team is working with Bala Consulting Engineers on the Mechanical, Electrical, Plumbing and Fire Protection for the proposed development.

Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules and architectural plans to date, the structure will be comprised of 124 studio units, 125 one-bedroom units and 2 two-bedroom units; in addition, a 2,065± square foot retail space, fitness room and office. As a result, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Parking Lot	N/A	N/A	0	0
Total Gallons per Day (Existing)				**0**

Proposed Flow				
Residential Units	Studio	124	120	14,880
Residential Units	1-Bedroom	125	120	15,000
Residential Units	2-Bedroom	2	210	420
Retail	4-Employees	1	325+4*12	373
Office	2 Employees	1	12*2	24
Total Gallons per Day (Proposed)				30,697
Net Change				**+30,697 GPD**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWTAER DISPOSAL RULES, most recent edition				

The proposed project is anticipated to increase the net flow by approximately 30,697 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. Additionally, the number of bedrooms per unit may change later in the design process. We will provide any changes to the anticipated water demand.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within Federal Street, Temple Street & Exchange Street and confirmation of the location and size of the services to the existing property and the size and material of the water main within Federal Street, Temple Street & Exchange Street.
2. PWD's proposed infrastructure improvements within the project vicinity.
3. Flow data for adjacent hydrants.
4. PWD's ability to serve the project.
5. Any project related offsite water main improvements.

I have attached an existing ALTA/NSPS Land Title Survey created by Owen Haskell, Inc to facilitate your review. A proposed preliminary utility plan is currently being developed by our office and will be distributed once the existing conditions survey is complete. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Faith Thomas, E.I.
Project Engineer
Acorn Engineering, Inc.

A C O R N
ENGINEERING, INC.

Unitil Service Corp.
Attn: Bridget Harmon
376 Riverside Industrial Parkway
Portland, Maine 04103

October 18, 2019

Subject: 200 Federal Street Redevelopment
Re: Ability to Serve

Dear Ms. Harmon:

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Unitil's ability to serve at a proposed mixed-use development located at 200 Federal Street within the B3 Downtown Business in Portland, Maine. The lot will be redeveloped into an eighteen-story mixed-use building with 124 residential studio units, 125 one-bedroom units and 2 two-bedroom units. The street level will include a 2,065± square foot retail space. The site currently serves as a surface parking lot with various landscaping and impervious open space features.

We are not aware of any existing gas services to the property. It is proposed to route a service from either Federal Street or Temple Street to the proposed building. The project may include a water source heat pump with gas boilers, gas hot water heaters and a separate service to the ground level retail. The project team is working with Bala Consulting Engineers on the Mechanical, Electrical, Plumbing and Fire Protection for the proposed development.

On behalf of the client, we are requesting the following information:
1. Any additional gas lines within Federal Street, Temple Street & Exchange Street.
2. A confirmation of an existing gas main within Federal Street, as well as the size and pressure of any gas mains in the vicinity.
3. Unitil's proposed infrastructure improvements within the project vicinity.
4. Unitil's ability to serve the project.
5. Any project related offsite main improvements.

I have attached an existing ALTA/NSPS Land Title Survey created by Owen Haskell, Inc to facilitate your review. A proposed preliminary utility plan is currently being developed by our office and will be distributed once the existing conditions survey is complete. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Faith Thomas, E.I.
Project Engineer - Acorn Engineering, Inc.

October 21, 2019

Acorn Engineering, Inc.
Attn: Faith Thomas E.I.
PO Box 3372 Portland Maine 04101

Re: 200 Federal Street Development

Dear Ms. Thomas:

Thank you for your interest in using natural gas for the above referenced project.

This is to confirm that natural gas can be made available from our distribution system to serve your proposed project.

Any improvements to the existing distribution system necessary to provide this service, as well as the design of the gas system in the project itself will be established as the overall design and scope of your project progresses. Please provide gas load requirements in order for the evaluation to be completed.

If you have any further questions or require additional information, please contact me at 207-541-2536 or email at harmon@unitil.com.

Sincerely,

Bridget L. Harmon

Business Development
Unitil Corporation
harmon@unitil.com
(O) 207-541-2536

Section Q:
Construction Management Plan

Construction Management Plan

Project Address: 200 Federal Street

Project Description:

The proposed project includes the redevelopment of a portion of an existing lot into an 18-story, predominantly residential building with ground level retail, enclosed & surface parking.

Project Team Summary:

Owner/Applicant:	Redfern Downtown LLC
Owner's Representative:	Cordjia Capital Projects Group
General Contractor:	TBD
Civil Engineer:	Acorn Engineering, Inc.
Architect:	Ryan Senatore Architecture
Structural Engineer:	Structural Integrity

The Owner/GC and all subcontractors will work with the City of Portland and adjacent landowners to minimize any project impacts.

The GC will remain responsible for enforcement of all compliance with 1) all contract plans and specifications in their scope of work and 2) all site working conditions and safety requirements, day and night, for both persons and property, in each case for the duration of their work. These include OSHA, NIOSH, U.S. EPA, local ordinance and any other applicable governmental regulations. Both the Owner/GC and any subcontractors will remain responsible for safeguarding the general public.

The GC shall review all permits and conditions associated with the project. Refer to the Civil/Site Plan Set, Sheet C-03 Construction Management Plan for visual representation of the measures to be taken during construction.

The following outline has been developed in accordance with the City of Portland Construction Management Plan General Template and shall be referenced by the GC during construction.

A. Construction Management Principles

The control of noise, vibrations, ground movement, truck traffic, and other construction related factors will be of utmost importance. Care shall be taken to minimize these effects in the best interest of neighbors and the general public. GC to ensure that work hours conform to the City of Portland's Ordinance.

B. Development Review of Construction Management Plan

Logistics and safety program shall be submitted at or prior to the preconstruction meeting by the GC with all pertinent information required by the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Guarantees and fees will be paid at the time of the respective application. Sections 14-530 and 13-532 will be complied with all necessary permits will be obtained prior to work.

1. Street Opening and Street Occupancy Permits:

   Required permits regarding street opening and occupancy will be obtained from the Department of Public Works. The requests shall conform to the approved Construction Management Plan.

2. Blasting:

   Although not anticipated, if blasting occurs, it shall conform to Article VIII. In Chapter 14 of the City Code and Section 3.7 in the City's Technical Manual.

3. Building Code:

   Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

The Contractor will work closely with adjacent abutters, businesses, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Communication in order to comply with all agreements, ordinances, and special permits will be of the utmost importance. Contractor contact information shall be posted on a sign on the construction fence along the Federal Street & Temple Street frontage. Additional signage necessary for communication shall be provided, but will be temporary and removed upon completion of the project. The contract information for the project personnel is:

Blaine Buck, Owner's Representative
(207) 236-9970

GC and Subcontractor information will be posted along the Federal Street & Temple Street frontages once contracted.

E. Construction Schedule

The GC shall submit a construction timeline at or prior to the preconstruction meeting. Construction may occur during the daytime hours as defined in Section 17-18 of the Construction Activities for Building permit and City Code Section 25-129, Noise, dust and debris. Between September 1 and May 31, the following year, no person shall engage in construction activities generating noise exceeding 50 decibels, between the hours of 7 pm and 7 am of the following day within 500 feet of any buildings. From June 1 to August 31, construction activity may continue until 8 pm. No construction activity shall begin before 8 am on a Saturday, Sunday, or legal holiday. Extended hours or night work may be requested for special circumstances and street utility work if needed. These requests will be subject to approval by the Public Works Authority.

Due to the limited space within the project parcel, deliveries will need to be stored in an alternate location or deliveries must be small enough to fit within the property. Deliveries will be scheduled between 7 am and 5 pm.

The estimated timeframe of the proposed project is outlined below:

Project Start Date:	Summer 2021
Project End Date:	Spring 2023

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City.

F. Security

1. The Construction Management Plan, Sheet C-03, depicts proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.

2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*

3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security
    - Installation of new fire protection systems as construction progresses
    - Preservation of existing systems during demolition
    - Organization and training of an on-site fire brigade
    - Development of a pre-fire plan with the local fire department
    - Rapid communication
    - Consideration of special hazards resulting from previous occupancies
    - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.

4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.

5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

   Construction activity in the public right-of-way shall be compliant with Chapter 25 Article VII of the City Code. At no time will it be permissible for construction activity including delivery vehicle to close or block streets or affect public safety access without

prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater

   Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual. This will apply to the new connections within Federal Street & Temple Street.

3. Traffic Control Plans

   Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. The contractor shall submit a satisfactory "Maintenance of Traffic" (MOT) plan prior to any street opening permit approval. This document shall contain all pertinent information from the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

   The MOT will address the work required for utility connections in Federal Street & Temple Street. Traffic will be channelized utilizing drums and cones. Proper signage will be installed prior to the through work zone. Alternating traffic will be controlled with flaggers. Trenches will be patched with pavement daily.

   The MOT plan shall provide for the safe passage of the public through or along the construction work zone. It may be permissible to close a portion of Federal Street & Temple Street during utility connections and/or detour a mode of traffic when absolutely necessary for safety. All requests shall be subject to City approval. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic.
   - Traffic Control signs shall not be placed where they would create any obstructions to bicycles or pedestrians.
   - Flaggers will be utilized when necessary.

   All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning and laying out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

   - Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready

for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

Use of public parking spaces on Federal Street & Temple Street shall not be permissible. The blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately and its removal shall comply with all local, state, and federal regulations.

2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.

3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.

4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.

5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.

6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:

    a. Snow/ice removal or commence automatically from 1" or greater of snow or ice
    b. Remove snow as needed within the work zone, including parking spaces. Driveways and site lines shall not be blocked by piles of snow.
    c. Clear all walks and ramps within the work zone
    d. Sand or salt as needed
    e. Clear all basin or drainage to help snow melt
    f. The above steps shall be carried out Sunday-Saturday including holidays.

I. Erosion & Sedimentation Control

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved Construction Management Plan, C-03, and the approved erosion and sedimentation control report, prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after storm events (0.5" or more in 24 hours). Additionally, temporary or permanent stormwater management systems shall be inspected and maintained to ensure working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the

City, Maine Department of Environmental Protection (MDEP) or the U.S. Environmental Protection Agency (EPA) upon request.

2. Due to the existing sparse landscaping on site, no protection during construction will be necessary.

3. Stored materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for the location of material staging areas, the location of on-site temporary construction trailers, the location of on-site truck delivery holding areas, the location of on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.

2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.

3. All deliveries for materials shall comply with the City's noise requirements.

K. Parking During Construction

1. Adequate parking for construction workers shall be provided along Federal Street & Temple Street or arrangements for off-street parking at an off-site location shall be provided.

2. Truck Routes and Volumes: The following quantities are estimated as part of the reconstruction:

    - Gravel & Stone – 7,000 CF. Earthwork subcontractor(s) pit to project site.
    - Hot Mix Asphalt – 2 tons. Paving subcontractor(s) pit to project site.

L. Dewatering Plans

1. A basic dewatering plan for any construction work is required and shall be submitted by the Contractor. The plan must cover construction sites where groundwater is not expected but the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including filters, erosion and sediment control measures, or other methods of removing sediment from approved discharges.

2. For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared by the Contractor and approved by the Department

of Public Works. Groundwater and/or soil testing may be required to determine course of action if treatment is necessary. Approval for all discharges to City infrastructure is required. The proposed plan must address the following:

- Project duration, discharge location, storage equipment on-site, dewatering schematic, and emergency contact.
- General requirements include trained staff on-site for all approve discharges and required site log for documentation of all discharges.
- Storage and/or treatment process should include proper settling time and maintain proper use of filtering medium as required.
- Contingency/maintenance plan for all dewatering equipment devices and filtration mediums.

Any water that is removed from an excavation must be pumped from a perforated device buried in crushed stone prior to discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

M. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

Section S:
Traffic & Parking Analysis

200 Federal Street

Transportation Demand Management (TDM) Plan

September 3, 2020

Summary

Redfern Properties provides this Transportation Demand Management (TDM) Plan for 200 Federal Street, located at the corner of Federal and Temple Streets in the B3 zone of Downtown Portland. The proposal is for an 18-story mixed-use building, primarily for 266 residential apartments, with one first floor retail use, and incorporation of existing U.S. Post Office visitor parking.

This is a key opportunity for urban infill redevelopment, new housing for downtown workers, and alternate transportation or reverse commuting for residents. The 200 Federal Street TDM Plan intends to reduce parking demand and drive-alone vehicle trips to and from the site and benefit the local transportation system through marketing the housing to downtown employees, providing leases exclusive of parking and on-site and near-site amenities, and offering strong support of transportation alternatives such as walking, bicycling and public transportation.

The plan sets the following TDM targets for 3 years after 200 Federal Street is fully occupied:

- *5% reduction in peak hour resident vehicle trips and parking demand for the site*
- *65% resident multimodal rate*

These targets will need to be reassessed after the first full year of occupancy of all tenant spaces.

COVID-19 NOTE: Site occupancy is forecast for Spring or Fall 2023 and with an anticipated vaccine for the COVID-19 virus available within approximately the next 18 months, transportation alternatives that are currently less viable - such as transit and carpooling – are anticipated to make significant recoveries by that time. COVID-related parking demand increases to enable drive alone options are also expected to decline. In addition, TDM efforts will likely be supported by a long-term increase in telework and walkable access to the largest number of jobs in the state.

Table of Contents

A.	Property Description & Transportation Context	2
B.	200 Federal Street TDM Coordination	9
C.	Trip Generation & Parking Demand Projections & Targets	10
D.	Trip and Parking Reduction Strategies	12
E.	Plan for Monitoring, Data Collection and Reporting	16

200 Federal Street Site

- 1.27 acre 18-story mixed-use urban infill site in the government district of Downtown Portland
- Residential: 266 dwelling units, 10% at Workforce Housing rate; includes common areas, co-working space, and fitness room: 185,739 sf; approximately 345 residents
- Retail tenant, 1st Floor: ~2,000 ft^2
- Post Office visitor parking, interior ground level: 21 spaces
- 2 new 15-minute on-street parking spaces

TDM Targets

- ***Trip & parking reduction targets:*** a 5% reduction in resident vehicle trips and parking demand within 3 years after full occupancy - resulting from TDM program; i.e., a reduction of 7 weekday morning peak trips, 9 weekday evening peak trips, and 5 parking spaces
- ***Multi-modal target:*** 5% of resident trips will be via transit, carpooling, by bicycle, on foot or telecommuting within 3 years after full occupancy
- Will reassess targets at end of year one of full occupancy at 200 Federal

TDM Coordinator

Initial Coordinator: Jonathan Culley
Redfern Properties
P.O. Box 8816
Portland, ME 04104
jonathan@redfernproperties.com
207-776-9715

Eventual Coordinator: Property Manager (company to be determined)

Cushman Transportation Consulting, LLC, 94 Beckett Street, 2nd Floor, Portland, ME 04101
Tel: (207) 200-1910 E-mail: sarah@sarahcushman.com www.sarahcushman.com



A. Property Description & Transportation Context

Site Characteristics & Occupant Demographics

200 Federal Street is a 1.27-acre parcel located at the corner of Federal and Temple Streets in the government district of Downtown Portland's B3 zone. The property also falls within the Pedestrian Encouragement Zone, Downtown Entertainment Overlay Zone, and Congress Street Historic District. These are land uses that benefit from and support this impressive in-fill redevelopment of what has, for some time, been only a small surface parking lot.

Infill development of any kind contributes to single-occupancy automobile trip reduction. That much more in the case of in-town housing, which is the primary use proposed for 200 Federal. When people move from one residence to another it provides a key opportunity and critical juncture at which to educate them about their transportation choices and the benefits of alternate transportation. Individuals are more receptive to this information as their daily living and commute patterns have changed with relocation.

Two hundred sixty-six (266) residential units are proposed for 200 Federal, consisting of 118 studios, 146 one-bedroom, and 2 two-bedroom rental apartments. Twenty-seven of the units will be deed-restricted as workforce rate housing. Redfern Properties will retain ownership of the building and a local property manager will manage the building long-term.

...One of the more interesting studies found in reviewing the literature was a 2003 German social science experiment conducted by three researchers (Bamberg, Rolle and Weber) where an individualized marketing intervention was used at a time of what they called a "changed decision" context, meaning immediately after relocation. The research found that if, when in a new situation, people received personally relevant and persuasive information, they were more likely to use it for making new behavioral decisions.

Portland Oregon SmartTrips Welcome Program, Tools of Change Landmark Case Study, 2012



Significant on-site and near-site amenities provide residents with a full-service living environment. People in residential settings often perceive they are dependent upon driving alone because of the number of errands and activities they must carry out in different locations. 200 Federal will reduce this dependence through the provision of services and facilities at and close to the site. Site features that encourage alternate transportation and discourage drive alone vehicle trips include: an indoor bicycle storage area, co-working space, an electronic package concierge for deliveries, and a fitness room.

In addition to the on-location amenities listed above, Redfern Properties has a Joint Development Agreement with PO Square Building, LLC to incorporate through-access to the Post Office Square building inhabiting the same block. This offers 200 Federal tenants both the U.S. Post Office and Norway Savings Bank as de facto building services. In addition, Redfern is seeking a grocery retailer or similar tenant for the small 2,000 square foot retail space on the 1st Floor. Post office visits to ship packages and grocery shopping are both trips often taken by personal vehicle.



Per the site development agreement, 200 Federal will maintain the existing Post Office visitor parking on the interior ground level of the building. With new access to these spaces via the adjacent Norway Savings parking lot, Redfern is able to create two new 15-minute parking spaces at the closed curb cut on Federal Street. This will provide pick-up and drop-off opportunities for residents, as well as neighboring businesses.

In strong support of site TDM efforts, residential leasing will be exclusive of parking. Tenants will be connected with nearby parking resources off-site. For example, PO Square Building, LLC also owns the Chestnut Street garage, within a 5-minute walk of 200 Federal; recent parking surveys show it can easily accommodate the vehicle storage needs of building residents. Parking that is unsubsidized and off-site is of tremendous benefit and a linchpin strategy to discourage drive alone trips and encourage the use of alternate transportation.

Tables 9 and 10 below, from the 2017 *City of Portland Parking Study for the Eastern Waterfront & Downtown* census data analysis, show that workers who live in the Downtown and Eastern Waterfront study area (which includes 200 Federal Street) and commute to all jobs – including anywhere in the region:

- Own far fewer vehicles: .7 per household - vs. 1.34 in the city and 1.79 in the region;
- Drive alone considerably less: 40.6% in the study area - vs. 67.4% in the city and 78.3% in the region;
- Use alternate modes of transportation and/or telecommute significantly more: 59.4% in the study area vs. 32.8% in the city and 21.9% in the region.

…The data shows significantly lower shares of drive alone commuting for workers who live in the study area or on the Peninsula as compared to the City and MSA [Portland-South Portland-Biddeford Metropolitan Statistical Area].

The share of workers who walk to work is very high in the study area at 43 percent in 2015, implying that those who live in the study area tend to work within a walkable distance from home…

… Carpooling decreased everywhere [between 2000 and 2015] except with residents of the study area where the carpool mode to work rose by nearly 7 percent…

2017 City of Portland Parking Study for the Eastern Waterfront & Downtown

Redfern Properties intends to market the property to downtown employees. According to the parking study, 12% of people live and also work in the study area. In *Portland's Plan 2030* (2017), analysis showed the number of people both living and working in the city decreased between 2002 and 2014. Residential sites like 200 Federal provide real opportunity for local population growth.

Table 9: Commute Mode Share Trends by Home Origin

	Commuter Home Origin	Drive Alone	Carpool	Transit	Bicycle	Walked	Work from Home & Other
2015	Portland-South Portland-Biddeford MSA	78.3%	9.3%	1.1%	0.6%	3.9%	7.0%
	City of Portland	67.4%	8.6%	3.1%	1.6%	12.2%	7.3%
	On the Peninsula	49.2%	6.9%	4.7%	2.8%	28.6%	7.9%
	Within the Study Area	40.6%	10.2%	3.5%	0%	42.5%	3.2%

Table 10: Auto Ownership 2000-2015

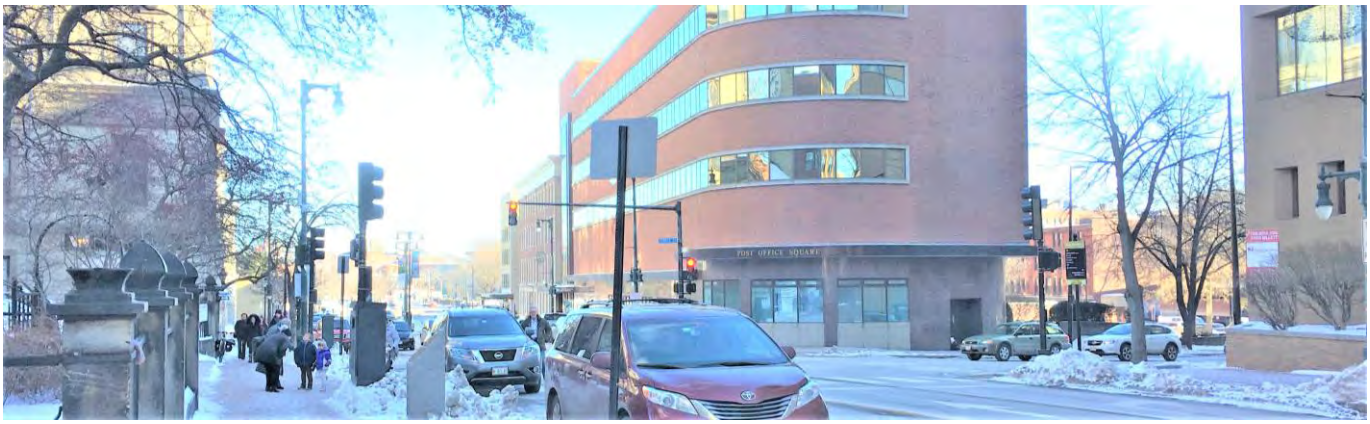
	Home Location	Vehicles	Occupied Households	Veh/HH
2015	Total U.S.	205,767,452	116,926,305	1.76
	Portland-South Portland-Biddeford MSA	383,798	214,667	1.79
	City of Portland	40,495	30,119	1.34
	On the Peninsula	11,611	11,917	0.97
	Within the Study Area	1,206	1,729	0.70



The developer anticipates 200 Federal will most likely attract Millennial tenants (adults under 40), single mid-level professionals and seniors. Real estate trends anticipate the apartments to be primarily one-person households (an average of 1.3 per unit). As stated in *Portland's Plan*, "Millennials (20-29) and Gen Xers (30-39) comprise the largest share of Portland's population, while Baby Boomers (50-69) are the fastest growing age group."

Per U.S. Census data, Millennials have been shown to prefer urban environments; they also tend to be more comfortable using modes other than the single-occupancy automobile for transportation. These multimodal habits were heavily influenced by the Great Recession and driving by Millennials has increased slowly as the economy has improved. However, from a behavior change perspective, this familiarity with different ways of getting around will greatly facilitate these tenants' participation in the 200 Federal Street TDM program.

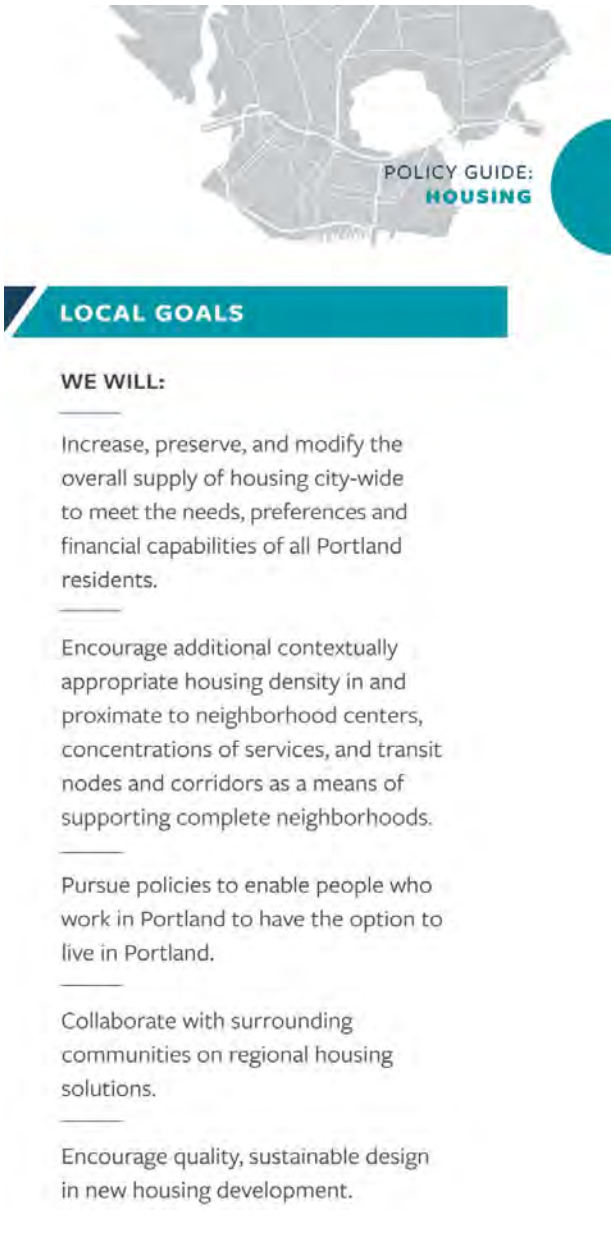
Regarding vehicle travel and senior demographics, the percentage of the population that drives plateaus for the general public through the ages of 30-55 - and then starts declining after the age of 55 for women and after age 60 for men. Similarly, vehicle miles and person miles traveled per capita both fall precipitously starting at the age of 55. Car ownership has had a slight rebound since the Great Recession. However, between 2015 and 2016, the one increase in car-free living (above the margin of error) was among householders age 65 or older who rent. (Source: American Community Survey of the U.S. Census).



Larger Transportation Setting

The 200 Federal Street project brings to fruition a number of the mixed-use, downtown neighborhood, housing, urban form, and transportation demand management goals of several recent and historically important Portland studies and plans. Included among them are:

- the original *Downtown Vision* plan (1991)
- *A Time of Change: Portland Transportation Plan* (1993)
- *Housing, Sustaining Portland's Future* (2002)
- *Peninsula Transit Study* (2008)
- *Sustainable Portland* (2009)
- *City of Portland Parking Study for the Eastern Waterfront & Downtown* (2017)
- the City's Comprehensive Plan, *Portland's Plan 2030* (2017)



Portland's Plan 2030 (2017 Comprehensive Plan)

For example, the redevelopment of this site in the center of Portland addresses the land use diversity, housing, and strengthening-the-downtown objectives outlined in *Portland's Plan* (Comprehensive Plan, 2017) – described further as Complete Neighborhoods and Reinforce the Center.

In addition, as noted above, 200 Federal Street and its TDM initiatives align well with observations from the *City of Portland Parking Study for the Eastern Waterfront & Downtown*. Other indications included, "If future residential development in the study area were to attract a higher percentage of residents who also work in the study area, and do not use their vehicle to commute to work, this would raise the internal capture rate for office parking demand. An internally captured office trip does not need an additional office parking space because the resident employee leaves their vehicle at home. In this way, a single parking space would serve either a residential purpose or an office purpose depending on the time of day. It would help lower parking demand to promote or incentivize the occupancy of new residential development with employees (of any kind) who also work in the study area."

For downtown residents working off the Peninsula, who may commute by single occupancy vehicle, there is also a reverse commute phenomenon. This change in the directionality of trips creates a more balanced inbound-outbound flow of vehicular traffic during the morning and evening peak travel hours.

Bicycle & Pedestrian Access



From a pedestrian and bicycling perspective, 200 Federal is very friendly, located within the strong sidewalk network and lower-speed street grid of the Portland peninsula. From the perspective of residents with any mobility concerns, sidewalks in the area are well-maintained year-round by the Portland Downtown district, including the removal of snow and ice during the winter months.

The building is also just six blocks from the Eastern Promenade multi-use path and seven blocks from the Bayside Trail, both pivotal links in Portland's alternate transportation system. In addition, the site is only three blocks from the Spring Street bicycle lane and a 4-minute bike ride to the Forest Avenue bike lane network and the Park Avenue protected bicycle lane.

Residential tenants working anywhere on the Peninsula will be within comfortable walking distance of their home; similarly, for 1st Floor retail employees who live on the East End, West End or downtown. Those residents whose employers are located within a five-mile commute distance can also easily bike to work, especially as bicycle networks in Portland, South Portland and Falmouth continue to improve. For example, 200 Federal tenants will be in close proximity to planned pedestrian and bicycle network improvements on Franklin Street, Preble and Elm Streets and the Federal Street Neighborhood Byway.

Amenities within easy walking distance of 200 Federal Street abound for residential tenants, retail employees and visitors. These include food and entertainment venues, grocery stores such as Trader Joe's and Whole Foods, and home product suppliers such as Reny's. These and other downtown offerings also provide an attractive dual-purpose trip for retail employees and site visitors who do end up driving downtown. For example, walking to run errands at neighboring businesses or meeting up with family and friends for after-hours events downtown. In addition, these internally captured trips represent no net new trip generation or parking demand beyond the original trip to the site.





Public Transportation Access

In terms of transit service, 200 Federal Street is ideally located just off the Congress Street bus corridor and only three short blocks (a 3 minute walk) from the hub of all of Greater Portland's public transportation options at the Elm Street Pulse, Monument Square and City Hall. 200 Federal Street itself is served by METRO Route #8 stop (now under review as part of METRO's Peninsula Loop Reboot task force – although delayed because of COVID). One block away is a Congress Street transit stop serving METRO's Routes 1, 7, 8, 9B and South Portland Bus' Routes 21, 24A and 24B.

At the METRO Pulse, services include ticket sales, a staffed indoor waiting room, outdoor seating and the:

- METRO Breez with service to Yarmouth, Freeport and Brunswick
- METRO Husky Line with service to Westbrook and Gorham
- METRO local Routes 2, 4, 5, 7, 8, 9A, 9B serving the significant transportation corridors of Outer Congress Street and Forest, Brighton, Washington, Stevens and Allen Avenues
- RTP Lakes Region Explorer with Route 302 service to Westbrook, Windham, Raymond, Casco, Naples and Bridgton

At City Hall one can catch METRO Routes 1, 7, 8, 9A and 9B and the intercity Shuttlebus, with service to Scarborough, Old Orchard Beach, Saco and Biddeford. At Monument Square, most of the above local METRO routes are accessible, along with all South Portland Bus routes, and the ZOOM Turnpike Express with service to Saco and Biddeford.

There is shelter from the elements for riders at the stops at Two Monument Square, in front of the Press Hotel, at the Pulse, and at the Monument Square stop at Center Street. METRO, South Portland Bus and Casco Bay Ferry Lines all provide real-time arrival information for riders, through the Southern Maine Transit Tracker website and smartphone apps such as Google Maps, Transit and Moovit. All local and express buses are also equipped with bicycle racks with space for 2-3 bikes. In addition, most METRO buses offer Wi-Fi access and some provide in-seat USB ports.



Shared Mobility Access

With the end of UhaulCarshare service in Portland in February 2020, Redfern is exploring other carshare options for residents at 200 Federal Street. If an option is found feasible, the company will offer a promotion code discount for tenants' carshare vehicle use for the first year of residency.



Over the past several years, the City was working on an agreement with JUMP Bikes (by Uber) – recently acquired during COVID-19 by Lime - to set up a dockless electric bikeshare system in Portland. If and when the system is launched, the developer will provide monthly bikeshare memberships for tenants.

B. 200 Federal Street's TDM Coordination

Redfern Properties has a long history of smart growth development projects and encouraging residents' physical and financial wellness through initiatives such as offering rent reductions for tenants who are car-free and providing on-site bicycle rooms and gyms. It sees this TDM program as part of its larger sustainability and smart growth mission.

Redfern is committed to a building Sustainability Initiative that will include its TDM efforts to reduce drive alone resident automobile trips, improve multimodal safety, and ease traffic congestion and area parking demand near 200 Federal Street. Jonathan Culley of Redfern Properties will serve as the interim TDM Coordinator until the development determines the site's property management company. Culley's contact information is:

Jonathan Culley
Redfern Properties
P.O. Box 8816, Portland, ME 04104
Email: jonathan@redfernproperties.com
Phone: 207-776-9715

The 200 Federal TDM Coordinator is responsible for:

- Coordinating tenant TDM policies and incentives
- Connecting tenants with nearby parking resources
- Encouraging greater use of preferred modes – walking, bicycling, carpooling, taking bus or rail transit - through transportation kiosk and site-wide promotion
- Overseeing/conducting surveying of tenants
- Filing annual reports and updating the plan with the City
- Exploration of additional TDM strategies, as needed

Culley and the future property manager are charged with coordinating the 200 Federal TDM plan implementation and monitoring and making any needed changes.

Redfern will provide the TDM Coordinator with a stipend to support the work of leading the site's ongoing TDM efforts. Acknowledging that roles and responsibilities change over time in any position, Redfern Properties and the site property manager will use the first few months of TDM implementation to enumerate the TDM Coordinator's responsibilities in detail for any other staff to uphold the responsibility of the position.

Day-to-day operations and monitoring of the TDM plan will be conducted in-house by the property manager long-term and Redfern Properties will retain the services of a TDM consultant to review initiatives, problem-solve and develop new strategies if and when necessary.



C. Trip Generation & Parking Demand Projections & Targets

Redfern Properties has hired Cushman Transportation Consulting, LLC (CTC) and Traffic Solutions to assist with its transportation demand management process. CTC specializes in TDM efforts locally and connects with TDM research and programs across North America – including aspects of setting and managing TDM targets. This all informs the following trip reduction, parking reduction and multimodal goals.

A complication for setting ambitious targets for this particular site is the existing high multimodal rate of individuals who currently live downtown. That is, when a multimodal rate is already extraordinary, mode change is much more incremental and moderate than if the rate has significant room for growth.

Projected Trip Generation & Parking Demand

On behalf of 200 Federal Street, Traffic Solutions created Institute for Transportation Engineers (ITE) trip generation and parking demand projections and conducted additional local traffic and parking studies to assess the potential impact of the site's redevelopment. This has included utilizing the most recent data in the 10th edition ITE *Trip Generation Manual* and the 5th edition ITE *Parking Generation Manual*, with distinctions for the multimodal context of the site.

Accordingly, the proposed 200 Federal Street project can be expected to generate approximately 56 trips in the AM peak hour and 53 trips during the PM peak hour. Per the parking demand projections analysis, the average peak hourly parking demand for the site is expected to be 125 spaces.

Trip Reduction Target

Given the multimodal accessibility of the site, the high existing rate of alternate transportation use by those living downtown, and the transportation demographics of expected tenants at 200 Federal Street, the building's TDM efforts should enable a further 5% reduction in resident drive alone vehicle trips by the end of 3-5 years. That is, 3 weekday morning peak trips and 3 weekday evening peak trips. The TDM team plans to revisit this reduction target after the first year of full occupancy at 200 Federal.

Parking Reduction Target

With the strong strategy of off-site and unsubsidized parking and the implementation of TDM incentives, a further achievable parking demand reduction is 5% by the end of 3 years; i.e., 6 spaces. The parking demand target will also be revisited after 200 Federal reaches its first year of full occupancy.

Projections & Targets

The TDM Plan sets the following targets:

- ***Trip & parking reduction target:*** a 5% reduction in resident vehicle trips and parking demand within 3 years after full occupancy - resulting from TDM program; i.e., 3 weekday morning peak trips, 3 weekday evening peak trips, 6 spaces
- ***Multi-modal target:*** 65% of resident trips will be via transit, carpooling, by bicycle, on foot or telecommuting within 3 years after full occupancy
- Will reassess targets at end of year one of 200 Federal Street occupancy

Multimodal Target

200 Federal is setting an initial target of 65% of residents making multimodal trips to and from the site, by 3 years after full occupancy. This includes transit, carpooling or vanpooling, bicycle, pedestrian and telecommute trips or some combination of these modes. The target is different from the trip and parking reduction targets above because, with the diversity of residents at 200 Federal and the timing of work schedules or retiree tenant activities, a number of these trips are likely to be outside of the morning and evening peak periods.

This is a complex target to set because of both the above mentioned current high multimodal rate and also the range of potential tenants and tenant occupations. For example, according to census data, when retired from day-to-day work, an individual's vehicle miles traveled decreases overall. 200 Federal plans to closely monitor existing trends to attain a reasonable mode-shift goal over time.

It is most useful for 200 Federal's TDM efforts to address the specific needs of transit users, carpoolers, bicyclists, walkers and telecommuters and set an overarching multimodal trip target for the site – versus targets for each mode. From other TDM experiments across the globe, it is clear that individuals' use of various alternate modes shift over time as different residents come and go and/or their needs change.

For example, a tenant who uses transit might move to another location or a different tenant who walks might switch primarily to bicycling. In another instance, a tenant who was able to drive may lose the ability to do so and switch to using transit or carpooling for errands.



D. Trip and Parking Reduction Strategies

In the table beginning on the following page, Redfern Properties proposes a number of best-practice and sensible parking and trip reduction strategies for 200 Federal's TDM Plan. These are based on the development team's understanding of the site's transportation context, likely residents and the usefulness of various TDM efforts. For example, unsubsidized off-site parking will produce the strongest results for decreasing single-occupancy vehicle trips to and from the site. In addition, the team acknowledges the various needs of different multimodal commuters. For instance, tenants who use transit, walk or bicycle are more able to do so if they have on-site, secure storage for larger commuting gear like bicycle trailers and shopping handcarts.

Another critical component for the success of 200 Federal's TDM Plan is a carefully thought-out marketing plan that engages tenants from when they first move in regarding preferred modes of transportation and provides easily accessible information and subsidies. As shared by Portland Oregon's SmartTrips Welcome program, a residential move is a unique and powerful opportunity for mode experimentation and change. This marketing also builds the site's TDM culture and the sense of multimodal travel as the social norm. 200 Federal has begun designing a promotion strategy that complements other area Portland TDM work to encourage walking, bicycling, carpooling and the use of public transit.

...When a person changes residence, everything changes: the way to the store, the way to work, even the steps to the fridge.

This time of change offers a unique opportunity to create new neural pathways or reinforce old ones that haven't been used for a while and make these stronger than habitual pathways.

Andrew Pelsma, SmartTrips Program Specialist, Portland, Oregon

...To us, this represents a significant number of people with an immediate gap in knowledge about their local travel options.

Linda Ginenthal, SmartTrips Program Manager

Finally, the region was recently reexamining the need for an area Transportation Management Association (TMA) to benefit sites like 200 Federal. TMAs are generally public-private entities that assist sites with TDM implementation, outreach and monitoring; advocate for improved transit and act as brokers for services such as shuttles. Redfern Properties plans to support the development of a TMA, if found to be feasible, and have 200 Federal Street participate as a member.

The highest priority items for 200 Federal Street's TDM program success are:

- *Unsubsidized parking off-site*
- *On-site and near site amenities, multimodal infrastructure and transportation choices*
- *Social marketing work to engage with new residents and establish commuting another way as part of the building's Sustainability Initiatives and common norms*

Infrastructure	
Remote Parking/Reduced Parking/Shared Parking	*Reduced parking:* residential leasing will be exclusive of parking and unsubsidized
	Remote, shared-use parking: Tenants will be connected with local parking resources within 1500 feet of site, including Chestnut Street and Temple Street Garages. Residential overnight parking for those who commute off-Peninsula works well with high day-use commuter parking locations such as these. In addition, parking off-site makes car ownership less convenient for residents and further encourages the use of alternate modes.
Affordable Housing	Site to meet City standard for 10% workforce housing. Affordable housing units generate fewer vehicle trips and less parking demand than market-rate housing.
Transit & Other TDM Access	Real Time Transit & TDM monitor display in main lobby with looping slides regarding: live-time transit service information for routes near the site (available through Southern Maine Transit Tracker); multimodal map with nearby transit routes, bicycle routes and trails, and walk and bike distances/times; listing of bicycle facilities on site; carshare locations and membership information; information on GO MAINE ride-matching, rewards and Emergency Ride Home benefit for all alternate modes of transportation; all TDM benefits available for residents; contact information for TDM Coordinator.
Pedestrian & Bicycle Access	*Sidewalks:* Reconstruction of all street sidewalk segments abutting development
	ADA-accessible pedestrian amenities: barrier-free ramp improvements
	Crosswalks: Striping improvements to existing or proposed crosswalks
	Lighting: Street and building lighting to improve sidewalk illumination
	On-street and Post Office courtyard bicycle parking: 8 exterior bicycle parking spaces
	Indoor, secure bicycle and stroller parking: 106 secure and weatherproof spaces in large accessible basement for regular size bikes, electric bikes, cargo bikes, bicycle trailers, bike attachments for children, and strollers. Also available to facilitate child carseat storage (for those commuting with children on foot and by carpool).
	Electric bicycle charging: Provide charging station/outlets for resident electric bikes in bicycle room
	Bicycle repair station: Provide bike repair stand in bicycle room
	Committed to meeting a higher demand for on-street bicycle parking if needed

Shared Mobility	*Carshare:* if new carshare option found, will offer tenant discount during first year of residency
	Handcarts: Provide one collapsible shopping/utility cart with property management branding for every 25 dwelling units, available for checkout on hourly basis (e.g., pen and paper sign up system, online, etc.)
	Cargo electric bikeshare: experiment with one electric-assist cargo bicycle, available for checkout on hourly basis (e.g., pen and paper sign up system, online, etc.)
Electric Vehicle Charging Station	Provide electric car charging station for at least 1 motor vehicle in Post Office parking area
On-Site Amenities	*Co-working space:* work area and meeting space for tenants' use to encourage telecommuting
	Broadband access: hardwired infrastructure for broadband available for tenant hook-up and WiFi provided in common areas
	Fitness room: Provide on-site gym to reduce vehicle trips and improve resident physical fitness for active transportation
	Grocery & other Amenities: Encourage retail tenant to offer amenities that encourage walking trips for simpler needs (e.g., grocery items such as are available at a Rosemont Market, or small housewares and hardware items, etc.)
	Postal services: U.S. Post Office location accessible on-site
	Banking services: Norway Savings Bank branch accessible on-site
Delivery Supportive Amenities	Facilitate deliveries by providing an electronic package concierge and parcel receipt area
General Contribution to Area Transportation Improvements	Per Chapter 14 of the City of Portland Code, the property is contributing to transportation impact fees that will improve traffic operations and transportation in and around downtown Portland.
Incentives	
Parking Pricing/Cash Out/Incentives	Residential leasing will be exclusive of parking and thus enable a lower rental fee
Transit Subsidies	*Transit passes:* Explore new DiriGo TouchPass system to simplify management of transit subsidy for individual resident and Mercy employee trips (expected in 2020 from METRO, City of South Portland Bus Service and Biddeford Saco Old Orchard Beach Transit - but delayed with the COVID-19 crisis)
Pedestrian/Bicycling Subsidies	*Bicycle safety courses*: Reimburse residents for bicycle safety courses
	Bicycle Benefits: Purchase memberships ($5) for residents who bicycle
	Bicycle maintenance: One free annual bicycle maintenance bench time visit to Portland Gear Hub Bike School for residents who bicycle
Shared Mobility Subsidies	*Carshare:* Discount for resident UhaulCarshare vehicle use for first year of residency
	Bikeshare: Monthly bikeshare memberships for residents when/if bikeshare starts in Portland
Targeted Promotions	*Early rental promotion to nearby employers:* Nearby employers will be invited to share 200 Federal housing information with their employees and participate in an early tour and promotion of the facilities.
	Experiment with discounts and coupons to nearby businesses: work with local businesses to offer residents discounts and coupons to downtown establishments within walking distance
TDM Coordinator	Provide stipend/remuneration to TDM Coordinator to support the work of the position.

Information	
Education for Travel Choice	*TDM orientation packets:* new residents and retail employees will be provided with orientation packets regarding the site's TDM program and access to 200 Federal by various travel modes. Includes: (1) Map of area with major streets, nearby landmarks and time to walk/bike to them, the closest bus stops and walking times, recommended cycling and walking routes, carshare locations, etc. (2) Information about transit service frequency, fares, first and last runs, and schedules; phone numbers and web addresses for transit service providers and taxi companies. (3) Reaching the site from major transportation terminals (bus and train stations, airport, ferry terminal, etc.) (4) Access arrangements for people with disabilities; (5) Availability of bicycle facilities, including secure bike parking and on-site bikeshare; (6) Bicycle Benefits membership and bicycle safety courses; (7) Encouraging residents to become members of GO MAINE and access rewards system, carpool matching and Emergency Ride Home Benefit; (8) carshare and eventual city bikeshare information; (9) automobile parking availability and price; (10) Information regarding building TDM program and contacting the TDM Coordinator.
	New Resident TDM Acknowledgement: At the time of occupancy, all new rental tenants will be provided with the site's TDM program benefits and goals. They will be asked to sign an acknowledgement of the TDM program and a commitment to participate in the annual resident commute survey.
	Commute coaching: One-on-one transportation consultations available for residents upon lease of dwelling unit to explore individual transportation options. Thereafter, offered at least once annually.
	New resident engagement: TDM Coordinator will engage with each new resident to share about the TDM program as part of the building's Sustainability Initiative
	Ongoing TDM program education: 1 or more times per year, TDM Coordinator will email all residents (new and existing, including subletters) - and the retail tenant - the same information as is in the TDM orientation packets.
	Transportation fairs/tabling: 1-2 times per year, TDM Coordinator will host morning or afternoon tabling event in lobby to engage residents in conversation about transportation choices. Will offer food and beverages.
	Experiment with offering walking tour of multimodal options: offer a hands-on walking tour of transportation options near the property. For example, visiting the METRO Pulse, discussing taking the bus and practicing putting a bicycle on the bus.
	Experiment with offering on-site bicycle safety class: as residents show interest, host a bicycle safety/information class or bicycle repair event for residents
	TDM surveying: Required resident transportation surveys and reporting to City will also serve as education tool
Promotion of Alternate Modes	*Co-promotion with City and downtown agencies:* Work with Portland Downtown and City of Portland's Drive Less, Do More marketing campaign to promote alternatives
	Social media and social proof: Use property management social media to build social proof of others doing the desired TDM actions (with posts from residents taking action – e.g., posting a photo of taking the bus to work or the morning carpool) - vs. just likes or retweets of info about using preferred alternate modes
	Resident and retail employee recognition: 1-2 times per year: recognize individual residents and retail employees who reduce the traffic impact of the site through property management social media, door posters, newsletter, email or other announcements.



E. Plan for Monitoring, Data Collection and Reporting

Recognizing that the implementation of a TDM Plan is a dynamic process, the 200 Federal Street TDM Coordinator will work with the City to monitor the effectiveness of the site's TDM Plan components - and to assess whether the site is achieving the trip and parking reduction and multimodal targets listed above. 200 Federal will work with tenants to evaluate off-site parking use and incentives for preferred modes and make improvements. Another important piece will be to determine the flexibility of tenants to utilize various travel modes.


Resident Transportation Survey - 7 Maple Street at 321 Commercial Street Site

Thank you for taking this survey!

Dear residents of 7 Maple Street:

Thanks very much for completing this survey regarding your daily travel! It should take you 5-10 minutes to complete. **Please have each licensed driver in your household complete the survey, if possible.**

This survey is required by the City of Portland to help monitor and update the work of 321 Commercial Street's Transportation Demand Management (TDM) Plan - of which 7 Maple Street is a part. The TDM plan is a requirement for most developments of our size under the City's Land Use Code and Ordinance and was required when we were first approved by the City in 2013.

TDM plans and their implementation help reduce the impact of drive-alone car trips on local traffic, parking supply, the environment, and the quality of life of our community.

We look forward to sharing more with you about the results of this survey and also ways that 321 Commercial can support how you get around - thanks again!

7 Maple

OK

Tenant Surveys

The TDM Coordinator will conduct annual tenant surveys that provide quantitative data (e.g., trip, parking and mode split) and qualitative data (e.g., perception of alternate transportation, area parking and the site's TDM programming). The site will carry out these surveys once annually for the first three years of full occupancy and then every two years thereafter, with at least 50% tenant participation.

The survey will be developed in consultation with the city's TDM manager and conform to overall city TDM modeling and planning. Survey questions will include:

- Number of people in household
- Resident mode of travel to and from work and/or for other trips away from the site – plus frequency of use of those modes
- If parking personal vehicle(s), where parked
- Whether the tenant drives during morning or afternoon peak periods

- Use of/participation in:
    - On-site bicycle parking, hand cart and cargo bicycle
    - Off-site carshare and future Portland bikeshare
    - Any site TDM incentives or other benefits or programming
    - GO MAINE program participation
- TDM marketing effectiveness
- Preferences, barriers or concerns with modes of travel and likelihood of changing travel behavior given specific incentives or disincentives
- Rating knowledge of walking, bicycling and using the bus in the community
- Space to add suggestions and comments

Note: the use of these survey tools will also assist 200 Federal with its TDM education efforts. That is, the questions themselves help people think differently about their transportation behavior. The surveys will also provide a reminder of the TDM lobby monitor and the TDM Coordinator as resources for more information about options.

Annual Report

The TDM Coordinator will then produce an annual TDM Report to meet the City's monitoring requirements. The report will include:

a. the above survey data and percent of units occupied;
b. how the data directly relates to the plan's reduction targets;
c. details of that year's TDM operations – including management, strategies, marketing, number of contact points with residents, and any new infrastructure development;
d. lessons learned and any changes in the TDM plan during the year;
e. plans for the following year.



Traffic Solutions
William J. Bray, P.E.
17 Mountview Drive
Gorham, ME 04038
(207) 400-6890
trafficsolutions@maine.rr.com

October 6, 2020

Parking Assessment

Proposed

"200 Federal Street"

INTRODUCTION

Redfern Downtown, LLC is proposing to construct an 192,675 square-foot 18-story mixed-use building at 200 Federal Street that will include 266 residential apartment units, common areas, small office space for building manager, a resident only fitness area and a 1,950sf retail space, (excluding bulk storage) on the ground floor. The proposed site is comprised of a single parcel bordered by Congress, Exchange, Federal and Temple Streets.

Twenty-seven (27) of the 266 apartment units will meet the City's criteria for affordable workforce units and the remaining 239 units will be market rate apartment units. The 266 total apartment units will include: 118 studio units, 146 one-bedroom units and (2) two-bedroom units.

The proposed site provides a total of 21 on-site parking spaces with a total of 11 surface spaces and 10 spaces under the proposed building. These spaces will be used by the U.S. Postal Service through an existing lease agreement. Parking (both short and long-term) for building tenants will be accommodated at the existing Chestnut Street parking garage located on Chestnut Street near Oxford and Lancaster Streets. Additionally, two existing 15-minute on-street parking spaces located on the Federal Street frontage of the site are proposed to accommodate the short-term parking needs of building residents.

The City's Zoning Ordinance presently requires one parking space for each proposed residential unit on the peninsular (Sec. 14-332.1 (k) except:

> *"The required parking for multi-unit residential buildings may be partially met through provisions of shared use vehicles...One shared use vehicle shall be deemed to satisfy eight (8) required car spaces..."*
>
> *"No parking shall be required for the first three units in the R-6 Residential Zone..."*
>
> *"The planning board may establish a parking requirement that is less than the normally required number of spaces upon a finding of unique conditions that result in a lesser parking demand, such as housing for persons who cannot drive, housing that participates in a travel demand management program, availability of transit... etc."*

Further, Section 14-332.2. (c) states:

> *"Site plans over 50,000 square feet and projects in the B-6, B-7, and USM Overlay Zones: Where construction is proposed of new structures having a total floor area in excess of fifty thousand (50,000) square feet, the planning board shall establish the parking requirement for such structures. The parking requirement shall be determined based upon a parking analysis submitted by the applicant and upon the recommendation of the city transportation engineer.*

This document provides a determination of the "*average*" peak parking demand requirements of the proposed residential apartments based upon national parking trends presented in the most current 5th edition of the Institute of Transportation Engineers **"PARKING GENERATION"** publication. A parking survey was conducted at an existing residential apartment building located in Portland to affirm the applicability of the national trends in predicting the parking requirements of the proposed residential apartment project.

PARKING DEMAND

National parking demand data presented in the 5th Edition of the Institute of Transportation Engineers (ITE) **"PARKING GENERATION"** publication is typically the instrument used in estimating the actual parking demand of a development site. The 5th edition, which was published in January 2019, represents the most current copy of the noted ITE document. The ITE manual provides "*average*" peak parking demand rates for more than 100 land-use categories including: residential, lodging, recreational, institutional, medical, retail, office, services, etc.

The "*average*" peak parking demand requirements of the proposed 200 Federal Street residential apartments is estimated based upon the following projected residential apartment unit mix:

Market Rate Units
- (106) Studio Units
- (131) One-Bedroom Units
- (2) Two-Bedroom Units

Affordable Workforce Units
- (12) Studio Units
- (15) One-Bedroom Units

Total Apartment Units
- (118) Studio Units
- (146) One-Bedroom Units
- (2) Two-Bedroom Units

The peak parking demand requirements of the proposed market rate apartment units is based upon Land-Use #221- Multi-Family Housing (Mid-Rise). This land-use category is generally reserved for buildings between three and 10 floors; however, the ITE parking data for a high-rise building (buildings greater than 10 floors) is very limited. In fact, the parking demand rate presented in the noted ITE document for a high-rise residential building is based upon a single study. ITE representatives contacted by Acorn Engineering noted the limitations of the data for the high-rise category and, with that direction, this report applies the parking demand rate for a mid-rise apartment building. Accordingly, a peak parking rate of 0.48 spaces per bedroom was applied in calculating the peaking demand requirements of the proposed market rate units.

The peak parking demand requirements of the proposed affordable workforce apartment units is determined based upon Land-Use #223 - Affordable Housing – Income Limits. The parking rate used in determining the peak parking demand of the 27 workforce apartment units is 0.30 spaces per bedroom.

Table 1, below, provides a projection of the "*average*" peak parking demand requirements for the proposed 200 Federal Street residential apartment building for a typical weekday condition.

Table 1
"Peak" Parking Demand Determination Summary
For
"200 Federal Street Residential Apartments"
(Weekday Condition)

Proposed Use	Total Bedrooms	Land-Use Code	Parking Space Rate	Parking Space Requirements
Market Rate Residential Apartments				
106 Studio Units	106 bedrooms	LUC 221	0.48 spaces/bedroom	51 spaces
131 One-Bedroom Units	131 bedrooms	LUC 221	0.48 spaces/bedroom	63 spaces
2 Two-Bedroom Units	4 bedrooms	LUC 221	0.48 spaces/bedroom	2 spaces
Workforce Apartment Units				
12 Studio Units	12 bedrooms	LUC 223	0.30 spaces/bedroom	4 spaces
15 One-Bedroom Units	15 bedrooms	LUC 223	0.30 spaces/bedroom	5 spaces
TOTAL	-	-	-	**125 spaces**

The "*average*" peak parking demand requirement of the proposed 200 Federal Street apartment building is estimated at **125** spaces for a typical weekday condition.

The proposed retail space (1,950sf) currently projected to be leased by a local neighborhood grocery, which, as a complementary use to the proposed residential apartments, will not require off-site parking. Section 14-332(h) of the City's Land Use Code further defines the parking requirements for retail space as follows: "*retail stores One (1) parking space for each two hundred (200) square feet of first floor area in excess of two thousand (2,000) square feet not used for bulk storage,.....* Locally collected traffic data gathered at a similar grocery site; located on the Portland Peninsular, shows the majority of persons observed patronizing the grocery store were pedestrians. The study results, as presented below in Table 2, shows fewer than 8% of the total combined peak hour trips generated by the Pine Street/Bracket Street market are, in fact, automobile trips. Other than an occasional truck delivery vehicle, the proposed neighborhood grocery store will not attract vehicle traffic; thus, parking accommodations are not required and/or necessary.

Table 2
Trip Generation Summary
Market
(Bracket Street @ Pine Street)

Survey Time	Entering Trips		Exiting Trips		Total Trips	
	Pedestrian Trip	Vehicle Trip	Pedestrian Trip	Vehicle Trip	Pedestrian Trip	Vehicle Trip
7:30 to 7:45 AM	0	0	0	0	0	0
7:45 to 8:00 AM	0	0	0	0	0	0
8:00 to 8:15 AM	15	0	11	0	26	0
8:15 to 8:30 AM	4	1	8	1	12	2
8:30 to 8:45 AM	6	2	1	3	7	5

8:45 to 9:00 AM	11	2	9	3	20	5
AM Peak Hour Total	**36**	**5**	**29**	**7**	**65**	**12**
3:30 to 3:45 PM	5	0	7	0	12	0
3:45 to 4:00 PM	7	1	7	2	14	3
4:00 to 4:15 PM	5	0	9	0	14	0
4:15 to 4:30 PM	6	1	7	0	13	1
4:30 to 4:45 PM	12	1	10	1	22	2
4:45 to 5:00 PM	21	0	18	0	39	0
5:00 to 5:15 PM	15	1	18	1	33	2
5:15 to 5:30 PM	15	0	14	0	29	0
PM Peak Hour Total	**63**	**2**	**60**	**2**	**123**	**4**

COMPARATIVE CITY OF PORTLAND PARKING DATA

Parking utilization data was gathered at the existing 667 Congress Street 139-unit apartment building on July 10, 2019 to establish local parking demand trends for a similar size multi-story apartment building. Parking counts were collected at 6:00 a.m., 10:00 a.m., 5:00 p.m. and 8:00 p.m. with the results of the survey highlighted in Table 2 as follows:

Table 3
Parking Utilization Study Summary
(667 Congress Street Apartment Buildings)

Apartment Location	Number of Apartment Units	Number of Bedrooms	Time Period/Parking Counts			
			6:00AM	10:00AM	5:00PM	8:00PM
667 Congress Street	139 apartment units	147 beds	66 vehicles	39 vehicles	37 vehicles	57 vehicles
Parking Space Rate/Bedroom	-	-	0.44 spaces/bedroom	0.26 spaces/bedroom	0.25 spaces/bedroom	0.39 spaces/bedroom

The existing 667 Congress Street apartment building has a total of 139 apartment units that includes (34) efficiency units, (97) one-bedroom units and (8) two-bedroom units, which results in a total of 147 bedrooms. A total of 83 parking spaces are provided on-site with 3 spaces reserved for Joe's Smoke Shop leaving a balance of 80 spaces reserved for building tenants.

The results of the survey show a total of 66 of the 80 parking spaces were occupied at 6:00 a.m. and a descending number of spaces were occupied during the remaining three noted time periods, with a total of 39 spaces occupied at 10:00 a.m., 37 spaces at 5:00 p.m. and 57 spaces at 8:00 p.m. Peak parking demand ratios were determined for each of the four study times. The highest parking ratio of **0.44** spaces/bedroom occurs at 6:00 a.m. with lower values calculated for the remaining hourly time periods.

The peak parking demand value of 0.44 spaces per bedroom measured at the 667 Congress Street apartment building compares very closely with the national parking demand value of 0.48 spaces per bedroom for a market rate residential apartment unit. Accordingly, the peak parking demand requirement of the proposed 200 Federal Street residential apartment building is based upon the higher national parking demand rate of **0.48** spaces per bedroom unit and, combined with the limited number of parking spaces required by the proposed 27 workforce apartment units, results in a total parking space requirement of **125** spaces.

PARKING SUPPLY

The Applicant, will meet the average peak parking demand requirements of the proposed Federal Street mixed-use project through parking lease agreements with nearby parking garages and/or surface lots. Signed agreements will be forthcoming under separate cover.

SUMMARY

1. The proposed 200 Federal Street 18-story residential apartment building will provide a total of 239 market rate and 27 affordable workforce residential apartment units for a combined total of 266 apartment units. The proposed mix of residential units includes: 118 studio units, 146 one-bedroom units and 2 two-bedroom units.

2. National peak parking demand rates presented in the most current copy of the Institute of Transportation Engineers "**PARKING GENERATION**" publication suggests a market rate apartment unit in a multi-story building generates a peak parking demand of 0.48 spaces per bedroom. The same publication provides a parking demand rate of 0.30 spaces for an affordable workforce apartment unit. The proposed residential apartment building is forecasted to generate a peak parking demand of **125** parking spaces.

3. A parking survey was conducted at the existing 667 Congress multi-story residential apartment building to establish a local parking demand metric unique to the peninsular section of the City of Portland. The existing 667 Congress Street apartment building, with a total of 139 apartment units, provides a total of 80 parking spaces for tenants of the building. The mix of apartment units yields a total of 147 bedrooms. The parking survey was conducted on July 10, 2019 during four time periods: 6:00 a.m., 10:00 a.m., 5:00 p.m. and 8:00 p.m. A total of 66 of the 80 parking spaces were found occupied at 6:00 a.m. and lower occupancy values were recorded for the remaining three study times. The local peak parking demand rate measured at the 667 Congress Street apartment building is 0.44 spaces per unit (66 occupied spaces ÷ 147 bedrooms = 0.44 spaces per bedroom.)

4. Traffic Solutions has applied the higher national peak parking demand rate of 0.48 spaces/bedroom in determining the peak parking demand requirements of the proposed apartment project, which results in a total parking requirement of **125** spaces.

5. The Applicant, will meet the average peak parking demand requirements of the proposed Federal Street mixed-use project through parking lease agreements with nearby parking garages and/or surface lots.



Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

PI-001235-2020

1 message

j p <pierress@yahoo.com> Tue, Nov 3, 2020 at 8:31 AM
To: ccameron@portlandmaine.gov

Good morning

My name is Joseph Palacci, I own 102-104-106 Exchange street, I also own Richbuilding on Exchange street . I am not familiar with the procedure , but I strongly object this project. I t will put a tremendous burden on the block for parking, and put a stress on an already dense area.

I would like to know the procedure for stoping this project !

Thank you

Joseph Palacci

207-450-9000

Sent from Yahoo Mail for iPad

200 FEDERAL STREET
REDFERN DOWNTOWN, LLC
PORTLAND, MAINE

LEGEND

EXISTING

REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION

PROPOSED

	UNDERDRAIN
	GREEN SPACE
	UTILITY PAVEMENT CUTS
	STRIPING
	SEDIMENTATION BARRIER
	EDGE OF PAVEMENT
	CURB
	SIGN
	LAMP OR LIGHT POLE
	UTILITY POLE
	GUY WIRE
	WATER VALVE
	FIRE HYDRANT
	SEWER MANHOLE
	CATCH BASIN
	DRAIN MANHOLE
E	UNDERGROUND ELECTRIC LINE
W	UNDERGROUND WATER LINE
64	MINOR CONTOURS (1 FT)
65	MAJOR CONTOURS (5 FT)
G	GAS LINE
	STORM DRAIN LINE
SS	SEWER LINE
	EXISTING/PROPOSED BUILDING
OHW	OVERHEAD ELECTRICAL/TELEPHONE/CABLE
	PROPERTY LINE
	SETBACKS
	BORING

INDEX

C-01	COVER SHEET & LEGEND
C-02	GENERAL NOTES
EX	BOUNDARY & TOPOGRAPHIC SURVEY – BY OWEN HASKELL, INC
C-03	CONSTRUCTION MANAGEMENT PLAN
C-10	SITE PLAN
C-11	SUBDIVISION PLAN
TBD	LANDSCAPE PLAN – BY ACETO LANDSCAPE ARCHITECTS
C-20	UTILITY PLAN – 1
C-21	UTILITY PLAN – 2
C-30	GRADING & DRAINAGE PLAN
C-40	SITE DETAILS – 1
C-41	SITE DETAILS – 2
TBD	LANDSCAPE DETAILS – BY ACETO LANDSCAPE ARCHITECTS
C-42	UTILITY DETAILS – 1
C-43	UTILITY DETAILS – 2
C-44	UTILITY DETAILS – 3
C-45	DRAINAGE DETAILS – 1
C-46	EROSION CONTROL NOTES
C-47	EROSION CONTROL DETAILS
1925339	SITE PHOTOMETRIC PLAN – SWANEY LIGHTING ASSOCIATES

CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233

UTILITIES

SEWER

DEPARTMENT OF PUBLIC WORKS (DPW)
250 CANCO ROAD
PORTLAND, MAINE 04101
CONTACT: MIKE TREMBLAY, P.E.
(207) 874-8834

WATER

PORTLAND WATER DISTRICT
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
CONTACT: ROBERT BARTELS, P.E.
(207) 774-5961

ELECTRIC

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: PAUL DUPERRE & JAMIE COUGH
(207) 828-2882

TELEPHONE

CONSOLIDATED COMMUNICATIONS
(FORMERLY FAIRPOINT)
45 FOREST AVENUE
PORTLAND, MAINE 04101
CONTACT: PAT MORRISON
(207) 745-9363

CABLE

SPECTRUM CABLE
118 JOHNSON ROAD
PORTLAND, MAINE, 04102
CONTACT: MARK PELLETIER
(877) 546-0962

NATURAL GAS

UNITIL SERVICE CORP
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541-2536

PROJECT TEAM

DEVELOPER

REDFERN DOWNTOWN, LLC
PORTLAND, MAINE
CONTACT: JONATHAN CULLEY
(207) 776-9715

OWNER'S REPRESENTATIVE

CORDJIA CAPITAL PROJECTS GROUP
CAMDEN, MAINE
CONTACT: BLAINE BUCK, P.E., R.A.
(207) 236-9973

ARCHITECT

RYAN SENATORE ARCHITECTURE
PORTLAND, MAINE
CONTACT: RYAN SENATORE, R.A.
(207) 650-6414

SURVEYOR

OWEN HASKELL, INC
FALMOUTH, MAINE
CONTACT: JOHN C. SCHWANDA, P.L.S.
(207) 774-0424

TRAFFIC ENGINEER

TRAFFIC SOLUTIONS
PORTLAND, MAINE
CONTACT: BILL BRAY, P.E.
(207) 774-3603

GEOTECHNICAL ENGINEER

SUMMIT GEOENGINEERING SERVICES
145 LISBON ST SUITE 701
LEWISTON, ME 04240
CONTACT: BILL PETERLEIN, P.E.
(207) 576-3313

STRUCTURAL ENGINEER

STRUCTURAL INTEGRITY CONSULTING ENGINEERS, INC.
PORTLAND, MAINE
CONTACT: AARON JONES, P.E.
(207) 774-4614

CIVIL ENGINEER

ACORN ENGINEERING, INC
PORTLAND, MAINE
CONTACT: WILLIAM SAVAGE, P.E.
(207) 775-2655

LANDSCAPE ARCHITECT

ACETO LANDSCAPE ARCHITECTS
PORTLAND, MAINE
CONTACT: NICK ACETO, PLA, ASLA
(207) 7221-3390

FIRE PROTECTION

CODE RED CONSULTANTS
SCARBOROUGH, MA
CONTACT: ZACH BLANCHARD, P.E.;
CARL NELSON, P.E.
(617) 500-7633

GENERAL CONTRACTOR

TBD

MEP DESIGNER

TBD



VICINITY MAP
SCALE: 1"=1000'

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CL	CENTERLINE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
CY	CUBIC YARD
DI	DUCTILE IRON
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
GAL.	GALVANIZED
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
M.E.P	MECHANICAL, ELECTRICAL, PLUMBING DESIGNER
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY	DATE
COST ESTIMATE	WHS	11/15/19
PRELIM PRICING	WHS	8/7/2020
SITE PLAN APPLICATION	WHS	9/4/2020

DRAWING NAME: COVER SHEET & LEGEND
PROJECT NAME/ ADDRESS: **FEDERAL STREET DEVELOPMENT** 200 FEDERAL STREET PORTLAND, ME 04101
CLIENT/OWNER: REDFERN DOWNTOWN, LLC PORTLAND, ME 04104

ACORN ENGINEERING, INC.

THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
PORTLAND, MAINE 04101
PO BOX 3477
(207) 775-2655

FILE: 1129_CIVIL
JN: 1129
SCALE: AS NOTED
DESIGNED BY: FRT
DRAWN BY: FRT
CHECKED BY: WHS/PFH

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11
8-28-20
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-01

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE (IF APPLICABLE), ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN AUTOCAD FORMAT AND PAPER, STAMPED "AS-BUILT". IF AUTOCAD CAPABILITY IS NOT AVAILABLE, EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED BOUNDARY & TOPOGRAPHIC SURVEY BY OWEN HASKELL, INC. DATED 11/12/19, REV 12/3/19.
8. SUBSURFACE DATA HAVE BEEN OBTAINED BY SUMMIT GEOENGINEERING SERVICES, INC. AND SHALL BE INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL ALSO REVIEW THE REPORT PRIOR TO SUBMITTING A BID.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AND ALL ADJACENT PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
10. CONSTRUCTION MANAGEMENT PLAN AND SITE LOGISTICS NARRATIVE BY THE CONTRACTOR SHALL BE REFERRED TO FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. TRAFFIC CONTROL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
12. NO HOLES, TRENCHES, OR STRUCTURES SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT IN ANY AREA ACCESSIBLE TO THE PUBLIC OR WITHIN THE PUBLIC RIGHT-OF-WAY.
13. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. THIS SHALL BE COMPLETED AT A MINIMUM FOR ADJACENT STRUCTURES ALONG FEDERAL STREET, TEMPLE STREET, EXCHANGE STREET, AND CONGRESS STREET. A COPY OF THE SURVEY SHOULD BE PROVIDED TO THE OWNER. DOCUMENT WITH PICTURES AT A MINIMUM.
14. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH THE ENGINEER, ACORN ENGINEERING INC. (ACORN), IF ANY.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL TREES AND SHRUBS ON THE PROJECT WHICH ARE NOT TO BE REMOVED.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY TRENCH PAVEMENT THAT HAS EXPERIENCED EXCESSIVE SETTLEMENT, CRACKING, OR OPENING OF JOINTS. REPAIRS MAY INCLUDE OVERLAY. REMOVAL OF WORK MAY BE NECESSARY AFTER THE FINAL ACCEPTANCE OF WORK OR PRIOR TO THE END OF THE WARRANTY PERIOD. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO ACORN TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP, ERECTION, AND CONSTRUCTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION FOR ACORN'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY ACORN OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. PRIOR TO BACKFILL, PROVIDE CURING OF CONCRETE FOR 28 DAYS OR AS DIRECTED BY MATERIALS TESTING ENGINEER.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE, IF APPLICABLE.
12. ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
13. ACORN BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND SITE OBSERVATION VISITS DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.
14. EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBPART P OF 29 CRF PART 1926.650-.652 (CONSTRUCTION STANDARD FOR EXCAVATIONS).
15. ALL TRENCH PAVEMENT REPAIR SHALL BE COMPLETED WITH THE USE OF A STREET PAVER WITH A SCREED WIDTH CAPABLE OF SPANNING THE FULL WIDTH OF THE TRENCH UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

SPECIAL INSPECTION NOTES

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ALL SITE DRAINAGE-RELATED WORK SHALL BE REVIEWED BY ACORN ENGINEERING.
3. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT.
4. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
5. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
6. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
7. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
8. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
9. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.
10. SPECIAL INSPECTION FIRM SHALL BE EMPLOYED BY REDFERN AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A LICENSED PROFESSIONAL LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED STRUCTURE CORNERS.
6. CONTRACTOR TO ENSURE THAT DRIVEWAYS AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND IN USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF SITE PLAN – LEVEL III AND SUBDIVISION PERMIT FROM THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.
3. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A STREET OPENING PERMIT FROM THE CITY OF PORTLAND. ADDITIONALLY, COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM (MEETS THE REQUIREMENTS WITHIN SECTION 615 OF THE MDOT STANDARD SPECIFICATIONS, MOST RECENT VERSION AND IS FREE OF TRACEABLE AMOUNTS OF CONTAMINANTS) SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY STRIPPED TOPSOIL WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. DEWATERING SHALL INCLUDE TREATMENT OF SILT THROUGH THE USE OF A DIRTBAG BY ACF ENVIRONMENTAL OR APPROVED EQUIVALENT. FLOWS FROM DEWATERING ACTIVITIES SHALL NOT BE DISCHARGED INTO SANITARY SEWERS. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE ADJACENT LAND OWNERS. PRIOR TO THE CONTRACTOR PRICING THE WORK, THEY SHALL PROVIDE ACORN WITH PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE, THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. NO ADDITIONAL PAYMENT FOR UNSUITABLE MATERIALS.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, CONTACT ACORN. THE DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER.
10. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER, IF APPLICABLE.

EROSION CONTROL NOTES:

1. ALL ROUTINE MAINTENANCE ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
2. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
3. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
4. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR MUST ALSO REFER TO THE APPLICABLE PERMIT CONDITIONS AS IDENTIFIED IN PERMITTING NOTES ABOVE, FINDINGS OF FACT AND ORDER (IF ANY), AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL, MOST RECENT EDITION, FOR ADDITIONAL INFORMATION.
5. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
6. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES, PRIOR TO THE ORDERING OF STRUCTURES.
3. ALL NEW SANITARY MANHOLES SHALL BE VACUUM TESTED BEFORE BACKFILLING. TESTING SHALL BE COMPLETED IN ACCORDANCE WITH TECHNICAL REPORT #16 (TR-16): GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS, PREPARED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.
4. SEWER MANHOLES SHALL BE 4' ID UNLESS OTHERWISE STATED ON THE PLANS.
5. CONTRACTOR TO PROVIDE 5'-6" OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
6. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN WITHIN THE PLAN SET.
7. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT DOCUMENT ''WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURE'', MOST RECENT REVISION.
8. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
9. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
10. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
12. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY MEP DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
13. COORDINATE EXIT POINT FOR SECONDARY UTILITY SERVICES WITH THE ARCHITECT/MEP DESIGNER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN WITHIN THE UTILITY PLAN.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.
15. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
16. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS OR SAGS IN THE PIPING WILL BE PERMITTED. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED PIPE LINES SHALL BE SUITABLY RESTRAINED WITH THRUST BLOCKS OR RETAINER GLANDS. RETAINER GLANDS ALLOWED FOR DUCTILE IRON PIPE ONLY. PROVIDE ALL BENDS, HORIZONTAL AND VERTICAL, AS REQUIRED TO MEET THE GRADES AND ALIGNMENTS INDICATED ON THE DRAWINGS.
17. ALL WASTEWATER PIPING, EXCLUDING BUILDING DRAINS, AND ALL PRESSURIZED PIPING, TO INCLUDE WATER MAINS, INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE.
18. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS AND ADDITIONAL PIPE AS REQUIRED TO ENSURE A COMPLETE AND PROPERLY FUNCTIONING CONNECTION. CONTRACTOR TO VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. ADAPTERS AND FITTINGS ARE INCIDENTAL TO THE PIPE INSTALLATION.
19. WHENEVER POSSIBLE, WATER LINES SHOULD BE INSTALLED OVER WASTEWATER LINES. A MINIMUM SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER LINE SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A WATER LINE CROSSES UNDER THE WASTEWATER LINE, A FULL LENGTH OF WASTEWATER PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE,
20. THE CONTRACTOR SHALL BE ANTICIPATE THAT THE NATIVE SILT AND CLAY SOILS WILL NOT BE SUITABLE FOR PIPE TRENCH BACKFILL IN PAVED AREAS.
21. GROUNDWATER SHALL BE CONTROLLED TO A LEVEL OF AT LEAST ONE FOOT BELOW SUBGRADE OF THE PIPE OR STRUCTURE. THE CONTRACTOR SHALL MAINTAIN THE LOWERED GROUNDWATER LEVEL UNTIL CONSTRUCTION HAS BEEN COMPLETED TO SUCH AN EXTENT THAT THE STRUCTURES OR PIPES WILL NOT BE FLOATED OR OTHERWISE DAMAGED.
22. EXCAVATION TO SUBRADE IN NATIVE SILT AND CLAY SHALL BE COMPLETED WITH A SMOOTH EDGE BUCKET TO MINIMIZE SUBGRADE DISTURBANCE.
23. ALL ADJUSTMENTS TO FINISHED GRADE ARE TO BE COMPLETED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONFIRM STRUCTURES THAT REQUIRE ADJUSTMENT WITH THE ENGINEER OR OWNERS REPRESENTATIVE PRIOR TO ADJUSTING FRAMES.

DEMOLITION NOTES:

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY BE ON SITE:
   - ROCK AND CONCRETE FOUNDATIONS
   - CONCRETE SLABS
   - BITUMINOUS ASPHALT PAVEMENT
   - CONCRETE PADS AND BLOCKS
   - FENCE POST AND FENCING
   - UNDERGROUND UTILITY LINES
   - ABOVE AND OR BELOW FUEL OIL AND PROPANE GAS TANKS
   - STORM DRAIN PIPES AND APPURTENANCE STRUCTURES
   - OTHER TRASH & MISCELLANEOUS SOLID WASTES
2. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
4. A PHASE I – ENVIRONMENTAL SITE ASSESSMENT FOR THE PROPERTY HAS BEEN DEVELOPMENT BY WOODARD & CURRAN, DATED MARCH 27, 2019.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRELIM PRICING	WHS 5/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: GENERAL NOTES

PROJECT NAME/ ADDRESS: **FEDERAL STREET DEVELOPMENT** 200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC PORTLAND, ME 04104

ACORN ENGINEERING, INC.

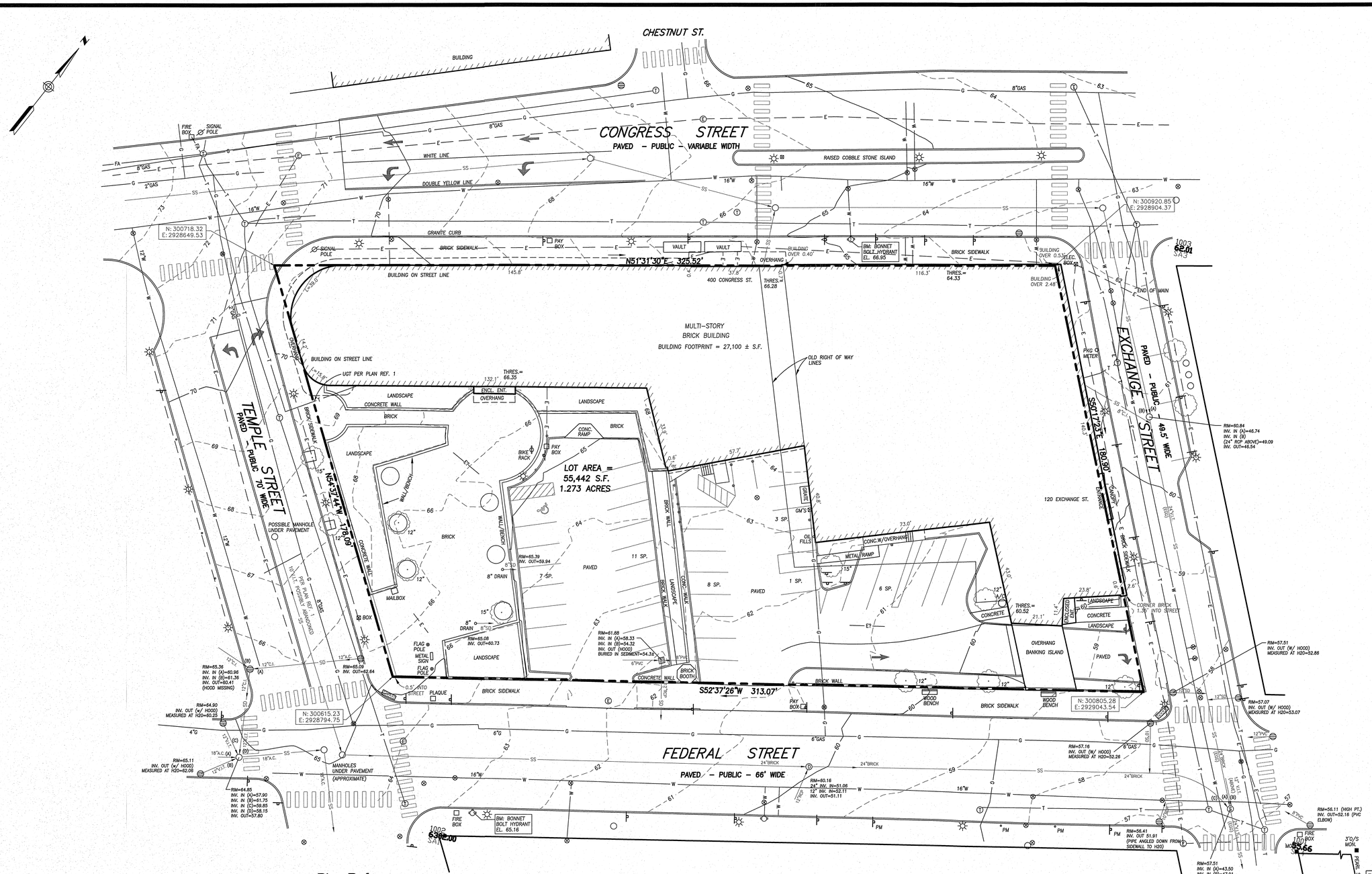
THESE PLANS SHALL NOT BE, IN WHOLE OR IN PART, USED FOR ANY OTHER PROJECT WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY SUCH UNAUTHORIZED USE, WHETHER OR NOT OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND SHALL BE WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

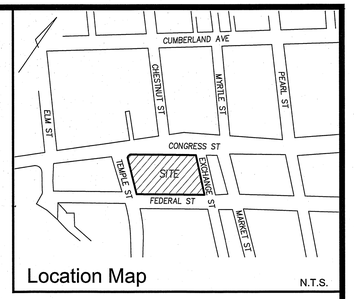
ACORN ENGINEERING, INC.
PO BOX 3477, PORTLAND, MAINE 04101
(207) 775-2655

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11401 — LICENSED PROFESSIONAL ENGINEER — 9-28-20

DRAWING NO.
C-02





Location Map N.T.S.

Legend

- MONUMENT FOUND
- IRON PIPE OR ROD FOUND
- MANHOLE
- HYDRANT
- WATER VALVE OR SHUTOFF
- GAS VALVE
- CATCH BASIN
- UTILITY POLE
- LIGHT POLE
- EM/GM ELECTRIC OR GAS METER
- SIGN
- CURB
- OHW — OVERHEAD WIRES
- DECIDUOUS TREE
- N/F NOW OR FORMERLY
- 000/000 DEED BOOK / PAGE
- CONC. CONCRETE
- BOLLARD
- PM PARKING METER
- W — WATER LINE
- G — GAS LINE
- T — TELEPHONE
- E — UNDERGROUND ELECTRIC
- FA — FIRE ALARM
- SD — STORM DRAIN
- SS — SANITARY SEWER
- 70 — 1' CONTOUR

Utility Note

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1–888–DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

SCALE : 1" = 20'

0' 10' 20' 40'

Plan References

1. *"MAINE NATIONAL BANK, SITE PLAN, SURVEY AND PLAN BY H.I. & E.C. JORDAN SURVEYORS" MARCH 30, 1973 REVISED THROUGH APRIL 25, 1973 ECJ FILE #89.*
2. *"CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, CONGRESS ST., FROM PEARL ST. TO STATE ST. STREET LINE DATA" MAY 6, 1949 CITY FILE NO. 456/43*
3. *"PLAN OF PROPERTY IN PORTLAND, ME MADE FOR GANNETT PUBLISHING CO., INC. APRIL 1946" BY H.I. & E.C. JORDAN CIVIL ENGINEERS.*
4. *"PLAN OF PROPERTY IN PORTLAND, MAINE, MADE FOR UNION MUTUAL LIFE INSURANCE CO. FEBRUARY 1953" BY H.I. & E.C. JORDAN CIVIL ENGINEERS.*
5. *CITY OF PORTLAND ENGINEERING DEPARTMENT STREET LINE PLANS.*
6. *H.I. & E.C. JORDAN & CO. SURVEYS OF 1920 AND 1922 (SEE BOOK 1111, PAGE 119)*
7. *ALTA/NSPS LAND TITLE SURVEY, 396 CONGRESS STREET (AKA 400 CONGRESS STREET) PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR P O SQUARE PORTLAND LLC AND ITS ASSIGNS, MAY 8, 2019, BY OWEN HASKELL, INC.*

General Notes

1. *OWNER OF RECORD: PO SQUARE BUILDING LLC, 120 EXCHANGE ST., PORTLAND, ME C.C.R.D. BOOK 35640 PAGE 71 TAX MAP 32 BLOCK G LOT 1*
2. *BEARINGS ARE BASED ON STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE, NAD83 PER CITY CONTROL PROVIDED BY THE DEPARTMENT OF PUBLIC WORKS. MONUMENTS USED: L757–32–104 (CEDAR + CUMBERLAND), T124–18–1152 (WHARF + UNION)*
3. *ELEVATIONS ARE BASED ON CITY DATUM. CONTROL POINT #23 T–113–44–141 ELEVATION 52.08 USED.*
4. *ONLY TWO CITY STREET MONUMENTS WERE FOUND, ON FEDERAL STREET. THE STREET LINES ARE BASED ON THOSE MONUMENTS FOR FEDERAL AND EXCHANGE AND PLAN REFERENCE 1 FOR CONGRESS AND TEMPLE STREETS.*
5. *UNDERGROUND UTILITIES IN THE STREET MARKED VIA DIGSAFE. UNDERGROUND UTILITIES ON SITE MARKED BY DIGSMART OF MAINE. PLAN REFERENCE 1 ALSO UTILIZED FOR THE LOCATION OF UNDERGROUND UTILITIES.*

Certificate

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

10-13-2020
DATE

JOHN C. SCHWANDA, PLS #1252

STATE OF MAINE JOHN C. SCHWANDA 1252 PROFESSIONAL LAND SURVEYOR

REV.3	10-13-20	REVISED COUNTOURS
REV.2	9-02-20	INVERT INFORMATION, ADDITIONAL UTILITES, BEARINGS
REV.1	12-03-19	UNDERGROUND UTILITIES, CITY HORIZONTAL COORDS.

Boundary & Topographic Survey

At

396-400 Congress Street, Portland, Maine

Made for

Acorn Engineering

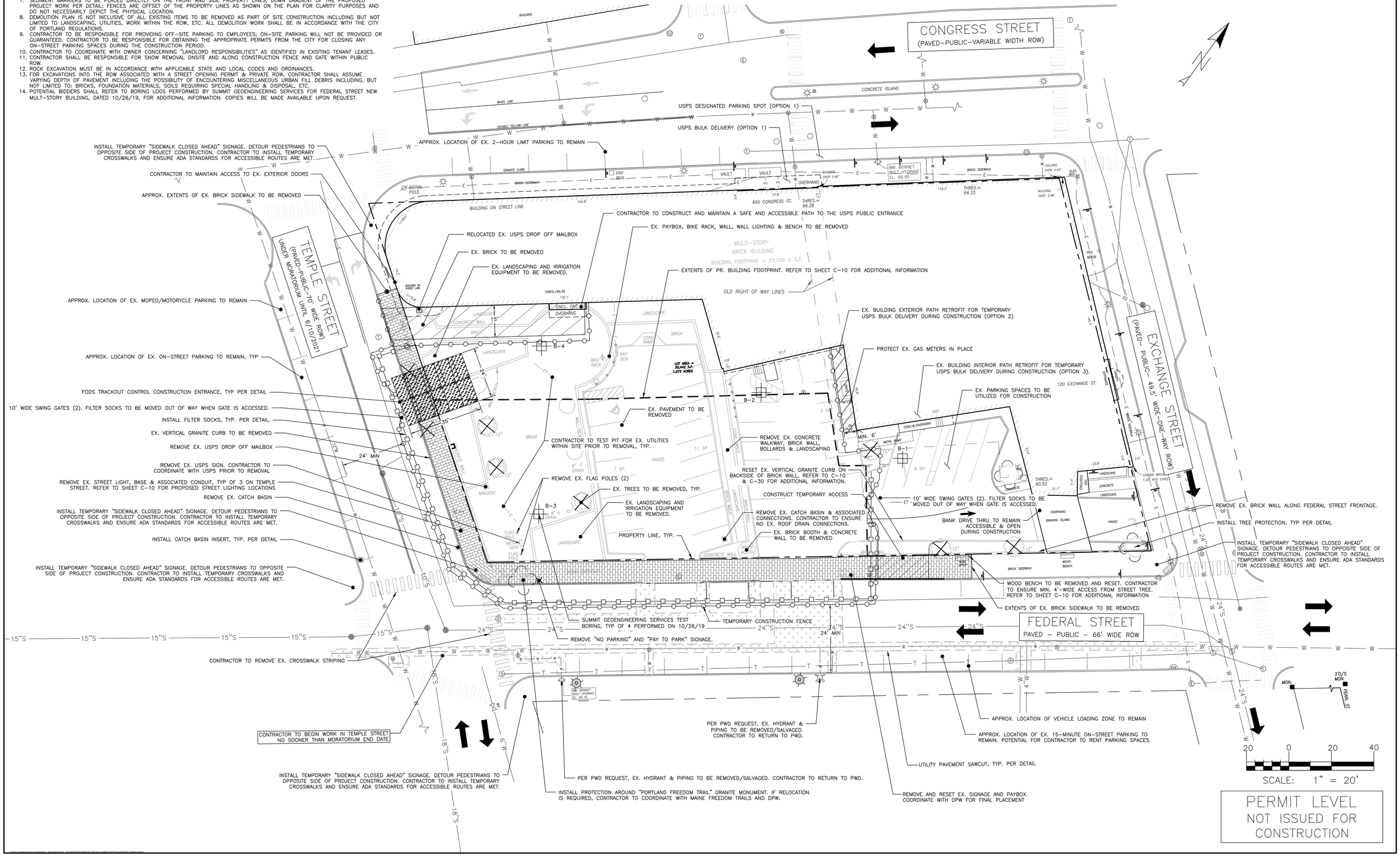
65 Hanover Street, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: RS / JLW	DATE: NOV. 12, 2019	JOB NO. 2019-287 P	
CHECKED BY: JCS	SCALE: 1" = 20'	DRWG. NO. 1	

GENERAL NOTES:

1. EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE PROPER DISPOSAL OF ALL MATERIALS.
3. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES IN PUBLIC ROW. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
5. CONTRACTOR WILL BE RESPONSIBLE FOR UTILIZING A PRIVATE UTILITY LOCATING SERVICE COMPANY PRIOR TO WORK IN PRIVATE ROW.
6. ALL CONSTRUCTION SIGNAGE IS TEMPORARY AND WILL BE REMOVED AT PROJECT COMPLETION. SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. FINAL SIGNAGE WORDING AND PLACEMENT LOCATION TO BE ACCEPTED BY THE CITY.
7. SEDIMENT BARRIERS TO BE PLACED DIRECTLY ON THE FRONT AND SIDE PROPERTY LINES, DOWN GRADIENT OF THE PROPOSED PROJECT WORK PER DETAIL; FENCES ARE OFFSET OF THE PROPERTY LINES AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY DEPICT THE PHYSICAL LOCATION.
8. DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.
9. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING OFF-SITE PARKING TO EMPLOYEES; ON-SITE PARKING WILL NOT BE PROVIDED OR GUARANTEED. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE PERMITS FROM THE CITY FOR CLOSING ANY ON-STREET PARKING SPACES DURING THE CONSTRUCTION PERIOD.
10. CONTRACTOR TO COORDINATE WITH OWNER CONCERNING "LANDLORD RESPONSIBILITIES" AS IDENTIFIED IN EXISTING TENANT LEASES.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR SNOW REMOVAL ONSITE AND ALONG CONSTRUCTION FENCE AND GATE WITHIN PUBLIC ROW.
12. ROCK EXCAVATION MUST BE IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
13. FOR EXCAVATIONS INTO THE ROW ASSOCIATED WITH A STREET OPENING PERMIT & PRIVATE ROW, CONTRACTOR SHALL ASSUME VARYING DEPTH OF PAVEMENT INCLUDING THE POSSIBILITY OF ENCOUNTERING MISCELLANEOUS URBAN FILL DEBRIS INCLUDING, BUT NOT LIMITED TO: BRICKS, FOUNDATION MATERIALS, SOILS REQUIRING SPECIAL HANDLING & DISPOSAL, ETC.
14. POTENTIAL BIDDERS SHALL REFER TO BORING LOGS PERFORMED BY SUMMIT GEOENGINEERING SERVICES FOR FEDERAL STREET NEW MULT-STORY BUILDING, DATED 10/26/19, FOR ADDITIONAL INFORMATION. COPIES WILL BE MADE AVAILABLE UPON REQUEST.



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRECON DESIGN	WHS 11/20/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: **CONSTRUCTION MANAGEMENT PLAN**

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER:
REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING, INC.
ACORN ENGINEERING, INC.
70 MAIN STREET, SACO, MAINE 04101
PO BOX 3370, PORTLAND, MAINE 04104
(207) 775-2655

THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE RETURNED UPON REQUEST OR UPON COMPLETION OF THE PROJECT. ANY MODIFICATION MADE BY ANY PERSON OTHER THAN ACORN ENGINEERING, INC. OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11555
9-28-20
REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-03

GENERAL NOTES:

1. BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. RAMPS MUST CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT FOR A MAXIMUM RISE OF 30-INCHES.
5. SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
6. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
7. PAVEMENT JOINTS MUST BE SAWCUT & TACK COATED PRIOR TO PAVING TO PROVIDE A DURABLE & UNIFORM JOINT

IMPERVIOUS AREA WITHIN PROPERTY		
LOCATION	EXISTING (SF)	PROPOSED (SF)
ROOF	27,703	41,803
STAIRS/RAMP	172	121
PAVEMENT	14,394	7,756
BRICK	6,718	2,619
CURB & LANDINGS	980	298
CONCRETE	588	487
TOTAL (EXCL. ROOF)	22,852	11,281
TOTAL (INCL. ROOF)	50,555	53,084

SPACE AND BULK STANDARDS			
B3 DOWNTOWN BUSINESS, DOWNTOWN ENTERTAINMENT OVERLAY ZONE, DOWNTOWN HEIGHT OVERLAY, CONGRESS STREET HISTORIC DISTRICT	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	NONE	1.27 AC	1.27 AC
MINIMUM STREET FRONTAGE	15'	998'	998'
MAXIMUM STREET WALL BUILD-TO LINE	5'	NA	0'
MINIMUM YARD DIMENSIONS	NONE	NA	NA
MINIMUM LOT WIDTH	NONE	NA	NA
MAXIMUM LOT COVERAGE	100%	91.4%	96.0%
MINIMUM BUILDING HEIGHT	35'	NA	>35'. SEE MAX. HEIGHT
MAXIMUM STREET WALL HEIGHT	90'	NA	38'±
MAXIMUM BUILDING HEIGHT*	190'	NA	190'
BICYCLE PARKING	106 INTERIOR	2 EXTERIOR	8 EXTERIOR 106 INTERIOR

*WHEN UTILIZING 40' ARCHITECTURAL CAP ALLOWANCE, PER "DOWNTOWN HEIGHT OVERLAY PORTLAND MAINE" MAP & SEC. 14-220(I)(3). PROPOSED MAP & TEXT AMENDMENT (PLAN ZN-001230-2020) TO ALLOW FOR RESIDENTIAL UNITS WITHIN THE "APPURTENANCE."

PARKING SUMMARY				
PARKING DIMENSION	REQUIRED	PROPOSED ON-SITE	PROPOSED ON-STREET	OFFSITE LEASE TBD
9'X18'	–	12	–	
11'X18' (ADA)	–	1	–	
8'X15' (COMPACT)	–	2	–	
9'X15' (COMPACT)	–	1	–	
EXISTING TO REMAIN	–	5	–	
PARALLEL	–		2, 15-MIN SPACES	
TOTAL:	125*	21	2	125*

*REQUIRED PARKING DETERMINED BY PARKING ASSESSMENT PERFORMED BY TRAFFIC SOLUTIONS.

ISSUED FOR	BY	DATE
TDM	WHS	11/8/19
COST ESTIMATE	WHS	11/15/19
PRECON DESIGN	WHS	11/20/19
PRE-APP MEETING	WHS	12/11/19
CSS MAP & TEXT AMENDMENT	WHS	7/24/2020
CSS SITE PLAN	WHS	8/4/2020
PRELIM PRICING	WHS	8/7/2020
MAP & TEXT AMENDMENT	WHS	8/21/2020
SITE PLAN APPLICATION	WHS	9/4/2020

DRAWING NAME: SITE PLAN

PROJECT NAME/ADDRESS: FEDERAL STREET DEVELOPMENT
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

THE IDEAS, DESIGNS, AND PLANS SHOWN ON THIS DRAWING ARE THE PROPERTY OF ACORN ENGINEERING, INC. AND SHALL NOT BE MODIFIED OR USED IN ANY WAY WITHOUT THE WRITTEN PERMISSION AND APPROVAL OF ACORN ENGINEERING, INC. ANY MODIFICATION OF THESE PLANS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
70 MILK STREET, PORTLAND, MAINE 04101
PO BOX 3593 (207) 775-2655

FILE: 1129_CIVIL
JN: 1129
SCALE: AS NOTED
DESIGNED BY: FRT
DRAWN BY: FRT
CHECKED BY: WHS/PFH

STATE OF MAINE WILLIAM H. SAVAGE No. 11565 9-28-20 REGISTERED PROFESSIONAL ENGINEER

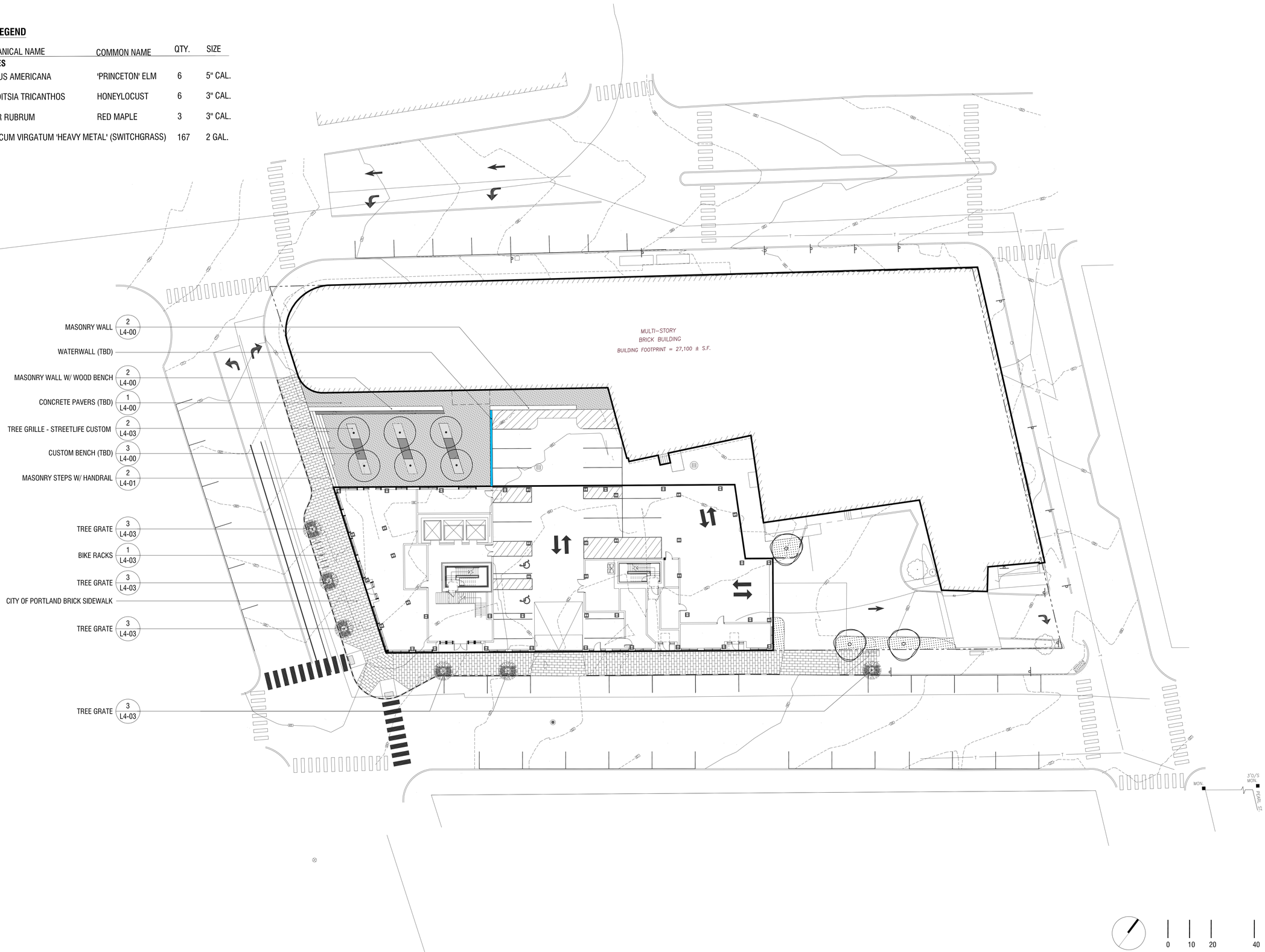
DRAWING NO. C-10

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

SCALE: 1"=10'

PLANTING LEGEND

SYM.	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
	TREES			
·	ULMUS AMERICANA	'PRINCETON' ELM	6	5" CAL.
	GLEDITSIA TRICANTHOS	HONEYLOCUST	6	3" CAL.
○	ACER RUBRUM	RED MAPLE	3	3" CAL.
	PANICUM VIRGATUM 'HEAVY METAL' (SWITCHGRASS)		167	2 GAL.



ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

200 FEDERAL STREET
PORTLAND, ME

PREPARED FOR

OWNER:

REDFERN DOWNTOWN LLC
Portland, Maine 04104

REVISIONS DATE

ISSUE DATE

SITE PLAN APPLICATION
SEPTEMBER 11, 2020

SHEET TITLE

SITE & PLANTING PLAN

SHEET INFORMATION

L 1-00

NOT FOR CONSTRUCTION

GENERAL NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANIES, DIG SAFE & DIG SMART NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.

5.1. APPROXIMATE LOCATION OF SEWER INFRASTRUCTURE OBTAINED FROM PORTLAND SEWER & STORM SHP FILES, DATED 06/20/16.

6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.

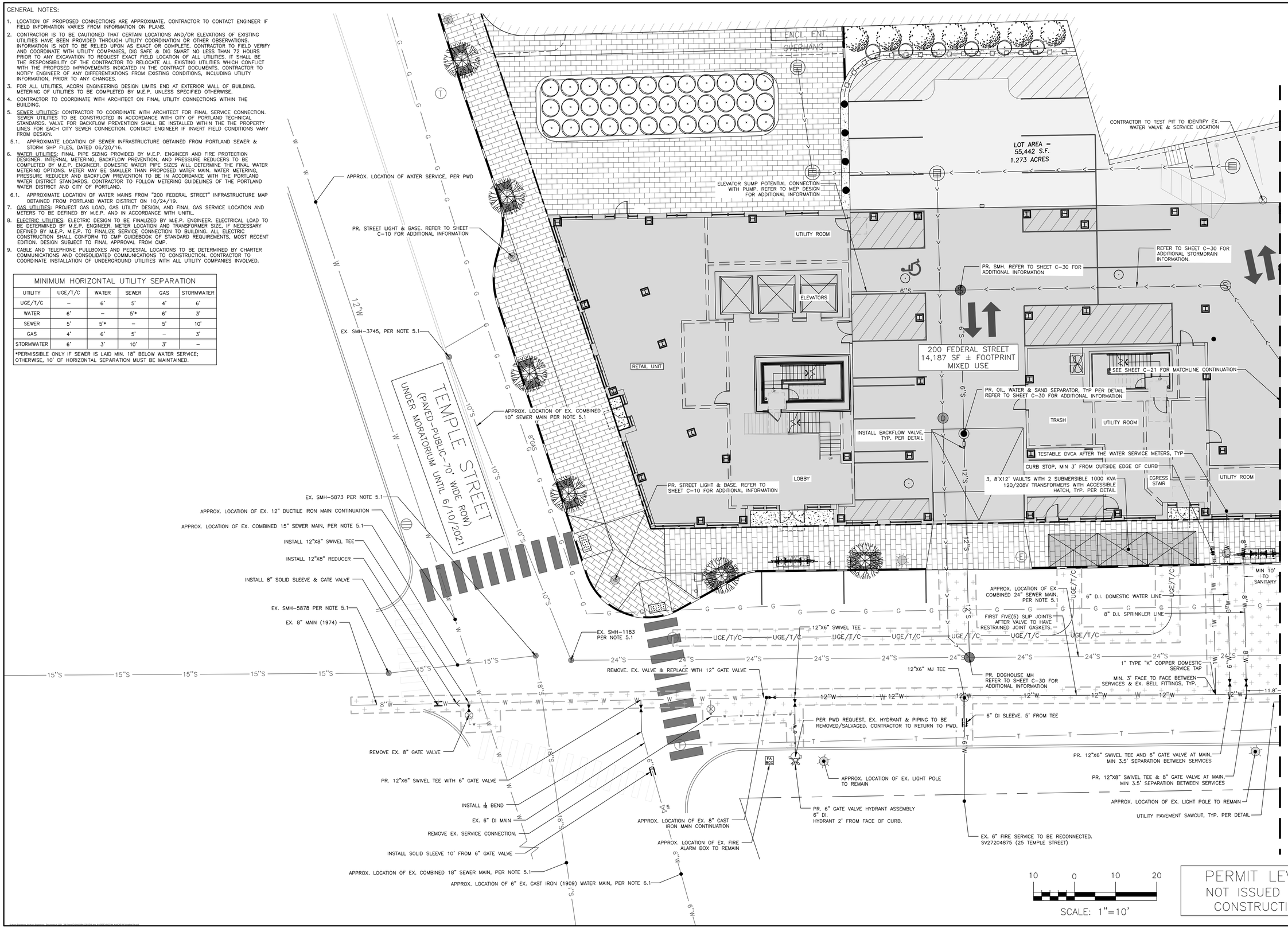
6.1. APPROXIMATE LOCATION OF WATER MAINS FROM "200 FEDERAL STREET" INFRASTRUCTURE MAP OBTAINED FROM PORTLAND WATER DISTRICT ON 10/24/19.

7. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNITIL.
8. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND CONSOLIDATED COMMUNICATIONS TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.

MINIMUM HORIZONTAL UTILITY SEPARATION

UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	–	6'	5'	4'	6'
WATER	6'	–	5'*	6'	3'
SEWER	5'	5'*	–	5'	10'
GAS	4'	6'	5'	–	3'
STORMWATER	6'	3'	10'	3'	–

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10' OF HORIZONTAL SEPARATION MUST BE MAINTAINED.



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
ATS	FRT 11/1/19
PWD REVIEW	FRT 11/5/19
DPW REVIEW	FRT 11/8/19
PWD REVIEW	FRT 11/13/19
COST ESTIMATE	WHS 11/15/19
PRECON DESIGN	WHS 11/20/19
SITE PLAN APPLICATION	WHS 3/4/2020

DRAWING NAME: UTILITY PLAN – 1

PROJECT NAME/ADDRESS: FEDERAL STREET DEVELOPMENT
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING, INC.

USE, PUBLICATION, OR MODIFICATION OF THESE PLANS WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
P.O. BOX 2377, AUGUSTA, MAINE 04101
(207) 775-2655

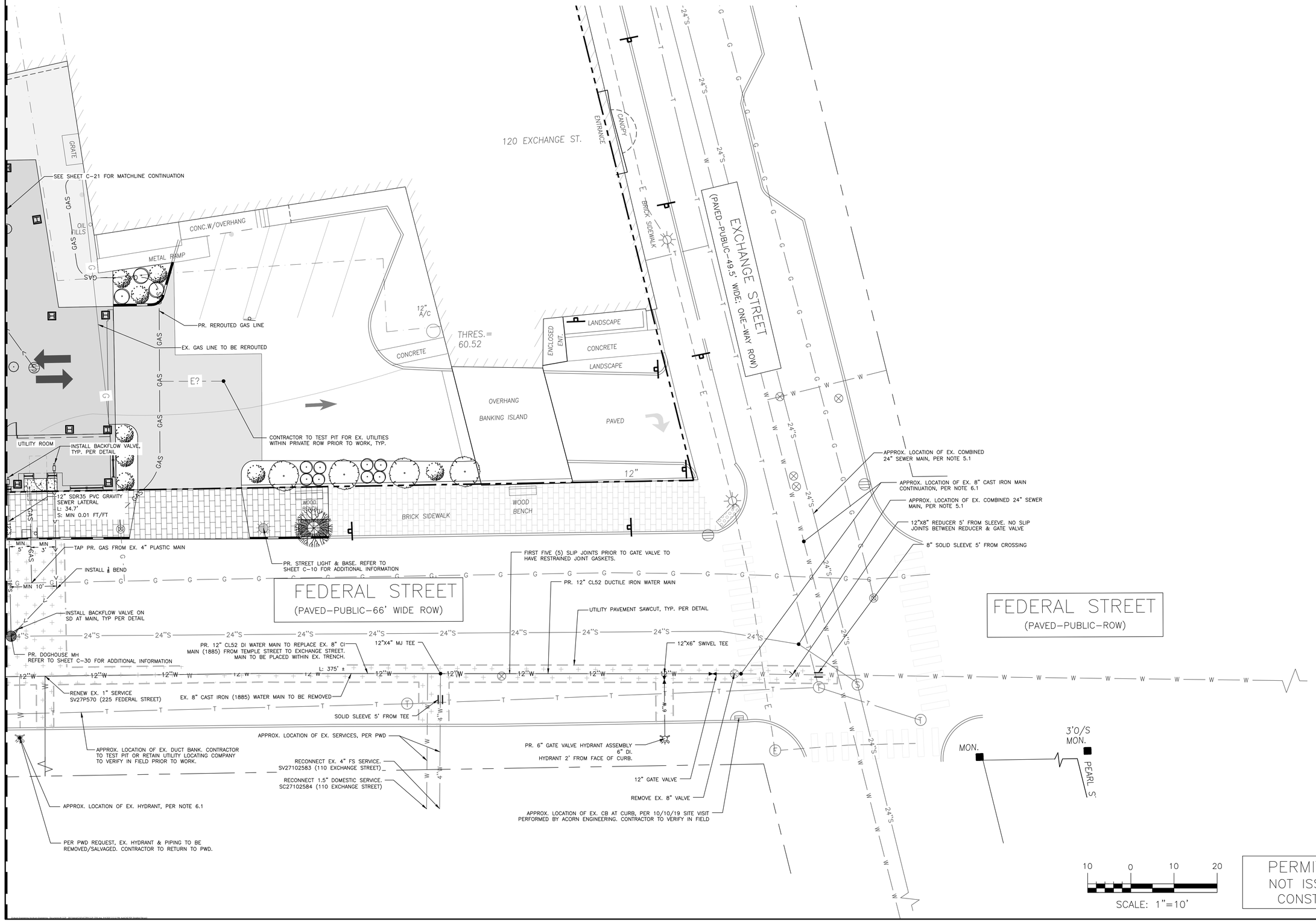
FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE
WILLIAM H. SAVAGE
No. 11661
8-28-20
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
C-20

GENERAL NOTES:

1. PLEASE REFER TO SHEET C-20 FOR GENERAL NOTES & UTILITY SEPARATION TABLE.



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	WHS	9/4/2020

DRAWING NAME: **UTILITY PLAN – 2**

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING, INC.
ACORN ENGINEERING, INC.
127 KENDALL ROAD, RAYMOND, MAINE 04101
PO BOX 337 (207) 775-2655

THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

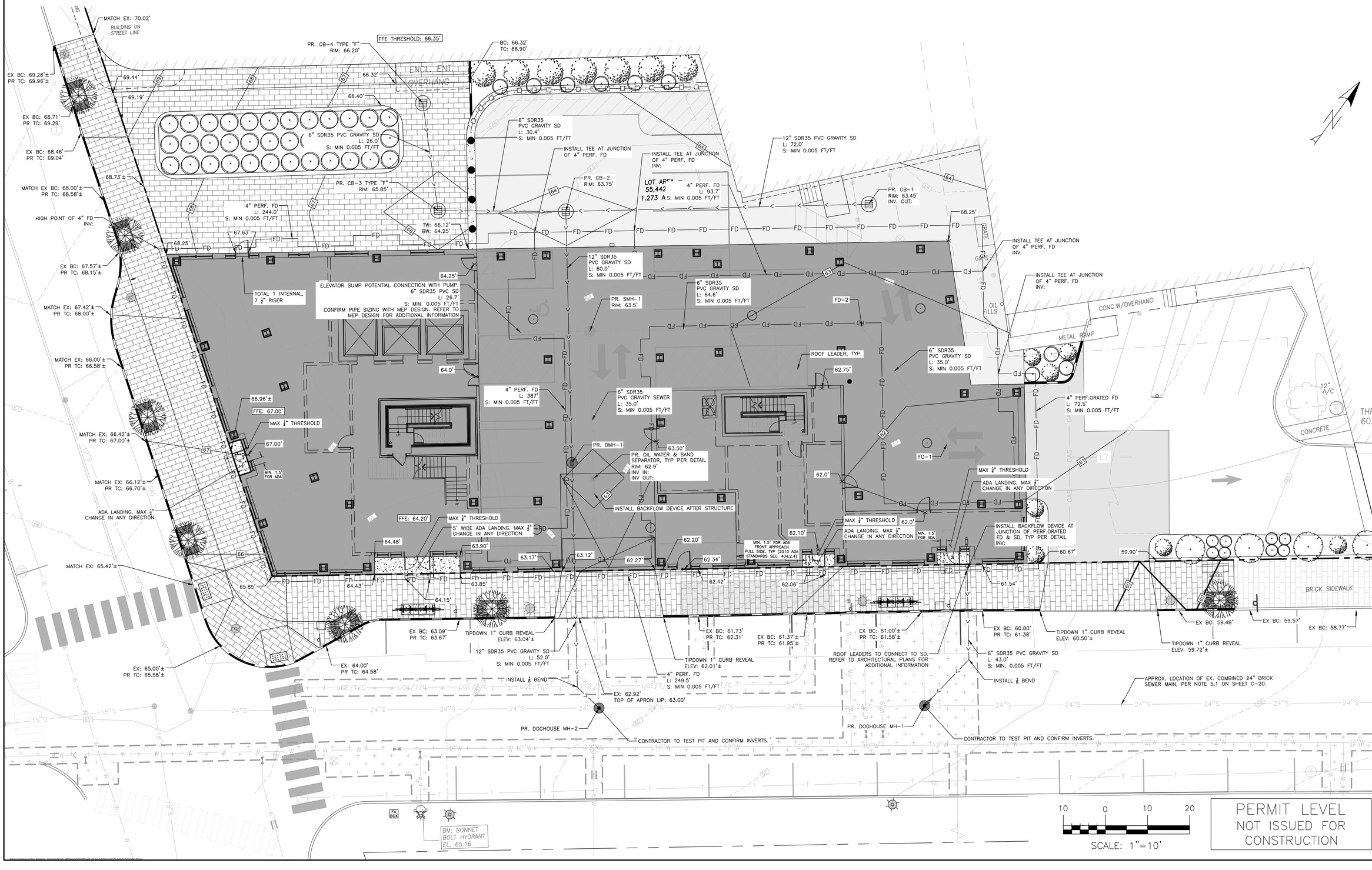
FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11555 — 9-28-20 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-21

GENERAL NOTES:

1. WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
4. CONTRACTOR SHALL ENSURE MINIMUM 1% SLOPE PITCHING AWAY FROM FOUNDATION.



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRECON DESIGN	WHS 11/20/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: GRADING & DRAINAGE PLAN

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING, INC.
ACORN ENGINEERING, INC. 70 MILK STREET, PORTLAND, MAINE 04101
PO BOX 3293 PORTLAND, ME 04104 (207) 775-2655

ALL PLANS SHALL BE CONSIDERED AS INSTRUMENTS OF SERVICE AND SHALL NOT BE USED, MODIFIED, OR ALTERED WITHOUT PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THESE PLANS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11812 — 8-28-20 — REGISTERED PROFESSIONAL ENGINEER

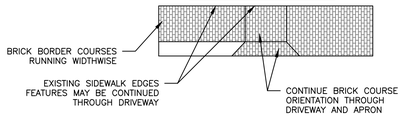
DRAWING NO.
C-30

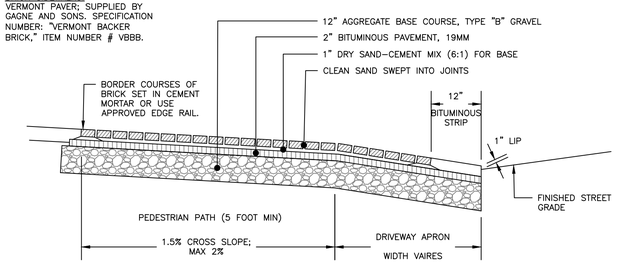
BRICKS TO BE USED:

NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA, OR APPROVED EQUAL.
LACHANCE ITEM #193623, PINE HALL PATHWAY PAVER BRICK.

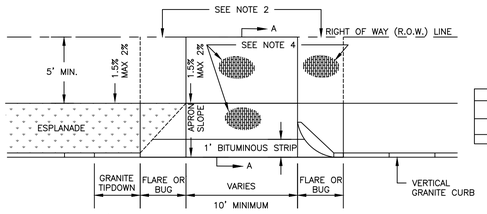
REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK," ITEM NUMBER # VBBB.

BRICK ORIENTATION DETAIL





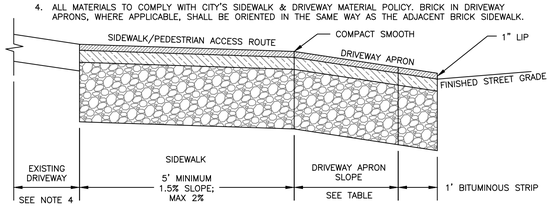
BRICK DRIVEWAY APRON WITH BITUMINOUS BASE
NOT TO SCALE



APRON SLOPE TABLE	
LAND USE	MAXIMUM RECOMMENDED GRADE CHANGE AT STREET (G)
RESIDENTIAL WITH <9 PARKING SPACES	14%
ALL OTHER DRIVEWAYS	10%

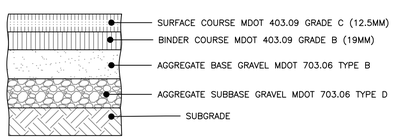
NOTES:

1. MATCH EXISTING GRADE AT R.O.W. LINE, WHERE REQUIRED TO MEETE A.D.A. AND DRIVEWAY APRON SLOPE REQUIREMENTS, A CONSTRUCTION EASEMENT MAY BE REQUIRED.
2. IF MATCHING THE EXISTING GRADE AT ROW CAUSES APRON SLOPE TO EXCEED RECOMMENDED %, SIDEWALK TRANSITION AREAS MAY BE ADDED, BUT SHALL NOT EXCEED 8.33%.
3. TWO-FOOT RADIUS CORNER GRANITE PIECE ("BUGS") ARE REQUIRED AT LOW-VOLUME DRIVEWAYS UNLESS OTHERWISE DIRECTED BY DPW. AT OTHER DRIVEWAYS, STANDARD FLARE/TIPDOWN TREATMENTS SHALL BE USED.
4. ALL MATERIALS TO COMPLY WITH CITY'S SIDEWALK & DRIVEWAY MATERIAL POLICY. BRICK IN DRIVEWAY APRONS, WHERE APPLICABLE, SHALL BE ORIENTED IN THE SAME WAY AS THE ADJACENT BRICK SIDEWALK.



SECTION A-A

DRIVEWAY APRON
NOT TO SCALE



NOTES:

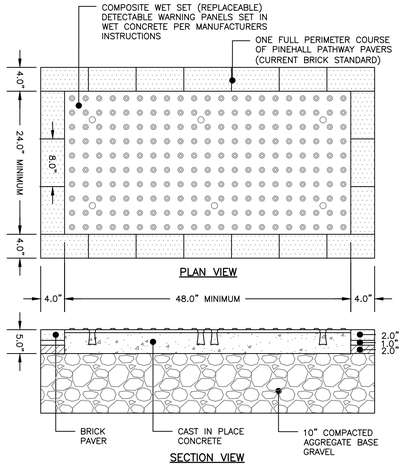
1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
2. SURFACE AND AGGREGATE MATERIALS SHALL MEET BOTH THE CITY OF PORTLAND & MDOT STANDARDS.

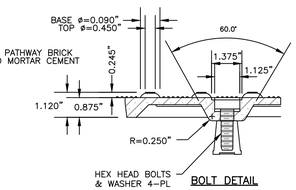
THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2-1/2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

CITY OF PORTLAND COLLECTOR BITUMINOUS PAVEMENT PROFILE (TEMPLE STREET)
NOT TO SCALE

NOTES:

1. COMPOSITE WET SET (REPLACEABLE) DETECTABLE WARNING PANELS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MAINE D.O.T. CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. NO OTHER DETECTABLE WARNING DESIGN OR CONFIGURATION IS ALLOWED.
4. FOR ALL DETECTABLE WARNING PANELS, WITHIN OR ABUTTING HISTORIC DISTRICTS AND HISTORIC LANDSCAPES, "DARK GRAY" COLORED (#36118) PANELS SHALL BE USED. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
5. THE DETECTABLE WARNING PANEL SHALL HAVE ONE FULL COURSE OF PINEHALL PATHWAY PAVERS (THE CURRENT BRICK STANDARD) AROUND THE FULL PERIMETER OF THE PANEL. THIS PERIMETER COURSE SHALL BE SET USING PORTLAND MORTAR CEMENT TO CREATE A FLUSH SURFACE BETWEEN THE BRICK AND THE PANEL.
6. SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
7. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FORM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.

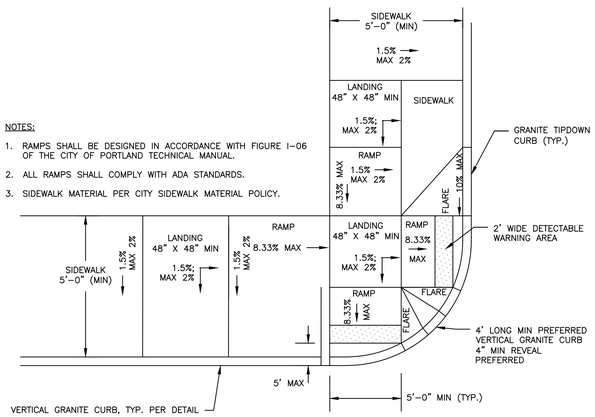




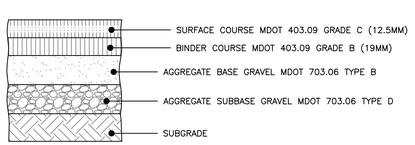
SIDEWALK RAMP DETECTABLE WARNING PANEL (HISTORIC DISTRICTS AND LANDSCAPES)
NOTES: TO SCALE

NOTES:

1. RAMPS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE I-06 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
2. ALL RAMPS SHALL COMPLY WITH ADA STANDARDS.
3. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.



COMBINED PERPENDICULAR RAMP LAYOUT AT INTERSECTION
NOT TO SCALE

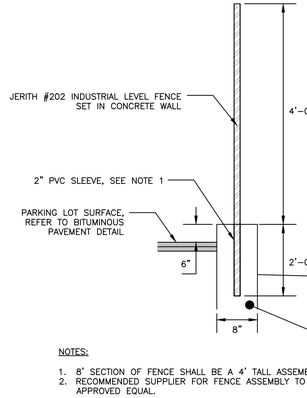


NOTES:

1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
2. SURFACE AND AGGREGATE MATERIALS SHALL MEET BOTH THE CITY OF PORTLAND & MDOT STANDARDS.

THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

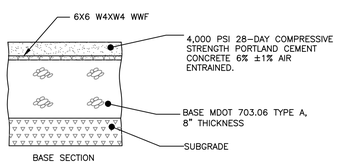
CITY OF PORTLAND LOCAL BITUMINOUS PAVEMENT PROFILE (FEDERAL STREET AND INTERNAL)
NOT TO SCALE



NOTES:

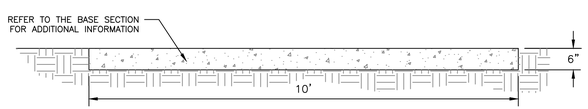
1. 8' SECTION OF FENCE SHALL BE A 4' TALL ASSEMBLY
2. RECOMMENDED SUPPLIER FOR FENCE ASSEMBLY TO BE MAIN LINE FENCE OR AN APPROVED EQUAL.

FENCE INSTALLED ON CAST IN PLACE (CIP) RETAINING WALL DETAIL
NOT TO SCALE



NOTES:

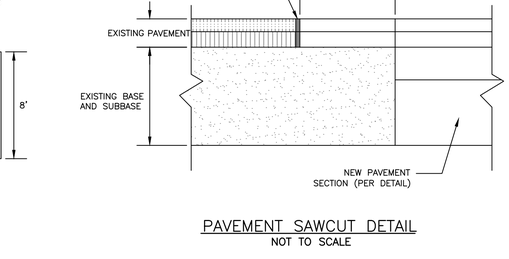
1. THE CONCRETE PAD SHALL BE 10'X3.25'X6" IN SIZE.
2. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
3. FINISH WITH A STIFF, COARSE, FIBER BROOM.



CONCRETE PAD DETAIL
NOT TO SCALE

NOTES:

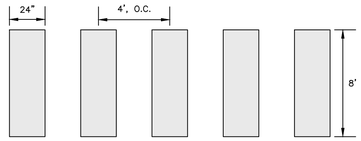
1. SAWCUT EXISTING PAVEMENT AND BUTT GRIND 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.



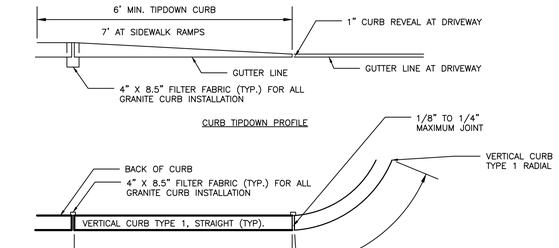
PAVEMENT SAWCUT DETAIL
NOT TO SCALE

NOTE:

1. CROSSWALKS TO BE BUILT IN CONFORMANCE WITH MUTCD STANDARDS, LATEST EDITION.
2. CROSSWALKS ARE TO BE PAINTED WHITE MEETING MAINE DOT SPECIFICATIONS.
3. 8' LENGTH OF BLOCKS TO BE PARALLEL TO THE DIRECTION OF CAR TRAFFIC.

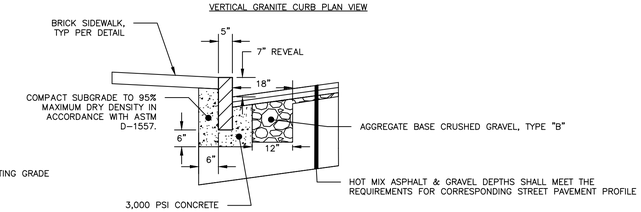


BLOCK CROSSWALK
NOT TO SCALE



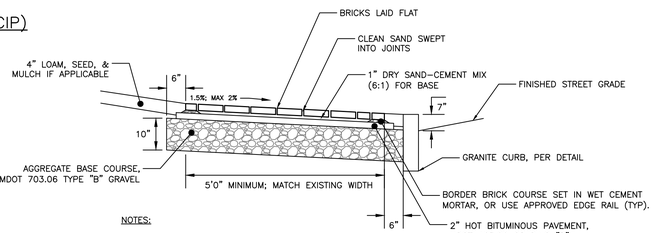
CURB TIPDOWN PROFILE

VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION
NOT TO SCALE



NOTES:

1. BRICKS TO BE USED:

NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.

2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.

BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: SITE DETAILS - 1

PROJECT NAME/ ADDRESS: **FEDERAL STREET DEVELOPMENT** 200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC PORTLAND, ME 04104

ACORN ENGINEERING, INC. — CIVIL ENGINEERING

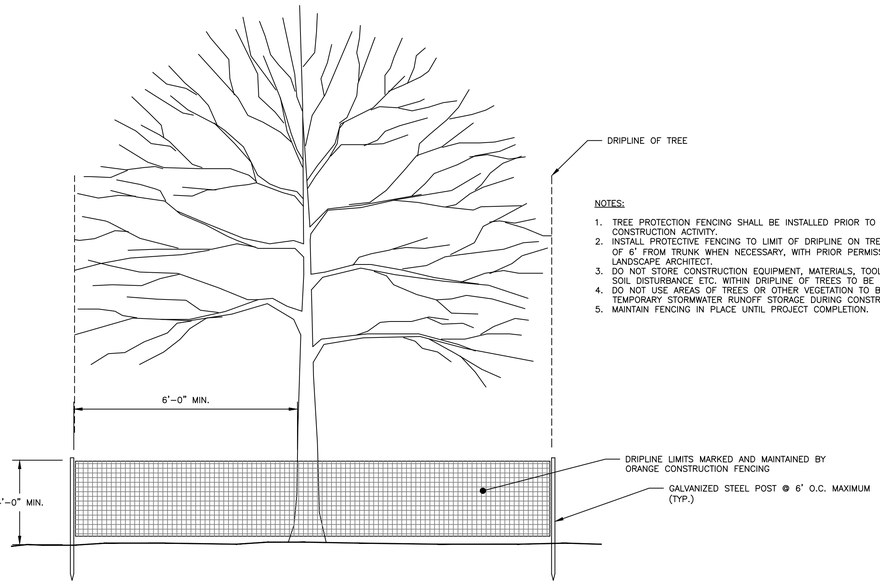
THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY UNAUTHORIZED MODIFICATIONS OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
PO BOX 7321 PORTLAND, MAINE 04101
(207) 775-2655

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11451 — 8-28-20 — LICENSED PROFESSIONAL ENGINEER

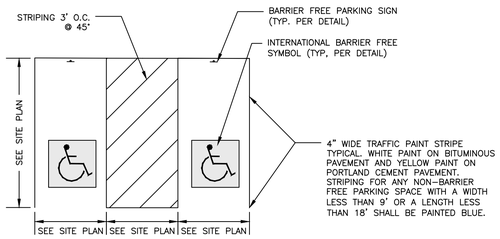
DRAWING NO.
C-40



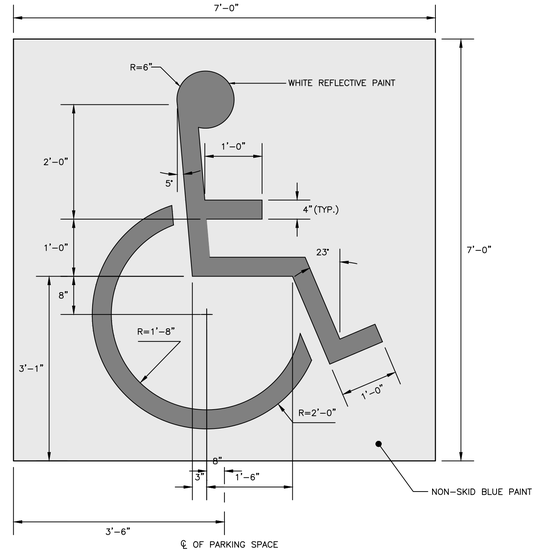
NOTES:

1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL PROTECTIVE FENCING TO LIMIT OF DRIPLINE ON TREE OR A MINIMUM OF 6' FROM TRUNK WHEN NECESSARY, WITH PRIOR PERMISSION OF LANDSCAPE ARCHITECT.
3. DO NOT STORE CONSTRUCTION EQUIPMENT, MATERIALS, TOOLS, OR OTHER SOIL DISTURBANCE ETC. WITHIN DRIPLINE OF TREES TO BE PRESERVED.
4. DO NOT USE AREAS OF TREES OR OTHER VEGETATION TO BE PRESERVED AS TEMPORARY STORMWATER RUNOFF STORAGE DURING CONSTRUCTION.
5. MAINTAIN FENCING IN PLACE UNTIL PROJECT COMPLETION.

TREE PROTECTION DETAIL
NOT TO SCALE



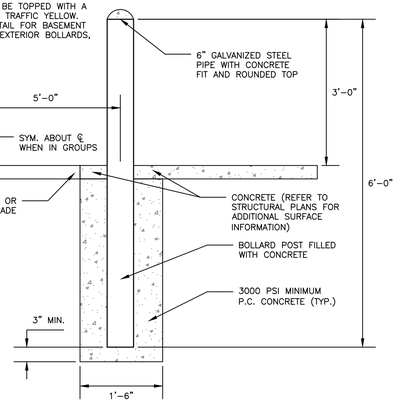
ADA PARKING SPACE DIMENSIONS
NOT TO SCALE



INTERNATIONAL BARRIER FREE SYMBOL
NOT TO SCALE

NOTES:

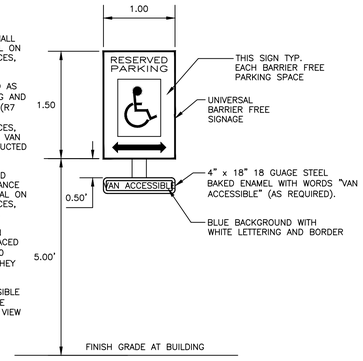
1. ALL PIPES SHALL BE TOPPED WITH A PLASTIC COVER IN TRAFFIC YELLOW.
2. PIPE BOLLARD DETAIL FOR BASEMENT LEVEL ONLY AND EXTERIOR BOLLARDS, IF ANY.



PIPE BOLLARD
NOT TO SCALE

NOTES:

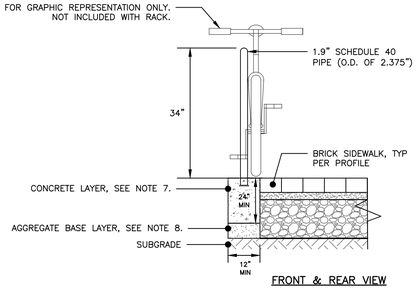
1. ALL ASPECTS OF RESERVED PARKING SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION
2. SIGN SHALL BE CONSTRUCTED AS SIGN R7-8 UNDER THE "PARKING AND STANDING SIGNS AND PLAQUES" (R7 SERIES) WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION. VAN ACCESSIBILITY SHALL BE CONSTRUCTED AS SIGN R7-8a OR R7-8b.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.
4. SIGN SHALL BE INSTALLED ON BUILDING. SIGNS SHOULD BE PLACED AT SUCH A HEIGHT (AT LEAST 60 INCHES ABOVE SURFACE) THAT THEY DO NOT GET OBSCURED BY ANY PARKED VEHICLES OR OTHER OBSTRUCTIONS AND MUST BE VISIBLE FROM THE DRIVER'S SEAT OF THE VEHICLE AND LOCATED RIGHT IN VIEW OF PARKING.



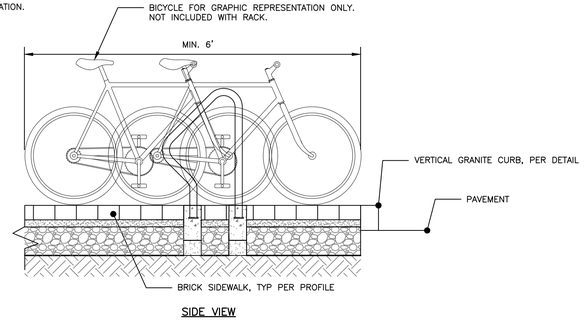
BARRIER FREE PARKING SIGN
NOT TO SCALE

NOTES:

1. BICYCLE RACK SHALL HAVE CAPACITY FOR TWO BICYCLES.
2. BICYCLE RACK PARTS SHALL BE OF UNIFORM COLOR AND SHALL BE FINISHED IN ACCORDANCE WITH MANUFACTURER'S PRODUCT SPECIFICATIONS.
3. BICYCLE RACK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S MOST RECENT INSTALLATION RECOMMENDATIONS, AND SHALL BE INSTALLED WITH AN IN-GROUND MOUNT UNLESS OTHERWISE APPROVED BY ENGINEER.
4. BICYCLE RACK SHALL BE "DERO SWERVE RACK", AS MANUFACTURED BY DERO BIKE RACKS.
5. MINIMUM OFFSETS SHOWN. MANUFACTURER'S RECOMMENDED OFFSETS SHALL BE ENFORCED WHERE POSSIBLE.
6. ALL OFFSETS ARE FROM OUTSIDE EDGES OF ITEMS.
7. CONCRETE SHALL BE 4000 PSI @28 DAYS. BOTTOM OF CONCRETE SHALL BE AT TOP OF AGGREGATE BASE ELEVATION.



FRONT & REAR VIEW

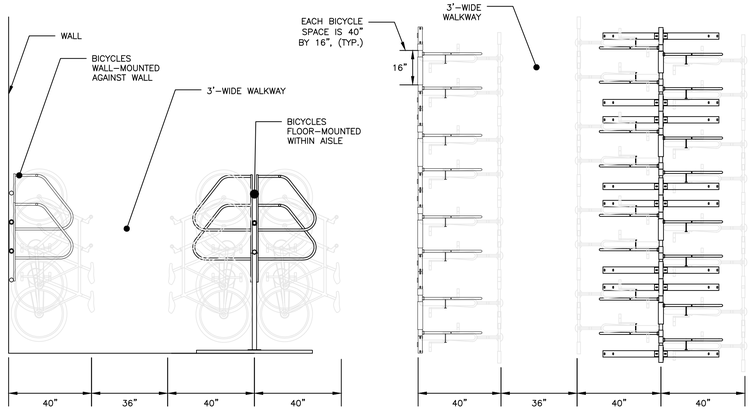


SIDE VIEW

DERO SWERVE BICYCLE RACK DETAIL
NOT TO SCALE

NOTES:

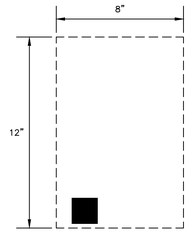
1. SPACING SHOWN IS TYPICAL FOR 24 BIKES IN ORDER TO INDICATE TYPICAL LAYOUT. NUMBER AND LOCATION OF INTERIOR BICYCLE RACKS SHALL CONFORM TO ALL CIVIL AND ARCHITECTURAL DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER AND ARCHITECT WITH ANY DISCREPANCIES.
2. BICYCLE MOUNT SHALL BE "ULTRA SPACE SAVER", AS MANUFACTURED BY DERO, OR APPROVED EQUAL.
3. BICYCLES SHALL BE WALL MOUNTED OR FLOOR MOUNTED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.



CROSS SECTION VIEW

PLAN VIEW

BICYCLE RACK - INTERIOR
NOT TO SCALE



NOTES:

1. NUMBERS TO BE PAINTED AS THE SAME COLOR AS THE CORRESPONDING PARKING SPACE.
2. BOTTOM OF NUMBER TO BE FLUSH WITH THE FRONT OF THE PARKING SPACE.

PARKING STALL NUMBER DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: SITE DETAILS - 2

PROJECT NAME/ ADDRESS: **FEDERAL STREET DEVELOPMENT** 200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC PORTLAND, ME 04104

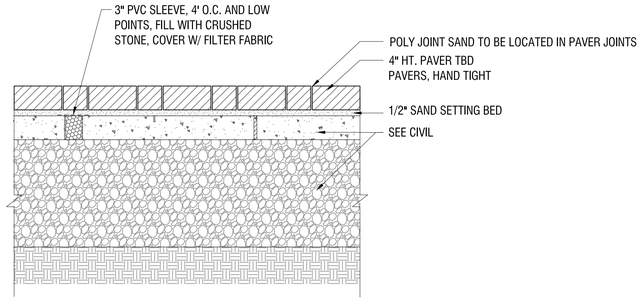
ACORN ENGINEERING, INC.
ENGINEERING, INC.
ACORN ENGINEERING, INC.
P.O. BOX 3201
PORTLAND, MAINE 04101
(207) 775-2655

THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. AND ANY MODIFICATION, WITH OR WITHOUT WRITTEN PERMISSION OR, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

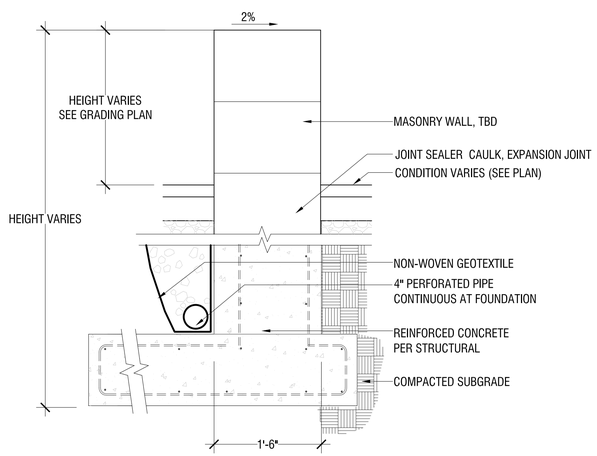
STATE OF MAINE — WILLIAM H. SAVAGE — No. 11441 — 8-28-20 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-41

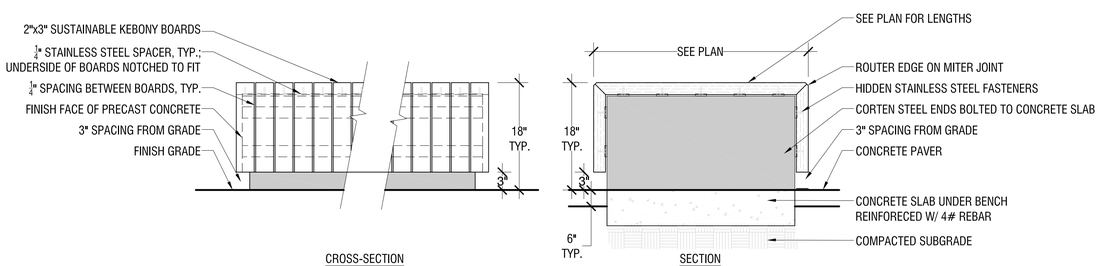


NOTES:
1. METAL EDGE RESTRAINT TO BE USED WHERE PAVERS MEET SOFTSCAPE, PLASTIC EDGE RESTRAINT IS NOT TO BE USED.

1 CONCRETE PAVER - TBD
1":1'-0"



2 MASONRY WALL
1":1'-0"



3 CUSTOM BENCH
1":1'-0"

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE
200 FEDERAL STREET
PORTLAND, ME

PREPARED FOR
OWNER:

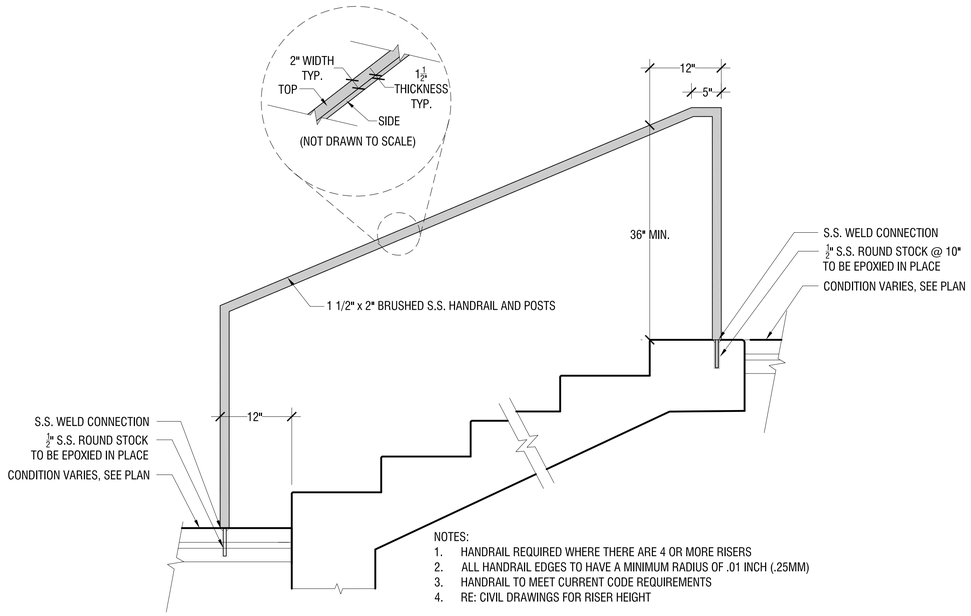
REDFERN DOWNTOWN LLC
Portland, Maine 04104

REVISIONS DATE

ISSUE DATE
SITE PLAN APPLICATION
SEPTEMBER 11, 2020

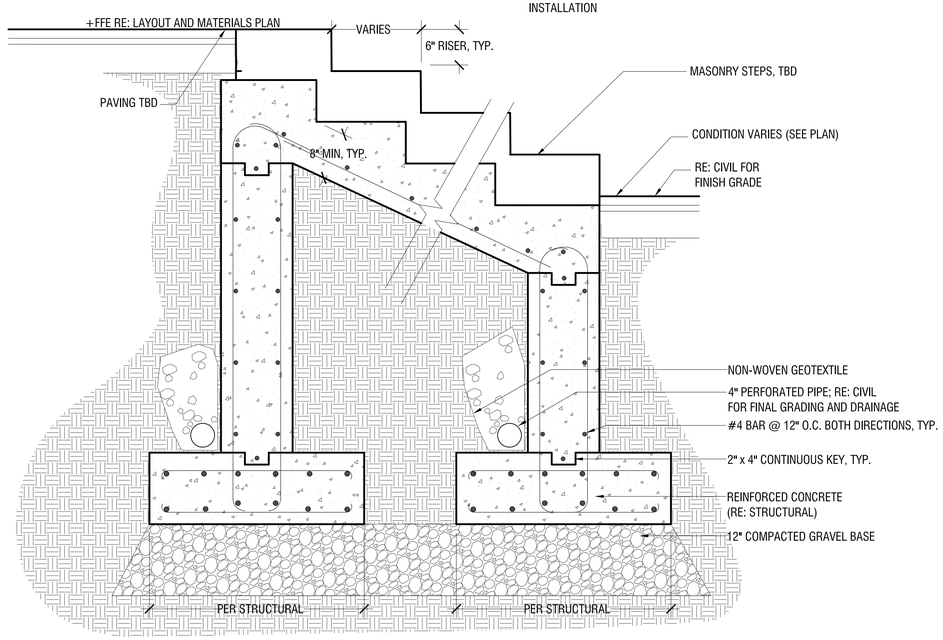
SHEET TITLE
SITE DETAILS

SHEET INFORMATION
L 4-00
NOT FOR CONSTRUCTION



1 HANDRAIL
1":1'-0"

NOTES:
1. SEE LAYOUT AND MATERIALS PLAN FOR LENGTHS TREAD LENGTHS
2. LANDSCAPE ARCHITECT TO REVIEW LAYOUT PRIOR TO INSTALLATION



2 MASONRY STEP
1":1'-0"

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

200 FEDERAL STREET
PORTLAND, ME

PREPARED FOR

OWNER:

REDFERN DOWNTOWN LLC
Portland, Maine 04104

REVISIONS | DATE

ISSUE DATE

SITE PLAN APPLICATION
SEPTEMBER 11, 2020

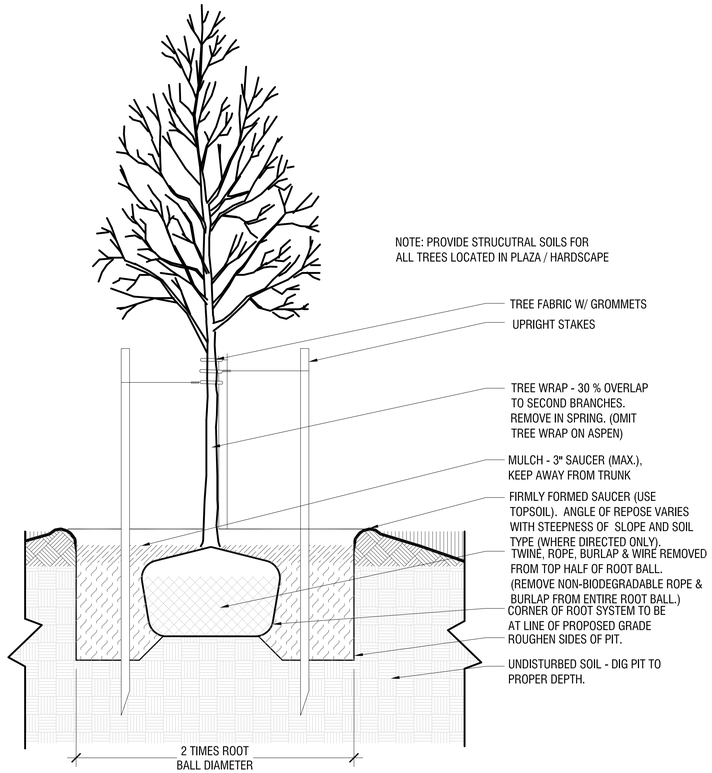
SHEET TITLE

DETAILS

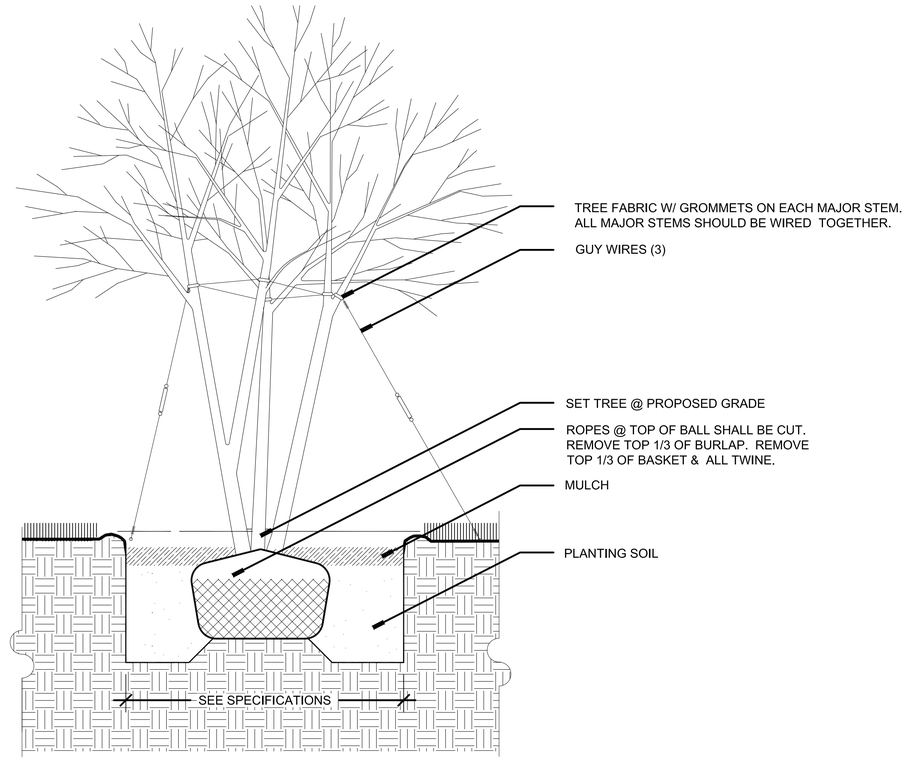
SHEET INFORMATION

L 4-01

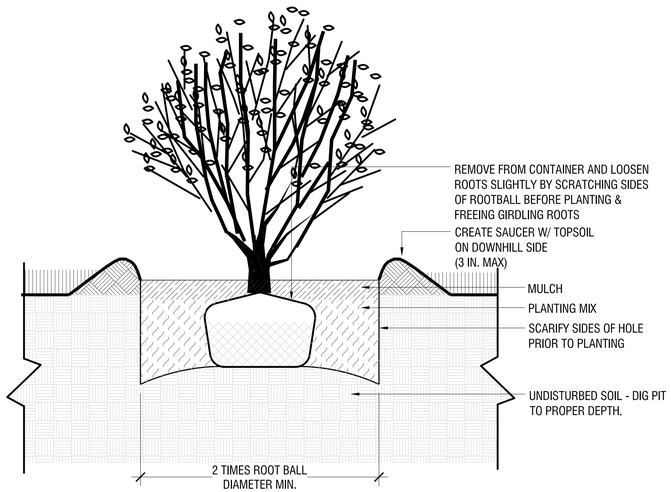
NOT FOR CONSTRUCTION



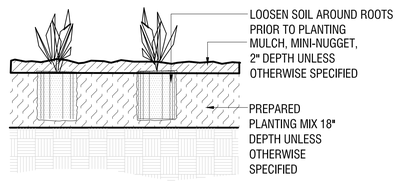
1 DECIDUOUS TREE PLANTING
1":1'-0"



2 MULTI-STEM TREE PLANTING
1":1'-0"



3 SHRUB PLANTING
1":1'-0"



4 PERENNIAL PLANTING
1":1'-0"

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

200 FEDERAL STREET
PORTLAND, ME

PREPARED FOR

OWNER:

REDFERN DOWNTOWN LLC
Portland, Maine 04104

REVISIONS | DATE

ISSUE DATE:

SITE PLAN APPLICATION
SEPTEMBER 11, 2020

SHEET TITLE

PLANTING DETAILS

SHEET INFORMATION

L 4.02

NOT FOR CONSTRUCTION

Product Sheet **Tree Grille Strips**

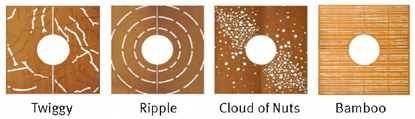
STREETLIFE®

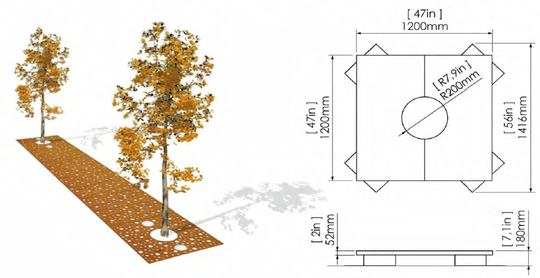
CorTen steel (weathering steel) tree grid incl. laser cut (standard or bespoke) pattern incl. ground level support frame

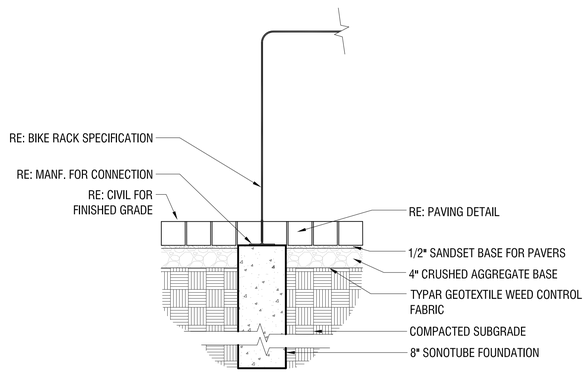




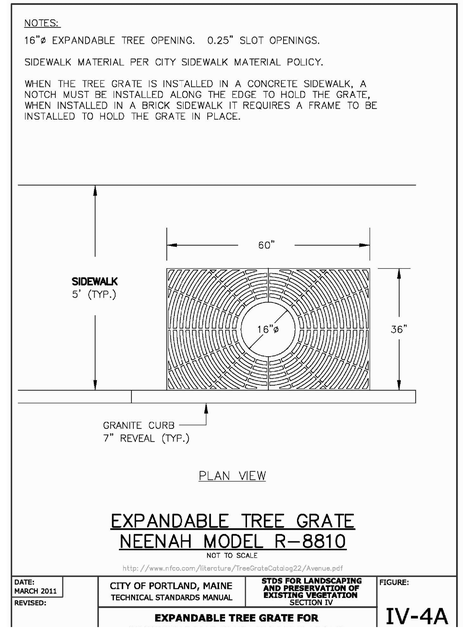
Product Code	**TGR-CUSTOM**
Dimensions	In consultation with client 18' LENGTH x 5' WIDTH ; 4.91' LENGTH X 4.91' WIDTH
Material	Steel: 8mm thick untreated CorTen steel (weathering steel)
Optional extras	Tree guard, round or square Tree hole
Delivery	Frame, grid and mounting tools separate (knock down)
Handling instructions	Corten steel can be handled without wearing protective gear, however it can leave rust stains, which are not hazardous as such.







NOTES:
1. SONOTUBE FOOTING TO BE 4 FT. DEPTH OR BELOW FROST LINE, WHICHEVER IS GREATER



1 BIKE RACK
N.T.S.

2 TREE GRILLE
N.T.S.

3 TREE GRATE
N.T.S.

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE
200 FEDERAL STREET
PORTLAND, ME

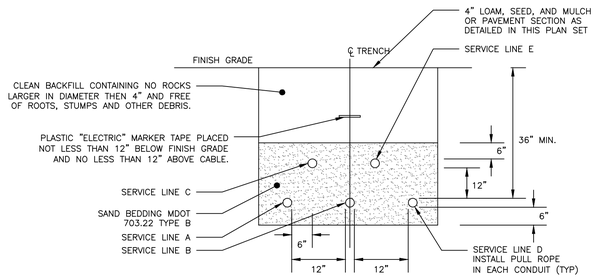
PREPARED FOR
OWNER:
REDFERN DOWNTOWN LLC
Portland, Maine 04104

REVISIONS DATE

ISSUE DATE
SITE PLAN APPLICATION
SEPTEMBER 11, 2020

SHEET TITLE
SITE FURNISHINGS

SHEET INFORMATION
L 4.03
NOT FOR CONSTRUCTION



CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
C	2–4"	SCHEDULE 40 PVC	COMMUNICATION	–
D	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	SEE NOTE 1
E	2–4"	SCHEDULE 40 PVC	CABLE	–

NOTES:

1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND–OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.
3. CONDUITS WITHIN THE CITY RIGHT–OF–WAY SHALL BE ENCASED IN CONCRETE.
4. FINAL SIZE OF CONDUITS TO BE SPECIFIED BY MEP, ELECTRICIAN, OR DESIGN/BUILD ELECTRICAL CONTRACTOR.

UTILITY TRENCH – PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE

NOT TO SCALE

SERVICE SADDLE: 1–1/2" AND 2" C.C. THREAD

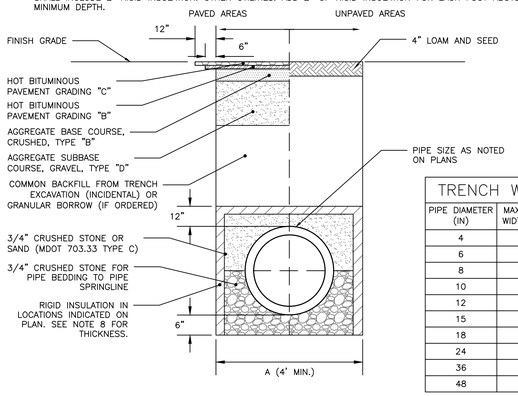
NOT TO SCALE

TYPICAL HYDRANT INSTALLATION DETAIL

NOT TO SCALE

NOTES:

1. ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II–2.
3. BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF.SD) SHALL BE ORIENTED UP.
5. ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS–46 RATING OR OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL , SECTION 2 – SANITARY SEWER AND STORM DRAIN – PART 2.5.2
6. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
7. THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND ROW.STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.



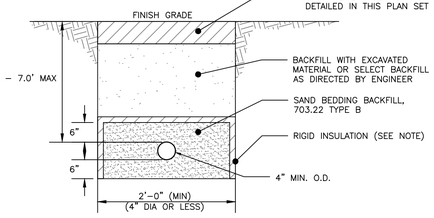
TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	5
15	5
18	5
24	6
36	6
48	7

CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL

NOT TO SCALE

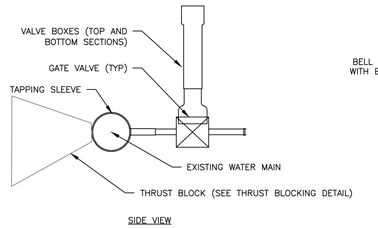
NOTES:

1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'–6" OF COVER IS POSSIBLE ADD 1 INCH OF "BLUE DOW" RIGID INSULATION FOR EVERY 12" LESS COVER.



WATER SERVICE TRENCH SECTION DETAIL

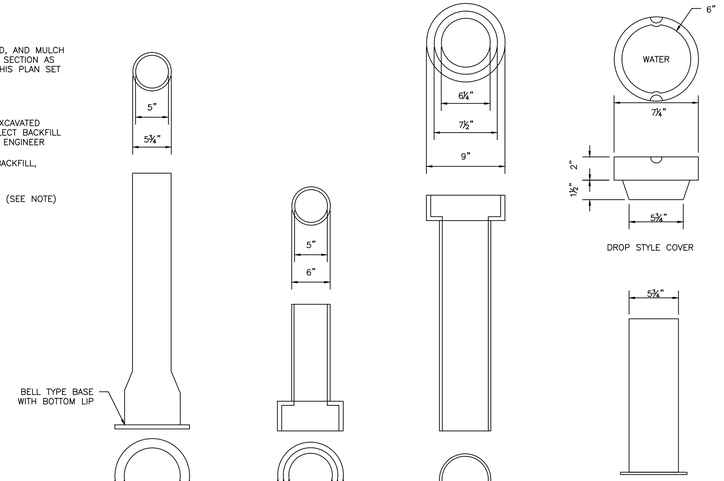
NOT TO SCALE



SIDE VIEW

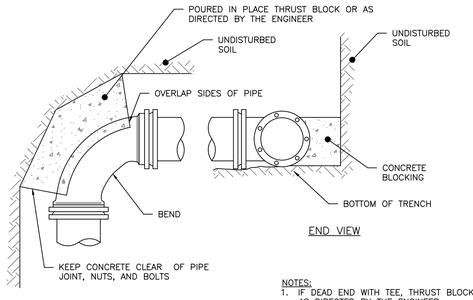
TAPPING SLEEVE AND VALVE

NOT TO SCALE



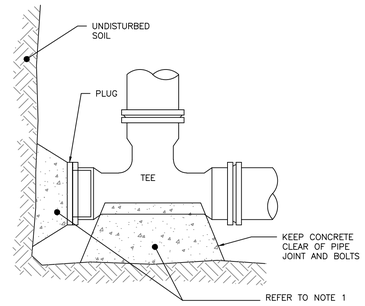
NOTES:

1. DIMENSIONS APPLICABLE FOR 5 ¾" BUFFALO VALVE BOXES
2. BASE SECTION MAY BE USED AS INTERMEDIATE SECTION



TOP VIEW

END VIEW



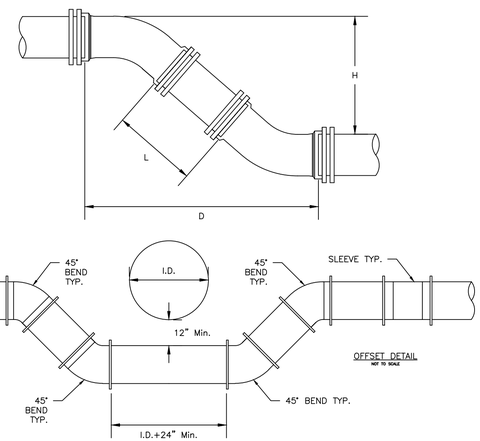
END SECTION

NOTES:

1. IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER
2. SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

THRUST BLOCKING: REGULAR BEND

NOT TO SCALE



NOTES:

1. DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION.
2. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

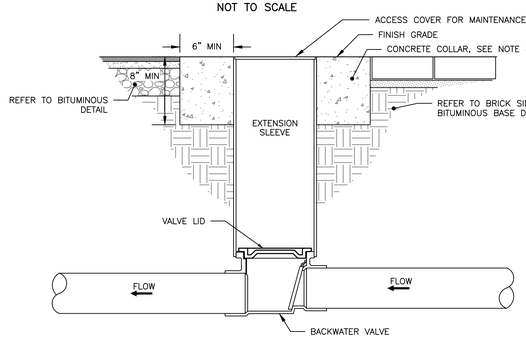
	6" PIPE		8" PIPE		12" PIPE	
H	D	L	D	L	D	L
12"	1' 6–1/2"	0' 10–1/2"	1' 7–1/2"	0' 9–1/2"	1' 11–1/2"	0' 5–1/2"
13"	1' 7–1/2"	0' 11–7/8"	1' 8–1/2"	0' 10–7/8"	2' 0–1/2"	0' 6–7/8"
14"	1' 8–1/2"	1' 1–5/16"	1' 9–1/2"	1' 0–5/16"	2' 1–1/2"	0' 8–5/16"
15"	1' 9–1/2"	1' 2–11/16"	1' 10–1/2"	1' 1–11/16"	2' 2–1/2"	0' 9–11/16"
16"	1' 10–1/2"	1' 4–1/8"	1' 11–1/2"	1' 3–1/8"	2' 3–1/2"	0' 11–1/8"
17"	1' 11–1/2"	1' 5–9/16"	2' 0–1/2"	1' 4–9/16"	2' 4–1/2"	1' 0–9/16"
18"	2' 0–1/2"	1' 6–15/16"	2' 1–1/2"	1' 5–15/16"	2' 5–1/2"	1' 1–15/16"
19"	2' 1–1/2"	1' 8–3/8"	2' 2–1/2"	1' 7–3/8"	2' 6–1/2"	1' 3–3/8"
20"	2' 2–1/2"	1' 9–13/16"	2' 3–1/2"	1' 8–13/16"	2' 7–1/2"	1' 4–13/16"
21"	2' 3–1/2"	1' 11–3/16"	2' 4–1/2"	1' 10–3/16"	2' 8–1/2"	1' 6–3/16"
22"	2' 4–1/2"	2' 0–5/8"	2' 5–1/2"	1' 11–5/8"	2' 9–1/2"	1' 7–5/8"
23"	2' 5–1/2"	2' 2"	2' 6–1/2"	2' 1"	2' 10–1/2"	1' 9"
24"	2' 6–1/2"	2' 3–7/16"	2' 7–1/2"	2' 2–7/16"	2' 11–1/2"	1' 10–7/16"
25"	2' 7–1/2"	2' 4–7/8"	2' 8–1/2"	2' 3–7/8"	3' 0–1/2"	1' 11–7/8"
26"	2' 8–1/2"	2' 6–1/4"	2' 9–1/2"	2' 5–1/4"	3' 1–1/2"	2' 1–1/4"
27"	2' 9–1/2"	2' 7–11/16"	2' 10–1/2"	2' 6–11/16"	3' 2–1/2"	2' 2–11/16"
28"	2' 10–1/2"	2' 9–1/8"	2' 11–1/2"	2' 8–1/8"	3' 3–1/2"	2' 4–1/8"
29"	2' 11–1/2"	2' 10–1/2"	3' 0–1/2"	2' 9–1/2"	3' 4–1/2"	2' 5–1/2"
30"	3' 0–1/2"	2' 11–15/16"	3' 1–1/2"	2' 10–15/16"	3' 5–1/2"	2' 6–15/16"
31"	3' 1–1/2"	3' 1–5/16"	3' 2–1/2"	3' 0–5/16"	3' 6–1/2"	2' 8–5/16"
32"	3' 2–1/2"	3' 2–3/4"	3' 3–1/2"	3' 1–3/4"	3' 7–1/2"	2' 9–3/4"
33"	3' 3–1/2"	3' 4–3/16"	3' 4–1/2"	3' 3–3/16"	3' 8–1/2"	2' 11–3/16"
34"	3' 4–1/2"	3' 5–9/16"	3' 5–1/2"	3' 4–9/16"	3' 9–1/2"	3' 0–9/16"
35"	3' 5–1/2"	3' 7"	3' 6–1/2"	3' 6"	3' 10–1/2"	3' 2"
36"	3' 6–1/2"	3' 8–7/16"	3' 7–1/2"	3' 7–7/16"	3' 11–1/2"	3' 3–7/16"
37"	3' 7–1/2"	3' 9–13/16"	3' 8–1/2"	3' 8–13/16"	4' 0–1/2"	3' 4–13/16"
38"	3' 8–1/2"	3' 11–1/4"	3' 9–1/2"	3' 10–1/4"	4' 1–1/2"	3' 6–1/4"
39"	3' 9–1/2"	4' 0–11/16"	3' 10–1/2"	3' 11–11/16"	4' 2–1/2"	3' 7–11/16"
40"	3' 10–1/2"	4' 2–1/16"	3' 11–1/2"	4' 1–1/16"	4' 3–1/2"	3' 9–1/16"
41"	3' 11–1/2"	4' 3–1/2"	4' 0–1/2"	4' 2–1/2"	4' 4–1/2"	3' 10–1/2"
42"	4' 0–1/2"	4' 4–7/8"	4' 1–1/2"	4' 3–7/8"	4' 5–1/2"	3' 11–7/8"
43"	4' 1–1/2"	4' 6–5/16"	4' 2–1/2"	4' 5–5/16"	4' 6–1/2"	4' 1–5/16"
44"	4' 2–1/2"	4' 7–3/4"	4' 3–1/2"	4' 6–3/4"	4' 7–1/2"	4' 2–3/4"
45"	4' 3–1/2"	4' 9–1/8"	4' 4–1/2"	4' 8–1/8"	4' 8–1/2"	4' 4–1/8"
46"	4' 4–1/2"	4' 10–9/16"	4' 5–1/2"	4' 9–9/16"	4' 9–1/2"	4' 5–9/16"
47"	4' 5–1/2"	4' 11–15/16"	4' 6–1/2"	4' 10–15/16"	4' 10–1/2"	4' 6–15/16"
48"	4' 6–1/2"	5' 1–3/8"	4' 7–1/2"	5' 0–3/8"	4' 11–1/2"	4' 8–3/8"
49"	4' 7–1/2"	5' 2–13/16"	4' 8–1/2"	5' 1–13/16"	5' 0–1/2"	4' 9–13/16"
50"	4' 8–1/2"	5' 4–3/16"	4' 9–1/2"	5' 3–3/16"	5' 1–1/2"	4' 11–3/16"
51"	4' 9–1/2"	5' 5–5/8"	4' 10–1/2"	5' 4–5/8"	5' 2–1/2"	5' 0–5/8"
52"	4' 10–1/2"	5' 7–1/16"	4' 11–1/2"	5' 6–1/16"	5' 3–1/2"	5' 2–1/16"
53"	4' 11–1/2"	5' 8–7/16"	5' 0–1/2"	5' 7–7/16"	5' 4–1/2"	5' 3–7/16"
54"	5' 0–1/2"	5' 9–7/8"	5' 1–1/2"	5' 8–7/8"	5' 5–1/2"	5' 4–7/8"
55"	5' 1–1/2"	5' 11–5/16"	5' 2–1/2"	5' 10–5/16"	5' 6–1/2"	5' 6–5/16"

TYPICAL MAIN OFFSET

NOT TO SCALE

VALVE BOX & COVER

NOT TO SCALE



NOTES:

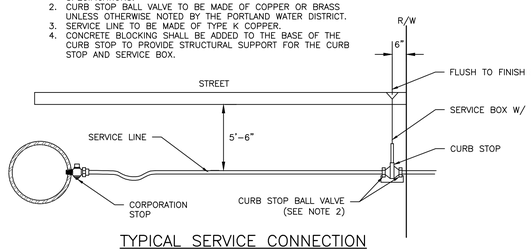
1. BACKFLOW VALVE TO BE PROVIDED BY AGRI DRAIN CORPORATION OR AN APPROVED EQUAL.
2. VALVE TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH RULES AND REGULATIONS AS OUTLINED IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.
3. VALVE SHALL BE INSTALLED WITH A VALVE BOX AND COVER TO PROVIDE EASY ACCESS AND MAINTENANCE; VALVE COVER SHALL STATE 'SEWER' ON LID FLUSH TO SURFACE. REFER TO VALVE & BOX COVER DETAIL FOR ADDITIONAL INFORMATION.
4. CONCRETE COLLAR AT A MINIMUM 24–HOUR COMPRESSIVE STRENGTH OF 3,000 PSI.

BACKFLOW VALVE ASSEMBLY

NOT TO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST COMPLY WITH THE CITY OF PORTLAND WATER DISTRICT (PWD) SPECIFICATIONS.
2. CURB STOP BALL VALVE TO BE MADE OF COPPER OR BRASS UNLESS OTHERWISE NOTED BY THE PORTLAND WATER DISTRICT.
3. SERVICE LINE TO BE MADE OF TYPE K COPPER.
4. CONCRETE BLOCKING SHALL BE ADDED TO THE BASE OF THE CURB STOP TO PROVIDE STRUCTURAL SUPPORT FOR THE CURB STOP AND SERVICE BOX.



TYPICAL SERVICE CONNECTION

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: UTILITY DETAILS – 1

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING

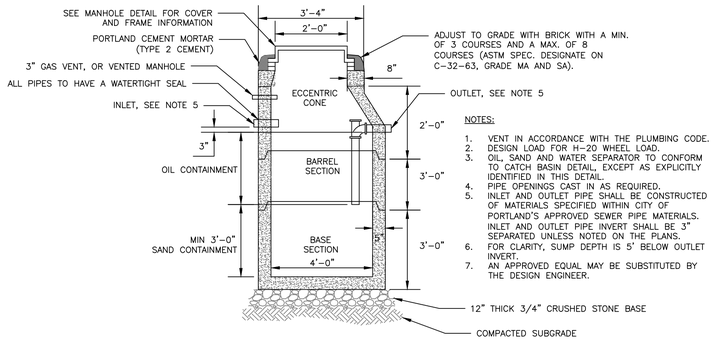
THESE PLANS SHALL NOT BE MODIFIED WITHOUT THE PRIOR WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THESE PLANS WITHOUT SUCH PERMISSION SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
PO BOX 7555 PORTLAND, MAINE 04101
(207) 775–2655

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11461 — LICENSED PROFESSIONAL ENGINEER — 8-28-20

DRAWING NO.
C-42



NOTES:

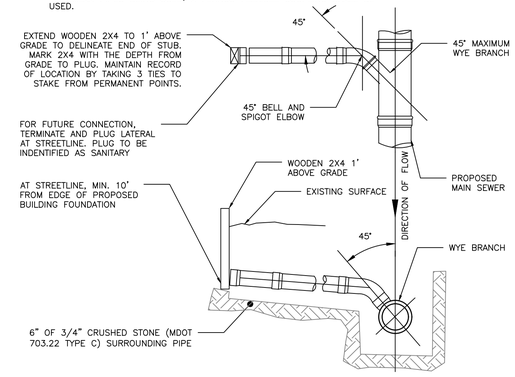
1. VENT IN ACCORDANCE WITH THE PLUMBING CODE.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. OIL, SAND AND WATER SEPARATOR TO CONFORM TO CATCH BASIN DETAIL, EXCEPT AS EXPLICITLY IDENTIFIED IN THIS DETAIL.
4. PIPE OPENINGS CAST IN AS REQUIRED.
5. INLET AND OUTLET PIPE SHALL BE CONSTRUCTED OF MATERIALS SPECIFIED WITHIN CITY OF PORTLAND'S APPROVED SEWER PIPE MATERIALS. INLET AND OUTLET PIPE INVERT SHALL BE 3" SEPARATED UNLESS NOTED ON THE PLANS.
6. FOR CLARITY, SUMP DEPTH IS 5' BELOW OUTLET INVERT.
7. AN APPROVED EQUAL MAY BE SUBSTITUTED BY THE DESIGN ENGINEER.

4'-0" DIAMETER PRECAST OIL AND WATER SEPARATOR

NOT TO SCALE

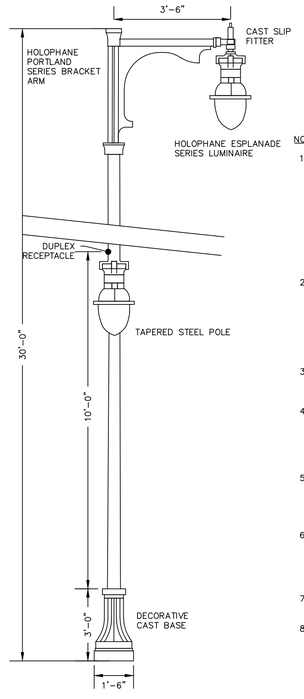
NOTES:

1. LOCATION WITH WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.
2. SITE CONTRACTOR TO COORDINATE CONNECTION OF SEWER LATERAL TO STRUCTURE PLUMBING WITH ARCHITECTURAL CONTRACTOR.
3. CONNECTION OF PROPOSED SEWER LATERAL TO STRUCTURE PLUMBING SHOULD INCORPORATE USE OF SIMILAR PIPE MATERIALS. IN THE CASE OF DISSIMILAR PIPES BEING USED, A FERNCO FLEXIBLE COUPLING SHALL BE USED.



SEWER TEE/WYE CONNECTION DETAIL

NOT TO SCALE



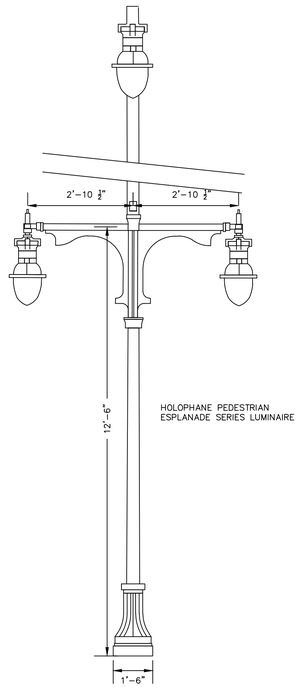
VIEW PARALLEL WITH SIDEWALK

NOTES:

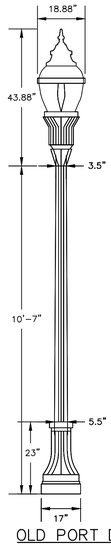
1. LUMINAIRE
   HOLOPHANE ESPLANADE LED 11
   MODEL: ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC
   CAST ALUMINUM HOUSING WITH STAINLESS STEEL HARDWARE. DROPPED REFRACTOR SHALL BE THERMAL RESISTANT BOROSILICATE GLASS. INTERNAL REFLECTOR AND PRISMATIC DIFFUSER SHALL PROVIDE AN IES TYPE IV DISTRIBUTION PATTERN. LUMINAIRE SHALL INCLUDE AN INTEGRAL BALLAST WITH MODULAR WIRING CONNECTORS AND MULTI-VOLTAGE TAPS. PROVIDE AN INTERNAL RECEPTACLE TYPE PHOTOCELL CONTROL. LED 3000K COLOR TEMPERATURE.
2. BRACKET ARM
   HOLOPHANE PORTLAND SERIES STEEL (CUSTOM)
   TOP BRACKET ARM: STEEL CROSSARM WITH A POST-TOP FITTING FOR A 3½" BY 8" TENON.
   MODEL: PD42-CA-RAL6012
   LOWER BRACKET ARM: STEEL DUAL CROSSARM
   MODEL: PD69-CA-RAL6012
3. SLIP FITTER
   HOLOPHANE MODEL WLLF200S-CA-RAL6012
   2-3/8" O.D. WITH SWIVEL CAST FITTER.
4. LIGHTING POLE
   HOLOPHANE MODEL PM-18-CSB-CA-RAL6012
   TAPERED STEEL POLE SMOOTH SHAFT RATED FOR A 90 MPH WIND LOAD WITH A 1.3 GUST FACTOR. PROVIDE FOUR HOT-DIPPED GALVANIZED STEEL L-TYPE ANCHOR BOLTS. LIGHTING POLE SHALL BE HOT DIP GALVANIZED PRIOR TO POWDER COAT PAINT.
5. DECORATIVE POLE BASE
   HOLOPHANE MODEL PM18CSB-CA-RAL6012.
   DECORATIVE CLAMSHELL CAST ALUMINUM BASE. HARDWARE SHALL BE STAINLESS STEEL.
6. DIMENSIONS
   OVERALL HEIGHT = 30' 0"
   UPPER BRACKET ARM LENGTH = 3' 6"
   LOWER BRACKET ARM LENGTH = 2' 10½"
   BASE DIAMETER = 18"
7. FINISH
   DARK GREEN: RAL-6012 (CUSTOM)
8. APPLICATION:
   STREET/PEDESTRIAN LIGHTING COMBINATION
   SPACING: ONE SIDE: 90'-100' ON CENTER; ALTERNATING SIDES: 175'-225' ON CENTER
   DOUBLE-ARM BRACKET ARMS PARALLEL TO SIDEWALK

DOWNTOWN COMBO DECORATIVE LIGHTING

NOT TO SCALE



VIEW FROM STREET



NOTES:

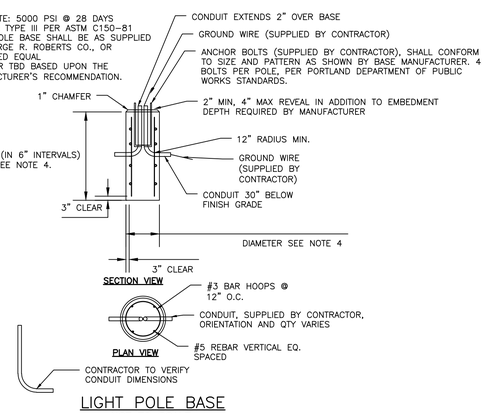
1. LUMINAIRE
   HOLOPHANE WASHINGTON POSTLITE II LED-ACRYLIC
   MODEL: WAUE2-P20-30K-AS-BK-3-BK-6-P7-F-PCLL
   CAST ALUMINUM HOUSING WITH STAINLESS STEEL HARDWARE
   THERMAL RESISTANT ACORN BOROSILICATE GLASS REFRACTOR WITH IES TYPE ASYMMETRIC TYPE IV DISTRIBUTION
   LUMINAIRE SHALL INCLUDE DECORATIVE RIBS, SOLID BAND, AND SPIKE FINIAL, WITH INTERNAL TWIST-LOCK RECEPTACLE TYPE PHOTOCELL CONTROL. LED 3000K.
2. LAMP
   IES TYPE ASYMMETRIC TYPE IV DISTRIBUTION
   LED 3000K COLOR TEMPERATURE
3. LIGHTING POLE
   HOLOPHANE NORTH YORKSHIRE-ALUMINUM POLE AND BASE
   MODEL NYA-11-FTJ-17-P07-ABG-BK-R126A
   TAPERED, FLUTED CAST ALUMINUM POLE SHAFT RATED FOR A 90 MPH WIND LOAD WITH A 1.3 GUST FACTOR
   PROVIDE FOUR HOT-DIPPED GALVANIZED STEEL L-TYPE ANCHOR BOLTS. PROVIDE GFI RATED DUPLEX RECEPTACLE OUTLET.
   LIGHTING POLE SHALL BE HOT DIPPED GALVANIZED PRIOR POWDER COAT PAINT.
4. DIMENSIONS
   OVERALL HEIGHT = 14' 3"
   POLE HEIGHT = 10' 7"
   TAPER = 5.5" TO 3.5"
   BASE DIAMETER = 17"
5. FINISH
   BLACK (STANDARD)
6. APPLICATION:
   STREET/SIDEWALK LIGHTING FOR TWO-WAY STREETS WITH PARKING ON BOTH SIDES
   SPACING: 60'-80' ON CENTER (STAGGERED PATTERN BOTH SIDES OF STREET)

OLD PORT DECORATIVE LIGHTING

NOT TO SCALE

NOTES:

1. CONCRETE: 5000 PSI @ 28 DAYS
2. CEMENT: TYPE III PER ASTM C150-81
3. LIGHT POLE BASE SHALL BE AS SUPPLIED BY GEORGE R. ROBERTS CO., OR APPROVED EQUAL
4. DIAMETER TBD BASED UPON THE MANUFACTURER'S RECOMMENDATION.



LIGHT POLE BASE

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRECON DESIGN	WHS 11/20/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: UTILITY DETAILS - 2

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

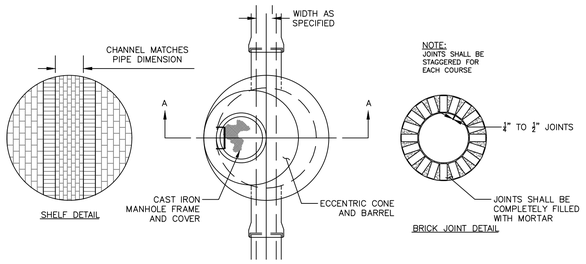
THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY UNAUTHORIZED REVISIONS OR, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

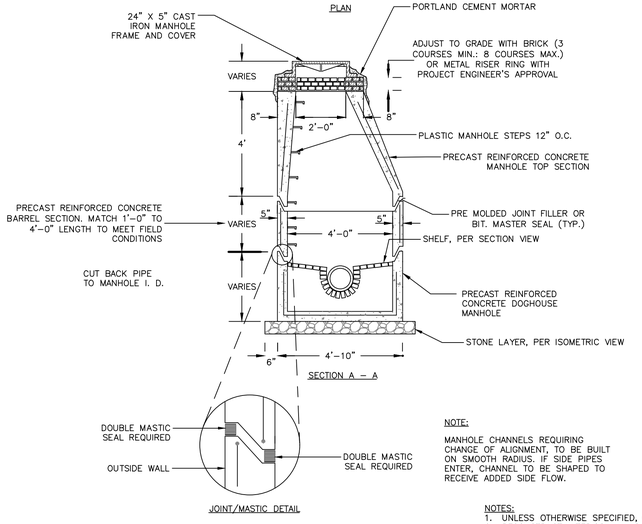
ACORN ENGINEERING, INC.
70 FORE STREET, PORTLAND, MAINE 04101
PO BOX 3472 (207) 775-2655

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — NO. 11401 — 9-28-20 — REGISTERED PROFESSIONAL ENGINEER

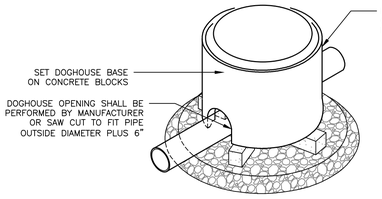
DRAWING NO.
C-43



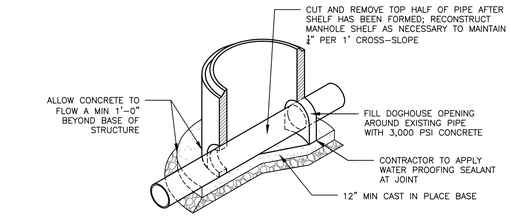


NOTE:

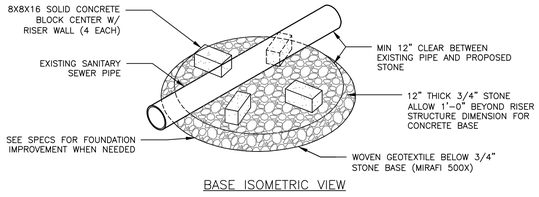
MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.



RISER ISOMETRIC VIEW



FOUNDATION SECTION VIEW



BASE ISOMETRIC VIEW

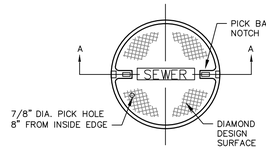
NOTES:

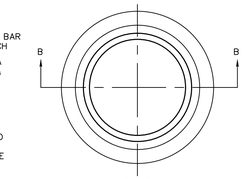
1. UNLESS OTHERWISE SPECIFIED, CONCRETE SHALL BE 4000 PSI @28 DAYS.
2. RECONSTRUCT INTERIOR MANHOLE INVERT AS NECESSARY TO ACCOMMODATE NEW PIPE.
3. THIS DETAIL IS INTENDED TO PROVIDE ADDITIONAL INFORMATION TO THE CONTRACTOR IN REGARDS TO THE CONNECTION OF THE DOGHOUSE MANHOLE BASE TO THE EXISTING SANITARY SEWER SYSTEM.
4. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
5. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVAL EQUAL.
7. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
8. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.

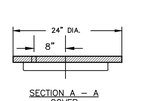
DOGHOUSE MANHOLE DETAIL
NOT TO SCALE

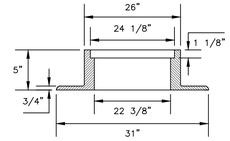
1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478. 7
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLD AND SHALL HAVE ONE " DIAMETER DRILLED PICK HOLE s LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVAL EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DR5A OR APPROVED EQUAL.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP PER DETAIL.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS









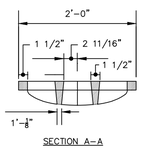
NOTES:

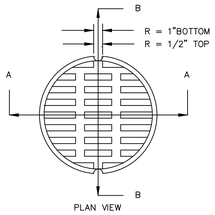
1. ALL MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE, LOCATED 8" FROM THE CENTER OF THE COVER
2. ALL SANITARY AND STORMWATER/DRAIN MANHOLE COVERS SHALL BE 24" x 5".
3. ALL SANITARY MANHOLE COVERS AND SHALL HAVE "SEWER" CAST INTO THE COVER.
4. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
5. APPROVED MANHOLE FRAMES:
   - 5.1. EAST JORDAN = 1690Z
   - 5.2. NEENAH = R-1496
   - 5.3. OR APPROVED EQUAL
6. APPROVED MANHOLE COVERS
   - 6.1. EAST JORDAN = 2160A
   - 6.2. NEENAH = R-1496
   - 6.3. OR APPROVED EQUAL

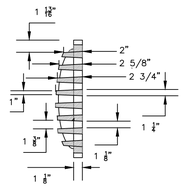
CAST IRON MANHOLE COVER AND FRAME
NOT TO SCALE

NOTES:

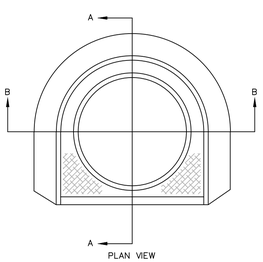
1. APPROVED CATCH BASIN FRAMES:
   - 1.1. EAST JORDAN = 7375Z
   - 1.2. NEENAH = R-3248
   - 1.3. OR APPROVED EQUAL
2. APPROVED CATCH BASIN GRATES
   - 2.1. EAST JORDAN = 2440M
   - 2.2. NEENAH = R-3248
   - 2.3. OR APPROVED EQUAL
3. PROVIDE 24" SQUARE GRATE FOR CATCH BASINS ADJACENT TO CURB

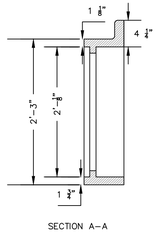


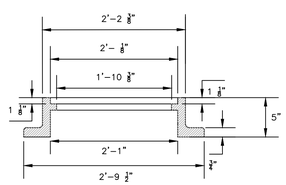




GRATE DETAIL

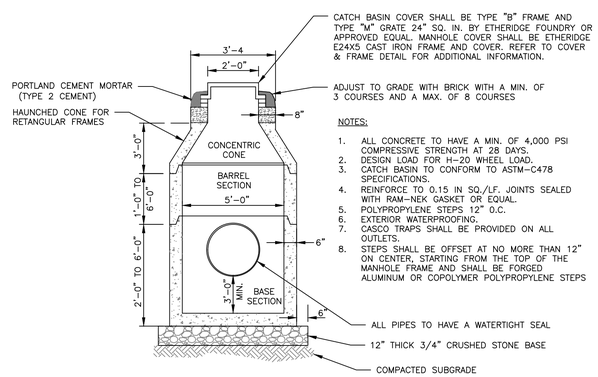






FRAME DETAIL

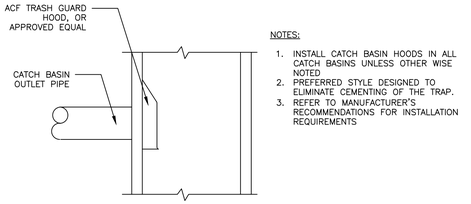
CATCH BASIN FRAME & GRATE
NOT TO SCALE



NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.15 IN SQ./LF. JOINTS SEALED WITH RAM-NEK GASKET OR EQUAL.
5. POLYPROPYLENE STEPS 12" O.C.
6. EXTERIOR WATERPROOFING.
7. CASCO TRAPS SHALL BE PROVIDED ON ALL OUTLETS.
8. STEPS SHALL BE OFFSET AT NO MORE THAN 12" ON CENTER, STARTING FROM THE TOP OF THE MANHOLE FRAME AND SHALL BE FORGED ALUMINUM OR COPOLYMER POLYPROPYLENE STEPS

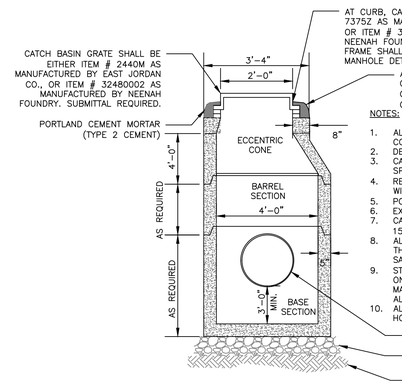
5'-0" DIAMETER PRECAST CATCH BASIN/MANHOLE
NOT TO SCALE



NOTES:

1. INSTALL CATCH BASIN HOODS IN ALL CATCH BASINS UNLESS OTHER WISE NOTED
2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS

CATCH BASIN HOOD DETAIL
NOT TO SCALE



NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.15 IN SQ./LF. JOINTS SEALED WITH RAM-NEK GASKET OR EQUAL.
5. POLYPROPYLENE STEPS 12" O.C.
6. EXTERIOR WATERPROOFING.
7. CASCO TRAPS SHALL BE PROVIDED ON ALL PIPES 15" OR LESS.
8. ALL CATCH BASINS AND MANHOLES SHALL MEET THE APPLICABLE CITY OF PORTLAND – SECTION 2 SANITARY AND STORM DRAIN DESIGN STANDARDS.
9. STEPS SHALL BE OFFSET AT NO MORE THAN 12" ON CENTER, STARTING FROM THE TOP OF THE MANHOLE FRAME AND SHALL BE FORGED ALUMINUM OR COPOLYMER POLYPROPYLENE STEPS
10. ALL CATCH PIPES SHALL HAVE A CATCH BASIN HOOD PER DETAIL UNLESS OTHERWISE NOTED

4'-0" DIAMETER PRECAST CATCH BASIN
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRECON DESIGN	WHS 11/20/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: UTILITY DETAILS – 3

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
70 MAIN STREET, SACO, MAINE 04101
(207) 775-2655
PO BOX 3200

© ACORN ENGINEERING, INC. ALL PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE RETURNED UPON REQUEST. ANY REUSE OF THESE PLANS, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

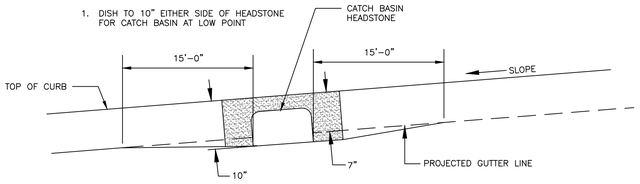
FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11967 — 8-28-20 — REGISTERED PROFESSIONAL ENGINEER

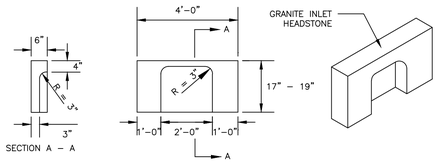
DRAWING NO.
C-44

NOTES:

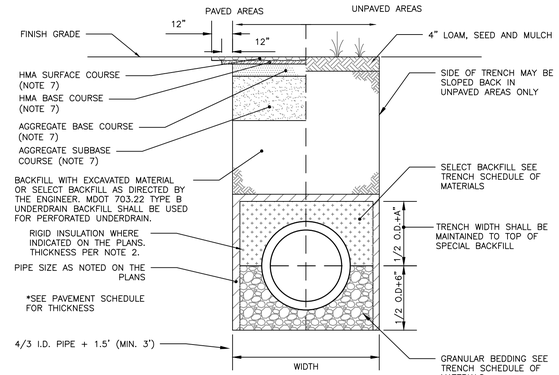
1. DISH TO 10" EITHER SIDE OF HEADSTONE FOR CATCH BASIN AT LOW POINT



PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET
NOT TO SCALE



4' GRANITE HEADSTONE FOR CATCH BASIN INLET
NOT TO SCALE



ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
- PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
- PVC RING TYPE SEWER PIPE MEETING ASTM F 789
- DUCTILE IRON PIPE (DIP)
- ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
- ADS SANITITE HP MIN. PS-46

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP, DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

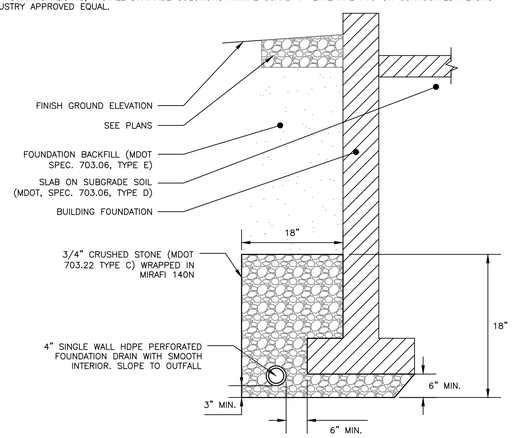
NOTES:

1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. PIPE COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" THICK OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" THICK RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT OF COVER LESS THAN THE MINIMUM DEPTH. WIDTH OF INSULATION SHALL BE FOUR TIMES THE DIAMETER OF THE PIPE WITH A MINIMUM WIDTH OF 30".
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
   - 4.1. 2'-0" – STORM DRAIN
   - 4.2. 5'-0" – SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF PORTLAND ROW.
7. THICKNESS AS NOTED BY SURFACE DETAILS

STORM DRAIN AND SEWER TYPICAL TRENCH SECTION: PRIVATE ROW
NOT TO SCALE

NOTES:

1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
2. REFER TO THE GEOTECHNICAL REPORT, MOST RECENT VERSION, FOR UNDERDRAIN INSTALLATION AND MATERIAL GRADATIONS.
3. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.
4. INSTALL STONE DRIP EDGE IN A LOCATIONS SUBJECT TO ROOF RUNOFF. WIDTH SHALL BE A MIN. 12" BEYOND THE PROJECTION OF THE ROOF EVE.
5. FOUNDATION WALL FOOTINGS SHALL BE CONSTRUCTED TO A MIN. DEPTH OF 4 FT BELOW ADJACENT FINISH GRADE TO TOP OF FOOTING. REFER TO STRUCTURAL ENGINEERS PLANS FOR ADDITIONAL INFORMATION AND MIN. REQUIREMENTS.
6. IF FOUNDATION DRAIN DAYLIGHTS, INSTALL DRAINAGE SOLUTIONS ANIMAL GUARD 4" EXTERNAL PVC OR CORRUGATED PLASTIC PIPE, OR INDUSTRY APPROVED EQUAL.



FOUNDATION DRAIN DETAIL
NOT TO SCALE

NOTES:

1. REFER TO GRADING AND DRAINAGE PLANS FOR CLEANOUT LOCATIONS.
2. CONTRACTOR TO CONFIRM NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
3. EACH CLEANOUT RIM SHALL BE DEPRESSED 1" FROM FINISH FLOOR GROUND ELEVATION.

CONCRETE COLLAR FOR CLEANOUTS AND FLOOR DRAINS IN THE TRAVEL WAY
NOT TO SCALE

NOTES:
1. REFER TO THE GRADING & DRAINAGE PLAN FOR LAYOUT, ELEVATIONS OTHER DETAILS.

FIELD INLET DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: DRAINAGE DETAILS – 1

PROJECT NAME/ADDRESS: FEDERAL STREET DEVELOPMENT
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.

THESE PLANS SHALL NOT BE MODIFIED, IN PART OR WHOLE, WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THESE PLANS WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
FREEPORT, MAINE 04101
PO BOX 347
(207) 775-2655

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11447 — 8-28-20 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-45

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 FILTER SOCKS SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE FILTER SOCKS SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE SOCKS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE SOCKS, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL, OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 MUD AND DUST FROM THE SITE TRACKED ONTO EXCHANGE STREET, FEDERAL STREET AND TEMPLE STREET SHALL BE REMOVED BY VACUUMING, PRIOR TO A PREDICTED RAIN EVENT, AND AS OTHERWISE DEEMED NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM, LIMED, AND MULCHED. EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.1 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 90% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED UNSTABILIZED.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS, FILTER SOCKS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 90% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.
- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 15T. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 90% F THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.
- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

- A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROLS, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WORKING WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST OF 0.5 INCHES OF RAIN OR SNOWMELT WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED. THE SCOPE OF INSPECTIONS INCLUDE DISTURBED AND IMPERVIOUS AREAS, MATERIAL STORAGE AREAS, VEHICLE ACCESS POINTS & ANY OTHER EROSION CONTROL MEASURES NOT DIRECTLY LISTED. THE CONTRACTOR SHALL PERFORM REPAIRS AS NEEDED TO ENSURE EROSION CONTROL MEASURES PERFORM AS DESIGNED. IF CORRECTIVE ACTION IS REQUIRED, THE REPAIR WORK SHALL BE STARTED BY NO LATER THAN THE END OF THE FOLLOWING WORKDAY AND COMPLETED WITHIN ONE WEEK, OR BEFORE THE NEXT PREDICTED "STORM EVENT." THE CONTRACTOR SHALL PROVIDE ALL NECESSARY REGULATING AGENCIES WITH WRITTEN DOCUMENTATION DESCRIBING INSPECTION DATES AND NECESSARY WORK TO MAINTAIN EROSION CONTROL MEASURES MEETING THE REQUIREMENTS SPECIFIED IN THIS PLAN SET.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 FODS TRACKOUT CONTROL ENTRANCES

THE FOLLOWING NOTES HIGHLIGHT THE INSTALLATION PROCEDURE FOR THE FODS TRACKOUT CONTROL ENTRANCES DURING THE PROJECT'S CONSTRUCTION PERIOD

5.2.1 CONTRACTOR TO FOLLOW THE MOST RECENT VERSION OF MANUFACTURER'S SPECIFICATIONS.

5.2.2 FOLLOW MANUFACTURER'S PROCEDURES FOR HANDLING AND SHIPPING

5.2.3 FODS TRACKOUT CONTROL MAT SYSTEM: MANUFACTURER FODS, 844–200–3637

5.2.4 EXAMINE AREA WHERE TRACKING PAD WILL BE PLACED, TO DETERMINE WHAT PREPARATION IS NEEDED.

5.2.5 EXAMINE PANELS WHEN THEY ARRIVE ON THE SITE TO VERIFY THEY ARE UNDAMAGED AND SUITABLE FOR INTENDED PURPOSE.

5.2.6 GRADE TOPSOIL TO ENSURE THAT INSTALLATION SITE IS FLAT, WITHOUT UNNEEDED HIGH SPOTS OR LOW SPOTS.

5.2.7 IF NECESSARY, REMOVE UNSUITABLE MATERIAL AND REPLACE WITH MATERIAL CAPABLE OF SUPPORTING CONSTRUCTION LOADS. COMPACT AS REQUIRED.

5.2.8 IF SUBSTRATE HAS A CBR OF 4 OR LESS, INCORPORATE AGGREGATE, GEOTEXTILE OR GEOGRID INTO THE SUPPORTING STRATA.

5.2.9 INSTALL CULVERT, IF NEEDED, BEFORE INSTALLING TRACKING PAD. BACKFILL TO ADEQUATELY SUPPORT MINIMUM H–20 TRAFFIC LOADING.

5.2.10 INSTALL TRACKING PAD TO THE APPROXIMATE LINES AND GRADES INDICATED ON THE DRAWINGS. SIZE SHALL BE AS INDICATED ON THE DRAWINGS, OR, IF NO SIZE IS INDICATED, PAD LENGTH SHALL BE THE GREATER OF: 35 FEET; OR 3 TIMES THE CIRCUMFERENCE OF THE LARGEST TIRE THAT WILL CROSS IT DURING THE PROJECT.

5.2.11 PROVIDE NUMBER OF INDIVIDUAL PANELS OF TRACKING PAD TO MAKE UP THE SIZE REQUIRED. ADJACENT PANELS SHALL BE BUTTED TOGETHER AND BE AT APPROXIMATELY THE SAME ELEVATION. ANCHOR PANELS AGAINST SLIDING ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

5.2.12 PLACE H–BRACKET BETWEEN FIRST AND SECOND MAT, AND ALL ADJACENT MATS.

5.2.13 CONNECT MATS TOGETHER USING LONG–STEEL STRAPS PER MANUFACTURER'S INSTRUCTIONS.

5.2.14 ANCHOR MATS TO SURFACE PER MANUFACTURES SPECIFICATION PER SUBSTRATE.

5.2.15 PROVIDE EXTRA PANELS FOR TURNING RADII, IF NEEDED TO PREVENT TRUCKS FROM RUNNING OFF THE PAD DURING TURNS.

5.2.16 CLEAN DIRT AND DEBRIS FROM TRACKING PAD AS OFTEN AS NECESSARY OR ONCE DEBRIS HAS REACHED 2.5"IN THE LANE OF TRAVEL. PROPERLY DISPOSE OF MATERIAL REMOVED SO IT DOES NOT LEAVE THE SITE OR ENTER DITCHES OF STORMWATER PIPES.

5.2.17 ONCE THE SITE IS STABILIZED, OR WHEN THE PROJECT MOVES INTO A NEW PHASE SUCH THAT THE TRACKING PAD IS NO LONGER REQUIRED, REMOVE TRACKING PAD, TAKING CARE TO PROPERLY DISPOSE OF DIRT AND DEBRIS, AND RESTORE THE AREA AS DESCRIBED IN SECTION 31 25 01.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 THE APPLICANT BEARS THE RESPONSIBILITY OF MAINTAINING FOR AT LEAST FIVE (5) YEARS, THE INSPECTION FORMS AND DOCUMENTATION OF CORRECTIVE ACTIONS TAKEN DURING CONSTRUCTION.

5.7 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: WILL SAVAGE, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

- MAINE PROFESSIONAL ENGINEERING LICENSE #11419
- MAINE DEP – CERTIFIED IN MAINTENANCE & INSPECTION OF STORMWATER BMP'S CERT #14
- CERTIFIED EROSION, SEDIMENT AND STORM WATER INSPECTOR (CESSWI) CERT #0293
- CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #4620

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. RELOCATE EXISTING UTILITIES.
6. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
7. COMMENCE INSTALLATION OF UTILITIES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
10. COMPLETE REMAINING EARTHWORK OPERATIONS.
11. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
12. INSTALL PAVING, CURBING AND BRICKWORK.
13. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
14. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
16. COMPLETE SITE SIGNAGE AND STRIPING.
17. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 CONCLUSION

THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

SEEDING PLAN

SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P205–K20) OR EQUIVALENT. FERTILIZER SHALL NOT BE APPLIED TO INFILTRATION BASIN ONCE AMENDED.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES

SEED	LBS / ACRE	LBS / 1,000 SF	RECOMMENDED SEEDING DATES
WINTER RYE	112	2.6	8/15 TO 10/1
OATS	80	1.8	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYEGRASS	40	0.9	4/1 TO 7/1
SUDANGRASS	40	0.9	5/15 TO 8/15
PERENNIAL	40	0.9	8/15 TO 9/15
TOTAL	312	7.1	

PERMANENT SEED APPLICATION RATES

SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

MULCHING

MULCH SHALL BE HARDWOOD AND APPLIED AT A RATE OF 70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT. REFER TO DETAIL FOR MORE INFORMATION.

CONCLUSION

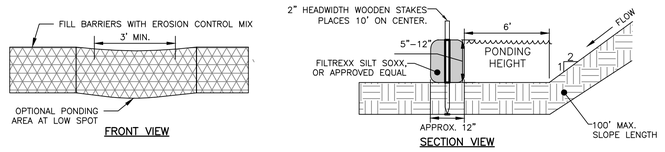
PLEASE REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION PERTAINING TO TEMPORARY SEEDING AND MULCHING.

HOUSEKEEPING

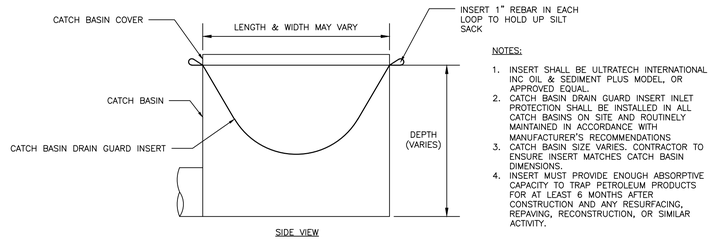
1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESP

NOTES:

1. FULL CONTACT WITH THE GROUND IS CRITICAL TO PREVENT SHORT CIRCUITING UNDER THE TUBE – THE GROUND SURFACE SHOULD BE SMOOTH AND LEVEL. IN WOODED AREAS, PROTRUDING ROOTS AND DEBRIS MAY NEED TO BE REMOVED. IN GRASSED AREAS, THE GRASS NEEDS TO BE EITHER MOWED OR COMPRESSED DOWN.
2. UPON FINAL STABILIZATION, THE TUBE CAN BE CUT OPEN AND THE MATERIAL USED WITHIN LANDSCAPED AREAS. THE MESH MATERIAL SHOULD BE REMOVED.
3. LOOSE COMPOST MAY BE BACKFILLED ALONG THE UPSLOPE SIDE OF THE COMPOST FILTER SOCK, IMPROVING FILTRATION AND SEDIMENT RETENTION.



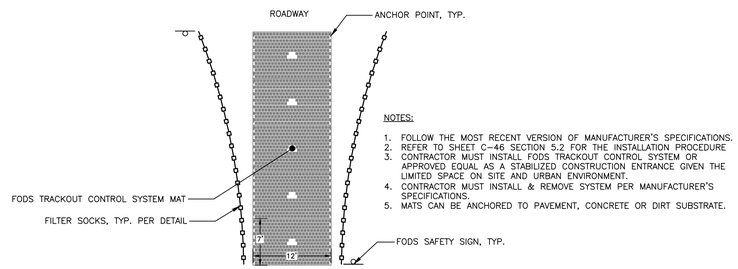
FILTER SOCK DETAIL
NOT TO SCALE



NOTES:

1. INSERT SHALL BE ULTRATECH INTERNATIONAL INC OIL & SEDIMENT PLUS MODEL, OR APPROVED EQUAL.
2. CATCH BASIN DRAIN GUARD INSERT INLET PROTECTION SHALL BE INSTALLED IN ALL CATCH BASINS ON SITE AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
3. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE INSERT MATCHES CATCH BASIN DIMENSIONS.
4. INSERT MUST PROVIDE ENOUGH ABSORPTIVE CAPACITY TO TRAP PETROLEUM PRODUCTS FOR AT LEAST 6 MONTHS AFTER CONSTRUCTION AND ANY RESURFACING, REPAVING, RECONSTRUCTION, OR SIMILAR ACTIVITY.

ULTRATECH DRAIN GUARD CATCH BASIN INSERT
NOT TO SCALE



NOTES:

1. FOLLOW THE MOST RECENT VERSION OF MANUFACTURER'S SPECIFICATIONS.
2. REFER TO SHEET C-46 SECTION 5.2 FOR THE INSTALLATION PROCEDURE
3. CONTRACTOR MUST INSTALL FODS TRACKOUT CONTROL SYSTEM OR APPROVED EQUAL AS A STABILIZED CONSTRUCTION ENTRANCE GIVEN THE LIMITED SPACE ON SITE AND URBAN ENVIRONMENT.
4. CONTRACTOR MUST INSTALL & REMOVE SYSTEM PER MANUFACTURER'S SPECIFICATIONS.
5. MATS CAN BE ANCHORED TO PAVEMENT, CONCRETE OR DIRT SUBSTRATE.

FODS TRACKOUT CONTROL SYSTEM CONSTRUCTION ENTRANCE
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
COST ESTIMATE	WHS 11/15/19
PRELIM PRICING	WHS 8/7/2020
SITE PLAN APPLICATION	WHS 9/4/2020

DRAWING NAME: **EROSION CONTROL DETAILS**

PROJECT NAME/ADDRESS: **FEDERAL STREET DEVELOPMENT**
200 FEDERAL STREET PORTLAND, ME 04101

CLIENT/OWNER: REDFERN DOWNTOWN, LLC
PORTLAND, ME 04104

ACORN ENGINEERING, INC.
ENGINEERING, LAND PLANNING & SURVEYING
PO BOX 3777 PORTLAND, MAINE 04101
(207) 775-2655

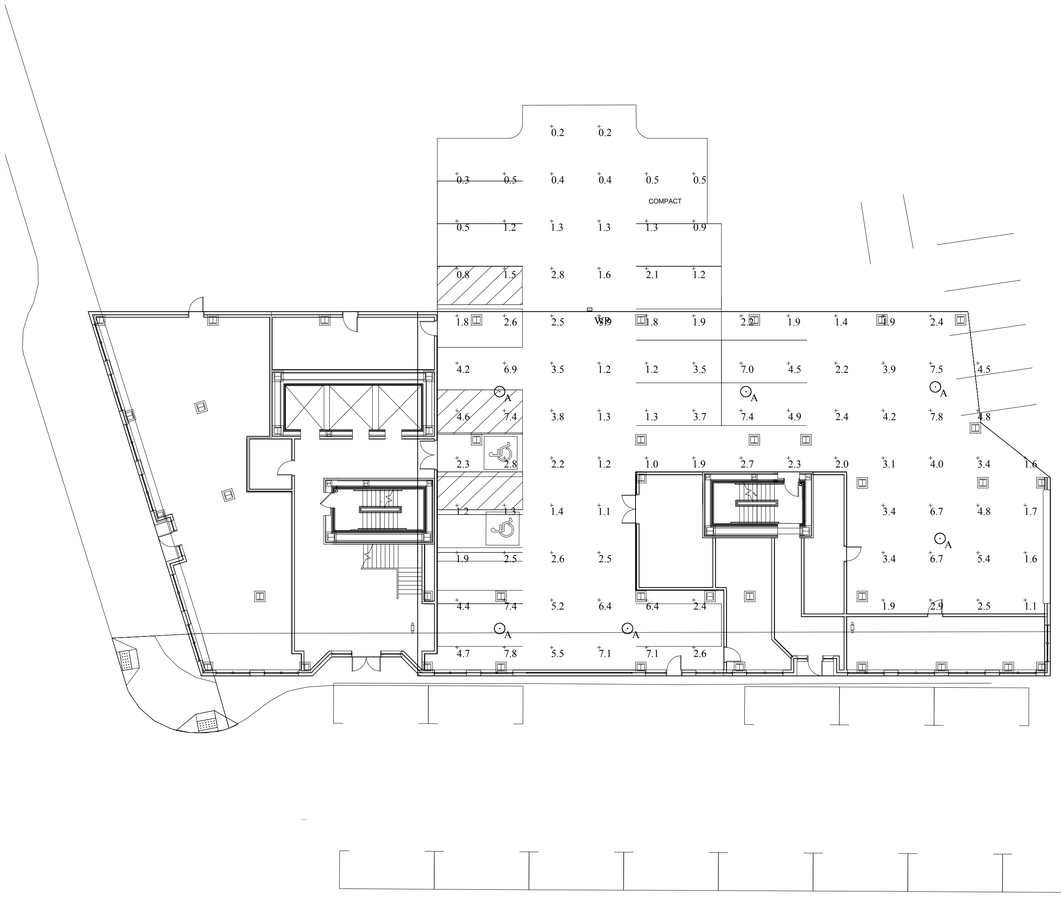
THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1129_CIVIL
JN:	1129
SCALE:	AS NOTED
DESIGNED BY:	FRT
DRAWN BY:	FRT
CHECKED BY:	WHS/PFH

STATE OF MAINE — WILLIAM H. SAVAGE — No. 11555 — 9-28-20 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
C-47

© Acorn Engineering, Inc. All rights Reserved. - Document ID: 1129 - J:\PE Projects\1129\CAD\1129-SITE.dwg, 9/4/2020 3:43:05 PM, AutoCAD PDF (Enabled Only).pc3



Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
⊙	6	A	9' - 0" AFG	0.900	6089	51.2	SRT2-50-4K7-5QW
▭	1	WP	12' - 0" AFG	0.900	2789	28	TRP1-12L30-4K7-4

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Overall Area	Illuminance	Fc	3.02	7.8	0.2	15.10	39.00

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON AIRE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

FEDERAL STREET DEVELOPMENT
PORTLAND, ME
SITE PHOTOMETRIC PLAN

REVISED FROM DRAWING NUMBER(S):

HUBBELL®
Hubbell Lighting, Inc.
701 MILLENNIUM BLVD.
GREENVILLE, SC 29607

DN BY:	DATE:	CHK BY:
DHK	11/14/19	N/A
REV. BY:	DATE:	SCALE:
		AS NOTED
QUOTE:	DRAWING / DESIGN NO.:	
N/A	1925339	

MIXED-USE HIGH-RISE

200 FEDERAL STREET

PORTLAND, MAINE

PROGRESS DRAWINGS

JULY 20, 2020



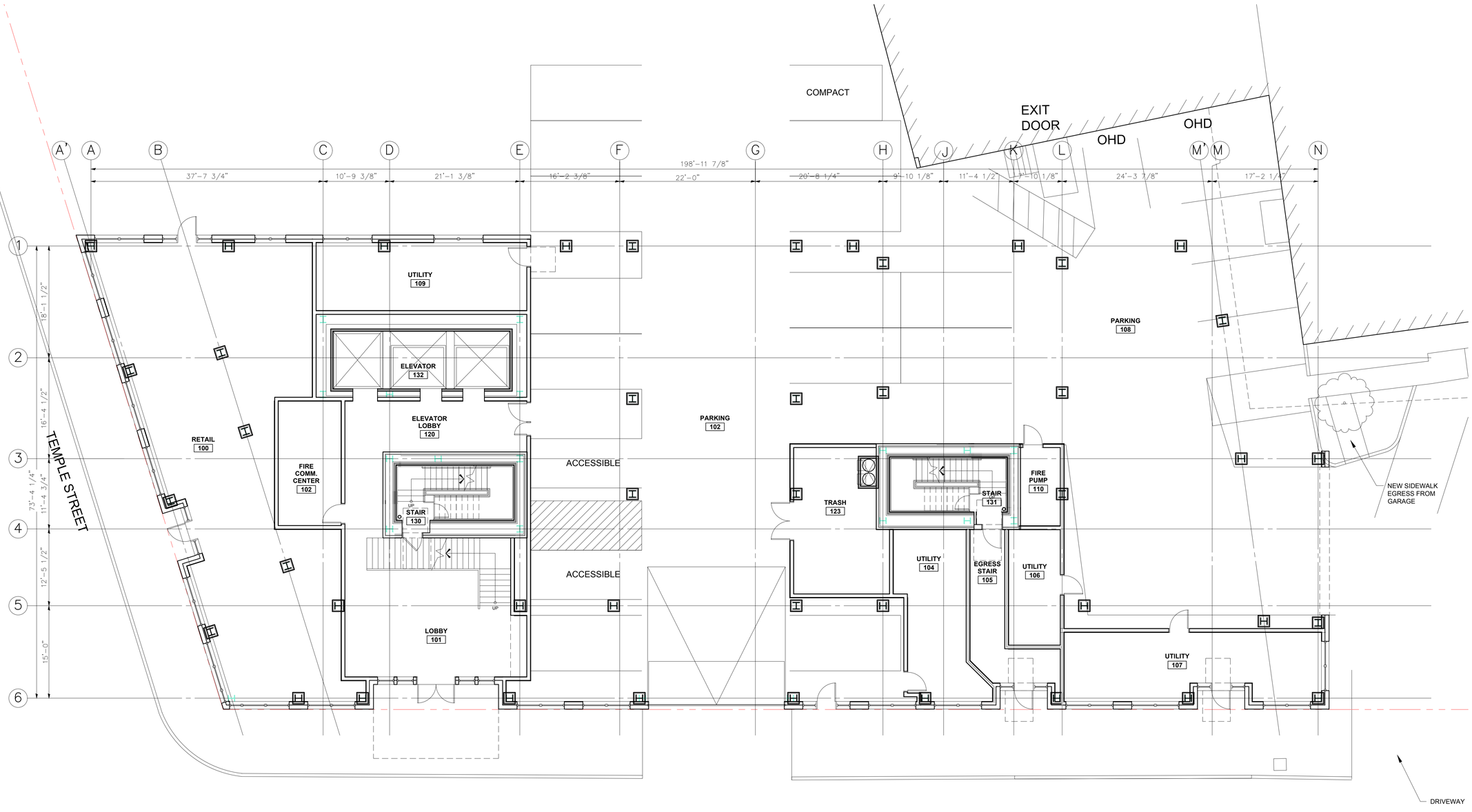
DRAWING LIST

SHEET NUMBER	
G0-0	TITLE SHEET
ARCHITECTURAL	
0-1	INTERIOR WALL AND PARTITION TYPES
0-2	SLAB, FLOOR AND ROOF TYPES
1-1	FIRST FLOOR PLAN
1-2	SECOND FLOOR PLAN
1-3	THIRD FLOOR PLAN
1-4	FOURTH FLOOR PLAN
1-18	EIGHTEENTH FLOOR PLAN
1-19	ROOF PLAN
A2-0	SOUTH ELEVATION
A2-1	NORTH ELEVATION
A2-2	EAST AND WEST ELEVATION
A3-0	WALL SECTIONS
A5-0	DETAILS
A5-1	DETAILS
A7-0	WINDOW SCHEDULE
A7-0A	PINNACLE WINDOW 1
A7-0B	PINNACLE WINDOW 2
1	CONCEPT IMAGE
2	CONCEPT IMAGE
3	CONCEPT IMAGE
4	CONCEPT IMAGE
5	CONCEPT IMAGE
6	CONCEPT IMAGE
1	SITE CONTEXT IMAGE
2	SITE CONTEXT IMAGE

ARCHITECT

RYAN SENATORE **ARCHITECTURE**

500 CONGRESS STREET, SECOND FLOOR, PORTLAND, MAINE 04101
207-650-6414



FEDERAL STREET

NORTH
GRID
TRUE NORTH

0 4' 8' 16' 32'

1 FIRST FLOOR PLAN
1/8" = 1'-0"

© 2020 RYAN SENATORE ARCHITECTURE

MIXED-USE HIGH-RISE

200 FEDERAL STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

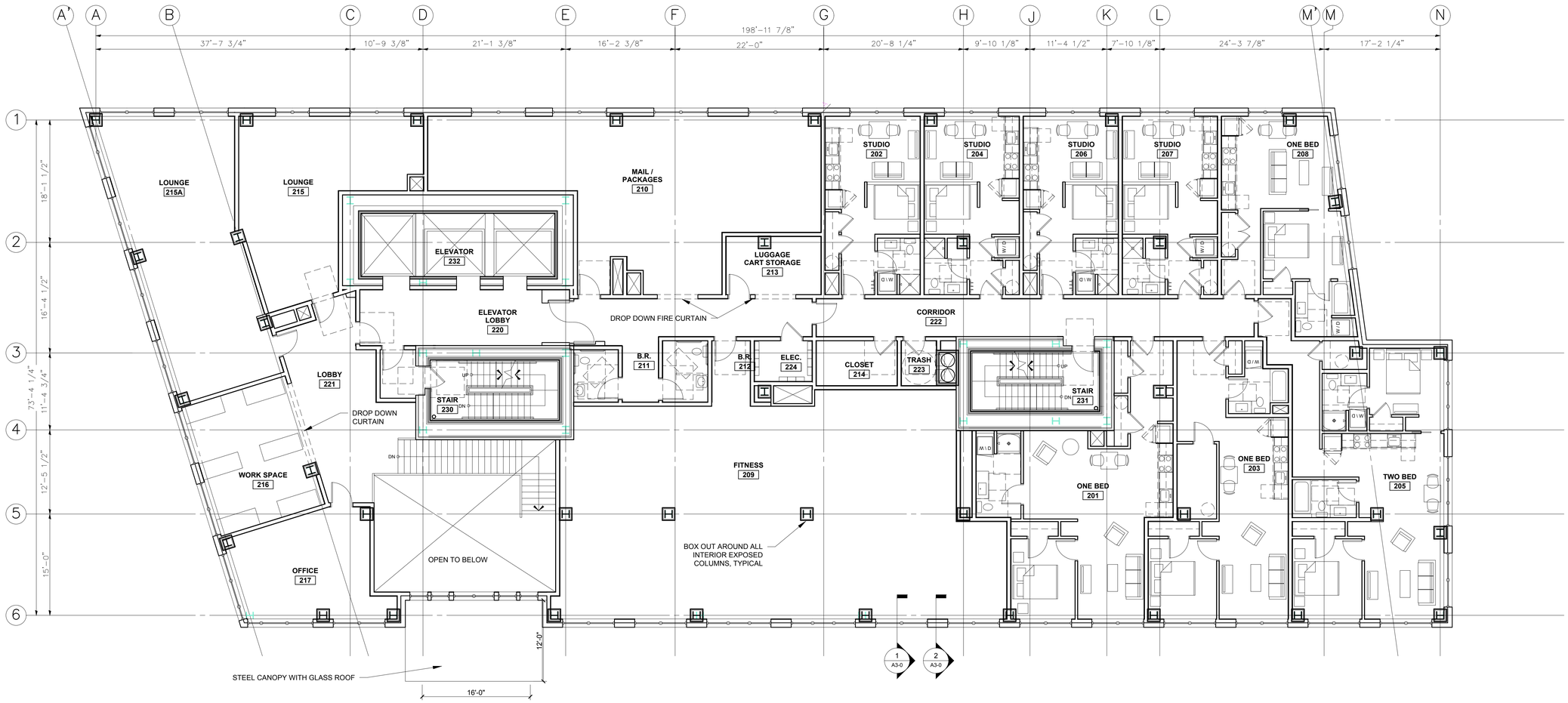
REVISIONS:

PROGRESS PRINT ONLY
Not for Construction
AUGUST 20, 2020

DATE:	
PROJECT No.	1947
DRAWN BY:	RRT, RJS
CHECKED BY:	RJS
SCALE:	AS NOTED

SHEET TITLE:
FIRST FLOOR PLAN

A1-1



1 SECOND FLOOR PLAN
1/8" = 1'-0"

© 2020 RYAN SENATORE ARCHITECTURE

MIXED-USE HIGH-RISE

200 FEDERAL STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS:

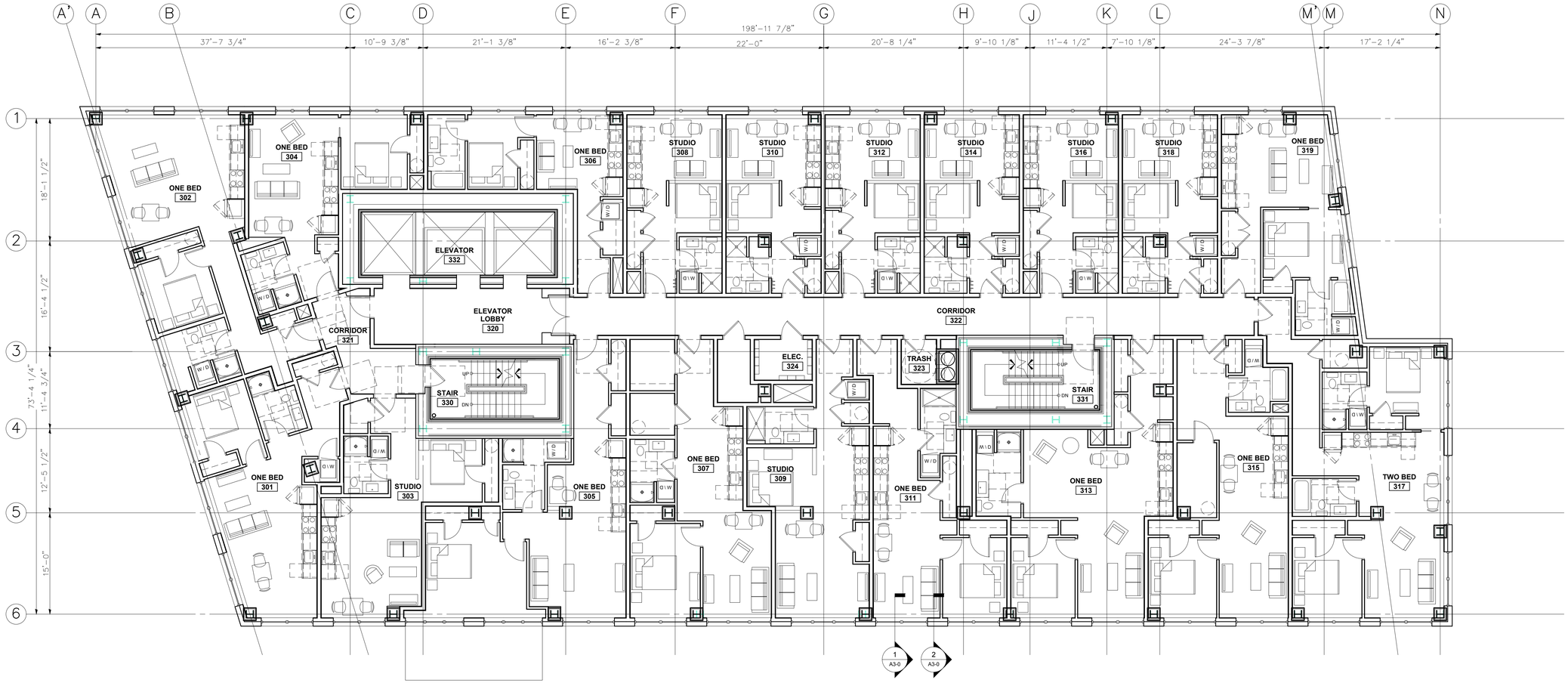
PROGRESS PRINT ONLY
Not for Construction
AUGUST 20, 2020

DATE:

PROJECT No.	1947
DRAWN BY:	RRT, RJS
CHECKED BY:	RJS
SCALE:	AS NOTED

SHEET TITLE:
SECOND FLOOR PLAN

A1-2



1 THIRD FLOOR PLAN
1/8" = 1'-0"

© 2020 RYAN SENATORE ARCHITECTURE

MIXED-USE HIGH-RISE

200 FEDERAL STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS:

PROGRESS PRINT ONLY
Not for Construction
AUGUST 20, 2020

DATE:

PROJECT No. 1947

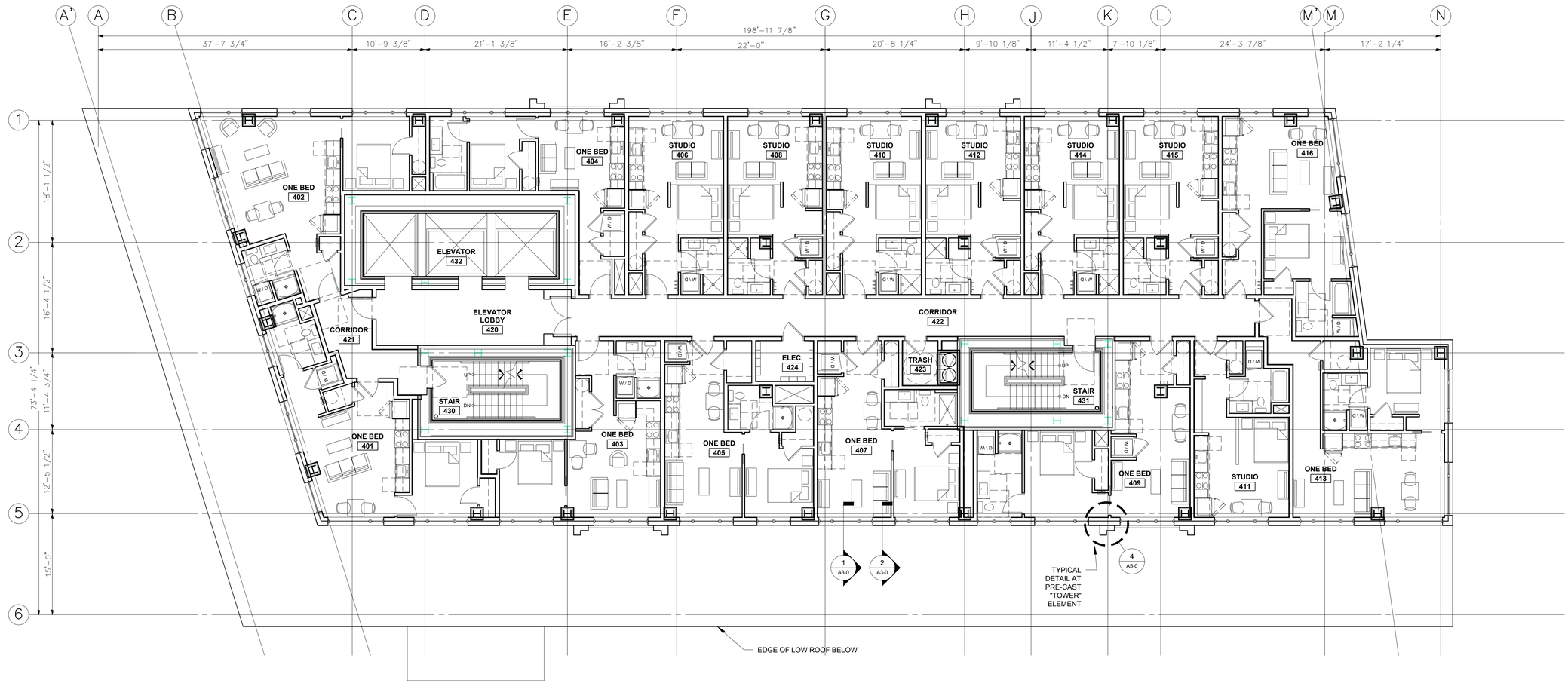
DRAWN BY: RRT, RJS

CHECKED BY: RJS

SCALE: AS NOTED

SHEET TITLE:
THIRD FLOOR PLAN

A1-3



1 FOURTH FLOOR PLAN
1/8" = 1'-0"

© 2020 RYAN SENATORE ARCHITECTURE

MIXED-USE HIGH-RISE

200 FEDERAL STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

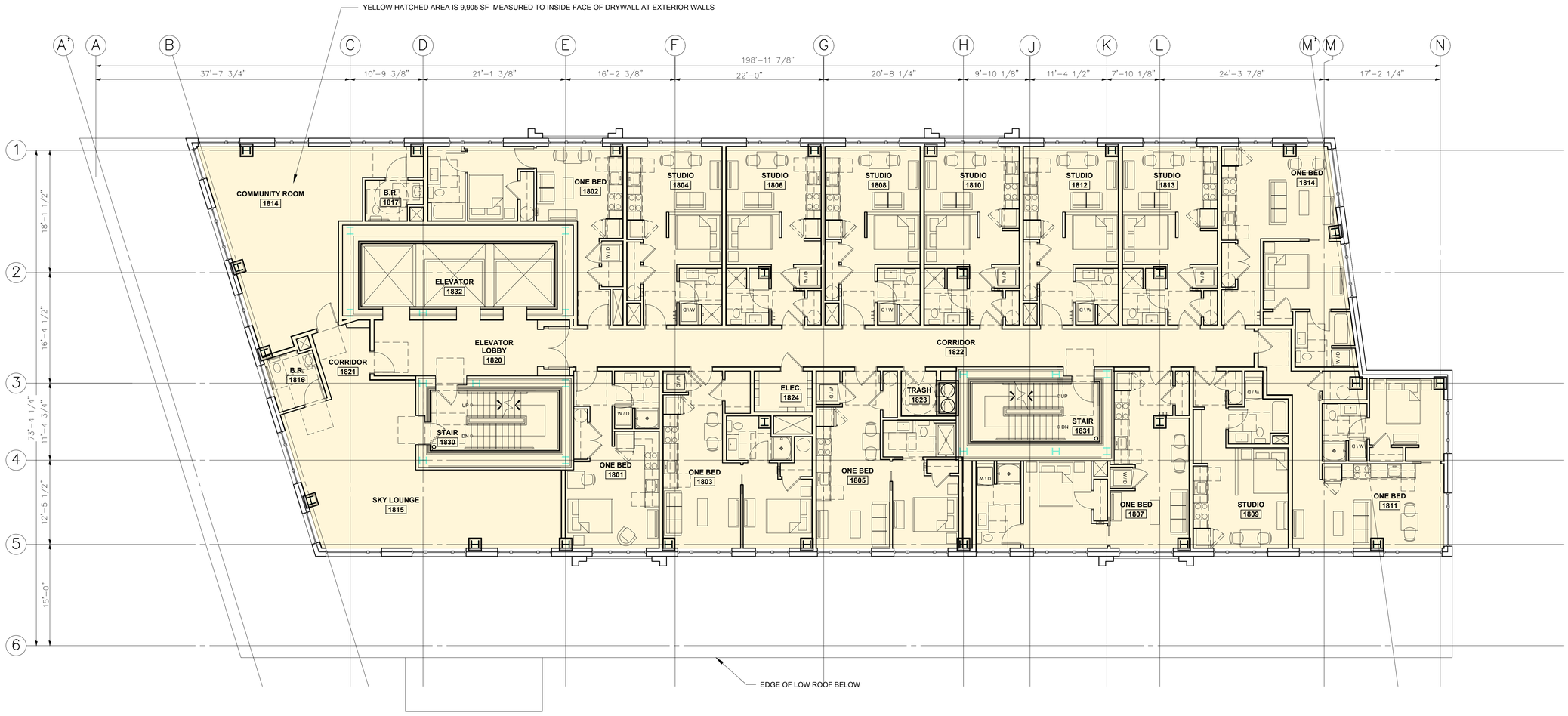
REVISIONS:

PROGRESS PRINT ONLY
Not for Construction
AUGUST 20, 2020

DATE:	
PROJECT No.	1947
DRAWN BY:	RRT, RJS
CHECKED BY:	RJS
SCALE:	AS NOTED

SHEET TITLE:
FOURTH FLOOR PLAN

A1-4



1 EIGHTEENTH FLOOR PLAN
1/8" = 1'-0"

© 2020 RYAN SENATORE ARCHITECTURE

MIXED-USE HIGH-RISE

200 FEDERAL STREET
PORTLAND, MAINE

RSA
RYAN SENATORE
ARCHITECTURE
500 CONGRESS STREET
PORTLAND, MAINE 04101
207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS:

PROGRESS PRINT ONLY
Not for Construction
AUGUST 20, 2020

DATE:

PROJECT No. 1947

DRAWN BY: RRT, RJS

CHECKED BY: RJS

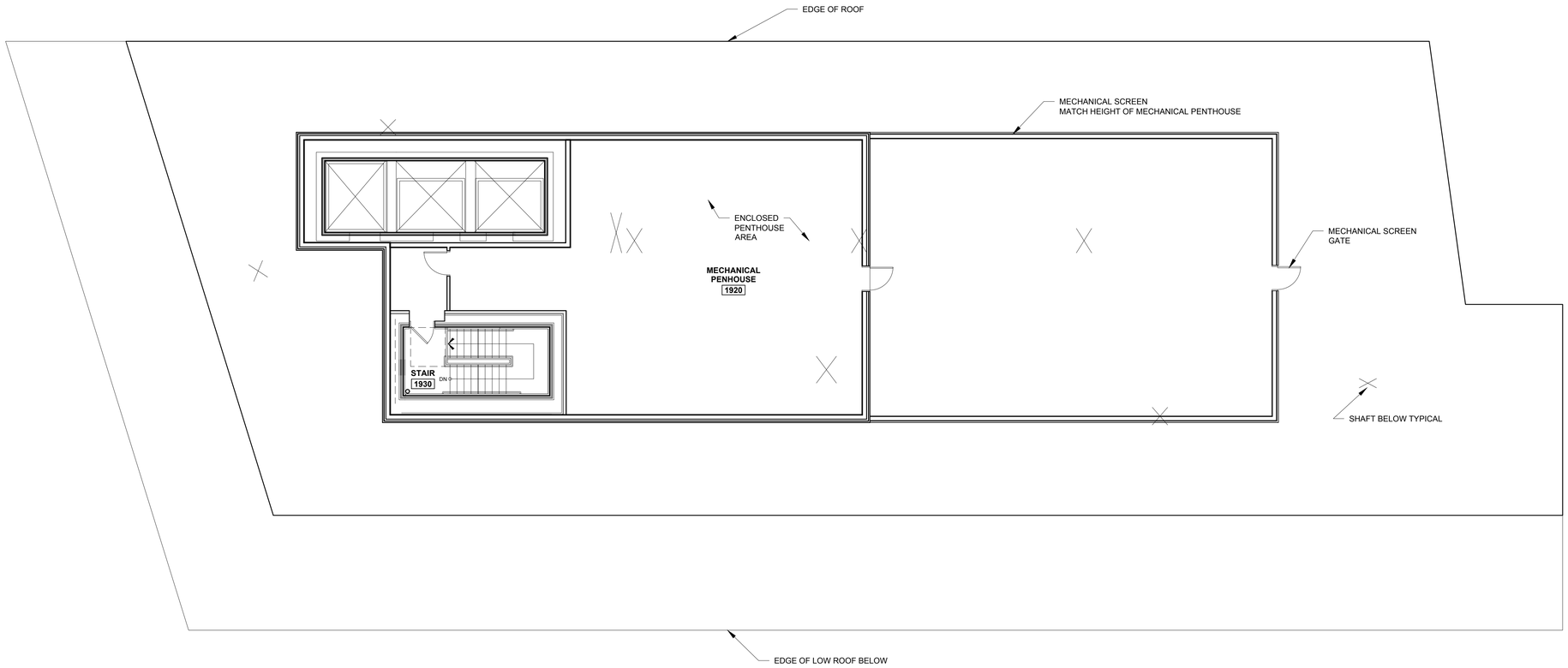
SCALE: AS NOTED

SHEET TITLE:
EIGHTEENTH FLOOR PLAN

A1-18

200 FEDERAL STREET

JULY 20, 2020



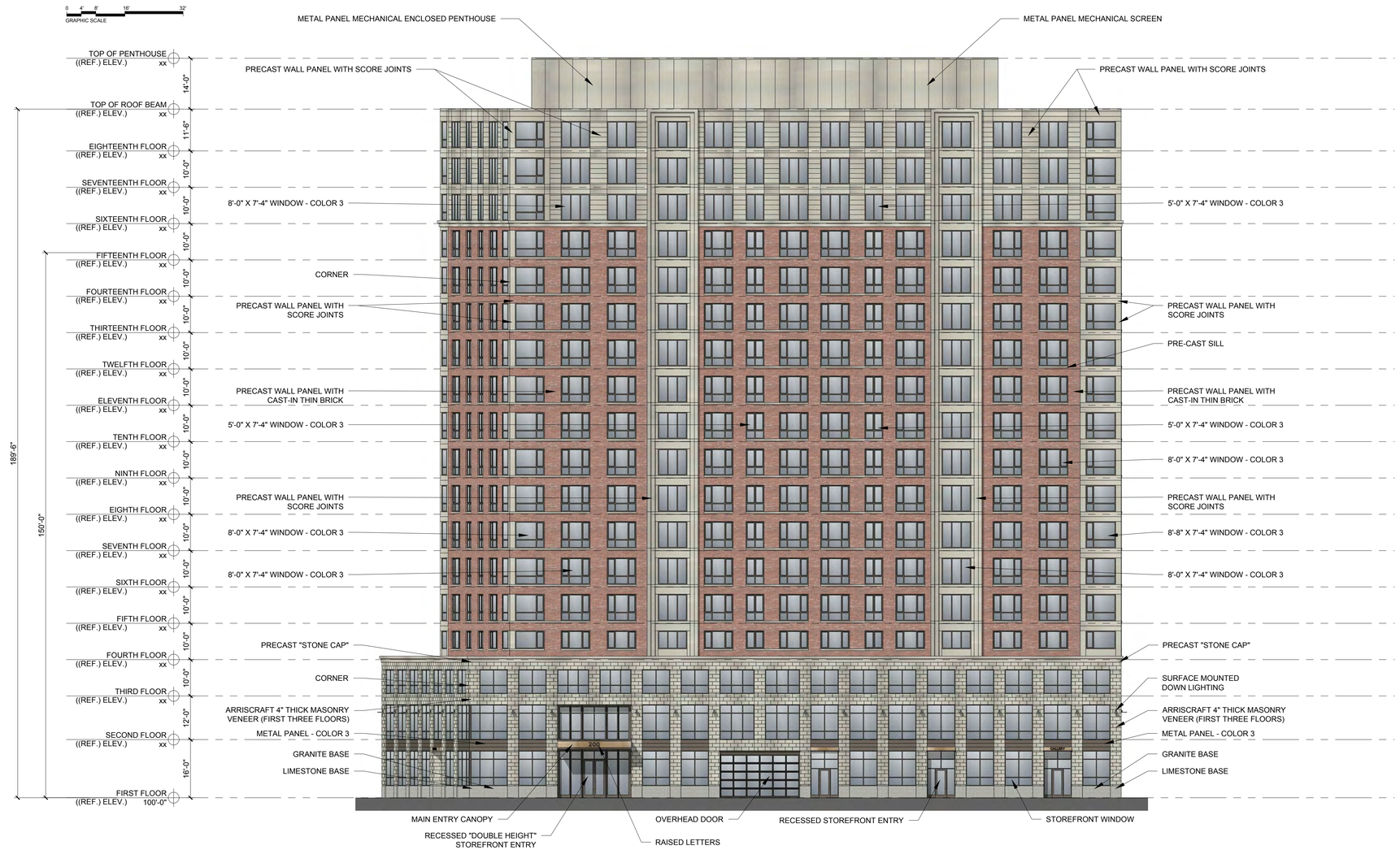
1 ROOF PLAN
1/8" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

200 FEDERAL STREET

JULY 20, 2020



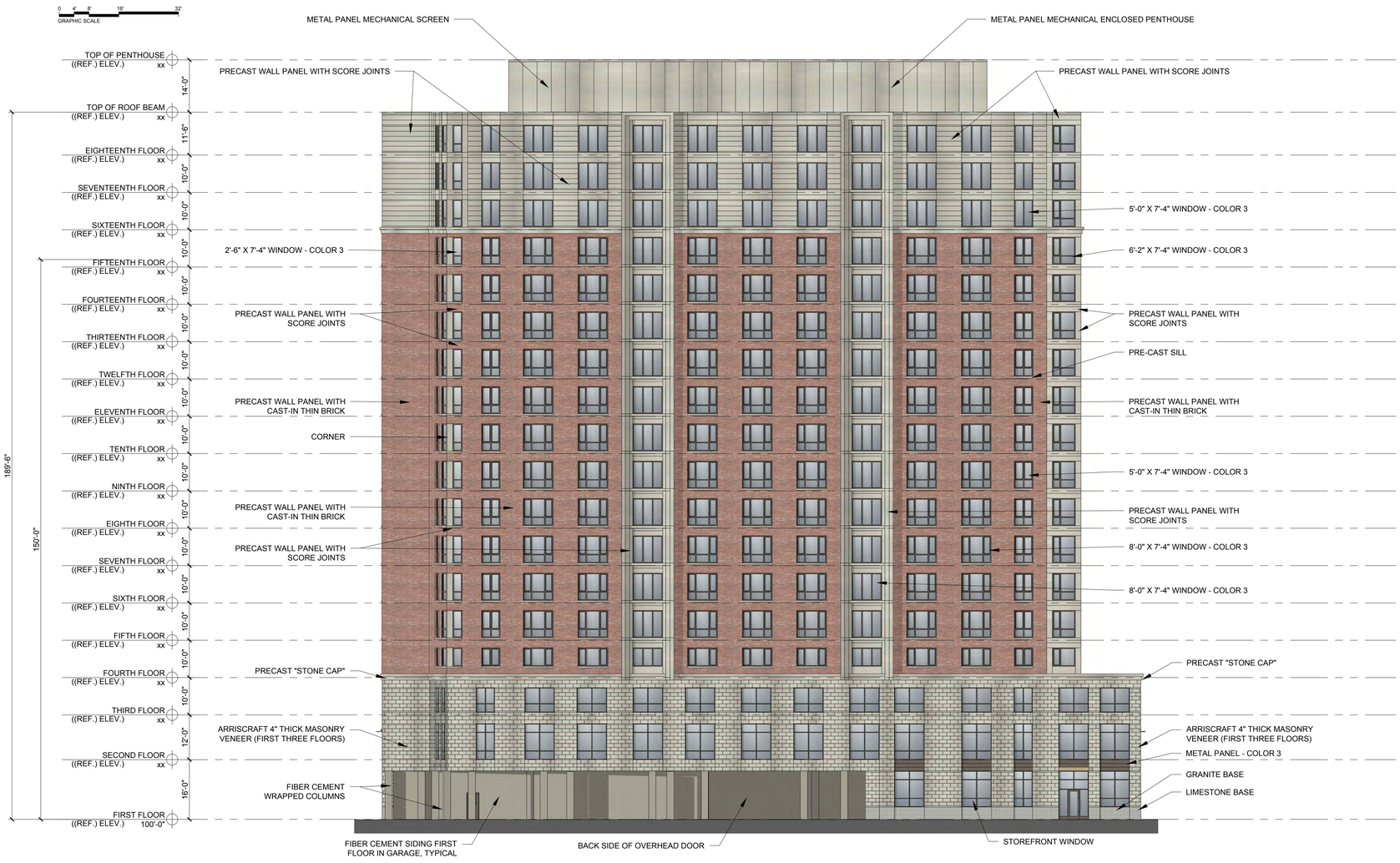
1 SOUTH ELEVATION
1/16" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

200 FEDERAL STREET

JULY 20, 2020



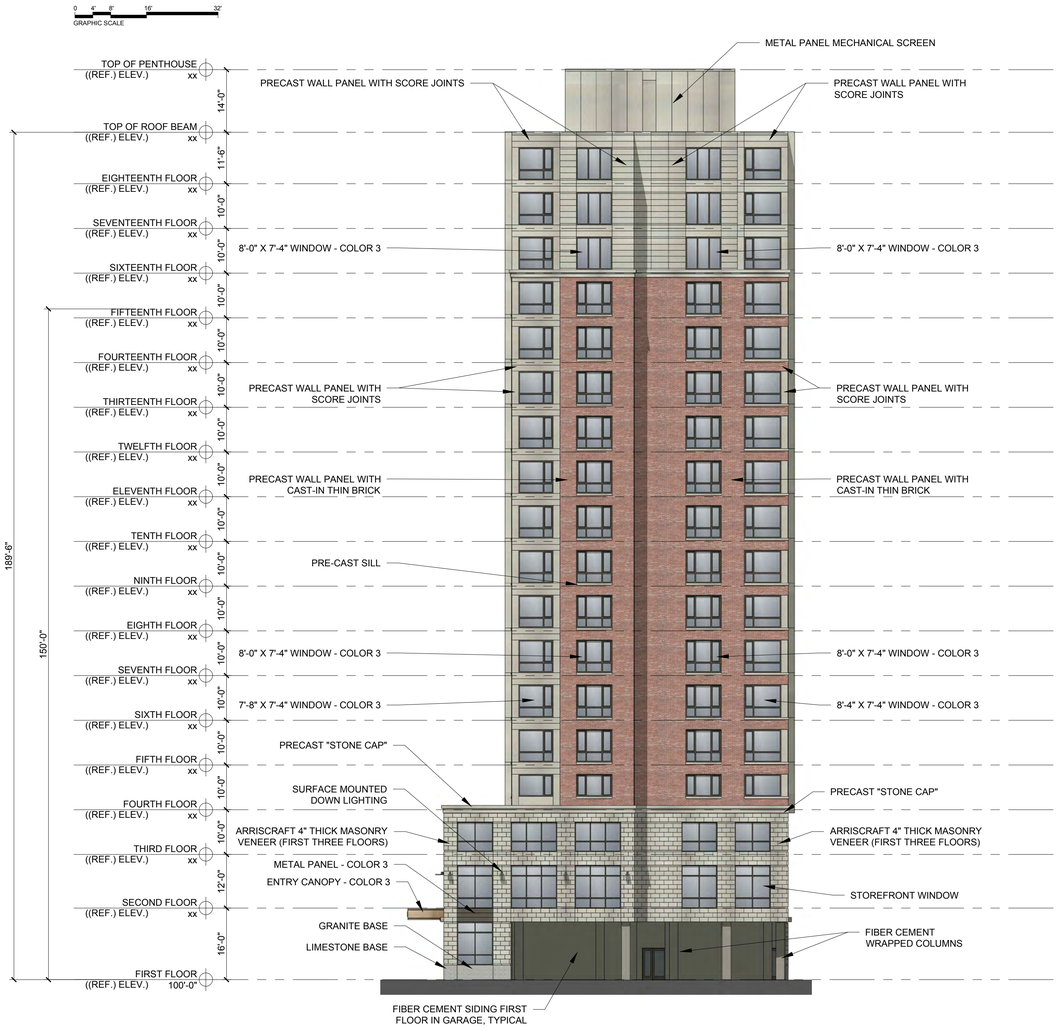
1 NORTH ELEVATION
1/16" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

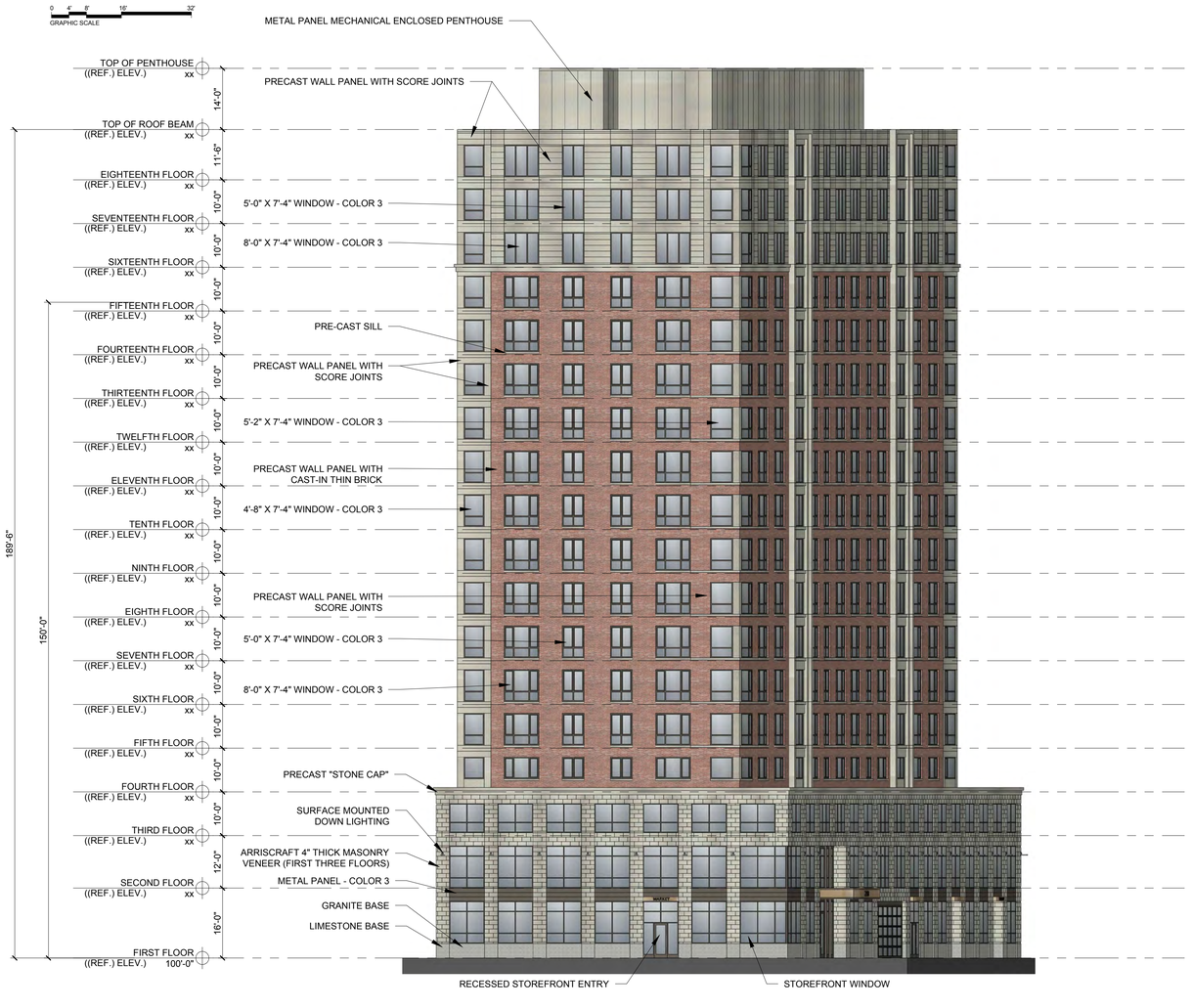
RYAN SENATORE **ARCHITECTURE**

200 FEDERAL STREET

JULY 20, 2020



1 EAST ELEVATION
1/16" = 1'-0"



1 WEST ELEVATION
1/16" = 1'-0"

PROGRESS PRINT ONLY
Not for Construction

RYAN SENATORE **ARCHITECTURE**

PLANNING BOARD REPORT
PORTLAND, MAINE

Student Center, Dormitory, & Quad
25 Bedford Street
Level III Site Plan and Site Location of Development Review
PL-001040-2020
University of Southern Maine, Applicant

Submitted to: Portland Planning Board **Public Hearing Date:** 11/10/2020	**Prepared by:** Christian Roadman, Planner **Date Prepared:** 11/6/2020

I. INTRODUCTION / PROPOSED DEVELOPMENT

The University of Southern Maine (USM) seeks to redevelop a portion of their campus, replacing two existing buildings and a parking lot with a 42,000 square foot student center, a 580 bed dormitory, and one-acre quad.

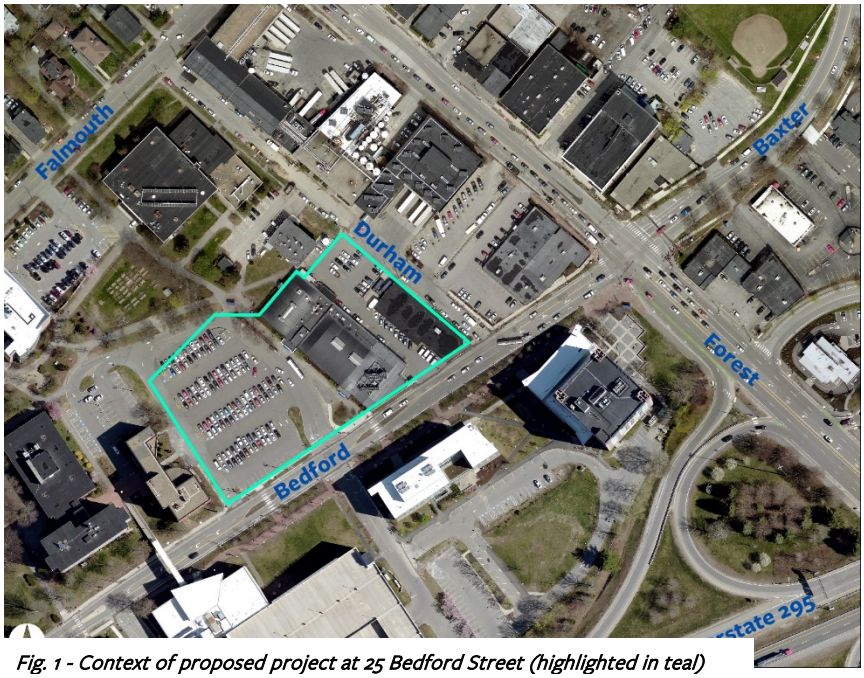


Fig. 1 - Context of proposed project at 25 Bedford Street (highlighted in teal)

The proposed project is located mostly within the R-5 Residential Zone, with a portion at the easternmost edge of the site in the B-2 Community Business Zone. USM's entire Portland campus also lies within the USM overlay zone, created to allow the University the flexibility to operate uses typical of an institution of higher education.

In addition to the City's site plan review requirements, this development is subject to a Site Location of Development (SLODA) review and requires a Maine DOT Traffic Movement Permit (TMP). The City of Portland is the delegated review authority for both.

Between removal of an existing 171 space parking lot and the new buildings, the development as currently proposed would result in a deficit of approximately 400 parking spaces. The University plans to construct a parking garage prior to completing this project; however, the Planning Board cannot assume that an appropriate facility would be planned, reviewed, permitted, and constructed within the necessary time frame. Because of this, USM developed a contingency plan (**Attachment D**) involving remote parking at offsite lots along METRO routes (or utilizing shuttles) and potential changes to existing parking operations to increase efficiency. Progress towards, and then provision of, adequate parking is suggested as a **condition of approval**.

Notices have been sent to 190 property owners and a legal advertisement was published in the October 30 and October 31 editions of the *Portland Press Herald*.



Fig. 2 - Rendering of proposed project at 25 Bedford Street in context viewed from the southwest (image: Applicant)

Applicant: University of Southern Maine
Consultants: Woodard & Curran, Inc. (civil engineering); SMRT Architects & Elkus Manfredi Architects (building design) Capstone Development Partners (student housing developer)

II. REQUIRED REVIEWS

Waiver Requests	Applicable Standards
Use of materials (fiber cement panel) identified as 'low quality' Staff support this waiver based on improved quality of fiber cement paneling	City of Portland Design Manual – (e) University of Southern Maine Overlay Zone, Appendix 3 Standard D-7 Materials
Review	**Applicable Standards**
Site Plan	Section 14-526
Site Location of Development	Technical Manual Section 14
Traffic Movement Permit	Delegated Review from Maine DOT

III. PROJECT DATA

Existing Zoning	R-5 Residential, B-2 Community Business, USM Overlay Zone
Existing Use	Student center, university facilities building, parking
Proposed Use	Student center, dormitory, quad
Property Size (sf.)	~673,000 (~144, 600 disturbed)

	Existing	Proposed	Net Change
Building Footprint (sf.)	36,906	48,477	+8,571
Building Floor Area (sf.)	36,906	259,861	+222,955
Impervious Surface Area (sf.)	123,178	70,334	-52,844
Parking Spaces	~171	0 (offsite spaces plan intended to offset need)	-171
Bicycle Parking Spaces	14	~36	+22



Fig. 3 - Rendering of the proposed project Bedford Street; the proposed dorm is to the right, partially visible. (image: applicant)

IV. EXISTING CONDITIONS

The University of Southern Maine's Portland Campus occupies more than 15 acres of land just outside of Portland's peninsula in the Oakdale neighborhood, and is bounded by Forest Avenue and Durham Street to the East, Falmouth Street to the North, Exeter Street to the West and I-295 and Chamberlain Street to the South. The campus operates in conjunction with USM's two other campuses located in Gorham and Lewiston, and at present, largely serves a commuter student population, with residence halls housed on the university's Gorham campus. The campus consists of 34 buildings ranging from repurposed single-family homes to large academic buildings, ten surface parking lots, one parking garage, and pathways across campus.

The buildings proposed for demolition as part of the redevelopment house campus services and facilities management.

V. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

The applicant held a required neighborhood meeting virtually via Zoom on July 15, 2020. 21 members of the public attended. Those who spoke commented their appreciation for the architecture of the new buildings and overall design. The neighborhood meeting notification, sign-in sheet and minutes are included as **Attachment B**.

As of this writing, public comment received (**PC1 – PC7**) generally expresses neighborhood concern regarding potential traffic and parking impacts on the nearby residential neighborhood and also the business operations of Oakhurst Dairy. One "comment" is a neighborhood petition supported by approximately 44 neighbors which expresses particular concern regarding the applicant's intended parking garage and how it is not included in this application.

VI. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

The applicant provided four deeds (**Attachment F**) to evidence ownership of the property.

The applicant provided a letter listing voter-approved general obligation debt, philanthropic contributions, and revenue bonds as financial resources facilitating the proposed project (**Attachment F**).

The applicant cited consultant experience and expertise as evidence of technical capacity (**Attachment F**).

VII. ZONING ANALYSIS

The development site is located within the R-5 Residential Zone, the B-2 Community Business Zone, and the USM Overlay Zone. The purpose of the USM Overlay Zone is to allow the University's existing campus to "be continued and reasonably expanded within defined boundaries" while recognizing "the unique qualities of a university campus while at the same time protecting the value and integrity of established neighborhoods."

University buildings and structures are subject to the requirements of the underlying zoning districts, except as modified by the USM Overlay Zone. The Overlay Zone allows for an 85 foot building height in the area of the campus where this development is to occur, with required setbacks of 10 feet along Bedford Street, 0 feet along Durham Street, and 20 feet along Falmouth Street.

The uses proposed for this project, which are classified as 'university uses', are permitted within the USM Overlay Zone. These include classrooms, student unions, dining halls, bookstores, auditoriums, outdoor use areas, student housing and offices.

The proposed buildings conform to height restrictions in the zone – a portion of one building exceeding the height limit (**Attachment P17**) is for a stair tower and elevator overrun, which is allowable.

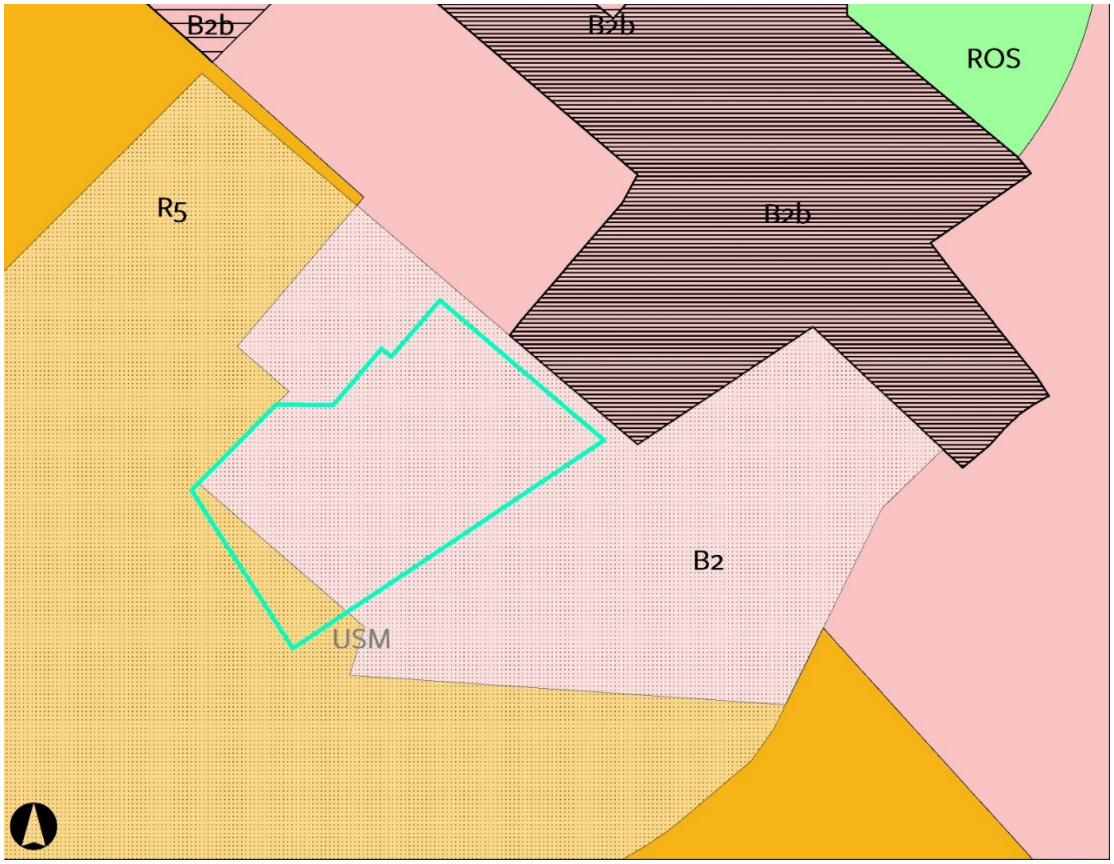


Fig. 4 - Zoning context of the proposed project at 25 Bedford Street (highlighted in teal). The stippled portion of the map represents the USM overlay zone.

VIII. DEVELOPMENT REVIEW

A. SITE PLAN STANDARDS (Section 14-526)

Staff reviewed the proposed development for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations, and staff comments relative to each standard are below:

a) Transportation Standards

Impact on Surrounding Street Systems and Access and Circulation; Access and Circulation; Public Transit Access; Parking; Transportation Demand Management

The proposed development is not expected to significantly impact the surrounding street system as the proposed uses are not expected to generate more traffic than current uses; the residence hall may reduce traffic demand on campus. Two curb cuts along Bedford Street would be eliminated, which should improve traffic flow on campus. Prior to the completion of this development, a new roundabout will be built at the intersection of Brighton Avenue and Deering Avenue, which at present is the most deficient intersection in the vicinity of the university. The roundabout is anticipated to improve traffic flow through that intersection and is currently under construction.

The University is located along the 2, 4, and Husky METRO (the latter connects its Gorham and Portland campuses). On campus, proposed pedestrian infrastructure connections are intended to improve pedestrian mobility.

In the short term, this development is expected to result in an overall decrease in the supply of off-street parking, as 171 surface spaces are being eliminated. As noted above, the University plans to construct a parking garage prior to completing this project; however, the Planning Board cannot assume that an appropriate facility would be planned, reviewed, permitted, and constructed within the necessary time frame.

Because of this, USM developed a contingency plan (**Attachment D**) involving remote parking at offsite lots along METRO routes or shuttle service, and potential changes to existing parking operations; utilizing parking attendants would allow cars to be "parked in" to maximize efficiency, and then be retrieved when needed by attendants. Additionally, USM proposed leasing parking spaces at one of two locations in Westbrook: Rock Row or 183 County Road in Westbrook. At the former, the existing Husky Line would allow students to then take the bus to campus and back. At the latter, the University would need to coordinate additional bus service or institute a shuttle service to that lot.

Progress towards, and then provision of, adequate parking is suggested as a **condition of approval**.

The University provided a Transportation Demand Management (TDM) plan (**Attachment C**) including a trip reduction goal of between 3% and 6%, and a parking reduction of between 10% and 14 % by the year 2025 (after presumed completion of the student center, residence hall and desired garage). The plan was reviewed and approved by the City's Transportation Programs Manager (**Attachment 1**), who noted that previous staff comments based on commitment to core strategies, development of greenhouse gas and mode split targets, expansion of monitoring / reporting on trip and parking reductions were addressed substantively to the satisfaction of staff.

The Department of Public Works senior engineer (**Attachment 3**) and consulting traffic engineer (**Attachment 2**) also participated in review of the project. Both are generally satisfied with the current application, but request specific conditions of approval tied to the applicant's Traffic Movement Permit (addressed below) and improvements to the applicant's construction management plan.

b) Environmental Quality Standards

Preservation of Significant Natural Features; Landscaping & Landscape Preservation; Water Quality, Storm Water Management and Erosion Control

The proposed project site is entirely developed, and as such, contains no significant natural features. The project introduces two new major green spaces: a one-acre campus quadrangle and a semi-private half-acre courtyard partially surrounded by the residence hall.

The proposed redevelopment will reduce the amount of impervious surface for this site but still must treat at least 50% of impervious area. To meet this threshold, the applicant proposes grassed underdrained soil filters and bioretention cell soil filters. The City's consulting civil engineer reviewed the applicant's proposal (**Attachment 4**) and requested updates and clarifications to several stormwater calculations and details. Revisions are anticipated prior to the Planning Board's public hearing on Tuesday. Otherwise, additional conditions of approval may be necessary.

The Department of Public Works requires (**Attachment 5**) a dewatering plan from the applicant. This is suggested as a **condition of approval**.

c) Public Infrastructure and Community Safety Standards

a. Consistency with related Master Plans; Public Safety and Fire Prevention; Availability and Capacity of Public Utilities

The project as shown appears consistent with master plans adopted by the City. The application was reviewed for compliance with relevant life/safety requirements and deemed satisfactory in this regard. The project proposes new utility connections for water, gas, electric and sewer. Confirmation of adequate wastewater capacity by the Department of Public Works and confirmation of ability to serve by the Portland Water District are suggested as **conditions of approval**.

d) Site Design Standards

1. Massing, Ventilation and Wind Impact; Shadows; Snow and Ice Loading; View Corridors; Historic Resources; Exterior Lighting; Noise and Vibration; Signage and Wayfinding

   The proposed building massing complements the existing campus environment, and promotes an improved pedestrian experience along Bedford Street with a more uniform street wall. The development is not anticipated to have adverse impacts related to either ventilation or wind, nor adverse impacts related to building shadows or snow and ice loading.

   There are no designated view corridors within the project vicinity, and lighting proposed (**Attachments G and P11**) meets City standards for light trespass and full cutoff fixtures. Lighting consists of bollard, wall pack and pole mounted fixtures that are concentrated along walkways, at building entrances and within the residence hall courtyard.

   No adverse impacts related to noise and vibration are anticipated as mechanical equipment is to be roof-mounted and away from public open spaces and other residential areas.

2. Zoning Related Design Standards

   The City's Urban Designer reviewed the proposed project (**Attachment 6**) against the USM Campus Design Principles and Standards (Appendix 3 of the Design Manual), and generally supported the proposed project design.

B. COMPREHENSIVE PLAN

Portland's Plan 2030 identifies a vision statement and policy goals for the City. Several of these are applicable to the proposed project and are reproduced below.

Vision statement:

- Equitable:
  "We will incorporate the needs of all our residents in planning for our future."

- Sustainable*:*

  "Portland will grow in order to sustain our community, infrastructure, and economy."

- Dynamic:

  "We will welcome new residents into our community because they enrich and sustain our community."

- Secure:
  "We will be committed to accessible housing and healthy food for all our residents."

- Authentic:
  "We will invest in and support our local economy.

  Policy goals:

- Environment:

  "Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation."

- Economy:

  "Support sustainable growth in our educational, medical, and cultural institutions."

- Housing:
  "Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods."

- Transportation:
  "Promote multi-modal accessibility, enabling residents and visitors of all ages and abilities to participate fully in the social and economic life of the community."

C. SITE LOCATION OF DEVELOPMENT

The City of Portland has delegated review authority from the Maine DEP for large projects that trigger Site Location of Development Act (SLODA) review. The standards for this review include the items below, which largely dovetail with Portland's existing site plan review standards:

- *Financial & Technical Capacity*: see section VI, above.
- *Traffic Movement*: see site plan standards, a, above, and Traffic Movement Permit, below.
- *No Adverse Effect on the Natural Environment, Ground Water, Flooding, Storm Water Management & Erosion and Sedimentation Control*: see site plan standards, b, above. The development is not located within a flood hazard zone, as shown on the FEMA Flood Insurance Rate Map provided in this application. The proposed development is not anticipated to cause or increase flooding or cause an unreasonable hazard to any adjacent structures.
- *Soil Types:* The applicant provided a draft geotechnical report and information regarding strategies to appropriately stabilize the building (Attachment X).
- *Infrastructure*: see site plan standards, c, above.

D. TRAFFIC MOVEMENT PERMIT

As defined under Maine state statute 704—A, a traffic movement permit is required of any project that generates 100 or more passenger car equivalents at peak hour. Any project surpassing this threshold is required to make adequate provision for traffic movement of all types into and out of the project area such that any traffic increase that is attributable to the project will not result in unreasonable congestion or unsafe conditions within the vicinity of the development.

Per the applicant's TMP materials (Attachment U) The proposed development is expected to generate 160 new morning peak hour trips am peak hour trips, and 160 new evening peak hour trips. Based on staff and

reviewer feedback, the applicant agreed to help fund and implement, in coordination with the City, physical infrastructure and signal timing improvements intended to mitigate traffic impacts and increase pedestrian safety in the area of the USM campus. Specifically, the applicant is required as a condition of approval, to:

1) Implement improvements at the Forest Avenue/Bedford Street/Baxter Boulevard intersection based on the Smart Corridor Study recommendations. This shall include geometric modifications to the corners on the Baxter Boulevard approach, upgrading pedestrian traffic signal equipment with all work complying with ADA standards.

2) Implement improvements at the Forest Avenue/Falmouth Street/Preble Street Extension intersection based on the Smart Corridor Study recommendations. This shall include geometric modifications to the southeast corner, implementing a crosswalk on the southerly Forest Avenue approach, upgrading pedestrian traffic signal equipment with all work complying with ADA requirements. It should be noted that the new crosswalk will require installation of a new sidewalk ramp on the westerly side of Forest Avenue.

3) Contribute $10,000 towards Forest Avenue Traffic Signal Optimization at the Forest Avenue/Bedford Street/Baxter Boulevard and Forest Avenue/Falmouth Street/Preble Street Extension intersections with the intent of improving mobility efficiencies.

4) Implement traffic calming / pedestrian improvements at the Falmouth Street / Oakdale Street intersection (including a raised intersection with supporting features for review and design by the Portland Department of Public Works) before completion of a parking garage structure or five years from TMP approval, whichever is sooner.

IX. PROPOSED MOTIONS

A. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board report for the public hearing on November 10, 2020 for application PL-001040-2020 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing:

1. The Planning Board **[finds / does not find]** based upon the submitted materials, that extraordinary conditions exist or undue hardship may result from strict compliance with the Design Manual standard (e) University of Southern Maine Overlay Zone, Appendix 3 Standard D-7 Materials which prohibits use of fiber cement panels. The Planning Board **[waives / does not waive]** the Design Manual standard ((e) University of Southern Maine Overlay Zone, Appendix 3 Standard D-7 Materials) to allow use of fiber cement panel.

B. SITE PLAN REVIEW & SITE LOCATION OF DEVELOPMENT

On the basis of the application, plans, reports, and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on November 10, 2020 for application PL-001040-2020 relevant to the site plan and Site Location of Development Act regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan **[is / is not]** in conformance with the site plan standards of the land use code and the Site Location of Development Act standards, subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall submit an ability to serve letter from the Portland Water District.

2. The applicant shall submit confirmation of adequate wastewater capacity from the Department of Public Works.

3. The applicant shall submit a dewatering plan for review and approval by the Department of Public Works.

SIX MONTHS AFTER ISSUANCE OF A BUILDING PERMIT

4. The applicant shall provide proof of parking commitments sufficient to provide the 396 parking spaces required by the proposed development, or shall submit a site plan application for a parking garage providing these spaces, for review and approval by the Planning Authority.

PRIOR TO CERTIFICATE OF OCCUPANCY

5. The applicant shall obtain a certificate of occupancy for a parking garage providing the 396 parking spaces required by the proposed development, or shall provide a final management plan and executed leases providing these spaces, for review and approval by the Planning Authority.

C. TRAFFIC MOVEMENT PERMIT

On the basis of the application, plans, reports, and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on November 10, 2020 for application PL-001040-2020 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan [is / is not] in conformance with 23 MRSA 704-A and Chapter 305 Rules and Regulations pertaining to Traffic Movement Permits, subject to the following conditions of approval:

1. The applicant shall provide conceptual design plans, preliminary and final plans and specifications (for review and approval by the Department of Public Works and Planning Authority) and then implementation of Traffic calming / pedestrian improvements at the Falmouth Street / Oakdale Street intersection (including a raised intersection with supporting features for review and design by the Portland Department of Public Works) before completion of a parking garage structure or five years from TMP approval, whichever is sooner.

PRIOR TO CERTIFICATE OF OCCUPANCY

2. The applicant shall provide a $10,000 contribution to the City towards Forest Avenue traffic signal optimization at the Forest Avenue / Bedford Street / Baxter Boulevard and Forest Avenue / Falmouth Street / Preble Street Extension intersections with the intent of improving mobility efficiencies.

3. The applicant shall provide conceptual design plans, preliminary and final plans and specifications (for review and approval by the Department of Public Works and Planning Authority) and then implementation of the following:

    - Improvements at the Forest Avenue/Bedford Street/Baxter Boulevard intersection based on the Smart Corridor Study recommendations. This shall include geometric modifications to the corners on the Baxter Boulevard approach, upgrading pedestrian traffic signal equipment with all work complying with ADA standards.

- Improvements at the Forest Avenue/Falmouth Street/Preble Street Extension intersection based on the Smart Corridor Study recommendations. This shall include geometric modifications to the southeast corner, implementing a crosswalk on the southerly Forest Avenue approach, upgrading pedestrian traffic signal equipment with all work complying with ADA requirements. It should be noted that the new crosswalk will require installation of a new sidewalk ramp on the westerly side of Forest Avenue.

XI. ATTACHMENTS

Report Attachments

1. Transportation Programs Manager TDM Memo
2. Consulting Transportation Engineer TMP Comments
3. Department of Public Works Senior Engineer CM Plan Memo
4. Consulting Civil Engineer Comments Memo
5. Department of Public Works Water Resources Comments
6. Urban Designer Review Memo

Public Comment

PC1 - PC 7.

Applicant's Submittals

A. Cover Letter and Project Summary
B. Neighborhood Meeting Materials
C. Transportation Demand Management
D. Interim Parking Management Plan Memo
E. Site Location of Development Application
F. Site Plan Requirements Narratives
G. Lighting Cut Sheets
H. Stormwater Report
I. USM Facilities Master Plan
J. Traffic Memo
K. Street Parking Memo
L. Design Narrative
M. Response to Comments Letters
N. Portland Commons Window to Wall Ratio
O. Landscape Design Concept Memo
P. Housing Survey Market Analysis
Q. Parking Analysis
R. Parking Garage Feasibility Study
S. Preliminary Plan for Move-In
T. Sightline Diagrams
U. TMP Section 7

Plans

P1. Cover Sheet
P2. Site Notes & Legends

P3. Existing Conditions & Removals Plan
P4. Building Demolition Plan
P5. Site Layout
P6. Utilities
P7. Planting & Landscape
P8. Grading & Drainage
P9. Erosion & Sedimentation Controls
P10. Steam Line
P11. Photometric
P12. Post Development Watershed Plan
P13. Post Development Water Quality Plan
P14. Construction Management
P15. USM Survey
P16. Floor Plans
P17. Elevations
P18. Renderings

Memorandum
Planning and Urban Development Department
Planning Division

To: Brandon Mazer, Chair and Members of the Portland Planning Board

From: Bruce Hyman, Transportation Program Manager

Date: November 4, 2020

Re: USM Dormitory and Student Success Center: second revisions to TDM Plan

Meeting Date: November 10, 2020

USM submitted its second round of revisions to its draft TDM Plan for review on November 3, 2020 (dated November 11, 2020), responding to staff comments (both written and during project meetings).

Staff comments focused on:

- Identifying and committing to 'core' TDM strategies for the Plan's initial implementation phase
- Developing explicit Greenhouse Gas and Mode Split targets
- Expanding the methods for monitoring and reporting on trip and parking reduction targets
- Suggested corrections to descriptions of the campus' existing multimodal context.

Each of these areas was addressed substantively to the satisfaction of staff.

Portland Maine Yes. Google's good here.

Christian Roadman <croadman@portlandmaine.gov>

USM Traffic Movement Permit

Tom Errico <thomas.errico@tylin.com> Fri, Nov 6, 2020 at 1:16 PM
To: Christian Roadman <croadman@portlandmaine.gov>

Hi Christian – The following documents the Traffic Movement Permit requirements for the USM project.

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations the City of Portland has considered the application of USM with supportive data, City staff review and other related materials on file. Based on a review of the files and related information, the City approves the Traffic Movement Permit Application of USM subject to the following conditions:

The applicant shall provide conceptual design plans, preliminary and final design plans and specifications for the following improvements for review and approval prior to implementation.

- Implementation of Improvements at the Forest Avenue/Bedford Street/Baxter Boulevard intersection based on the Smart Corridor Study recommendations. This shall include geometric modifications to the corners on the Baxter Boulevard approach, upgrading pedestrian traffic signal equipment with all work complying with ADA standards.

- Implementation of Improvements at the Forest Avenue/Falmouth Street/Preble Street Extension intersection based on the Smart Corridor Study recommendations. This shall include geometric modifications to the southeast corner, implementing a crosswalk on the southerly Forest Avenue approach, upgrading pedestrian traffic signal equipment with all work complying with ADA requirements. It should be noted that the new crosswalk will require installation of a new sidewalk ramp on the westerly side of Forest Avenue.

- The applicant shall make a $10,000 contribution towards Forest Avenue Traffic Signal Optimization at the Forest Avenue/Bedford Street/Baxter Boulevard and Forest Avenue/Falmouth Street/Preble Street Extension intersections with the intent of improving mobility efficiencies.

- The applicant expressed their intention to construct a parking garage on their campus within the next five years. The applicant shall implement traffic calming / pedestrian improvements at the Falmouth Street / Oakdale Street intersection (including a raised intersection with supporting features for review and design by the Portland Department of Public Works) before this structure's completion or five years from this approval, whichever is sooner.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105

+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Instagram

Portland Maine Yes. Google's good here.

Christian Roadman <croadman@portlandmaine.gov>

USM Residence Hall and student center -- CM plan comments

Mike Tremblay <mtremblay@portlandmaine.gov> Fri, Nov 6, 2020 at 11:50 AM
To: Christian Roadman <croadman@portlandmaine.gov>
Cc: Kevin Kraft <kkraft@portlandmaine.gov>, James Rather <jrather@portlandmaine.gov>

Christian,

Please include the following condition of approval:

Prior to issuance of a building permit, the Applicant shall obtain an approved Construction Management Plan from the Department of Public Works.

The applicant should address the following:

- Detailed pedestrian detour routes should be provided around the proposed sidewalk closures on Durham and Bedford streets. Pedestrians should be directed to cross at accessible ramp/crosswalk locations (temporary, if necessary). A temporary crossing/ramp at Durham Street is recommended to reduce the detour area, and because it is likely that many pedestrians will cross here during the Bedford Street sidewalk closure regardless. Detour signage should be standard MUTCD pedestrian detour signs. University-specific wayfinding signage is also recommended.

- If possible, pedestrian detours should be avoided by providing temporary walkways. Given the high volume of pedestrian traffic in the vicinity of this work, detours inconvenience a significant number of pedestrians. The islands on Bedford Street may preclude this, however.

- The CM plan indicates that the existing bus stop on the north side of Bedford Street will need to be closed. USM should coordinate with METRO. If a bus stop is to be relocated, this should be reflected on the CM plan.

- The CM plan narrative indicates that parking for contractors will be provided offsite, but did not identify a location. A location for offsite parking should be provided. As always, contractor parking on neighborhood streets is not permitted.

- "No Parking Any Time" signs should be posted periodically on the construction fence along Bedford and Durham streets.

- Delivery routes should be specified. Deliveries should utilize Forest Avenue and Bedford Street, and avoid the use of Falmouth Street to the extent practical. Construction vehicles shall not "cut through" residential streets at any time.

- The CM plan appears to account for truck movements related to Oakhurst Dairy. The Applicant indicates that they have worked with Oakhurst to ensure their plans do not conflict with Oakhurst operations. The Applicant shall continue to accommodate Oakhurst operations with any future changes to the CM plan.

- The City-administered Deering's Corner Roundabout project is underway, and affects Bedford Street, Deering Avenue, Brighton Avenue, Falmouth Street, and the vicinity. Detours and closures may be required through the end of construction in Fall 2021. Contractors should coordinate with Shaw Brothers, the contractor for the roundabout, as necessary.

Mike Tremblay, P.E.
Senior Engineer
Engineering Division
Department of Public Works
City of Portland, ME
mtremblay@portlandmaine.gov
P. 207.874.8881 F. 207.874.8852

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Christian Roadman, Planner	**DATE:**	11/5/2020
FROM:	Michael Guethle, PE	**PROJECT NO.:**	20309A
SUBJECT:	25 Bedford Street – Level III Site Plan, PL-001040-2020		

Wright-Pierce has reviewed the updated Level III Site Plan Application information provided for the redevelopment at 25 Bedford Street, as defined in the above subject line. The proposed project is located on a 4.7+/- acre site bound by Bedford Street, Durham Street, and private abutters. The proposed project includes redevelopment of existing campus facilities with new campus facilities, including a student success center, residential uses, developed outdoor spaces, new pedestrian connectivity, and appurtenant needs such as maintenance access and utility connections.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) November 4, 2020
- Engineering Permitting Plans, uploaded (most recent) November 4, 2020

Comments:

For stormwater treatment, Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)

1) Basic Standard: Per the City's Technical Manual *Portland Stormwater Management Standards And Maine Dep Chapter 500 Stormwater Management*, an Erosion & Sediment Control management plan, notes, and details per the Chapter 500 Rules must be provided to meet the Basic Standard.
    a. Erosion and Sedimentation Control best practices were observed on the Erosion and Sediment Control Plan and associated Details. An Inspection, Maintenance, and Housekeeping Plan has been provided with the erosion details and notes.

b. In general, application of erosion and sedimentation control devices is appropriate. The following items need revision or review:
    i. Catch basin inlet protection, check dam location updates, and perimeter n has been identified for the project. No further action necessary.
    ii. Construction Entrance appears to be located in a low area of the site, near or in a catch basin area. While this is not ideal, it is understood to be part of the critical needs for traffic movement. Measures to ensure the final stormwater management basin is built in accordance with state regulations are identified in the General Standard portion of this memorandum.

2) General Standard: The applicant has provided information regarding the size and scope of the project, and has indicated the project is subject to the General Standard under the requirements of the Site Location of Development Act (SLODA). The project is being reviewed under the redevelopment guidelines and requirements.
    a. The applicant has provided an impact analysis to compare pre-development and post-development land use pollutant rankings under MaineDEP redevelopment guidelines. The written analysis indicated that the proposed development had a lower pollutant ranking than the existing site and is therefore required to treat 50% of the proposed site's disturbed surface area.
        i. Additional analysis was provided for the redevelopment portions of the site, including clarification on how pollutant rankings apply to the project.
            1. Please elaborate on the pollutant ranking selected for the roof areas. It is our understanding that the roof areas are flat, which is typically assigned a pollutant ranking of 3.
            2. Clarification on the limit of site disturbance is needed. Three differing numbers were used for the site's developed area. 4.577 acres was used in the HydroCAD report (which may include non-disturbed tributary areas); 157,971 SF was used for the pollutant ranking calculation; and both 165,175 SF and 157,971 SF were used

for the treatment goal calculation. The proposed amount of treatment does not meet the 50% developed area requirement.

ii. High-pollutant surface areas should be prioritized for stormwater treatment under the redevelopment standard. Please provide written or visual understanding of how priority for treatment has been assigned to high-ranking pollutants (such as the paved drive area). If high-pollutant areas are not confirmed to be treated, a discussion identifying practicability of treatment should be identified.

b. An executed maintenance contract for the BMP systems is required. Maintenance agreements may be provided as a condition of approval.

3) Soil Filter and Bioretention Cell Design:

a. Additional design information in the stormwater management report is needed showing the following characteristics:

i. The amount of impervious and developed area conveyed to the BMP;

ii. Confirmation on the BMP sizing being a minimum of 5% of the impervious surface area and 2% of the developed surface area;

iii. Confirmation of basin areas, depth, media layers, and sizing;

iv. Sizing for sediment pretreatment for walkways and other sanded areas.

b. Additional questions were developed from the HydroCAD calculation submission:

i. Filter outlets should be reviewed. Outlets should include underdrains conveying to the outlet control structure, as well as design for the outlet control structure inlets. Information clarifying the systems have 1-foot of freeboard during the 25-year, 24-hour rain event should also be provided.

ii. The filter basin should drain dry in no less than 24-hours and no more than 48-hours following a water quality rain event.

1. Please provide calculations indicating the basin draining 24-hours to 48-hours following either the basin filling to the ponding level, or following a 24-hour, 1-inch water quality rain event. While the exfiltration rate has been updated to be in accordance with the

MaineDEP BMP design manual, the exfiltration rate effectively allows for the ponds to drain in 30 minutes without a controlled underdrain outlet.

2. Typically, this will require a reducer to the underdrain orifice, which will be adjusted in the field following construction. Underdrains and reducers were not observed in the modeling. Please indicate that any reducer will need to be field-verified and adjusted in accordance with Chapter 7.1 of the BMP manual; however, this information does need to be included in the model as it will typically increase peak runoff rates from larger rain events.

4) Flooding Standard: The applicant has submitted HydroCAD files indicating the post-development do not exceed the pre-development runoff rates for the facility. However, these calculations will need to be revised based on the above review comments for the GUSF designs.
    a. Volume and rate of runoff to municipal storm drains are to be approved by comment 6.e of this memorandum.
5) Grading and Drainage:
    a. A Maine Construction General Permit will likely be required for the project due to the extent of grading. This has been acknowledged by the applicant.
    b. Locations of level landings, and maximum slopes for regulated maximum distances, have been updated on the plans for ADA access locations.
        i. The applicant has identified most of these locations on the plans. Please note, information for crosswalks does nor indicate level landings with detectable warning plates on the opposite side of the road from the proposed development, and design assumes a 2% cross-slope in roadway for these areas. These items should be confirmed, and improved if needed, during construction.
        ii. Siting of detectable warning plates shall be completed in accordance with ADA regulations and City of Portland standard details.

c. Catch Basin Details have been updated to include a 3-foot sump, no further action necessary.

d. Elevations for basin frames and grates, as well as slopes of pipes, were not evaluated as part of this submittal.

6) Utility Connections

a. Ability to serve letters have not been provided for utilities impacted by the proposed project, but have been requested by the applicant for applicable utilities. The applicant has indicated that ability to serve letters will be submitted to Planning upon receipt, and can be included as a condition of approval if necessary.

b. It is understood that grease trap sizing is being reviewed by others.

c. Standard design for the water and fire system has been provided. Adherence to PWD standards is typically provided by the water utility for water connections, and would be addressed in an ability to serve letter and acceptance through PWD.

d. Gas connection has been updated on the plans, and is not shown to be impacting stormwater utilities. No further action necessary.

e. Connection to Existing Stormwater Systems: E-mail, or otherwise written, confirmation from the Department of Public Works accepting this connection is requested to confirm that this connection is appropriate under Land Use section 14-526 (b) 3 a. (iv); and 14-526 (c) 3 a. Applicant has identified this is being coordinated, and can be used as a condition of approval.

f. Applicant has coordinated plantings with utilities. No further action necessary.

Portland Maine Yes. Google's good here.

Christian Roadman <croadman@portlandmaine.gov>

25 Bedford Street - WR Compliance Comments

Benjamin Pearson <bnp@portlandmaine.gov> Wed, Nov 4, 2020 at 8:28 AM
To: Christian Roadman <croadman@portlandmaine.gov>
Cc: Stephen Marcotte <smarcotte@portlandmaine.gov>, James Rather <jrather@portlandmaine.gov>, Mike Tremblay <mtremblay@portlandmaine.gov>

Good morning,

Steve does an additional review beyond the initial discussion during our DPW Review Meetings. I have reviewed those comments and provided some additions. Please see them below.

For 25 Bedford Street:

On the Utility Plan (CU-101) there are two sewer lines coming out of the building, one directly to a grease interceptor (GB-250) and another that wyes into a junction manhole. This is what we asked for and is satisfactory. However, both lines are labeled as sanitary sewer lines which could cause confusion. We would recommend the following:

- Labeling sewer laterals as “sanitary sewer” and “grease laden wastewater sewer”, or something similar to differentiate that only kitchen waste should be plumbed to the grease interceptor.
- Update the “grease separator” label to “grease interceptor”
- Update the specification on the Utility Details sheet (CU501) with the proper drawing available here under the technical data section: https://schierproducts.com/gb-250/

Reminder that the CMP states that PC construction will work with the City to prepare a dewatering plan. Please include my contact information (Ben Pearson, PE, Compliance Coordinator at 207-874-8843 or bnp@portlandmaine.gov) to begin that process.

Thank you,
Ben

--
Benjamin Pearson, PE
Compliance Coordinator
Water Resources, Public Works
bnp@portlandmaine.gov
207-874-8843

Planning and Urban Development Department
Planning Division

Subject: USM Overlay Design Review – 25 Bedford Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Thursday, October 1 2020

The USM housing and student center project at 25 Bedford Street was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer against the *USM Campus Design Principles and Standards* (Appendix 3 of the Design Manual).

Design Review Comments*:*
All major and minor development . . . shall be designed to create a ***quality and cohesive campus*** *environment while* ***integrating with and respecting the residential character of surrounding neighborhoods*** *as demonstrated by compliance with the principles and standards . . . included as Appendix 3 of this manual.*

(d) B-2 Commercial Business Zones
Principle A. Campus Design – The project uses contemporary architecture that adequately conveys the uses of the two buildings while relating them to the established campus character in building scale, massing, and the material palette. Overall, the project creates or improves the pedestrian environment with active edges and sidewalk improvements as well as open space amenity. The residential building placement reinforces the street wall and provides an active edge, especially on Bedford Street. The placement of the student center back from the street accomplishes the goal for vital open space and appropriately distinguishes this buildings as having a more public and open use on campus from the more private residential use of the dormitory building. The location of this site is removed from the existing residential context – the buildings are appropriately related (in scale and design character) to the institutional buildings on Bedford Street.

A1. Campus Edges – the residential hall mediates between the need to create active street edges, convey and protect the private use, provide scale transition from low-rise buildings to the mid-rise campus buildings, while also providing a positive gateway entrance experience from the Forest Avenue approach. The project appropriately creates lower height and massing at Bedford Street in dialogue with the Wishcamper and Abromson Center. The building sensitively places the taller portion of the building to the rear/interior of the lot away from the street to make a scale transition. This allows for some visual emphasis at the most visible corner approach with tower elements.

A2. Building Orientation – The buildings are appropriately oriented towards Bedford Street. The student center is creating a distinctive relationship to the street by being set back and allowing for a south-facing quad open space.

A3. Pedestrian Environment – The pedestrian environment on Bedford Street is improved by creating a strong street wall with active frontage and a prominent entry oriented to the street. The project includes sidewalk and landscape improvements. The quad space creates a flexible open space amenity that provides some relief to the street wall and functional space for many kinds of activity.

A4. Gateways – The two proposed buildings are mid-block from the Forest Ave/Bedford gateway. However, though technically not a gateway location, the residential hall does visually serve as a first impression of the campus for those approaching on Forest Avenue with tower-like elements oriented to the approach.

A5. Views and Landmarks - The massing arrangement and circulation tower have been well placed, detailed to create visual interest at day and night as viewed from Forest Avenue and Bedford Street. The project does not appear to compete with or interfere with the view corridors to identified landmarks. There are no view corridors here to city buildings or natural resources. See comments below regarding rooftop design and long views.

Principle B. Access and Circulation – This proposal continues to build up an existing street and pedestrian realm. Bedford Street is a primary street on-campus and improvements to the material, circulation, landscape, and open space amenity bring the quality of the streetscape to an appropriate level for this main street status.

B1. Connectivity – The building placement keeps most of the internal campus circulation intact. The quad space does have some grade change but keeps multiple access points and flexibility. The residential buildings, for security reasons, proposes one main entrance oriented to Bedford Street.

B2.Circulation – The circulation diagram shows consideration has been given to the internal circulation through the new quad space and around the student center building. Staff recommend the design team consider desire lines and the tendency for pedestrians to use the shortest path – in some cases, landscape and path design do not seem to reflect where people will actually walk. Staff suggest some of these right angles and obstructions be removed and that the university revisit and revise paths through these spaces after observation of desire lines and on-the-ground use of the spaces. The overall building scale and placement allows for reasonable permeability through the campus while improving the experience on Bedford Street.

B3. Multi-modality – The multi-modal nature of Bedford Street is maintained.

B4. Traffic-calming – There is little revision to the roadways. Crosswalk design and pedestrian access along Durham Street are being evaluated by DPW peer review.
B5. Sidewalks - Bedford Street appropriately has wide sidewalks to meet this standard. However, the applicant proposes concrete instead of brick. This standard calls for brick pavers which staff support for visual continuity on Bedford Street where brick was previously introduced with the sidewalk improvements on the opposite side of the street. Durham Street is a secondary street with little anticipated pedestrian traffic.
B6. Street Lights – The proposal will continue with the established fixture selection already found on campus.

Principle C Parking, Loading, and Service Areas – parking structures/lots are not included within this proposal.

C1. Structures – n/a
C2. Active Uses – n/a
C3. Decks and Ramps – n/a
C4. Surface Lots – n/a

C5. Loading and Service Areas – the loading and service areas for both buildings are located off Durham Street to the rear/interior of the site and away from street view. The landscape plan shows minimal landscaping/screening of these features relying on the buildings to provide the screen from the public rights-of-way.

C6. Utility Services – generators and transformers are located in a rear service area between the two buildings and out of view of the public rights of way. Other utilities are provided underground. Rooftop systems are consolidated and placed away from building edges to reduce visual impact from the street. Sight line diagrams show these units will not be visible from the immediate surroundings of the buildings (see sightline diagram and overall birdseye view). However, some long views from eastbound Bedford Street and approaching on Forest Avenue will be able to see these units which are numerous and unscreened. In conversation with the applicant, staff suggested in key locations, either an increased parapet height to minimize the impact of these units from the long views or else a screen element that unifies the rooftop appurtenances into one cohesive design element at the roof level. The standard emphasizes impacts to residential areas – the impact on neighboring residential properties is not determined to be adverse.

Principle D Architectural Design – USM chose with this proposal to create visual connection to the more recent campus buildings such as the Wishcamper and Abramson Center since this streetscape and these buildings are the most immediate visual relationship. Buildings on the USM campus do vary in era and style. Some consistent characteristics include buildings of similar scale, massing, and height. Most buildings include a simple material palette (this varies from red brick, yellow brick, and metal panel, curtain wall). Many of these institutional buildings include a high level of fenestration or curtain wall.

D1. Height – The proposed building heights are comparable to the existing scale of campus buildings. The residential hall appropriately places the taller massing back from the street. The student center is a lower height appropriately conveying its use as a more “civic” and open building compared with the residential or academic buildings.

D2. Setbacks – The residential building maintains an urban street wall with no setback. The student center is placed back from the street to create the quad open space meeting the standard regarding a landscape design feature as an exception to the setback standard.

D3. Stepbacks – n/a

D4. Massing – The residential building breaks the massing by stepping up the height towards the rear/interior of the lot. This creates a transition of scale as well as a more visually interesting corner condition. Upper story bays on Bedford Street convey the residential use of the building

and provide massing variation/visual interest to what is a long façade. High levels of fenestration at the street, circulation towers, and communal spaces provide connection between the street and the building interior. Durham Street includes residential units near the street and is therefore less open, exposed or visually accessible. This reinforces the hierarchy of Bedford as the front orientation for the building. Long expanses of façade are detailed either with bays, material changes, or fenestration.
D5. Entrances – The primary entrance to both buildings are oriented to Bedford Street. In the case of the student center, this is exaggerated by a tall portico space. The high level of fenestration and canopy bring emphasis and legibility to both residential and student center entrances.

D6. Windows - The standards around level of transparency and % fenestration appear to be met. The projects successfully mediates between providing visual interest and connection of activity to the street with balancing the private nature of the residential use.

D7. Materials – The applicant chose a more contemporary palette that visually comports with the Wishcamper and Abramson buildings. This includes a grey material palette with a high level of glazing and use of metal. This is appropriate in this particular streetscape given the immediate context. These buildings are not immediately adjacent to residential neighborhoods or sensitive uses or historic architecture. The goal of future development here is to convey the 21st century campus which includes goals of sustainability and a commitment to its relationship to Maine – geography, culture, economy. Though elements such as exposed timber are not common in urban architecture or the character of Portland's downtown, staff were able to support this departure from some of the traditional material choices in order to distinguish the student center use and convey the commitment to sustainability and connection to Maine materials and natural resources. See comments above regarding rooftop appurtenances.

D8. Signage – n/a
D9. Historic Structures – n/a
D10 Original Residential Structures – n/a

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

FW: Plan Number: PL-001040-2020

1 message

jrather@portlandmaine.gov <jrather@portlandmaine.gov> Mon, May 4, 2020 at 2:37 PM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Jennifer Munson <jmy@portlandmaine.gov>

Comment/questions for USM – I let Elizabeth know that the best way to reach us currently is via email. Matt, I'll leave it to you to follow up. Thanks!

From: Elizabeth Burke <emburke207@gmail.com>
Sent: Monday, May 4, 2020 2:15 PM
To: planningboard@portlandmaine.gov
Subject: Plan Number: PL-001040-2020

Dear Planning Board,

I've called Matt Grooms twice (4/25/2020 and 4/28/2020), leaving messages asking for a call back. I had a few questions I thought might be best asked in person, before writing. Mr. Grooms has not called me back.

The questions I have are this:

1. How tall will the new building be that extends into the campus if measured from the slope of Falmouth Street. I had asked this question at an informal meeting between the USM leaders of the project and concerned neighbors about 2 years ago. They had no answers, if perhaps because they didn't yet have full designs.

I ask this question, because I am extremely fond of my view of the Time & Temp building sign and the skyline of the city from my 2nd floor kitchen window at 5 Oakdale Street.

2. Is the design of that part of the building, where there are it appears to be large metal supports for a roof overhang at about 45 degree angles written in stone? I find those incredibly ugly, and I'm going to see those from my home. It seems they are probably fundamentally steel I-beams. Judging on the amount of rust already in the steel work for the over-the-street walkway to the Abromson building, such steel work has to regularly repainted. At any rate, certainly a more elegant design for that roof to ground support might be considered.

Very truly yours,

Elizabeth M. Burke

5 Oakdale Street, Portland, ME 04103

207-232-1455

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: USM Traffic Movement Permit

Matthew Grooms <mgrooms@portlandmaine.gov> Thu, Jul 30, 2020 at 10:53 AM
To: Jennifer Munson <jmy@portlandmaine.gov>

Hi Jen,

I am forwarding a public comment for the USM project, PL-001040-2020. Thanks!

Matt

---------- Forwarded message ---------
From: **Elizabeth Burke** <emburke207@gmail.com>
Date: Wed, Jul 29, 2020 at 11:13 PM
Subject: USM Traffic Movement Permit
To: Matthew Grooms <mgrooms@portlandmaine.gov>

From: 5 Oakdale Street
Portland, Maine 04103

29 July 2020

To: Matthew Grooms
Planning Department
City of Portland, Maine
389 Congress Street
Portland, ME 04101

Dear Mr. Grooms,

I would like to request a hearing in the City of Portland regarding USM's desire to move traffic mostly up Falmouth Street.

Most specifically, I want USM to pay for Oakdale Street to become a dead-end street at the junction of Falmouth and Oakdale Street.

Oakdale is a very very old historic neighborhood, now full of families with children. I am not interested in it becoming a part of the fast easy way to get from one way to another.

In fact, so far as I'm concerned, I'd like Falmouth Street to be shut down. Let the University use Bedford Street as its main avenue. Bedford Street belongs to the City of Portland, and also the State of Maine, so the University will have to buy it from the city and/or the State, in order to shut it down. If they want exclusive use of Falmouth Street, they should pay to protect the Oakdale neighborhood.

Very truly yours, Elizabeth M. Burke

--
Matthew Grooms, AICP
Senior Planner
Planning Division
City Hall, 389 Congress Street, 4th Floor
Portland, Maine 04101
(207) 874-8725 (T)
(207) 756-8258 (F)
mgrooms@portlandmaine.gov

August 11, 2020

City of Portland Maine
Department of Planning and Urban Development
389 Congress Street
Portland, ME 04101

VIA EMAIL: planningboard@portlandmaine.gov

RE: Plan Number PL-001040-2020 (USM Career & Student Success Center – Portland Commons)

Dear Sirs:

We are in receipt of the public notice from the City of Portland Planning Division regarding the aforementioned project. Please consider this notice regarding our written comments and responses to this project.

As you know, Oakhurst has operated in the city since the company was founded in 1921. As we near our 100th year anniversary, we continue to operate and employ nearly 200 employees and provide economic benefit to many local companies, suppliers and most importantly our dedicated family farming community.

Oakhurst has existed on the current site since 1922, prior to the development of the of the USM campus on this current site. Our facility has grown since then and primarily consumed the same footprint since 1951 with various expansions since then to continue to effectively service the New England marketplace.

Oakhurst continues to support USM with their growth and expansions plans. We have been neighbors for many years and desire to continue to effectively be good neighbors and co-exist in this growing community.

We do have a handful of concerns that we feel can be reasonably addressed throughout the planning and approval process with the City of Portland. Oakhurst has engaged some local engineering resources to assist us with understanding the project impacts and any conflicts to our continued safe and efficient operations. We have only been in receipt of project materials for a relatively short amount of time.

We expect the results of our engineering review within the next 30-60 days and will continue to work collectively with USM's project management team to resolve any concerns. In addition, we will provide a more official response to the planning board regarding our concerns, mostly related to vehicular traffic, parking and utility services in and around our property.

We appreciate the opportunity to respond to this notice and invite you to contact us with any questions or concerns prior to us providing our more detailed response to this project.

Sincerely,

John H Bennett

John Bennett
President
Oakhurst Dairy

Oakhurst Dairy
(207) 772-7468
364 Forest Avenue
Fax (207) 874-0714
Portland, Maine 04101
www.oakhurstdairy.com

USM Project

Mike Carey <mikebcarey@gmail.com> Aug 28, 2020 8:31 PM
Posted in group: **Planning Board**

Spencer,

Happy end-of-Summer!

Annie and I participated in the Planning Board meeting a couple weeks back on the USM Project. I'm about to provide some critical feedback, but I also want to acknowledge that I believe the University's growth is a benefit to the city and can be a benefit to the neighborhood with some adjustments.

I'll brief in my comments. I hope you consider this when the council makes a decision on the project.

Comments:
1) I'm beside myself that USM is permitting the student center and dormitory prior to permitting the parking garage. From a process perspective it's confounding. Worst case scenario the City will have two buildings approved and under construction, but without the parking garage, may be unable to get a CO. I can't see why USM or the City would allow this to happen.

2) I'm disappointed that USM is essentially turning its back on the neighborhood by positioning all campus amenities toward Bedford Street and positioning Falmouth Street to be only an on-ramp for cars to the newly enhanced campus. The University held a neighborhood meeting nearly two years ago to get feedback on their plans and pitch their bond proposal. At that meeting, the overwhelming feedback from the neighborhood was "please don't isolate yourself from us". The current project seems to do exactly that.

3) In regards to the parking garage...in the meeting there was much talk about traffic study and plan, but unfortunately that information had yet to be made public. This circles back to #1 above. The process is really challenging. I do understand that information is now available and there is possibility for parking garage on bedford which may be the better alternative here.

4) President Cummings has mentioned that The University's goal is to limit both traffic and parking impacts to the neighborhood. With this in mind - how do we initiate a conversation about adjusting traffic flow in and around the university? Our neighbors are expressing concern about increased pass through traffic in the neighborhood. Perhaps it's time to look at creating one-way streets, some traffic calming and limiting access to the neighborhood from Falmouth Street.

Please know that the above comments are not made out of concern for "property values" or the ability to "sell" our property in the future. I'm focused on creating a liveable, walkable, safe neighborhood that enhances the University and the City of Portland.

As always, thank you for your willingness to listen and weigh all aspects of the situation.

-Mike
207-776-1936
--
207-776-1936 (m)

October 9, 2020

Dear City of Portland Planning Board Members:

While I am supportive of USM's broader goals for improving and expanding its Portland campus, I am not in favor of locating a 425-car parking garage on Falmouth Street as outlined in preliminary documents provided by the university. Because increased traffic flow is an unavoidable byproduct of USM's redevelopment, I feel it's important for the city to evaluate parking considerations in conjunction with approving construction of a 600-bed dorm and a campus center.

I have lived on Fessenden Street—about 600 feet from the USM campus—for 22 years, raising three kids here and growing close with my neighbors, many of them families with young children who are invested in the community and have chosen the neighborhood for its proximity to downtown, Deering Oaks, and the Back Cove. We ride bikes and walk to these places; it's a large part of the Oakdale neighborhood's appeal.

We are also, however, bounded by the increasingly busy thoroughfares of Forest and Brighton Avenues and bisected to the south by Route 295. We struggle with traffic already—commuters routinely use our two-block, residential street as a cut-through to avoid traffic lights, driving as quickly as they do on those wider and busier streets, sometimes with alarming speed. Not only do we have a lot of schoolchildren in our neighborhood, most of whom normally either walk to their Ocean Avenue Elementary bus stops or travel on foot to King Middle School, we also have USM student and faculty foot traffic through the neighborhood as well. In the winter, when the sidewalks are icy and not well maintained, it's extremely common to see pedestrians walking in the middle of the streets to get to where they're going.

I question the wisdom and the foresight of constructing a multi-level parking garage on the perimeter of a densely populated residential neighborhood with a lot of pedestrian activity, especially when USM has identified a viable alternative site on Bedford Street—adjacent to Rt. 295, on an existing arterial, and not directly connected to any residential streets or buildings. I urge you to please make any permitting for the broader project contingent on USM's ability to identify and obtain proper permits and community buy-in for the additional parking required with such a sizeable expansion.

Lastly, my neighbors, my family and I have spent many months now dealing with the disruption caused by the city's construction of the new traffic circle by the USM law school. It's actually hard to overstate the extent to which the day-to-day machinery noise has shattered the peace and taxed our patience. According to USM's documents, a parking structure will require eight to ten months of construction time on Falmouth Street, which is a lot to ask of its neighbors—again, when there are less disruptive options available.

Thank you for your attention to this matter and your hard work on behalf of our community.

Sara Corbett
104 Fessenden Street

October 13, 2020

City of Portland Maine
Department of Planning and Urban Development
389 Congress Street
Portland, ME 04101

VIA EMAIL: planningboard@portlandmaine.gov

RE: Plan Number PL-001040-2020 (USM Career & Student Success Center – Portland Commons)

Dear Sirs:

We are in receipt of the public notice from the City of Portland Planning Division regarding the aforementioned project. Please consider this notice regarding our written comments and responses to this project.

In reference to the letter we submitted to the Portland Planning Board on August 11, 2020, we present this follow-up and reference the attached "Traffic Peer Review" provided to Oakhurst by Sebago Technics on October 2, 2020.

As previously stated, Oakhurst does have a number of concerns validated by experts in traffic engineering and management. The attachment helps describe our concerns and also speaks to the actions we feel are necessary to maximize avoiding any negative impact to reasonably operating our business.

We look forward to working through the extra information that will likely be provided at the planning workshop today. We will also engage staff at Sebago Technics to evaluate if the additional documentation does indeed address some of our concerns or highlights the need for additional information or some modification to the plan as presented.

We recognize the complexity of this project and will do our best to participate in a positive and productive manner in order to attain the best possible outcome for both USM and Oakhurst Dairy.

We appreciate the opportunity to respond to this notice and invite you to contact us to clarify any concerns we have outlined or to have us participate in any meetings or workshops to help facilitate understanding or resolve conflicts most effectively.

Sincerely,

John H Bennett

John Bennett
President
Oakhurst Dairy

Oakhurst Dairy
(207) 772-7468

364 Forest Avenue
Fax (207) 874-0714

Portland, Maine 04101
www.oakhurstdairy.com

October 2, 2020
20323

Mr. Paul Connolly
Oakhurst Dairy
364 Forest Avenue
Portland, Maine 04101

RE: Traffic Peer Review
USM Career and Student Success Center and Residence Hall
Portland, Maine

Dear Paul,

Sebago Technics has completed an initial peer review of the Level III Site Plan Application and associated materials for the proposed USM Career and Student Success Center (CSSC) and Residence Hall to be located adjacent to Bedford Street and Durham Street on the Portland Campus. While the site plan application is specific to the student center and residence hall, the traffic related elements of the application also consider the future construction of a parking garage on Falmouth Street in place of the existing Sullivan complex parking lot. Concurrently with the site plan application process, USM is also proceeding with a Traffic Movement Permit (TMP) application which covers all uses including the proposed parking garage.

The following application materials were included in this review:

1. Level III Site Plan Application – Dated March 2020.
2. Transportation Demand Management Plan – Dated March 5, 2020
3. Traffic Impact Analysis -Dated March 5, 2020
4. Construction Management Plan - Dated February 28, 2020
5. Traffic Movement Permit Application – Sections 1 thru 6 – Dated July 15, 2020

In general, it is our opinion that more detail is required as it relates to the expected traffic impacts of the project to the surrounding area, including those which may directly impact Oakhurst Dairy operations. As part of the approval process, additional traffic impact study materials will need to be submitted as part of the TMP process. The next part of that application is the "Section 7 Traffic Study", which will require a more detailed study of the project area as compared to the Traffic Impact Analysis that was submitted as part of the Site Plan Application.

It is our understanding that Oakhurst Dairy has existing concerns with increasing traffic in the area effecting operations and how the additional traffic from the USM project will exacerbate such issues.

The following comments outline both general and specific concerns identified during our review of the materials submitted to date:

Traffic Impact Analysis

1. As stated above, we anticipate that a "Section 7 Traffic Study" will be submitted as part of the Traffic Movement Permit process. However, based on the Traffic Impact Analysis submitted as part of the site plan application, further detail should be provided on the impacts the development will have along Forest Avenue in the vicinity of the site including the signalized intersections of Bedford Street and Falmouth Street.

2. The analysis assumes that no new traffic will be generated by the subject development alone, but rather that any new traffic would come from a potential increase in enrollment. The increased traffic associated with such an enrollment increase was assumed to be destined for the proposed Falmouth Street parking garage. While this methodology seems appropriate, it would be beneficial to understand if existing university related traffic that utilizes Bedford Street to access the campus, may in the future use Falmouth Street and therefore be accounted for in the Traffic Impact Analysis.

3. The analysis provides an intersection capacity and queueing analysis for the intersections of Forest Avenue at Bedford Street and Forest Avenue at Falmouth Street. The general conclusion is that both intersections would operate with similar delay before and after the expected increase in traffic. However, the analysis appears to consider only overall intersection delay and not delay by specific movements. This information should be provided to fully understand the expected impacts to capacity and queueing.

4. Additionally, the study states the anticipated queue for the Forest Ave signalized left turn to Falmouth Street can be accommodated in the available storage length. More detail should be provided on the actual reported queue lengths to see if this will impact operations to Oakhurst Dairy's entrance on Forest Avenue.

   Since it seems the largest increase in traffic will be the Forest Avenue northbound left turn onto Falmouth Street, it would be beneficial to look at mitigation options such as additional queue detection to help facilitate large queues for this movement if they are to occur in the future.

5. Historically the Forest Avenue corridor, including the signals at Bedford Street and Falmouth Street, were programmed as a coordinated signal system. Recently, the City installed adaptive signal control along the corridor. This adaptive system uses AI Software to optimize traffic timing plans based on real time traffic volumes. The software and algorithms running the system are proprietary to the specific adaptive system vendor. While this has been shown to lower overall travel times for the corridor, it makes it difficult to analyze future impacts due to development along the corridor. Any future traffic analysis should address this topic and the concern of extended queue lengths that could negatively impact Oakhurst Dairy operations.

6. Whereas the projected increase in traffic is attributed solely to increase in enrollment, it is our opinion mitigation measures should be put into place to ensure that USM is held accountable for any increases in traffic that may result from a general increase in enrollment which is not necessarily tied to specific development projects. The concern would be that this development, while in itself is not creating a substantial amount of new traffic, would allow for increased enrollment levels beyond what the traffic study may consider.

7. Future traffic analysis should consider the crash history of the intersections along Forest Avenue. Currently the intersection of Forest Ave at Bedford Street and the segment of Forest Ave between Bedford Street and Falmouth Street are considered High Crash Locations by the MaineDOT.

Parking

1. The completed parking study states that currently there is an overall surplus of parking on campus, noting a peak occupancy of approximate 93-94%. With the proposed development and other changes to campus, it is expected the parking supply would be reduced from 1,701 spaces to 1,552 spaces, prior to construction of the proposed garage. During the interim period when parking has been reduced, but the garage not yet built, how will this parking shortage be handled?

   It is our understanding that the current Site Plan Application is only for the residence hall and student center, but not the Parking Garage. The timeline and relationship between the two projects should be clarified as it seems additional parking supply would be needed immediately to serve the new residence hall. If not, it would appear there would be a significant deficit in parking until the garage were built.

2. The parking analysis indicates that dependent on future enrollment levels, parking supply may not be adequate and USM would need to further increase parking supply or reduce demand. Logically there would be a connection between the need for increased parking and subsequent increase in traffic to the area.

3. It is our understanding that currently a number of shuttle services utilize the Woodbury Parking Lot are to pick up/drop off at the existing student center. Where is it proposed such services be relocated with the removal of this parking area?

We hope these comments are helpful in understanding the impacts of the proposed USM development project to existing Oakhurst Dairy operations as well as the surrounding area. As always, don't hesitate to contact us if you have any questions, otherwise we look forward to being of further assistance once additional application materials or responses to our comments are received.

Sincerely,

SEBAGO TECHNICS, INC.

Derek Caldwell, P.E., PTOE
Transportation/Traffic Engineer

DHC:llg

Level III Site Plan; 25 Bedford Street; The University of Southern Maine

Annie Leahy <anniepleahy@gmail.com> Oct 13, 2020 2:22 PM
Posted in group: **Planning Board**

Dear Planning Board Members, Councilor Thibodeau and Mayor Snyder,

Attached please find a letter signed by 39 residents of the Oakdale Neighborhood stating our collective concern regarding the planning process for the Level III Site Plan for 25 Bedford Street. We will put the original document in the mail to you today.

Many thanks in advance for your attention to these concerns.

Best Regards,
Annie Leahy
10 Oakdale Street
Portland, ME 04103

--

annie leahy
m. 917.544.9499

Woodford Oakdale Neighborhood Petition regarding USM Development

Dear Portland Planning Board and City Council,

As a resident of the Woodford Oakdale Neighborhood, I am pleased to join my neighbors in signing this petition regarding the University of Southern Maine's (USM) Site Plan - Level III Site Plan/Bedford St. - 25 (USM Student Center and Residential Hall.)

We want to communicate to the city and the University of Southern Maine, our general support for their expansion efforts. However, we wish to express our collective concern about this project's process to date; precisely, the request by the University to the city to approve a site plan whose success is contingent on parking without including a specific parking plan within that application.

The Woodard & Curran Level III Site Plan dated March 2020 that the University is seeking approval for makes numerous references to the Student Center, and Residence Hall's parking needs to be successful Of note: "**As evidenced in the Parking Analysis, additional parking will be required on campus to accommodate the needs of the new Residence Hall which is planned for occupancy in August of 2022.** The University had a second study completed by Platz Associates to look at options to provide new structured parking on campus. **This study considered two options: (1) a new parking structure located in the existing Sullivan Gym parking area on 68 Falmouth Street; and (2) expansion of the existing parking garage located on Bedford Street.** There were several scenarios evaluated for each site. T**he University has reviewed the options and will be pursuing a structured parking solution on the 68 Falmouth Street lot.** It will be a multi-level structure and include primary access from Falmouth Street."

While the University is now exploring other possible locations for this garage due to neighborhood concerns about the Falmouth Street location (USM Law School Area, Durham Street), it is clear the success of the future Student Center & Residence Hall project is contingent on a parking plan. This new garage will significantly impact the surrounding neighborhood, both for traffic flow and safety. Therefore, we respectfully request that the city require USM to combine their application for the Student Center & Residence Hall with the proposed parking garage location so that the city and the neighborhood have the opportunity to understand the full scope of their proposed development.

Thank you for your work and consideration.

PRINTED NAME	SIGNATURE	ADDRESS
Stanley Tupper		30 Chamberlain Ave Portland 04101
Jill Mozes		24 Chamberlain Ave Portland 04101
Michael Eling		23 Chamberlain Portland 04101
Cheryl Eling		23 Chamberlain Ave Portland, 04101
John Ogorek		20 Chamberlain Ave Portland, ME 04101
David Fellows		20 Chamberlain Ave Portland, ME 04101
DEBRA Smith		3 WASHBURN AVE. PORTLAND, ME 04101
DIRK BOWLES		4 CHAMBERLAIN AVE PORTLAND, ME 04101
DAWN GAY		8 Chamberlain Ave Portland ME 04101
PETER PERCY		3 WASHBURN AVE PORTLAND 04101

PRINTED NAME	SIGNATURE	ADDRESS
JOHN C STEVENS		29 CHAMBERLAIN AVE
Jennifer Hutchins		33 Chamberlain Ave.
Peter Weed		33 Chamberlain Ave Portland, ME
Brenda Nicholas		42 Chamberlain Ave Portland, ME
DAVID SCHMUTZ		43 WASHBURN AVE PORTLAND ME 04101
MIKE CAREY		10 OAKDALE ST. PORTLAND, ME 04103
ANNIE LEAHY		10 OAKDALE ST PORTLAND, ME 04103
Hannah Tarkinson		62 Fessenden St Portland, ME 04103
DAN TARKINSON		62 FESSENDEN ST PORTLAND, ME 04103
MOIRA LEIGH		69 FALMOUTH ST PORTLAND ME 04103

PRINTED NAME	SIGNATURE	ADDRESS
Claire Jeffers		287 Deering Ave 04103
Benjamin Lake		" "
Robert Barca		70 Fessenden St Portland 04103
Bryan Carter		76 Fessenden St Portland 04103
Collins DUNN		75 Fessenden St Portland, ME 04103
MACKENZIE MAHER-COLLE		75 Fessenden St Portland 04103
Sara Corbett		104 Fessenden St Portland 04103
Jessica Thurston		70 Fessenden St Portland, ME 04103
Sally Walker	Sally Walker	92 Fessenden St

PRINTED NAME	SIGNATURE	ADDRESS
Susan Brennan	Susan Brennan	105 Fessenden St
Leonard Brennan	Leonard Brennan	105 Fessenden St.
Michael Paterniti		104 Fessenden St
Liz Woodbury		60 Brighton Ave
Briana Volk		4 Kenwood St
Andrew Volk		4 Kenwood St.
Emily Chaff		81 Brighton
Carolina Fitzgerald		108 Fessenden St
	KEVIN M. FITZGERALD	108 FESSENDEN STREET
	Elizabeth M Burke	5 Oakdale St Portland ME

Level III Site Plan—25 Bedford Street—University of Southern Maine

Romana Vysatova <romana.vysatova@gmail.com> Oct 14, 2020 9:08 AM
Posted in group: **Planning Board**

Dear Planning Board Members, Councilor Thibodeau and Mayor Snyder:

My husband, Eric Ingersoll, and I would like to add our names to this letter signed by our neighbors in the Oakdale neighborhood about our concern about the planning process for the Level III Site Plan for 25 Bedford Street.

Please let me know if you need a hard copy of this email with our signatures or if this is sufficient.

Best Wishes,

Romana Vysatova & Eric Ingersoll
61 Falmouth Street
Portland, ME 04103

WONA neighborhood letter concerning USM plans

dmmlapointe@aol.com <dmmlapointe@aol.com> Oct 14, 2020 1:20 PM

Posted in group: **Planning Board**

To all.
We would like to have our names added to the list of neighbors in WONA concerning the plans for the garage at USM that was submitted by Annie Leahy.
Thank you.
Mark LaPointe(124 Oakdale St.)
Diane LaPointe (124 Oakdale St.

Support for the Woodfords Oakdale Petition calling for a proposed parking plan

Kierston Van Soest <kpvansoest@gmail.com> Oct 13, 2020 7:21 PM

Posted in group: **Planning and Urban Development**

Good evening,

I wanted to lend my support for a petition that my neighbors circulated regarding the USM Site Plan. I was not available to sign it in the time allocated to complete. But I support the request, which is namely for the Planning Board to require that the USM Student Center and Residence Hall application be submitted in conjunction with the proposal for the parking plan. The parking element is a very much intertwined and part of the overall plan - and should be evaluated as such.

Respectfully,

Kierston Van Soest
45 Longfellow Street

UNIVERSITY OF SOUTHERN MAINE

PORTLAND, MAINE

CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

REISSUED FOR PERMITTING

7-24-20

APPLICANT INFORMATION

OWNER:

UNIVERSITY OF SOUTHERN MAINE
BEDFORD STREET
PORTLAND, MAINE 04101
PH: 207-780-4160

PERMITS

CITY OF PORTLAND

LEVEL III SITE PLAN APPLICATION
SITE LOCATION AND DEVELOPMENT ACT (DELEGATED REVIEW)

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

SITE LOCATION OF DEVELOPMENT ACT

CONSULTANT INFORMATION

SURVEYOR:

SURVEYWORKS, INC.
7 COBBLESTONE DRIVE, SUITE 4
TURNER, MAINE 04282
PH: 207-200-1678

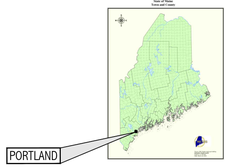
ARCHITECT/CIVIL ENGINEER/LANDSCAPE ARCHITECT
/STRUCTURAL ENGINEER/ELECTRICAL ENGINEER
/MECHANICAL ENGINEER/INTERIOR DESIGNER:

SMRT, INC.
144 FORE STREET
PORTLAND, MAINE 04104
PH: 207-772-3846

ELKUS MANFREDI ARCHITECTS
25 DRYDOCK AVENUE
BOSTON, MASSACHUSETTS 02210
PH: 617-426-1300

DRAWING LIST

GI001	COVER SHEET
SITE	
C-001	SITE NOTES & LEGENDS
CD101	EXISTING CONDITIONS & DEMOLITION PLAN
CD102	BUILDING DEMOLITION PLAN
CP101	SITE LAYOUT PLAN
CP501	SITE LAYOUT DETAILS
CP502	SITE LAYOUT DETAILS
CE001	EROSION & SEDIMENT CONTROL NOTES
CE101	EROSION & SEDIMENT CONTROL PLAN
CE501	EROSION & SEDIMENT CONTROL DETAILS
CG101	GRADING & DRAINAGE PLAN
CG501	GRADING & DRAINAGE DETAILS
CG502	GRADING & DRAINAGE DETAILS
CU101	UTILITY PLAN
CU102	STEAM LINE PLAN
CU501	UTILITY DETAILS
ARCHITECTURAL - RESIDENCE HALL	
1.A200	EXTERIOR ELEVATIONS
1.A201	EXTERIOR ELEVATIONS
1.A202	EXTERIOR ELEVATIONS
1.A203	EXTERIOR ELEVATIONS
ARCHITECTURAL - CAREER AND STUDENT SUCCESS CENTER	
2.A200	EXTERIOR ELEVATIONS
2.A201	EXTERIOR ELEVATIONS
SITE ELECTRICAL	
ES103	PHOTOMETRIC PLAN
ES104	PHOTOMETRIC PLAN
PLANTING	
LP101	PLANTING & LANDSCAPING PLAN
LP501	PLANTING & LANDSCAPE DETAILS & SCHEDULE





LOCUS

PERMITTING REQUIREMENTS

MUNICIPAL	SUBMITTED	STATUS
LEVEL B SITE PLAN APPROVAL	3-6-20 7-24-20 (REVISED)	UNDER REVIEW
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION		
SITE LOCATION OF DEVELOPMENT ACT AMENDMENT (DELEGATED REVIEW BY THE CITY OF PORTLAND, ME)	3-6-20 7-24-20 (REVISED)	UNDER REVIEW
MAINE GENERAL CONSTRUCTION PERMIT	PRIOR TO CONSTRUCTION	

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20
CURRENT ISSUE STATUS:

STATE OF MAINE
JEFFREY
ACETO
No. 6418
LICENSED
PROFESSIONAL ENGINEER

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

COVER SHEET

SHEET TITLE:

0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	GI001-19206	SHEET No.	GI001

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

24x36

GENERAL NOTES

1. THE SCOPE OF SITE WORK FOR THIS PROJECT INCLUDES PROTECTION OF EXISTING STRUCTURES AND UTILITIES, AND REINSTATEMENT OF DISTURBED AREAS OF THE SITE TO MATCH EXISTING CONDITIONS. THE EXISTING CONDITIONS SHOWN ON THE PROJECT DRAWINGS ARE TAKEN FROM RECORD DRAWINGS AND HISTORICAL INFORMATION. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SITE CONDITIONS PRIOR TO THE START OF WORK AND CONTACT THE PROJECT ARCHITECT IMMEDIATELY IF DISCREPANCIES ARE FOUND.
2. EXISTING UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM HISTORICAL RECORDS AND PREVIOUS DESIGN DRAWINGS. NO GUARANTEE IS MADE THAT THE UTILITIES SHOWN WILL BE FOUND IN THE LOCATIONS INDICATED, OR THAT THE INFORMATION SHOWN IS COMPLETE. INFORMATION ON EXISTING UTILITY LOCATIONS IS PROVIDED FOR REFERENCE ONLY AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING EXISTING UTILITY LOCATIONS AND DEPTHS AND COORDINATING THE WORK ACCORDINGLY.
3. THE CONTRACTOR SHALL UNDERTAKE TEST PITS AT THE SITE AND ENGAGE PRIVATE UTILITY DETECTION SERVICE, AS NECESSARY, TO ACCURATELY IDENTIFY UTILITIES IN ORDER TO EFFICIENTLY PLAN AND COMPLETE THE WORK.
4. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITIES ADJACENT TO THE WORK. ANY DAMAGE TO EXISTING STRUCTURES, ROADS, SIDEWALKS, UTILITIES, OR OTHER SITE FEATURES CAUSED BY THE WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
5. ANY UTILITY REPAIRS OR RECONFIGURATION REQUIRED AS PART OF THIS PROJECT SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE AUTHORITY HAVING JURISDICTION.
6. TEMPORARY WORKS, SUPPORT AND PROTECTION OF STRUCTURES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COSTS SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT SUM.
7. ALL WORK SHALL BE UNDERTAKEN IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY STANDARDS.
8. OPEN EXCAVATIONS AND WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED, AS NECESSARY TO PREVENT UNAUTHORIZED ACCESS
9. DRIVEWAYS, WALKWAYS AND ENTRANCES SERVING PREMISES SHALL BE KEPT CLEAR AND AVAILABLE TO OWNER, OWNER'S EMPLOYEES, AND EMERGENCY VEHICLES, AS NECESSARY TO MAINTAIN THE FUNCTION OF THE FACILITY. COORDINATE ALL WORK WITH OWNER TO ENSURE THAT ADEQUATE ACCESS AND CIRCULATION IS MAINTAINED AT ALL TIMES.
10. DE-WATERING, IF NECESSARY, SHALL BE UNDERTAKEN IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL STANDARDS. NO DISCHARGE OF SEDIMENT LADEN RUNOFF TO SURFACE WATERS, OR THE PIPED STORM DRAIN SYSTEM AT THE SITE SHALL BE ALLOWED.
11. ALL DISTURBED PAVEMENT AREAS, ROADS AND SIDEWALKS SHALL BE REINSTATED TO MATCH EXISTING GRADES, MATERIALS AND DEPTHS.
12. EXISTING PAVEMENT SHALL BE SAW-CUT AT LEAST TWELVE INCHES INTO SOUND MATERIAL TO PROVIDE A CLEAN, STRAIGHT EDGE BETWEEN EXISTING SOUND SURFACE MATERIAL AND THE REPAIRED AREA.
13. A SMOOTH TRANSITION SHALL BE PROVIDED BETWEEN REPAIR WORKS AND EXISTING PAVEMENT. ALL REINSTATED AREAS SHALL BE GRADED TO PITCH UNIFORMLY TO ENSURE POSITIVE DRAINAGE.

LAYOUT NOTES:

1. DO NOT SCALE THE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY OMISSIONS IN DIMENSIONING SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR DECISION. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES, AND SPECIFICATIONS SHALL IMMEDIATELY BE REPORTED TO THE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS FROM BUILDING ARE TO FACE OF BUILDING FOUNDATION. ALL DIMENSIONS FROM CURBS ARE TO FACE OF CURB.
4. PROVIDE A SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING WORK.
5. CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AND LOCAL UTILITY COMPANIES TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION.
6. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR WORK SHOWN ON THESE PLANS.
7. ALL WORK SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS AND MEET OR EXCEED CITY OF PORTLAND STANDARDS.
8. PROVIDE TAPERED END SECTIONS AT ALL CURB ENDS.
9. EXISTING CONDITIONS AND TOPOGRAPHIC DATA ARE BASED UPON TOPOGRAPHIC SURVEY PREPARED BY SURVEYWORKS, INC., TURNER, MAINE, AND DATED 2-14-2020.

GRADING NOTES:

1. SOIL DISTURBANCE IS TO BE KEPT TO A MINIMUM AND ALL DISTURBED AREAS SHALL BE STABILIZED (WITH PERMANENT OR TEMPORARY MEASURES) AS QUICKLY AS POSSIBLE.
2. ALL DISTURBED AREAS NOT OTHERWISE TREATED SHALL BE LOAMED AND SEEDED (6" DEPTH).
3. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED ON A REGULAR BASIS AND AS REQUIRED AFTER STORM EVENTS.
4. GULLIES OR OTHERWISE ERODED AREAS IN SEEDED AREAS SHALL BE RESTORED AS SOON AS POSSIBLE FOLLOWING OBSERVATION, USING EROSION CONTROL MESH TO STABILIZE AS REQUIRED.
5. FILL IN AND AROUND THE AREA OF THE NEW BUILDING ADDITION SHALL MEET THE SPECIFICATION FOR 'STRUCTURAL FILL'.
6. ALL EMBANKMENTS AND OTHER FILL SECTIONS SHALL BE CONSTRUCTED USING GRANULAR BORROW - A MIXTURE OF SAND AND GRAVEL MEETING MDOT SPECIFICATION 703.19 GRANULAR BORROW. SUITABLE SOIL BORROW MAY BE USED IN PLACE OF GRANULAR BORROW ONLY WHERE MOISTURE CONTENT CAN BE CONTROLLED TO MEET THE SPECIFIED COMPACTION.

INLET & OUTLET STRUCTURES:

1. INLET AND OUTLET STRUCTURES SHALL BE PRECAST CONCRETE, UNLESS OTHERWISE SPECIFIED. CONCRETE STRUCTURES SHALL BE DESIGNED TO WITHSTAND H-20 WHEEL LOADING AND SHALL BE PROVIDED WITH PROTECTIVE GRATES WITH A MAXIMUM OPENING SIZE OF FOUR INCHES UNLESS OTHERWISE SPECIFIED. CONCRETE STRUCTURES SHALL BE CONSTRUCTED ON A MINIMUM 12-INCH DEEP BASE OF 3/4-INCH COMPACTED CRUSHED STONE.
2. OUTLET PIPES SHALL BE PROVIDED WITH ANTI-SEEP COLLARS TO PREVENT PIPING OF RUNOFF ALONG STONE EMBEDMENT TRENCHES

DEWATERING NOTES:

1. THE CONTRACTOR SHALL EMPLOY A DEWATERING SYSTEM THAT ACHIEVES THE FOLLOWING FUNCTIONS DURING CONSTRUCTION:

   A. DEVELOP A SUBSTANTIALLY DRY AND STABLE SUBGRADE DURING EXECUTION OF THE WORK,

   B. PREVENT DAMAGE TO STRUCTURES ADJACENT TO THE WORK,

   C. RETAIN SEDIMENTS ON-SITE AND WITHIN THE WORK AREA. DEWATERING OPERATIONS SHALL BE SUSPENDED IF THE TURBIDITY OF DISCHARGES TO THE DOWNSTREAM DRAINAGE SYSTEM IS INCREASED ABOVE AMBIENT LEVELS.
2. FLOCCULANTS MAY BE USED TO CONTROL THE TURBIDITY OF DISCHARGE WATER. REFER TO THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S EROSION AND SEDIMENT CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS (2014, OR AS CURRENTLY REVISED) FOR RECOMMENDATIONS AND SPECIFICATIONS.
3. SURFACE WATER ENTERING THE CONSTRUCTION SITE SHALL BE INTERCEPTED AND DIVERTED AROUND THE WORK AREA THROUGH THE USE OF DIKES, CURB WALLS, DITCHES, SUMPS, PUMPING, OR OTHER APPROVED MEANS.
4. ANY ENFORCEMENT ACTIONS OR FINES RESULTING FROM THE IMPROPER DISCHARGE OF TURBID WATER AND SEDIMENT TO DOWNSTREAM AREAS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. DIRT BAGS AND TEMPORARY DEWATERING PONDS SHALL BE CONSTRUCTED AND MAINTAINED AS NEEDED TO CAPTURE AND TREAT PUMPATE FROM DEWATERED AREAS.

GEOTEXTILE & EROSION BLANKET NOTES:

1. EROSION CONTROL BLANKET FOR USE IN PONDS AND DRAINAGE CHANNELS SHALL BE 100% BIODEGRADABLE DOUBLE NET EROSION BLANKET WITH A 100% COCONUT FIBER MATRIX AND ORGANIC JUTE NETTING. EROSION CONTROL BLANKET FOR USE IN CHANNELS SHALL BE NORTH AMERICAN GREEN® BIONET® C125-BN ™. EAST COAST EROSION BLANKETS ECC-2B OR APPROVED EQUAL.
2. PERMANENT TURF REINFORCEMENT MAT FOR REINFORCED TURF SPILLWAYS AND EMERGENCY OVERFLOW WEIRS SHALL BE A UV-STABILIZED POLYPROPYLENE MAT WITH TWO LAYERS OF UV-STABILIZED NETTING. PERMANENT TURF REINFORCEMENT MAT SHALL BE NORTH AMERICAN GREEN® P300, EAST COAST EROSION BLANKETS ECP-2, OR APPROVED EQUAL.
3. GEOTEXTILE SEPARATION FABRIC SHALL BE A WOVEN SLIT FILM GEOTEXTILE WITH AN APPARENT OPENING SIZE OF 50 (US STANDARD SIEVE) (PER ASTM D4751) THAT MEETS THE REQUIREMENTS FOR A CLASS 2 SEPARATION GEOTEXTILE PER AASHTO M288.96. GEOTEXTILE SEPARATION FABRIC SHALL BE MIRAFI® 500X OR APPROVED EQUAL.
4. GEOTEXTILE DRAINAGE FABRIC SHALL BE A NONWOVEN GEOTEXTILE MANUFACTURED FOR USE IN SUBSURFACE DRAINAGE APPLICATIONS. THE MATERIAL SHALL HAVE AN APPARENT OPENING SIZE OF 70 (US STANDARD SIEVE) (PER ASTM D4751), A PERMITTIVITY OF 1.7/SEC OR GREATER (PER ASTM D4491) AND RETAIN A MINIMUM OF 70% STRENGTH AT 500 HOURS UV EXPOSURE (PER ASTM D4355). GEOTEXTILE DRAINAGE FABRIC SHALL BE MIRAFI® 140N, CONTECH® C-35NW, OR APPROVED EQUAL.

MANHOLE & CATCH BASIN NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4,000 PSI AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPECIFICATION C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID AND HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER / DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVED EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPECIFICATION DESIGNATION C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
10. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS WITHIN CITY RIGHTS-OF-WAY TO BE REMOVED SHALL BE SALVAGED BY THE CONTRACTOR , AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
11. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP.

UTILITY NOTES:

1. PROVIDE AND INSTALL MATERIALS NECESSARY TO COMPLETE UTILITY FEATURES AND DESIGN UNLESS OTHERWISE INDICATED.
2. ALL WORK SHALL MEET OR EXCEED STANDARDS OF THE CITY OF PORTLAND AND THE PORTLAND WATER DISTRICT.
3. ALL SEWER WORK SHALL BE IN ACCORDANCE WITH CITY OF PORTLAND STANDARD AND SHALL BE INSPECTED AND APPROVED BY THE CITY OF PORTLAND.
4. CONTRACTOR TO VERIFY EXISTING UTILITY CONNECTION POINTS PRIOR TO SUBMISSION OF BIDS AND INCLUDE ALL EXTRA WORK REQUIRED TO EXTEND UTILITIES AS REQUIRED.
5. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND HAVE BEEN DETERMINED BY SURFACE EVIDENCE AND/OR PREVIOUSLY GENERATED PLANS. NO GUARANTEE IS MADE THAT ALL UTILITIES ARE SHOWN OR WILL BE FOUND IN LOCATIONS INDICATED. THIS INFORMATION IS PROVIDED FOR REFERENCE AND THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES AND POINTS OF CONNECTION IN THE FIELD. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND RESTORATION OF ALL UTILITIES DISTURBED DURING CONSTRUCTION AT NO EXTRA EXPENSE TO THE OWNER.
6. THE OWNER, CONSTRUCTION MANAGER AND ARCHITECT SHALL BE NOTIFIED AT LEAST TWO DAYS PRIOR TO ANY INTERRUPTION TO ANY UTILITY SERVICE.
7. ADJUST ALL UTILITY STRUCTURE TOPS/RIMS TO MATCH PROPOSED GRADES UNLESS NOTED OTHERWISE.
8. LOCATIONS OF EXISTING SEWER LINES ARE BASED ON THE TOPOGRAPHIC SURVEY PRODUCED BY SURVEYWORKS, INC., DATED 2-14-2020.
9. EXISTING UTILITY CONNECTIONS TO THE BUILDINGS AT THE SITE ARE TAKEN FROM PREVIOUS PLANS AND A SURVEY OF SURFACE FEATURES. THE CONTRACTOR SHALL EXCAVATE TEST PITS IN AREAS ADJACENT TO EXISTING BUILDINGS AS NECESSARY TO VERIFY THE LOCATION, DEPTH AND SIZE OF EXISTING SERVICES. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT AND OWNER.
10. CONTRACTOR SHALL MAKE PROVISION FOR CONNECTING NEW UTILITY SERVICES TO THE PROJECT WITHOUT INTERRUPTION BY USE OF LIVE TAPPING AND OVER-PUMPING WHERE APPROPRIATE.

EMBANKMENT NOTES:

1. BASIN EMBANKMENTS SHALL BE CONSTRUCTED OF SUITABLE ON-SITE SOIL. COMPACTED IN MAXIMUM EIGHT INCH LIFTS TO 90% MAXIMUM DRY DENSITY. A MINIMUM OF SIX INCHES OF CLEAN SCREENED LOAM SHALL BE APPLIED TO FINISHED GRADE AND THE AREA SHALL BE IMMEDIATELY SEEDED AND STABILIZED WITH MULCH, HYDROSEED, OR EROSION BLANKET DEPENDING ON THE LEVEL OF EXPECTED INUNDATION (SEE EROSION CONTROL SHEETS).
2. EMBANKMENTS CONSTRUCTED ON EXISTING SOIL SLOPES STEEPER THAN 4H:1V SHOULD BE KEYED INTO THE EXISTING GROUND SURFACE WITH CONTINUOUS LEVEL BENCHES. EMBANKMENTS CONSTRUCTED ON EXISTING SOIL SLOPES FLATTER THAN 4H:1V SHALL HAVE A 10FT WIDE BENCH CUT INTO THE NATIVE SOIL AT THE TOE OF THE SLOPE FOR FILL EMBANKMENTS. A ONE FOOT (1') MINIMUM LAYER OF DRAINAGE COURSE MATERIAL SHALL BE PLACED OVER THE INITIAL BENCH PRIOR TO PLACING EMBANKMENT FILL. THE TOE BLANKET DRAIN SHALL BE CONSTRUCTED SUCH THAT GRAVITY DRAINAGE FORM THE BLANKET DRAIN OCCURS.

PLANTING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL SUPPLY AND INSTALL ALL PLANTS IN SUFFICIENT QUANTITIES TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS. DISCREPANCIES BETWEEN QUANTITIES NOTED ON THE DRAWINGS AND THOSE GRAPHICALLY SHOWN SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT AND SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL REMUNERATION.
2. THE LANDSCAPE CONTRACTOR IS ADVISED THAT BELOW GROUND UTILITIES EXIST ON SITE, THE LOCATIONS OF WHICH SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF OPERATIONS (SEE GENERAL NOTES REGARDING DIGSAFE). SHOULD THE LOCATION OF ANY PROPOSED PLANTING CONFLICT WITH ANY UTILITY, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY FOR DECISION.
3. ANY AND ALL PAVING, CURBING, UTILITIES, LAWNS, ETC,, DAMAGED AS A RESULT OF THE LANDSCAPE CONTRACTOR'S OPERATIONS SHALL BE REPLACED OR REPAIRED TO ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. LOCATIONS OF PROPOSED PLANTINGS AND BED LINES SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. PLANTS SHALL BE PLACED NO CLOSER THAN ONE-HALF THE NOTED SPACING TO PAVEMENT EDGES, BED LINES, OR STRUCTURE FACES, UNLESS NOTED OR SHOWN OTHERWISE.
6. PLANT MASSES SHALL BE LAID OUT AND INSTALLED STARTING AT THE PRINCIPAL, FORM-DEFINING PERIMETER, THEN FILLING INWARD IN DOUBLE-ROW-STAGGERED FASHION, UNLESS NOTED OR SHOWN OTHERWISE.
7. ALL PLANTING BEDS INCLUDING TREE AND SHRUB PITS AS INDICATED SHALL RECEIVE 3" APPROVED CLEAN, UNIFORMLY GROUND OR SHREDDED PINE OR HEMLOCK BARK MULCH.
8. THE LANDSCAPE CONTRACTOR SHALL RELOCATE ANY PLANT ACCORDING TO THE DIRECTION OF THE LANDSCAPE ARCHITECT.
9. ALL PLANT MATERIALS CALLED FOR AND INSTALLED SHALL MEET OR EXCEED SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" (LATEST EDITION) AS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
10. ALL PLANTING BEDS SHALL BE DEFINED BY A NEAT, SHOVEL-CUT BED LINE. BED LINES SHALL BE TRUE TO FORM AS SHOWN ON THE DRAWINGS, CONSISTING OF SMOOTH CURVES AND SHARP LINES AND CORNERS.
11. IF, BECAUSE OF CULTURE REQUIREMENTS, AVAILABILITY, OR OTHER CIRCUMSTANCES, THE LANDSCAPE CONTRACTOR BELIEVES A PARTICULAR PLANT CALLED FOR IS INAPPROPRIATE, THE LANDSCAPE CONTRACTOR SHALL REPORT THE SITUATION IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DECISION.
12. ALL DISTURBED AREAS NOT OTHERWISE TREATED SHALL RECEIVE 6" LOAM AND SEED.

SITE ABBREVIATIONS

ALT	ALTERNATE	GALV	GALVANIZED	MISC.	MISCELLANEOUS	S	SLOPE
BOC	BOTTOM OF CURB	GC	GENERAL CONTRACTOR	NSD	NEW STORM DRAIN (LINE)	T & B	TOP & BOTTOM
BOW	BOTTOM OF WALL	HC	HANDICAPPED	NSS	NEW SANITARY SEWER (LINE)	TO	TOP OF
CIP	CAST-IN-PLACE	HMA	HOT MIX ASPHALT	NW	NEW WATER (LINE)	TOC	TOP OF CURB
℄	CENTER LINE	HP	HIGH POINT	O.C.	ON CENTER	TOW	TOP OF WALL
CLL	CONTRACT LIMITS LINE	ID	INSIDE DIAMETER	OD	OUTSIDE DIAMETER	TP	TEST PIT
ECB	EXISTING CATCH BASIN	LP	LOW POINT	R	RADIUS	TYP.	TYPICAL
FFE	FINISHED FLOOR ELEVATION	LT	LEFT	RE:	REFER (TO)	UG	UNDERGROUND
GA	GAUGE	MAX.	MAXIMUM	ROW	RIGHT-OF-WAY	W/	WITH
		MIN.	MINIMUM	RT	RIGHT	W/O	WITHOUT

SITE LEGEND

EXISTING		PROPOSED	
BODY OF WATER/STREAM		BOLLARD	
BOLLARD		BORING	
BORING		BRIDGE	
BRIDGE		BUILDING W/ DOOR	
BUILDING W/ DOOR		BUILDING CANOPY	
BUILDING CANOPY		CATCH BASIN	
CATCH BASIN		CHECKDAM - STONE	
CHECKDAM - STONE		COMMUNICATIONS LINE-OH	NTC NTC
COMMUNICATIONS LINE-OH	T T T	COMMUNICATIONS LINE-UG	NUC NUC
COMMUNICATIONS LINE-UG	C C C	CONCRETE PAD	
CONCRETE PAD		CULVERT	
CULVERT		CURB - BITUMINOUS	
CURB - BITUMINOUS		CURB - FLUSH	
CURB - SLOPED GRANITE		CURB - SLOPED GRANITE	
CURB - VERT GRANITE		CURB - VERT GRANITE	
CURB - SLIPFORM		CURB - SLIPFORM	
DETENTION POND		DETENTION POND	
DIRECTION OF FLOW		DIRECTION OF FLOW	
DITCH		DITCH	
DRAIN MANHOLE		DRAIN MANHOLE	
DRIP STRIP		DRIP STRIP	
EASEMENT		EASEMENT	
ELECTRIC MANHOLE		ELECTRIC MANHOLE	
ELECTRIC - OVERHEAD	OHW OHW	ELECTRIC - OVERHEAD	NOHE
ELECTRIC - UNDERGROUND	E E E	ELECTRIC - UNDERGROUND	NUGE
ELEVATION BOT OF CURB	+BOC	ELEVATION BOT OF CURB	+BOC
ELEVATION BOT OF STEP	+BOS	ELEVATION BOT OF STEP	+BOS
ELEVATION TOP OF CURB	+TOC	ELEVATION TOP OF CURB	+TOC
ELEVATION TOP OF STEP	+TOS	ELEVATION TOP OF STEP	+TOS
ELEVATION - SPOT	+100.0	ELEVATION - SPOT	+100.0
FENCE - CHAINLINK	X X X X	EMERGENCY CALL BOX	
FENCE - ORNAMENTAL		EROSION CONTROL MESH	
FIELD INLET		FENCE - CHAINLINK	X X X X
FIRE HYDRANT		FENCE - ORNAMENTAL	
FLAG POLE		FIRE HYDRANT	
FORCE MAIN PIPE	SFM SFM	FLAG POLE	
GAS & FUEL EQUIPMENT	GAS	FORCE MAIN PIPE	NSFM
GAS LINE	G G G	FOUNDATION DRAIN	NFND
GAS VALVE		GAS & FUEL EQUIPMENT	GAS
GENERATOR ON CONC PAD		GAS LINE	NGAS
GRAVEL DRIVE		GAS VALVE	
GUARDRAIL		GENERATOR ON CONC PAD	
HELIPAD		GRAVEL DRIVE	
HIGH POINT ELEVATION	+HP	GUARDRAIL	
IRRIGATION PIPING		HELIPAD	
LANDMARK SIGN		HIGH POINT ELEVATION	+HP
LIGHT - BOLLARD		IRRIGATION PIPING	
LIGHT POLE		LANDMARK SIGN	
LIGHT - SPOT		LIGHT - BOLLARD	
LOW POINT ELEVATION	+LP	LIGHT POLE	
MAJOR CONTOUR	100	LIGHT - SPOT/WALL	
MINOR CONTOUR	100	LIMIT OF WORK	
PARKING AREA-BITUMINOUS		LOW POINT ELEVATION	+LP
PAVEMENT STRIPING		MAJOR CONTOUR	100
PROPERTY LINE		MINOR CONTOUR	102
PROPERTY LINE - ABUTTER		PARKING AREA-BITUMINOUS	
		PAVEMENT STRIPING	
RETAINING WALL		PROPERTY LINE	
RIPRAP		RETAINING WALL	
ROADWAY		RIPRAP	
ROADWAY CENTER LINE		ROADWAY	
SANITARY SEWER PIPE	SS SS	ROADWAY CENTER LINE	
SANITARY SEWER MANHOLE		SANITARY SEWER MANHOLE	
SETBACK		SANITARY SEWER PIPE	NSS NSS
SIGN		SETBACK	
SIGN - TWO-SIDED		SIGN	
SILT FENCE	SF SF	SIGN - TWO-SIDED	
SLOPE NOTATION	S = .01	SILT FENCE	SF SF
SOIL TYPE BOUNDARY		SLOPE NOTATION	S = .01
SPRINKLER		SPRINKLER	
STONE WALL		STONE WALL	
STORM DRAIN PIPE	SD SD	STORM DRAIN PIPE	NSD NSD
TELEPHONE EQUIPMENT	TEL	TELEPHONE EQUIPMENT	TEL
TEST PIT	TP	TEST PIT	
TRAFFIC ARM & SIGNAL		TRAFFIC ARM & SIGNAL	
TRANSFORMER ON CONC	T	TRANSFORMER ON CONC	T
TURF		TURF	
UNDERDRAIN PIPE	UD UD UD UD UD	UNDERDRAIN PIPE	UD UD UD UD UD
UTILITY POLE		UTILITY POLE	
WALKWAY - BITUMINOUS		WALKWAY - BITUMINOUS	
WALKWAY - BRICK/COBBLE		WALKWAY - BRICK/COBBLE	
WALKWAY - CONCRETE		WALKWAY - CONCRETE	
WALL - ORNAMENTAL		WALL - ORNAMENTAL	
WATER GATE VALVE		WATER GATE VALVE	
WATER PIPE (DOMESTIC)	W W W	WATER PIPE (DOMESTIC)	NW NW
WATER PIPE (FIRE)	F	WATER PIPE (FIRE)	NFS NFS
WATER SHUTOFF		WATER SHUTOFF	
WATERSHED BOUNDARY		WELL	W
WETLAND BOUNDARY			

NOTE:
THIS LEGEND IS FOR REFERENCE ONLY AND APPLIES ONLY TO THE CIVIL/SITE LAYOUT DRAWINGS. NOT ALL ITEMS SHOWN HEREIN MAY APPEAR ON THE DRAWINGS, OR BE INCORPORATED IN THE DESIGN.

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20
CURRENT ISSUE STATUS:

STATE OF MAINE
JEFFREY
CETO
No. 6418
LICENSED
PROFESSIONAL ENGINEER

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

SITE NOTES & LEGENDS

SHEET TITLE:

0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL	C-001	
DRAWN BY:	WSM		
SMRT FILE:	C-001-19206	SHEET No.	

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION



DEMOLITION LEGEND:

- MATERIALS TO BE REMOVED
- LIMIT OF BITUMINOUS REMOVAL
- UNDERGROUND PIPING TO BE REMOVED

NOTE: OAKJURST DAIRY BUILDING HAS (2) DOMESTIC WATER SERVICES; ONE IN DURHAM STREET AND ONE IN FOREST AVENUE.

DEMOLITION NOTES:

1. ALL PRE-EXISTING STRUCTURES WITHIN THE PROPOSED BUILDING FOOTPRINT, UNDER AREAS PROPOSED FOR PAVING, AND ALONG PROPOSED UTILITY ROUTES ARE TO BE COMPLETELY REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL.
2. MAINTAIN TWO-WAY ACCESS THROUGH CONSTRUCTION FOR MAINTENANCE DRIVE.
3. FENCE NOTED TO BE REMOVED SHALL BE SALVAGED.
4. UTILITY POLES AND LIGHTS NOTED FOR REMOVAL SHALL BE SALVAGED.
5. ALL CONFLICTING ITEMS WITHIN THE DEVELOPMENT AREA NOT OTHERWISE NOTED SHALL BE REMOVED.
6. IN PAVEMENT REMOVAL AREAS EXISTING SURFACE SHALL BE GROUND, REMOVED AND STOCKPILED FOR LATER USE AS SUITABLE FILL MATERIAL.
7. ALL MANHOLE AND CATCH BASIN FRAMES AND COVERS TO BE REMOVED SHALL BE SALVAGED FOR FUTURE USE.

DEMOLITION KEY:

1. REMOVE BUILDING - SEE SHEET CD102 FOR DETAILS
2. REMOVE PAVEMENT TO LIMITS SHOWN
3. REMOVE WALKWAY PAVEMENT TO LIMITS SHOWN
4. REMOVE EXISTING CURBING
5. REMOVE SIGN & STOCKPILE FOR REINSTALLATION
6. PROTECT EXISTING ELECTRICAL LINES & STRUCTURES TO REMAIN
7. PROTECT EXISTING STRUCTURE TO REMAIN
8. REMOVE GUARDRAIL
9. REMOVE SEWER STRUCTURE
10. REMOVE STORM STRUCTURE & CONNECTED PIPING
11. PROTECT HYDRANT TO REMAIN
12. REMOVE BOLLARD
13. REMOVE EXISTING CALL BOX & LIGHT & SALVAGE FOR OWNER
14. REMOVE EXISTING BICYCLE REPAIR STATION & SALVAGE FOR OWNER
15. DISCONNECT GAS METER
16. REMOVE UTILITY POLE IN CONJUNCTION W/ CMP
17. PROTECT BUS SHELTER & BOLLARDS
18. REMOVE ALL EXISTING RAISED PLANTING BEDS
19. MARK DOORS "EMERGENCY EGRESS ONLY"
20. REMOVE CONCRETE PAVEMENT TO LIMITS SHOWN

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

JEFFREY J. CETO No. 6418 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

EXISTING CONDITIONS & DEMOLITION PLAN

SHEET TITLE:

0 15' 30' 60' 90'

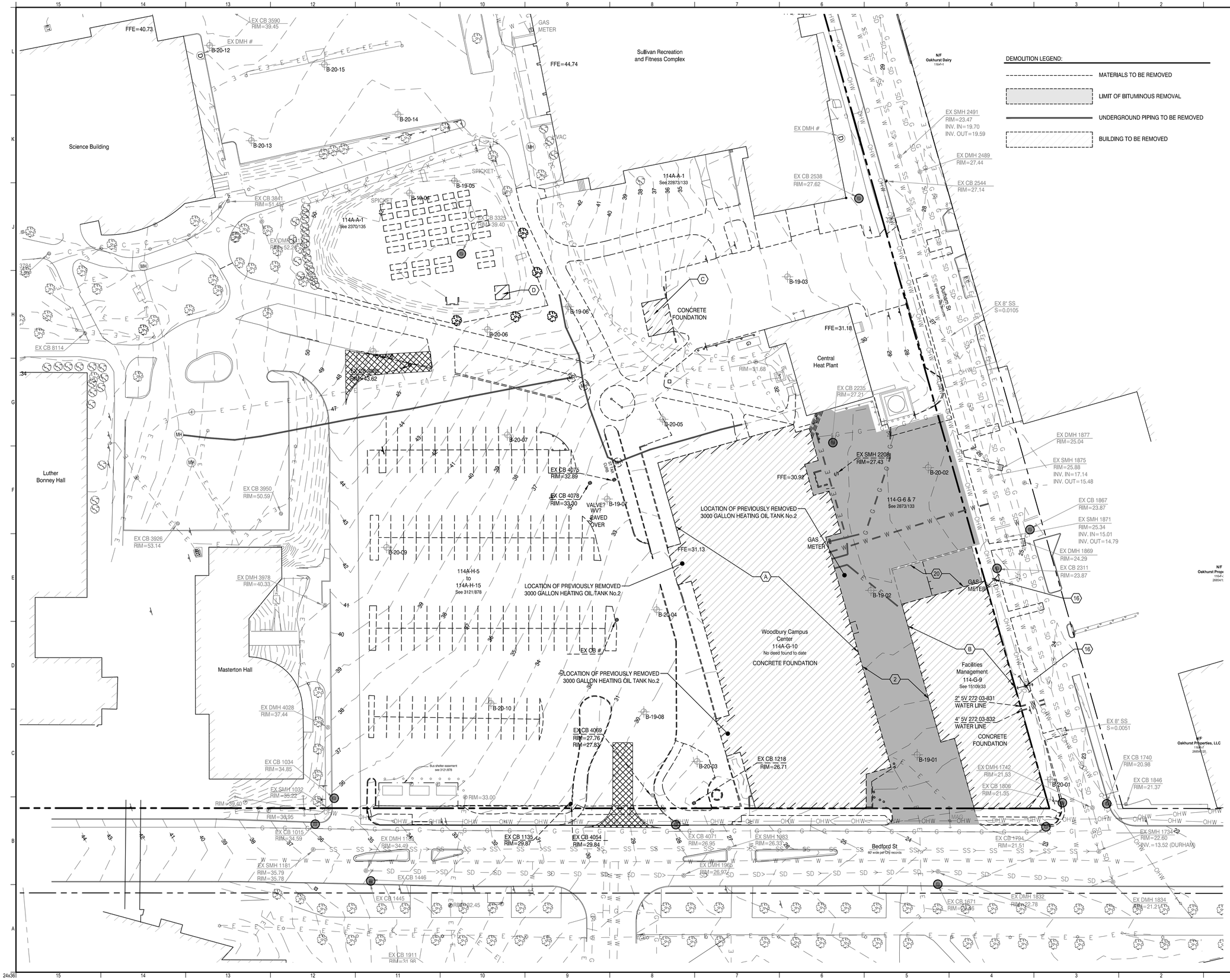
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CD101-19206	SHEET No.	CD101

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION

24x36



DEMOLITION NOTES:

1. ALL PRE-EXISTING STRUCTURES WITHIN THE PROPOSED BUILDING FOOTPRINT, UNDER AREAS PROPOSED FOR PAVING, AND ALONG PROPOSED UTILITY ROUTES ARE TO BE COMPLETELY REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL.
2. MAINTAIN TWO-WAY ACCESS THROUGH CONSTRUCTION FOR MAINTENANCE DRIVE.
3. FENCE NOTED TO BE REMOVED SHALL BE SALVAGED.
4. UTILITY POLES AND LIGHTS NOTED FOR REMOVAL SHALL BE SALVAGED.
5. ALL CONFLICTING ITEMS WITHIN THE DEVELOPMENT AREA NOT OTHERWISE NOTED SHALL BE REMOVED.
6. IN PAVEMENT REMOVAL AREAS EXISTING SURFACE SHALL BE GROUND, REMOVED AND STOCKPILED FOR LATER USE AS SUITABLE FILL MATERIAL.
7. ALL MANHOLE AND CATCH BASIN FRAMES AND COVERS TO BE REMOVED SHALL BE SALVAGED FOR FUTURE USE.

DEMOLITION LEGEND:

- MATERIALS TO BE REMOVED
- LIMIT OF BITUMINOUS REMOVAL
- UNDERGROUND PIPING TO BE REMOVED
- BUILDING TO BE REMOVED

DEMOLITION KEY:

- (A) #35 BEDFORD STREET; BUILDING DESCRIPTION: WOODBURY CAMPUS CENTER
- (B) #25 BEDFORD STREET: BUILDING DESCRIPTION: FACILITIES MANAGMENT
- (C) SAND/SALT SHED; BUILDING DESCRIPTION:
- (D) SHED

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

BUILDING DEMOLITION PLAN

SHEET TITLE:

0 15' 30' 60' 90'

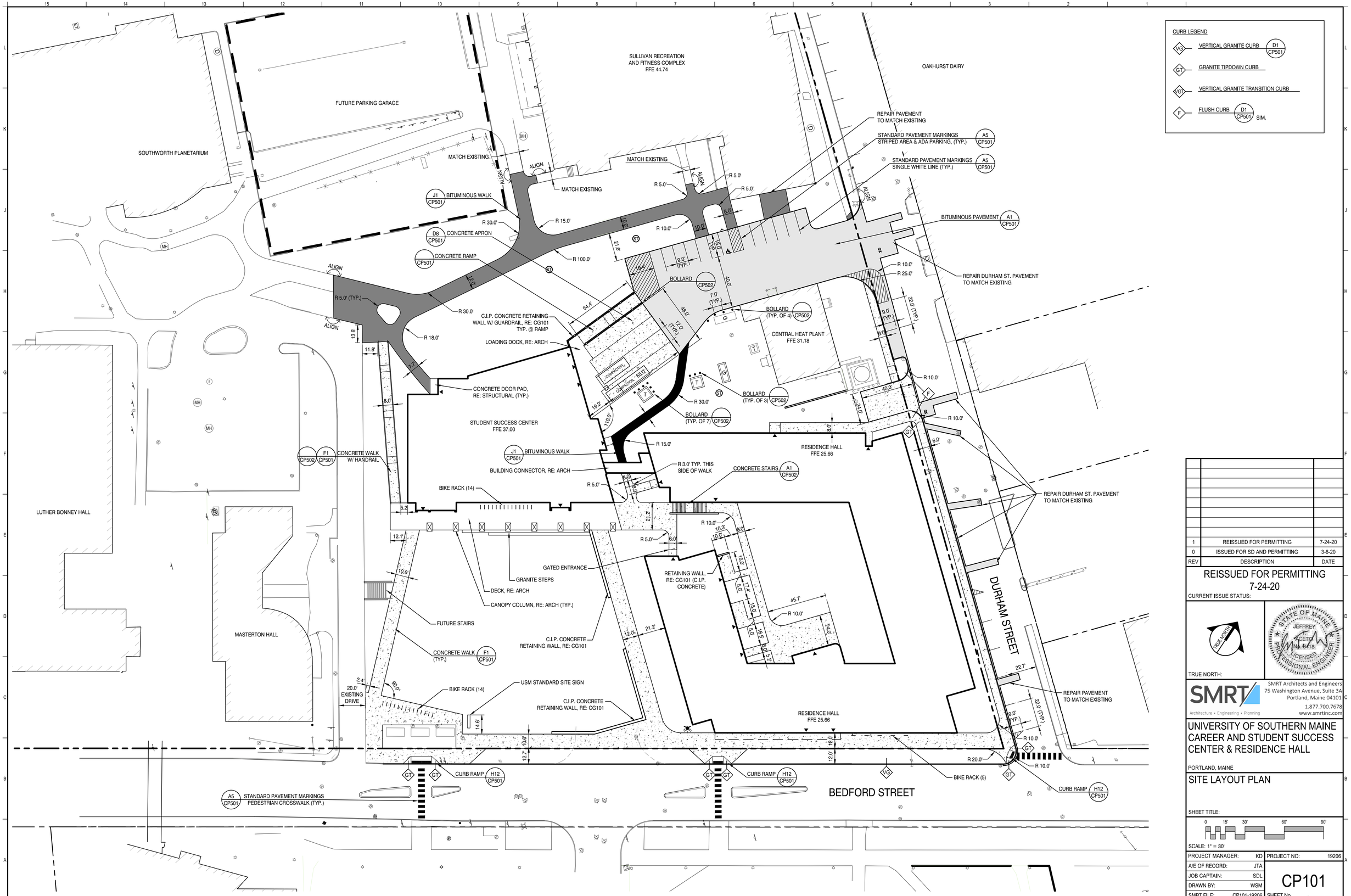
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		CD102
DRAWN BY:	WSM		
SMRT FILE:	CD102-19206	SHEET No.	

©COPYRIGHT 2020 SMRT INC.

NOT FOR CONSTRUCTION

24x36



REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH

TRUE NORTH:

STATE OF MAINE JEFFREY T. KROECHER No. 13418 LICENSED PROFESSIONAL ENGINEER

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

SITE LAYOUT PLAN

SHEET TITLE:

0 15' 30' 60' 90'

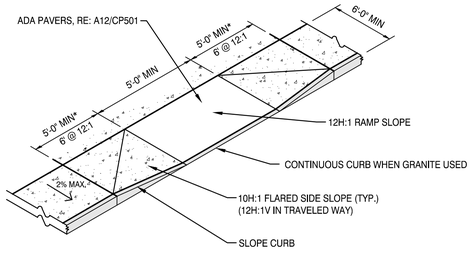
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CP101-19206	SHEET No.	CP101

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

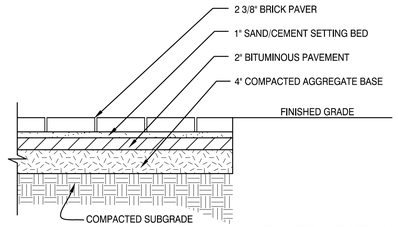
24x36



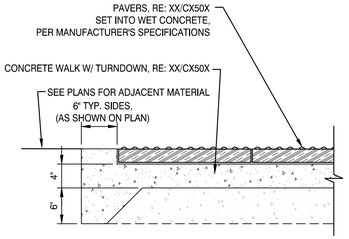
NOTE:

1. FLARE LENGTH TO BE 6' WHEN IN A WALKWAY.

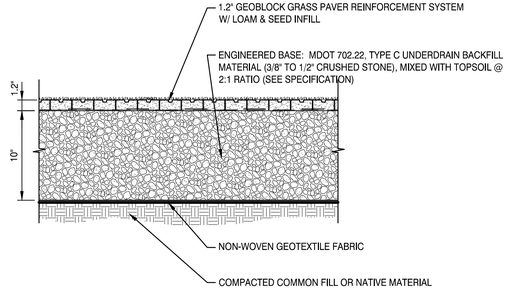
CURB RAMP H12
NOT TO SCALE



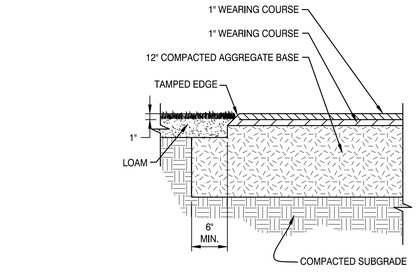
PAVER SECTION K8
1" = 1'-0"



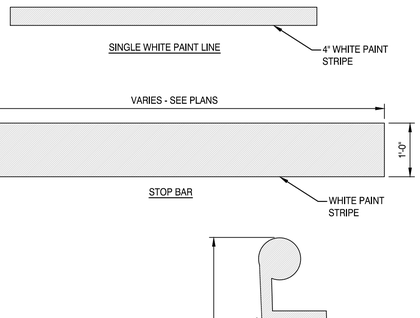
ADA PAVER SECTION H8
1" = 1'-0"

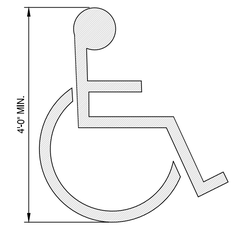


REINFORCED TURF J5
1" = 1'-0"

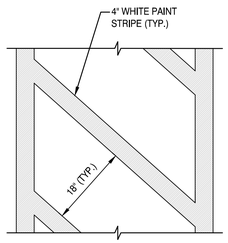


BITUMINOUS WALK J1
1" = 1'-0"



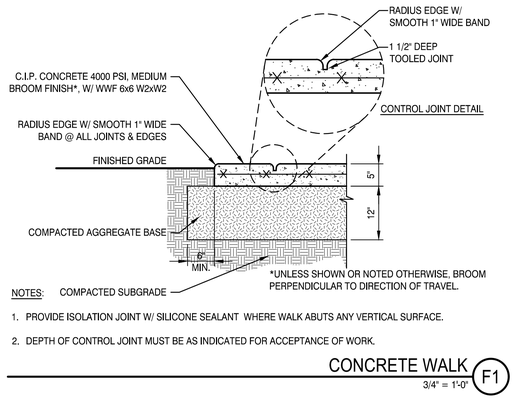


DISABILITY SYMBOL



STRIPED AREA

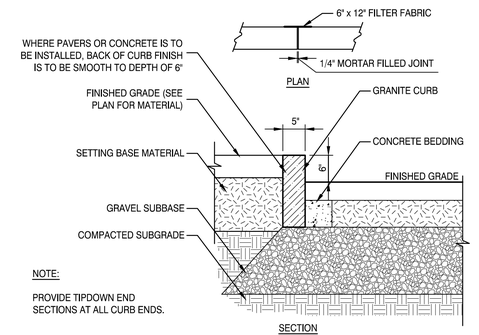
STANDARD PAVEMENT MARKINGS A5
3/4" = 1'-0"



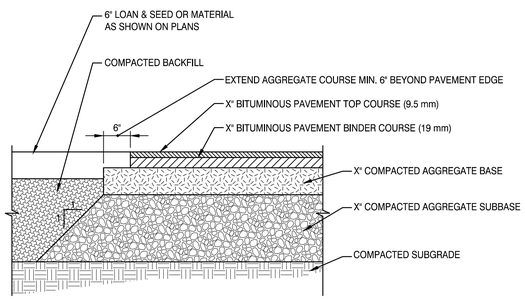
NOTES:

1. PROVIDE ISOLATION JOINT W/ SILICONE SEALANT WHERE WALK ABUTS ANY VERTICAL SURFACE.
2. DEPTH OF CONTROL JOINT MUST BE AS INDICATED FOR ACCEPTANCE OF WORK.

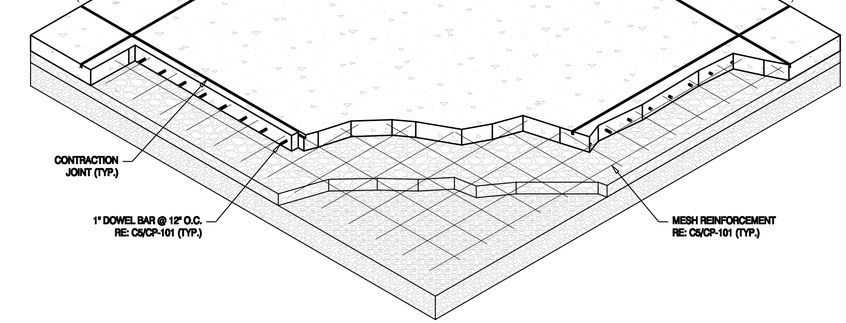
CONCRETE WALK F1
3/4" = 1'-0"



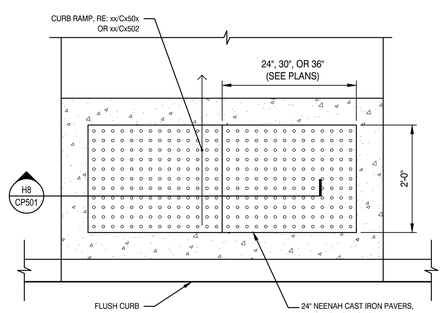
VERTICAL GRANITE CURB D1
3/4" = 1'-0"



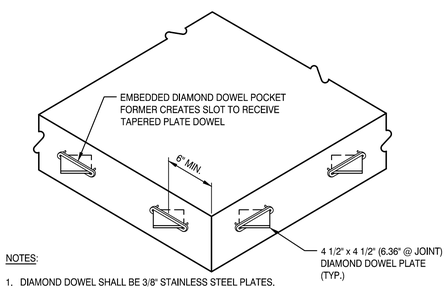
BITUMINOUS PAVEMENT A1
3/4" = 1'-0"



CONCRETE APRON D8
NOT TO SCALE



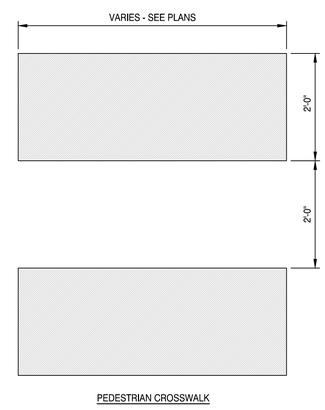
ADA PAVER PLAN A12
3/4" = 1'-0"



NOTES:

1. DIAMOND DOWEL SHALL BE 3/8" STAINLESS STEEL PLATES.
2. DIAMOND DOWEL TO BE PLACED @ 18" O.C.
3. DIAMOND DOWEL SYSTEM AS MANUFACTURED BY PNA CONSTRUCTION TECHNOLOGIES, INC. (800) 542-0214.
4. DIAMOND DOWEL SYSTEM TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS.

DIAMOND DOWEL CONCRETE CONNECTION A8
NOT TO SCALE



PEDESTRIAN CROSSWALK

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

STATE OF MAINE
JEFFREY
T.
CETC
No. 6418
LICENSED
PROFESSIONAL ENGINEER

SMRT
Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS
CENTER & RESIDENCE HALL

PORTLAND, MAINE

SITE LAYOUT DETAILS

SHEET TITLE:

0 1/2" 1" 2" 3"

SCALE:

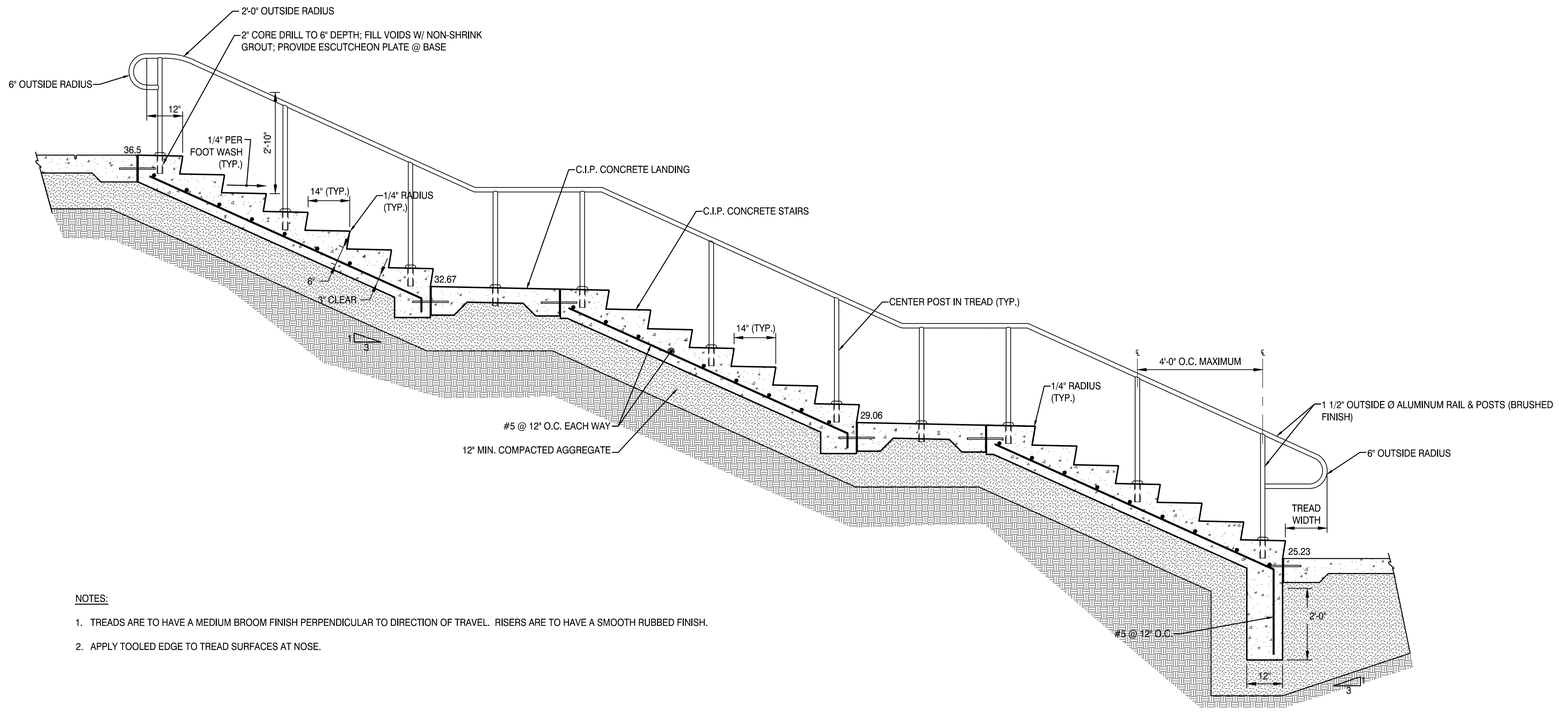
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CP501-19206	SHEET No.	CP501

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION

BOLLARD A12

1" = 1'-0"



NOTES:

1. TREADS ARE TO HAVE A MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL. RISERS ARE TO HAVE A SMOOTH RUBBED FINISH.
2. APPLY TOOLED EDGE TO TREAD SURFACES AT NOSE.

CONCRETE STAIRS A1

1/2" = 1'-0"

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

STATE OF MAINE
JEFFREY T. CETO
No. 8418
LICENSED PROFESSIONAL ENGINEER

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

SITE LAYOUT DETAILS

SHEET TITLE:

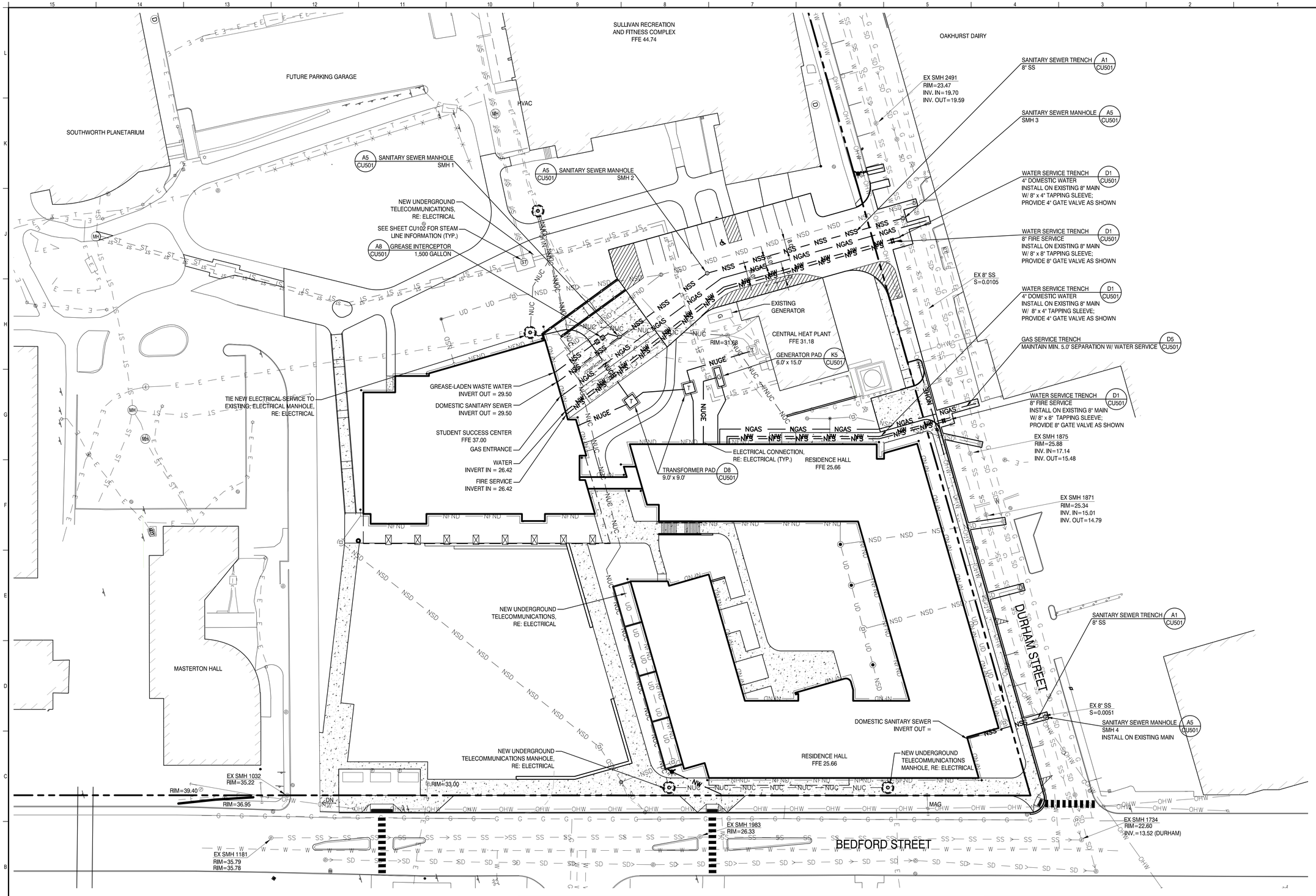
0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		CP502
DRAWN BY:	WSM		
SMRT FILE:	CP502-19206	SHEET No.	

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION



PIPE TYPE	PIPE DIA.	PIPE SLOPE	START STRUCTURE	START INVERT	END STRUCTURE	END INVERT	PIPE LENGTH (FT)
HDPE	8"	0.00	BUILDING	14.22	SMH 4	13.96	54
HDPE	8"	0.00	SMH 2		SMH 3		139
HDPE	8"	0.00	SMH 1		SMH 2		74
HDPE	8"	0.00	BUILDING		SMH 1		52
HDPE	X	0.00	BUILDING		GS 1		35
HDPE	X	0.00	GS 1		SMH 1		12

STRUCTURE ID	RIM ELEV	INV. (N)	INV. (E)	INV. (S)	INV. (W)
SMH 1	32.45				
SMH 2	30.87				
SMH 3	27.97				
SMH 4	23.55				
GS1	32.61				
	32.67				

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

60% CONSTRUCTION DOCUMENTS 1
10-22-20
CURRENT ISSUE STATUS:

TRUE NORTH:

SMRT Architects and Engineers
75 Washington Ave., Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

ELKUS MANFREDI ARCHITECTS
25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL
PORTLAND, MAINE

UTILITY PLAN

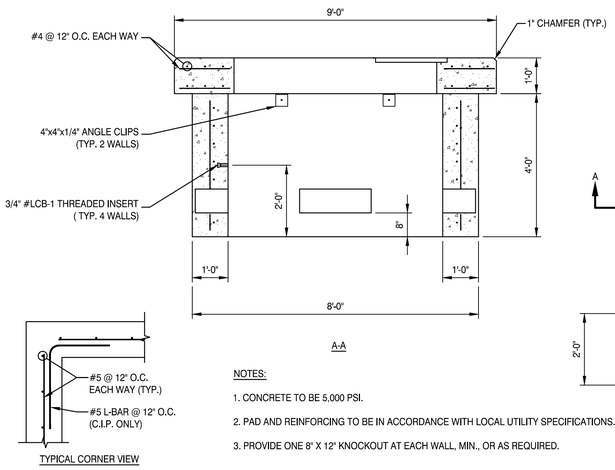
SHEET TITLE:

0 15' 30' 60' 90'
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CU101-19206	SHEET No.	CU101

©COPYRIGHT 2020 SMRT INC.

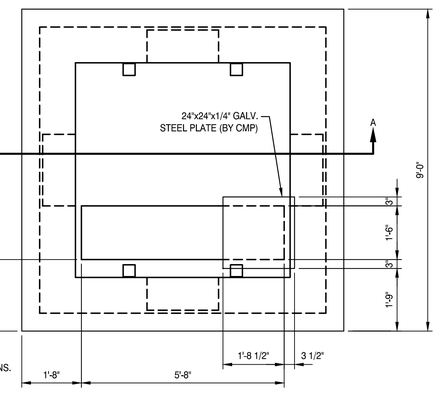
NOT FOR CONSTRUCTION



TYPICAL CORNER VIEW

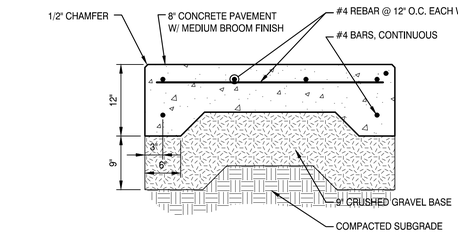
NOTES:

1. CONCRETE TO BE 5,000 PSI.
2. PAD AND REINFORCING TO BE IN ACCORDANCE WITH LOCAL UTILITY SPECIFICATIONS.
3. PROVIDE ONE 8" X 12" KNOCKOUT AT EACH WALL, MIN., OR AS REQUIRED.



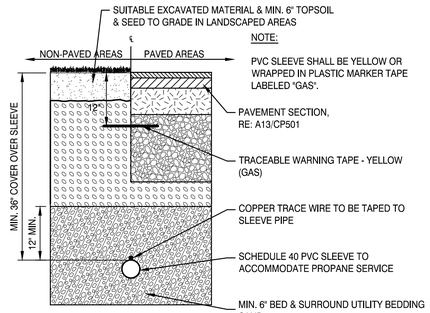
TRANSFORMER PAD D8

NOT TO SCALE



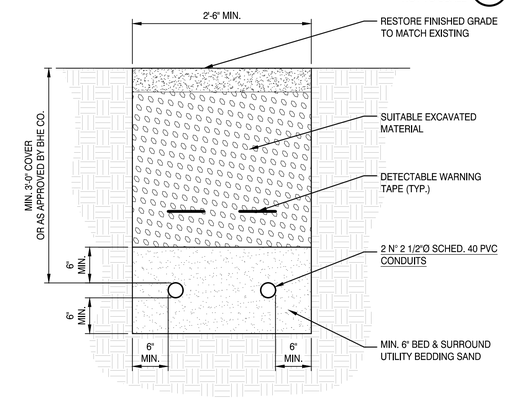
GENERATOR PAD K5

NOT TO SCALE



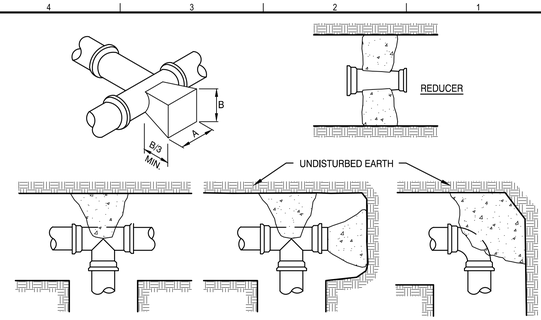
GAS SERVICE TRENCH D5

NOT TO SCALE



PRIMARY ELECTRIC TRENCH D5

NOT TO SCALE



TEE TEE (PLUGGED) BEND

FITTING SIZES	TEES & PLUGS		90° BEND		45° BEND & WYE		REDUCER, 11 1/4° & 22 1/2° BENDS	
	A	B	A	B	A	B	A	B
4"	1'-7"	1'-2"	1'-9"	1'-5"	1'-8"	0'-10"	1'-7"	0'-6"
6"	2'-0"	1'-11"	2'-5"	2'-2"	1'-10"	1'-7"	1'-9"	0'-10"
8"	2'-8"	2'-6"	3'-2"	3'-0"	2'-5"	2'-1"	1'-9"	1'-6"
10"	3'-4"	3'-3"	4'-0"	3'-10"	3'-0"	2'-9"	2'-2"	1'-11"
12"	4'-0"	3'-10"	4'-8"	4'-8"	3'-8"	3'-3"	2'-7"	2'-3"
14"	5'-5"	3'-10"	6'-6"	4'-11"	4'-9"	3'-5"	3'-5"	2'-5"

NOTES:

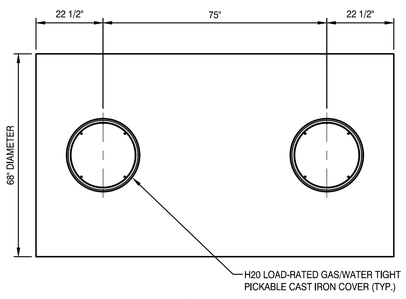
1. DIMENSIONS ARE BASED ON 150 PSI WATER PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
2. WRAP ALL FITTINGS WITH POLYETHYLENE.
3. GRIP-RING PIPE RESTRAINERS TO BE USED IN CONJUNCTION WITH THRUST BLOCKS.

THRUST BLOCKS G1

NOT TO SCALE

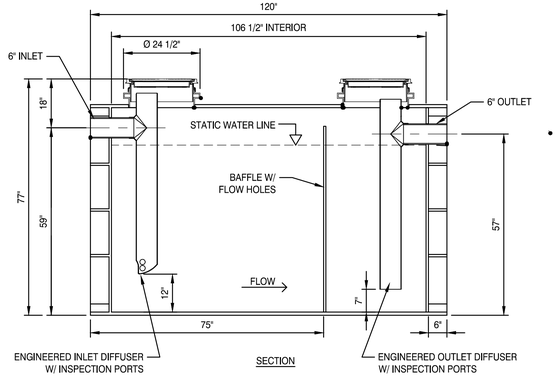
WATER SERVICE TRENCH D1

3/4" = 1'-0"



PLAN

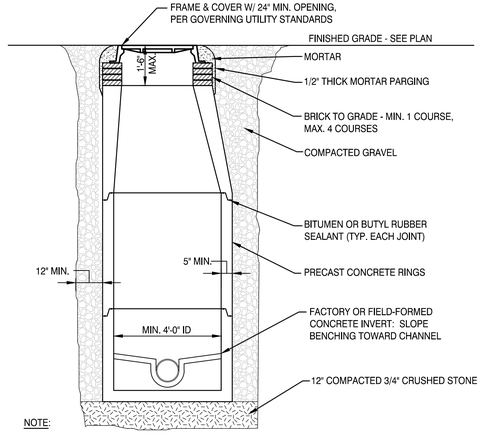
1,500 GALLON GREASE INTERCEPTOR
EQUAL TO SCHIER GGI-1500 BIG FOOT



SECTION

GREASE INTERCEPTOR A8

1/2" = 1'-0"

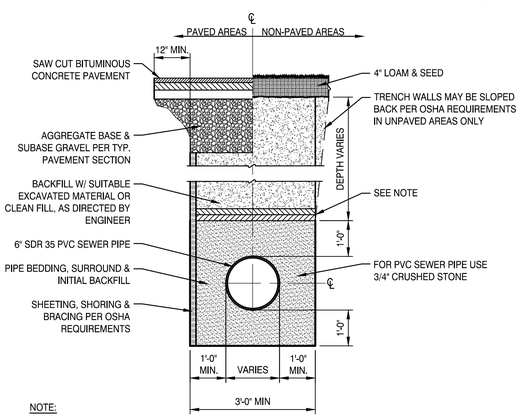


NOTE:

PROVIDE DROP PIPE FOR ALL INVERT DIFFERENTIALS GREATER THAN TWO (2) FEET.

SANITARY SEWER MANHOLE A5

NOT TO SCALE



NOTE:

INSULATE GRAVITY SEWER WHERE COVER IS LESS THAN FOUR FEET. USE 2" THICK RIGID STYROFOAM INSULATION FOR FULL WIDTH OF TRENCH.

SANITARY SEWER TRENCH A1

NOT TO SCALE

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

60% CONSTRUCTION DOCUMENTS
10-22-20

CURRENT ISSUE STATUS:

SMRT Architects and Engineers
75 Washington Ave., Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

ELKUS | MANFREDI ARCHITECTS
25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS
CENTER & RESIDENCE HALL

PORTLAND, MAINE

UTILITY DETAILS

SHEET TITLE:

0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CU501-19206	SHEET No.	CU501

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

SULLIVAN RECREATION AND FITNESS COMPLEX
FFE 44.74

OAKHURST DAIRY

FUTURE PARKING GARAGE

SOUTHWORTH PLANETARIUM

2 TON 15' OC

2 TON 15' OC

STANDARD EVERGREEN PLANTING (TYP.) H1 LP501

H5 LP501 DRIP STRIP @ BLDG. FACE WHERE NOT PAVED (TYP.)

CENTRAL HEAT PLANT
FFE 31.18

1 TC AS SHOWN

5 AG 15' OC

5 TON 25' OC

2 TON 15' OC

STUDENT SUCCESS CENTER
FFE 37.00

62 DP 2' OC

43 CA 2' OC

42 ES 2' OC

15 JH 3' OC

1 ZS AS SHOWN

RESIDENCE HALL
FFE 25.66

20 NE 2' OC

24 CA 2' OC

30 ES 2' OC

48 CA 2' OC

3 AF 30' OC

33 NE 2' OC

16 CA 2' OC

22 AU 3' OC

53 DP 2' OC

LUTHER BONNEY HALL

MASTERTON HALL

QUAD (LAWN)

LAWN

19 AK 3' OC

5 AF 30' OC

40 AK 3' OC

63 JH 3' OC

109 AK 3' OC

62 AK 3' OC

68 AK 3' OC

87 NE 2' OC

46 RL 3' OC

4 ZS 30' OC

151 HD 2' OC

45 CP 2' OC

3 OC AS SHOWN

B1 LP501 STANDARD SHRUB PLANTING (TYP.)

A1 LP501 STANDARD PERENNIAL PLANTING (TYP.)

RESIDENCE HALL
FFE 25.66

DRIP STRIP @ BLDG. FACE WHERE NOT PAVED (TYP.) H5 LP501

3 MA 50' OC

STANDARD TREE PLANTING (TYP.) E1 LP501

9 MA AS SHOWN

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH

TRUE NORTH:

LICENSED LANDSCAPE ARCHITECT
MARK G. JOHNSON
NO. 1857
STATE OF MAINE
3-6-2020

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PLANTING & LANDSCAPING PLAN

SHEET TITLE:

0 15' 30' 60' 90'

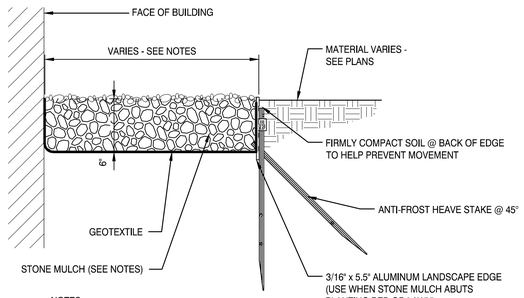
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	MGJ		
JOB CAPTAIN:	SDL		LP101
DRAWN BY:	WSM		
SMRT FILE:	LP101-19206	SHEET No.	

©COPYRIGHT SMRT INC.

NOT FOR CONSTRUCTION

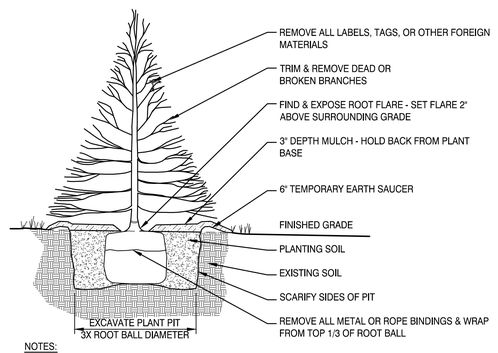
24x36



NOTES:

1. STONE MULCH TO BE ROUNDED RIVERSTONE, 3" INCHES DIA. MAX., WASHED AND FREE OF FOREIGN OR ORGANIC MATERIALS.
2. STANDARD MAINTENANCE STRIP TO BE 12" WIDE.
3. STANDARD DRIP STRIP TO BE WIDTH OF BUILDING EAVE PLUS 12" UNLESS SHOWN OTHERWISE.
4. EDGE TO BE BY SURE-LOC ALUMINUM EDGING CORP, OR APPROVED EQUAL .
   - MILL FINISH
   - 12" STAKES
   - ANTI-FROST HEAVE STAKE POCKETS @ 8" O.C.

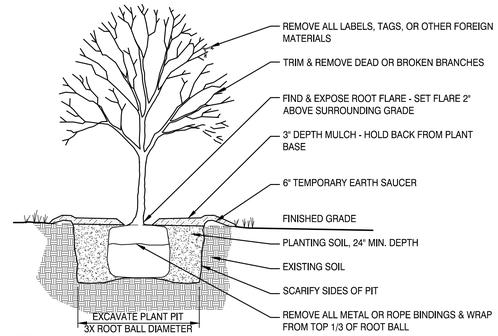
DRIP STRIP H5
NOT TO SCALE



NOTES:

1. TREE TO BE SET PLUMB.
2. SECURE TREE AS MAY BE REQUIRED ACCORDING TO TREE SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

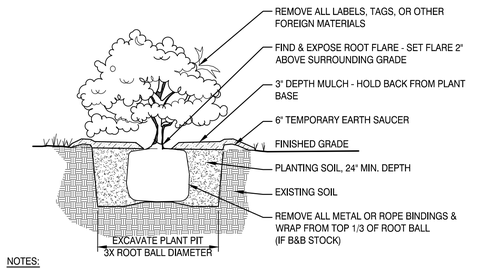
STANDARD EVERGREEN PLANTING H1
NOT TO SCALE



NOTES:

1. TREE TO BE SET PLUMB.
2. SECURE TREE AS MAY BE REQUIRED ACCORDING TO TREE SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

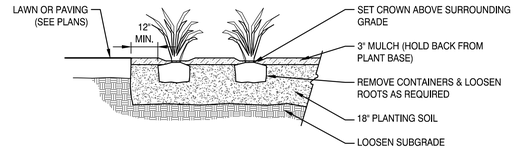
STANDARD DECIDUOUS TREE PLANTING E1
NOT TO SCALE



NOTES:

1. SHRUB TO BE SET PLUMB.

STANDARD SHRUB PLANTING B1
NOT TO SCALE



STANDARD PERENNIAL PLANTING A1
NOT TO SCALE

MARK	SCIENTIFIC NAME / COMMON NAME	SIZE CAL	SIZE HT	ROOT	REMARKS
TREES					
AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	1 1/2"	6'-8'	B & B	Clump form, 3-stem minimum
AF	Acer x freemani 'Armstrong' / Armstrong Red Maple	2"	12'-14'	B & B	Full, matched specimens
MA	Malus 'Adirondack' / Adirondack Crabapple	1 1/2"	6'-8'	B & B	Full, matched specimens
TC	Tilia cordata 'Greenspire' / Littleleaf Linden	2"	12'-14'	B & B	Full, matched specimens
ZS	Zelkova serrata 'Musashino' / Musashino Zelkova	2"	12'-14'	B & B	Full, matched specimens
SHRUBS					
AU	Arctostaphylos uva-ursi / Bearberry	#2	18"	Cont.	
AK	Azalea 'Karen' / Evergreen Azalea	#2	18"	Cont.	
JH	Juniperus horzontalis 'Bar Harbor' Bar Harbor Juniper	#2	6"	Cont.	
RL	Rhododendron laetivirens 'Wilson' / Wilson Rhododendron	#2	18"	Cont.	
SP	Stewartia pseudocamellia / Japanese Stewartia	#7	5'-6'	Cont.	Full, matched specimens
TON	Thuja occidentalis 'Nigra' / Dark American Arborvitae	#5	5'-6'	Cont.	
PERENNIALS					
CA	Calamagrostis x accutifolia 'Karl Foerster' / Feather Reed Grass	#1	-	Cont.	
CP	Carex pennsylvanica / Sedge	#1	-	Cont.	
DP	Dennstaedtia punctiloba / Hayscented Fern	#1	-	Cont.	
ES	Echinacea Sombrero Lemon Yellow / Coneflower	#1	-	Cont.	
HD	Hosta 'Dream Weaver' / Hosta	#1	-	Cont.	
NE	Nepeta 'Early Bird' / Catmint	#1	-	Cont.	
OC	Osmunda cinnamomea / Cinnamon Fern	#1	-	Cont.	

PLANT SCHEDULE A5

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

LICENSED LANDSCAPE ARCHITECT
MARK G. JOHNSON
NO. 1857
STATE OF MAINE
3-6-2020

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PLANTING & LANDSCAPING DETAILS & SCHEDULE

SHEET TITLE:

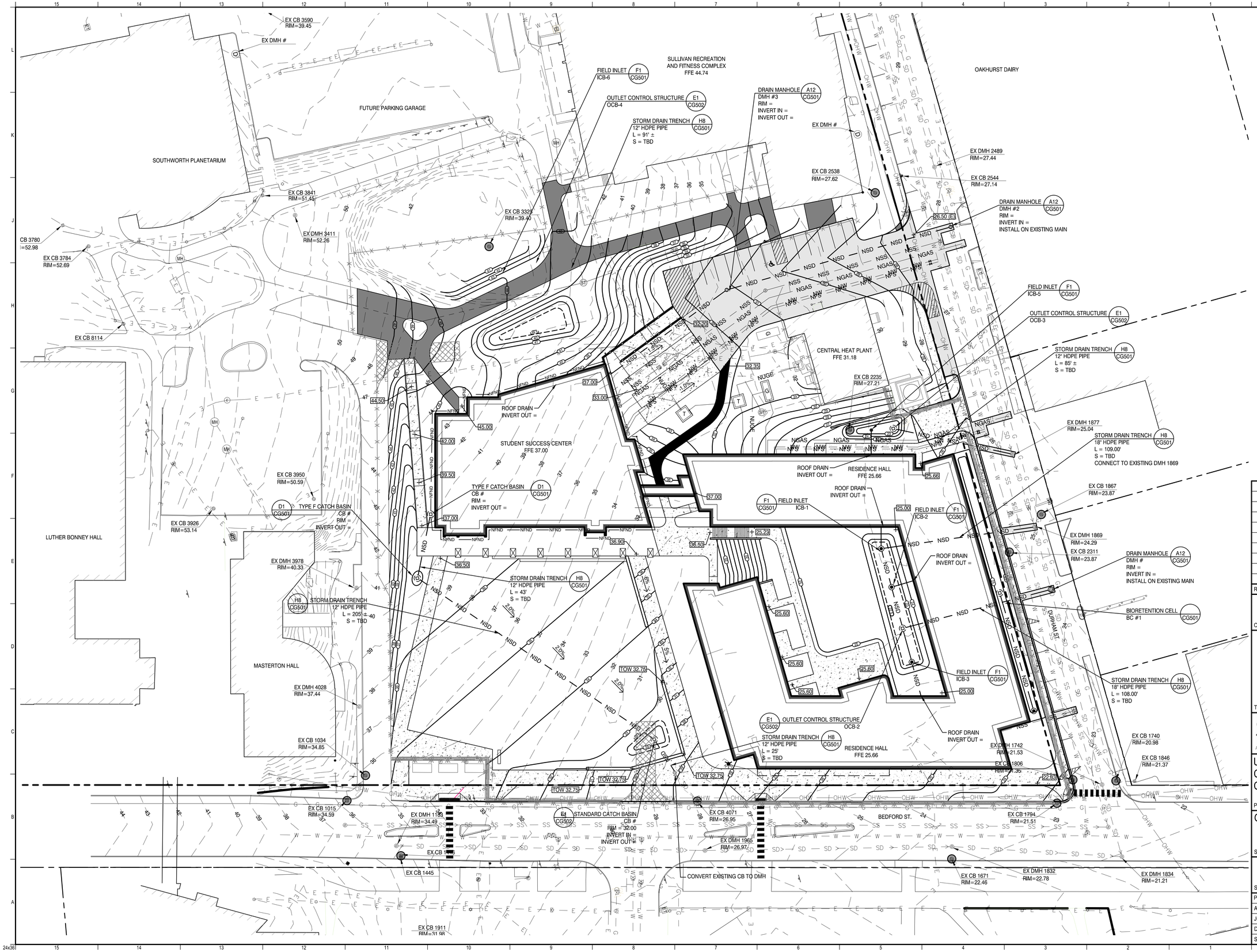
0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	MGJ		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	LP501-19206	SHEET No.	LP501

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION



REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

JEFFREY CETOLA No. 6418 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

GRADING & DRAINAGE PLAN

SHEET TITLE:

0 15' 30' 60' 90'

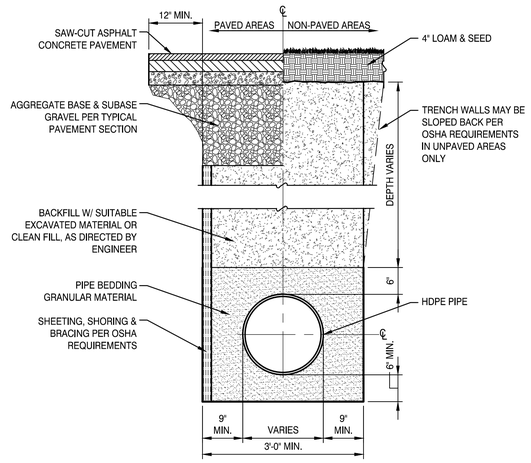
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CG101-19206	SHEET No.	CG101

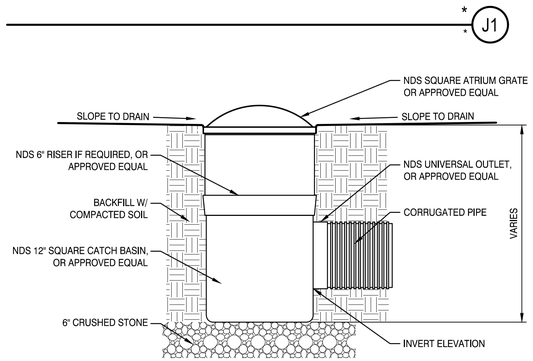
©COPYRIGHT 2020 SMRT INC.

NOT FOR CONSTRUCTION

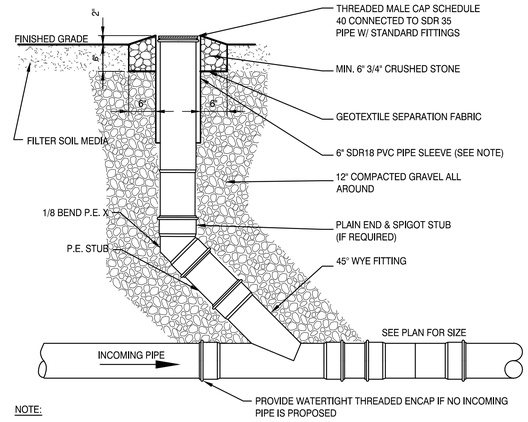
24x36



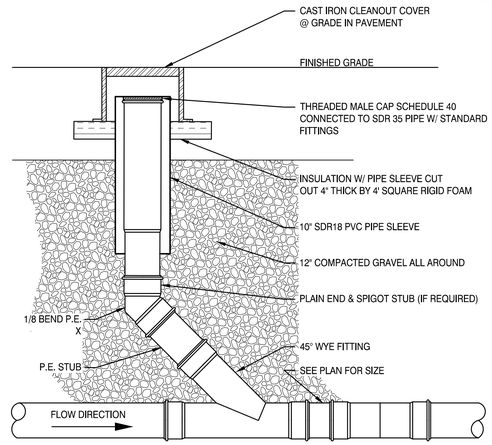
STORM DRAIN TRENCH H5
NOT TO SCALE



FIELD INLET F1
NOT TO SCALE

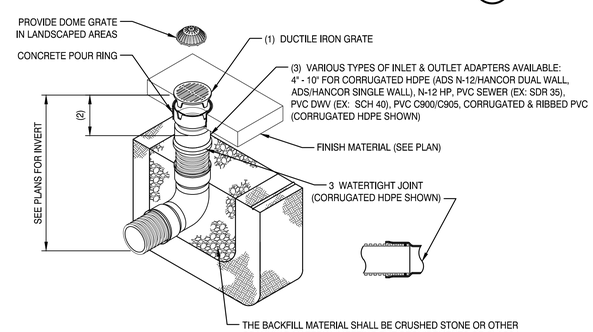


NOTE:
WHERE PIPE & RISER ARE 4"Ø USE 6" SLEEVE. WHERE PIPE & RISER ARE 6"Ø USE 8" SLEEVE.



CLEANOUT - VEGETATED AREAS E8
*

UNDERDRAIN D12
1 1/2" = 1'-0"

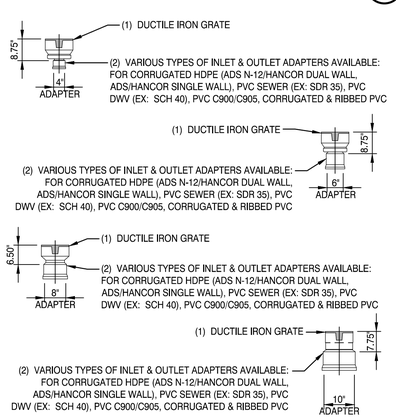


NOTES:

1. GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. FOR COMPLETE DESIGN DETAILS.
3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL) & PVC SEWER.

GRATE OPTIONS	LOAD RATING	PART #
PEDESTRIAN/STANDARD	LIGHT DUTY	1099CGS
SOLID COVER	LIGHT DUTY	1099CGC
BRONZE	N/A	1099CGB
DOME	N/A	1099CGD

CLEANOUT - PAVED AREAS E5
NOT TO SCALE

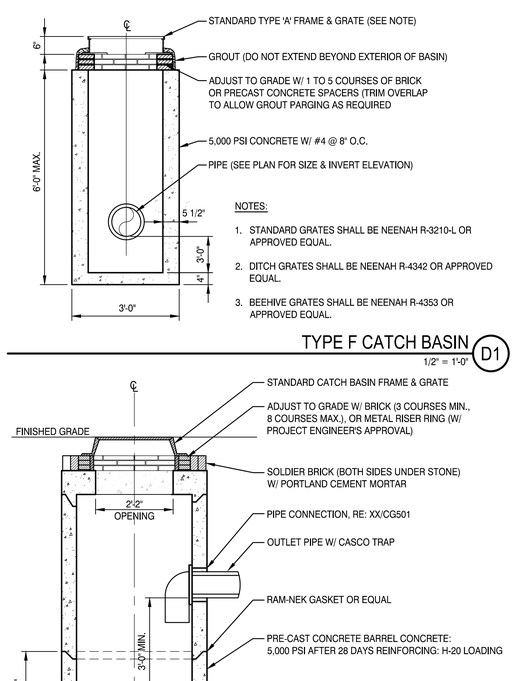


NOTES:

1. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
2. DIMENSIONS ARE FOR REFERENCE ONLY, ACTUAL DIMENSIONS MAY VARY.

DESIGN DETAILS

IN-LINE DRAIN A5
NOT TO SCALE



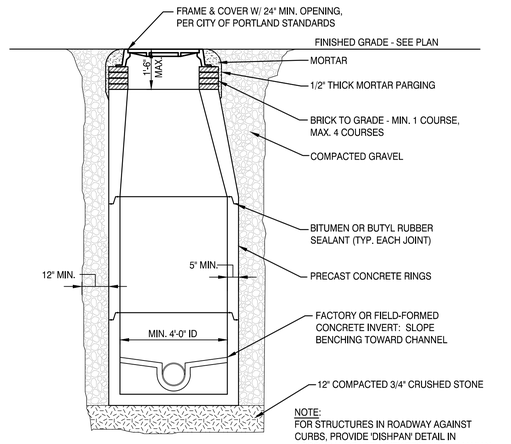
NOTES:

1. STANDARD GRATES SHALL BE NEENAH R-3210-L OR APPROVED EQUAL.
2. DITCH GRATES SHALL BE NEENAH R-4342 OR APPROVED EQUAL.
3. BEEHIVE GRATES SHALL BE NEENAH R-4353 OR APPROVED EQUAL.

TYPE F CATCH BASIN D1
1/2" = 1'-0"

NOTE:
FOR STRUCTURES IN ROADWAY AGAINST CURBS, PROVIDE 'DISHPAN' DETAIL IN ACCORDANCE WITH CITY TECHNICAL MANUAL

STANDARD CATCH BASIN A1
1/2" = 1'-0"



NOTE:
FOR STRUCTURES IN ROADWAY AGAINST CURBS, PROVIDE 'DISHPAN' DETAIL IN ACCORDANCE WITH CITY TECHNICAL MANUAL

DRAIN MANHOLE A12
NOT TO SCALE

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20
CURRENT ISSUE STATUS:

STATE OF MAINE JEFFREY J. CETO No. 6418 LICENSED PROFESSIONAL ENGINEER

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL
PORTLAND, MAINE

GRADING & DRAINAGE DETAILS

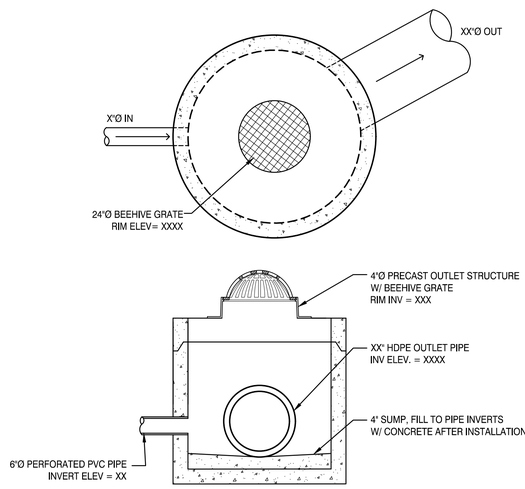
SHEET TITLE:

0 1/2" 1" 2" 3"
SCALE:

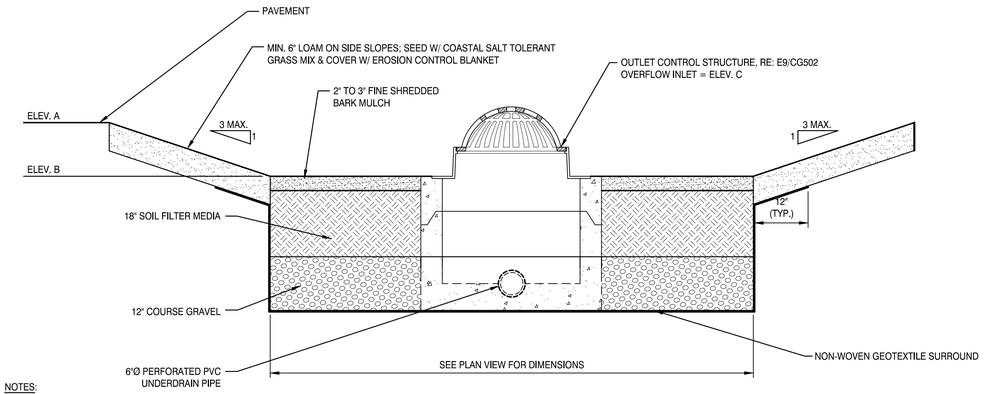
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CG501-19206	SHEET No.	CG501

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION



OUTLET CONTROL STRUCTURE E9



BIORETENTION CELL A1

NOTES:

1. SEED FOR SLOPES SHALL BE COASTAL SALT TOLERANT GRASS MIX BY NEW ENGLAND WETLAND PLANTS, INC. OR APPROVED EQUAL. SEE LANDSCAPE PLANS FOR OTHER PLANTINGS.
2. EROSION BLANKET SHALL BE A DOUBLE NET STRAW/COCONUT BIODEGRADABLE BLANKET (NORTH AMERICAN GREEN SC150BN OR APPROVED EQUAL).
3. SOIL FILTER MEDIA SHALL CONSIST OF A SILTY SAND COMBINED WITH 20% TO 25% (BY VOLUME) OF A MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH. RESULTING MIXTURE SHALL HAVE A FINES CONTENT OF AT LEAST 8% WITH A CLAY CONTENT OF LESS THAN 2%.
4. INSTALLATION OF BIORETENTION AREAS SHALL NOT COMMENCE UNTIL ALL DISTURBED AREAS UPSTREAM OF THE SITES HAVE BEEN PERMANENTLY STABILIZED.

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

STATE OF MAINE
JEFFREY
CETC
No. 6418
LICENSED
PROFESSIONAL ENGINEER

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS
CENTER & RESIDENCE HALL

PORTLAND, MAINE

GRADING & DRAINAGE DETAILS

SHEET TITLE:

0 1/2" 1" 2" 3"

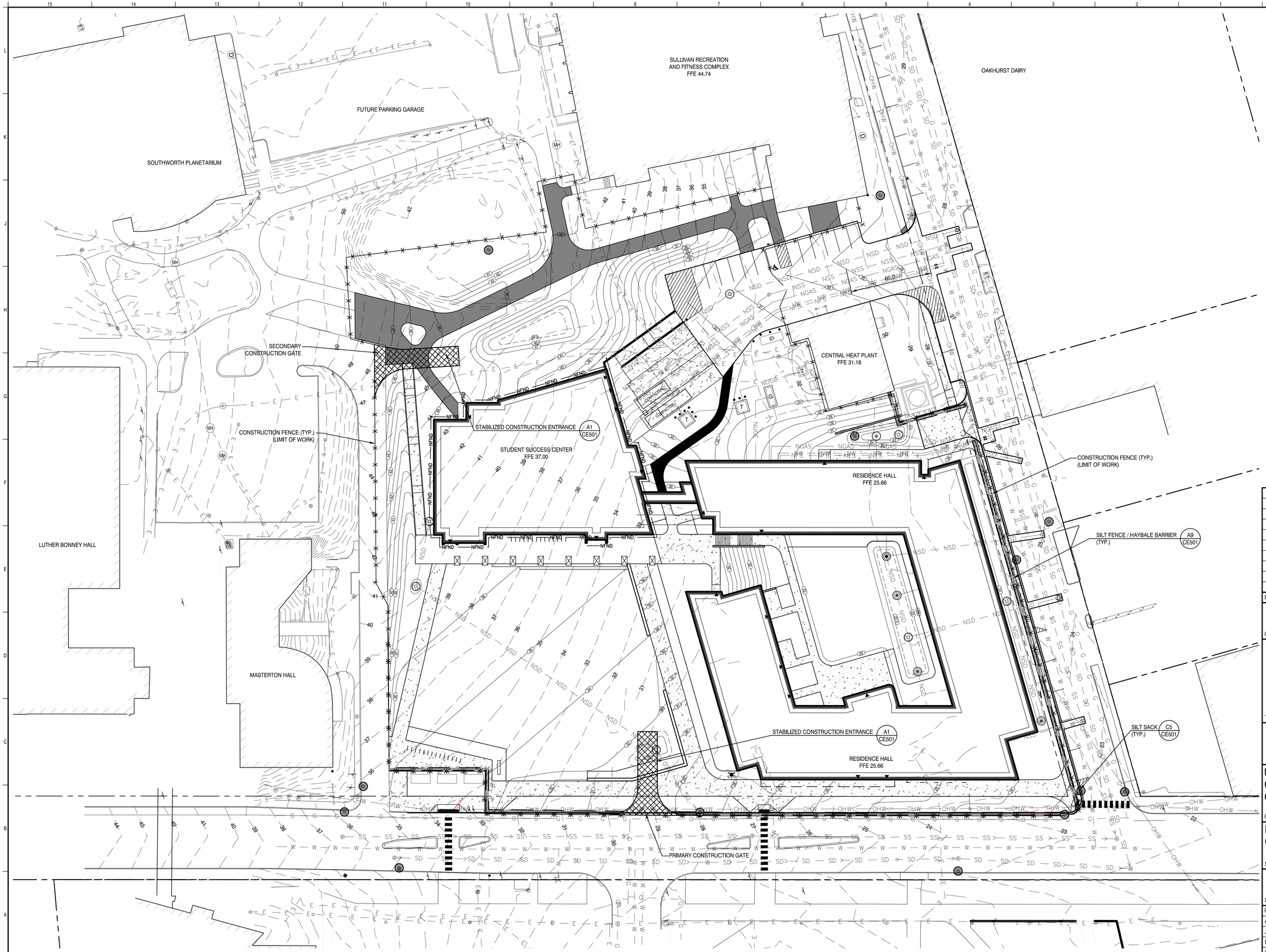
SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL	CG502	
DRAWN BY:	WSM		
SMRT FILE:	CG502-19206	SHEET No.	

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION

24x36



REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

JEFFREY T. KROETSCH
No. 13418
LICENSED PROFESSIONAL ENGINEER
STATE OF MAINE

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

EROSION & SEDIMENT CONTROL PLAN

SHEET TITLE:

0 15' 30' 60' 90'

SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CE101-19206	SHEET No.	CE101

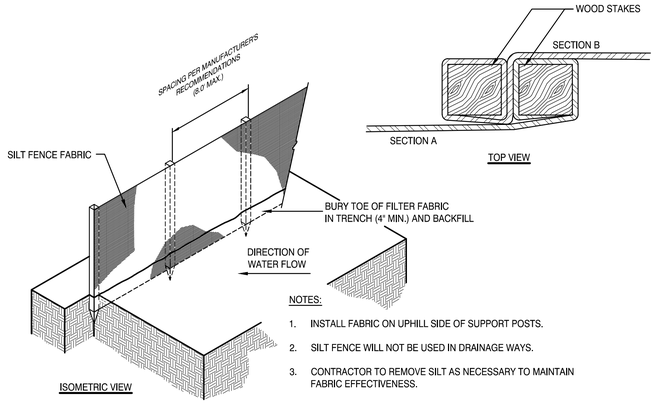
©COPYRIGHT 2020 SMRT,INC.

NOT FOR CONSTRUCTION

24x36

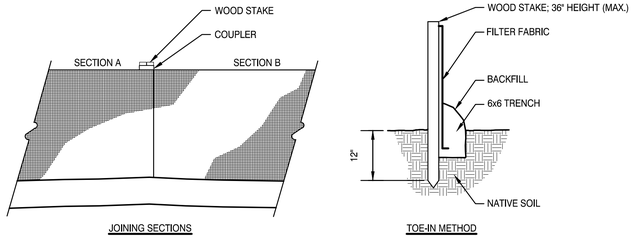
SILT FENCE F10

NOT TO SCALE



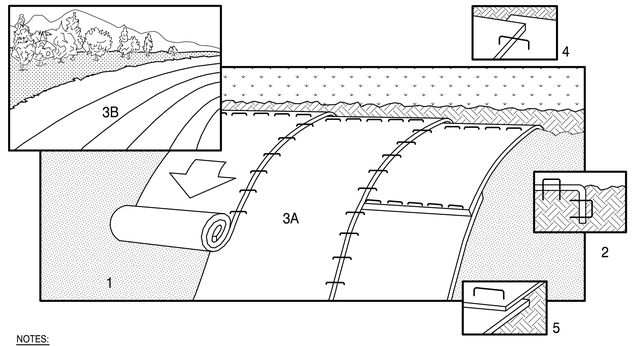
NOTES:

1. INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS.
2. SILT FENCE WILL NOT BE USED IN DRAINAGE WAYS.
3. CONTRACTOR TO REMOVE SILT AS NECESSARY TO MAINTAIN FABRIC EFFECTIVENESS.



EROSION CONTROL BLANKET F5

NOT TO SCALE

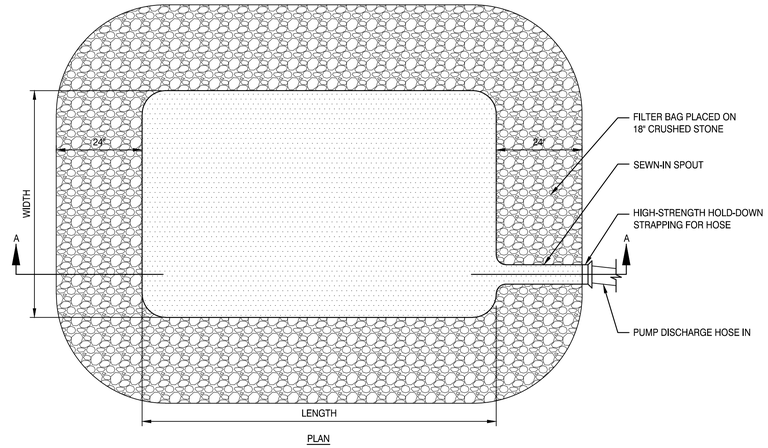


NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP. REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. EROSION CONTROL BLANKET FOR USE ON SLOPES SHALL BE A BIODEGRADABLE DOUBLE NET WOVEN BLANKET WITH JUTE NETTING AND COCONUT FIBRE MATRIX SPECIFICALLY MANUFACTURED FOR THE PURPOSE (NORTH AMERICAN GREEN) BIO-NET S150BN OR APPROVED EQUAL.
7. ONCE PERMANENT STABILIZATION IS ACHIEVED, REMOVE ANY NON-BIODEGRADABLE MESH, IF USED.

DIRT BAG F1

NOT TO SCALE

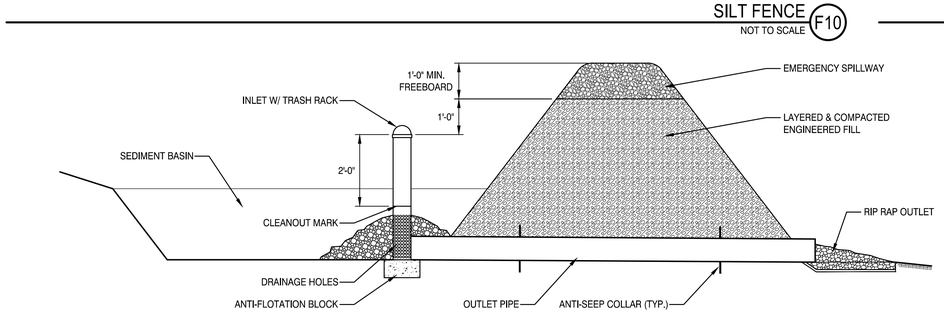


NOTE:

LOCATION OF DIRTBAGS TO BE SELECTED BY THE CONTRACTOR, BUT SHALL NOT BE LOCATED IN RECENTLY DISTURBED OR DESTABILIZED AREAS.

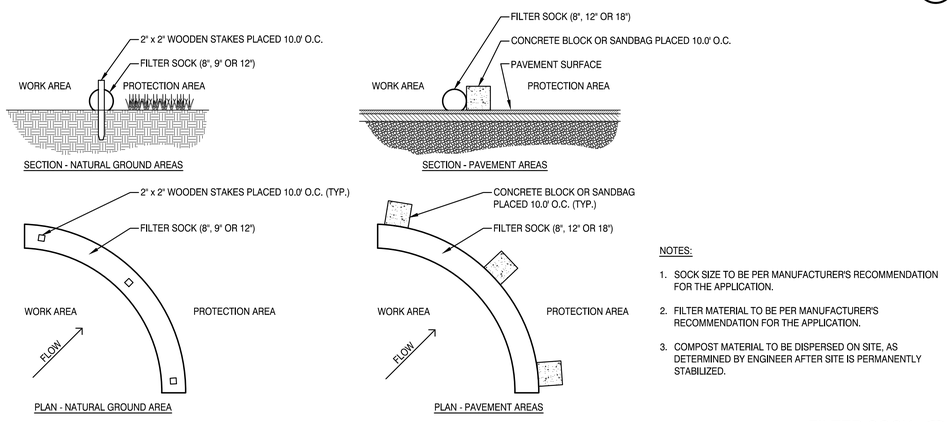
TEMPORARY SEDIMENT BASIN D9

NOT TO SCALE



FILTER SOCK A9

NOT TO SCALE

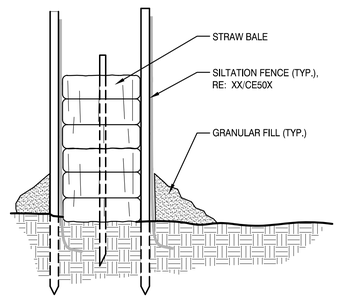


NOTES:

1. SOCK SIZE TO BE PER MANUFACTURER'S RECOMMENDATION FOR THE APPLICATION.
2. FILTER MATERIAL TO BE PER MANUFACTURER'S RECOMMENDATION FOR THE APPLICATION.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER AFTER SITE IS PERMANENTLY STABILIZED.

SILT SACK C5

NOT TO SCALE



NOTES:

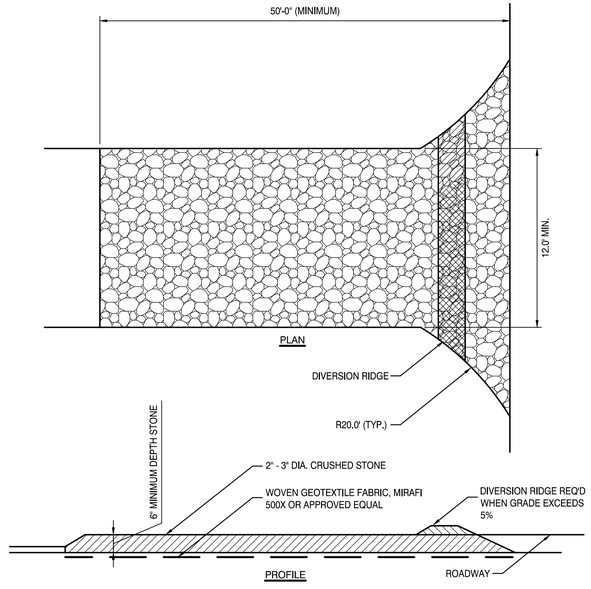
1. CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).
2. INSERT TO BE EMPTIED IN AN APPROVED MANNER WHEN IT IS 1/2 FULL OF SEDIMENT.
3. INSPECT INSERT AFTER ALL RAINFALL EVENTS, REPAIR AND MAINTAIN AS REQUIRED.

SILT FENCE / HAYBALE BARRIER A5

NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE A1

NOT TO SCALE



NOTES:

1. THE PURPOSE IS TO REMOVE MUD FROM TIRES OF CONSTRUCTION VEHICLES.
2. WHEN STONE BECOMES CLOGGED AND INEFFECTIVE, TOPDRESS WITH 3" OF NEW STONE OR REPLACE ENTIRE PAD.
3. IF TIRE WASHING IS REQUIRED, WASH WATER SHALL DRAIN INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. REMOVE ENTIRE SYSTEM AT COMPLETION OF THE PROJECT, AND RESTORE TO ORIGINAL CONDITION.

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

JEFFREY T. ACETO No. 5418 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

EROSION & SEDIMENT CONTROL DETAILS

SHEET TITLE:

0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CE501-19206	SHEET No.	CE501

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

EROSION & SEDIMENTATION CONTROL NOTES:

TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCE, SILTATION FENCE, EROSION CONTROL MIX BERM, STONE CHECK DAMS, HAY BALE BARRIERS, CATCH BASIN INLET BARRIERS, CATCH BASIN SEDIMENT COLLECTION BAGS, EROSION CONTROL BLANKET, AND TEMPORARY SEEDING AND MULCHING AS REQUIRED. PERMANENT DEVICES INCLUDE THE USE OF RIP RAP AT EXPOSED STORM DRAIN AND CULVERT INLETS AND OUTLETS, RIP RAPPED SLOPES, AND PERMANENT VEGETATION.

GENERAL

A. IT IS ANTICIPATED THAT CONSTRUCTION MAY BEGIN AS SOON AS POSSIBLE FOLLOWING RECEIPT OF NECESSARY PERMITS.

1. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES PUBLISHED BY THE THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, (2016, OR AS CURRENTLY REVISED), OR U.S ENVIRONMENTAL PROTECTION AGENCY PUBLICATION 832/R-92-005 (SEPTEMBER, 1992, OR AS CURRENTLY REVISED) STORM WATER MANAGEMENT FOR CONSTRUCTION, CHAPTER 3, WHICHEVER IS MORE STRINGENT.

2. ANY ADDITIONAL EROSION AND SEDIMENTATION CONTROL DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERSONNEL AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.

3. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/ REPLACEMENT/ MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF ACCEPTABLE PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:

A. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

B. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

C. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.

D. FOR AREAS STABILIZED WITH RIP RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP RAP. STONE MUST BE SIZED APPROPRIATELY.

E. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

F. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIP RAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN CUTTING OF THE CHANNEL.

B. EROSION AND SEDIMENTATION CONTROL MEASURES

1. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. IT IS THE INTENT THAT SILT FENCE OR EROSION CONTROL MIX BERM BE INSTALLED DOWN GRADIENT OF ALL DISTURBED AREAS OF THE SITE. SILT FENCE SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE SILT BARRIERS. THIS SEDIMENT WILL BE SPREAD AND STABILIZED IN AREAS OF THE SITE NOT SUBJECT TO EROSION. SILT FENCE OR EROSION CONTROL MIX BERM SHALL BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, THEY WILL BE REPLACED WITH A TEMPORARY CRUSHED STONE CHECK DAM.

2. ALL CATCH BASINS, NEW OR EXISTING, THAT MAY RECEIVE RUNOFF FROM DISTURBED AREAS MUST BE PROTECTED DURING CONSTRUCTION.

3. REMOVAL OF SOD, TREES, BUSHES AND OTHER VEGETATION AND SOIL DISTURBANCE WILL BE KEPT TO A MINIMUM WHILE ALLOWING PROPER SITE DEVELOPMENT.

4. GRUBBINGS AND ANY UNUSABLE TOPSOIL SHALL BE STRIPPED AND REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN AN APPROVED MANNER.

5. ANY SUITABLE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR REUSE IN FINAL GRADING. TOPSOIL WILL BE STOCKPILED IN A MANNER SUCH THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE WILL RESULT. SEDIMENT BARRIERS SHALL BE INSTALLED DOWN-GRADIENT OF ALL SOIL STOCKPILES AND STORMWATER SHALL BE PREVENTED FROM RUNNING ONTO ALL STOCKPILES. IF A STOCKPILE IS NECESSARY, THE SIDE SLOPES OF THE TOPSOIL STOCKPILE WILL NOT EXCEED 2:1. TOPSOIL STOCKPILES WILL BE TEMPORARILY SEEDED WITH AROOSTOOK RYE, ANNUAL OR PERENNIAL RYE GRASS WITHIN 7 DAYS OF FORMATION, OR TEMPORARILY MULCHED IF SEEDING CANNOT BE DONE WITHIN THE RECOMMENDED SEEDING DATES.

6. TEMPORARY DIVERSION BERMS AND DRAINAGE SWALES SHALL BE CONSTRUCTED AS NECESSARY.

7. TEMPORARY STABILIZATION SHALL BE CONDUCTED WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOILS. PRIOR TO ANY RAIN EVENT, AND PRIOR TO ANY WORK SHUT DOWN LASTING MORE THAN ONE DAY. TEMPORARY STABILIZATION INCLUDES SEED, MULCH, OR OTHER NON-ERODABLE COVER.

8. TEMPORARY SEEDING SPECIFICATIONS: WHERE SEEDBED HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME, AND SEED. APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND 10-10-10 (N-P2O5-K2O) FERTILIZER AT A RATE OF 600 LBS PER ACRE (13.8 LB. PER 1,000 SQUARE FEET). UNIFORMLY APPLY SEED AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY.

RECOMMENDED TEMPORARY SEEDING DATES AND APPLICATION RATES ARE AS FOLLOWS:

AROOSTOOK RYE:
RECOMMENDED SEEDING DATES: 8/15 -10/1
APPLICATION RATE: 112 LBS/ACRE

ANNUAL RYE GRASS:
RECOMMENDED SEEDING DATES: 4/1 - 7/1
APPLICATION RATE: 40 LBS/ACRE

PERENNIAL RYE GRASS:
RECOMMENDED SEEDING DATES: 8/15 - 9/15
APPLICATION RATE: 40 LBS/ACRE

9. PERMANENT SEEDING SPECIFICATION. IF A LANDSCAPE PLAN HAS BEEN PREPARED FOR THE PROJECT, SOIL PREPARATION AND SEED SPECIFICATIONS OF THAT PLAN SHALL SUPERSEDE THESE GENERAL PERMANENT SEEDING REQUIREMENTS. IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND JUNE 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEEDED WITH AROOSTOOK RYE MULCHED AT RATES PREVIOUSLY SPECIFIED. SEE WINTER CONDITIONS NOTES FOR SEEDING STABILIZATION AFTER NOVEMBER 1.

A. APPLY TOPSOIL TO A MINIMUM DEPTH OF 4 INCHES. MIX TOPSOIL WITH THE SUBSOIL TO A MINIMUM DEPTH OF 6 INCHES.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND GRANULAR, COMMERCIAL-GRADE, 10-10-10 (N-P2O5-K2O) FERTILIZER AT A RATE OF 800 LBS PER ACRE (18.4 LBS PER 1,000 SQUARE FEET).

C. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY.

D. THE SEED MIXTURE FOR LAWN AND FILTRATION BASIN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:

30% CREEPING RED FESCUE
50% KENTUCKY BLUEGRASS
20% ITALIAN/PERENNIAL RYE GRASS

NOTE: SEED MIXTURE SHALL CONSIST OF AT LEAST TWO VARIETIES OF EACH TYPE OF GRASS. WHEN USED IN A FILTER BASIN, STORMWATER SHALL NOT BE DIRECTED TO THE BASIN UNTIL THE GRASS IS ESTABLISHED.

10. MULCH ALL AREAS SEEDED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE.

11. DITCH LININGS, STONE CHECK DAMS, AND RIP RAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF CULVERT.

12. RIP RAP REQUIRED AT CULVERTS AND STORM DRAIN INLETS AND OUTLETS SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE.

13. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 15%, IN THE BASE OF DITCHES NOT OTHERWISE PROTECTED, AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (E.G. WETLANDS AND WATER BODIES). EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

14. TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

15. TEMPORARY EROSION CONTROL MIX BERM SHALL BE REMOVED BY SPREADING MATERIAL IN AREAS OF THE SITE NOT SUBJECT TO EROSION.

C. WINTER CONDITIONS

1. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1ST THROUGH APRIL 15TH. IF AREAS WITHIN THE CONSTRUCTION ACTIVITY ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15TH, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.

2. SILT FENCE: IN LIEU OF PROVIDING THE 4" X 4" TRENCH, FOR FROZEN GROUND, STONY SOIL, THE PRESENCE OF LARGE ROOTS, OR OTHER PROHIBITIVE CONDITIONS, THE BOTTOM 8" TO 12" OF THE FABRIC MAY BE LAID ON EXISTING GRADE AND BACK FILLED WITH STONE ANCHORING MATERIAL, AS SHOWN ON THE DRAWINGS.

3. AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

4. HAY MULCH SHALL BE APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.

5. AFTER NOVEMBER 1ST OR THE FIRST KILLING FROST FOR THE REGION AND BEFORE SNOW FALL ALL EXPOSED AND DISTURBED AREAS NOT TO UNDERGO FURTHER DISTURBANCE ARE TO HAVE DORMANT SEEDING. THE DORMANT SEEDING METHOD: PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED PERMANENT SEED MIXTURE AT DOUBLE THE REGULAR SEEDING RATE, AND MULCH AND ANCHOR. DORMANT SEEDINGS NEED TO BE ANCHORED EXTREMELY WELL ON SLOPES, DITCH BASES AND AREAS OF CONCENTRATED FLOWS. DORMANT SEEDING REQUIRES INSPECTION AND RESEEDING AS NEEDED IN THE SPRING. ALL AREAS WHERE COVER IS INADEQUATE MUST BE IMMEDIATELY RESEEDED AND MULCHED AS SOON AS POSSIBLE.

6. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1ST, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

7. MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

D. HOUSEKEEPING

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON-SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORM WATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS, ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.

4. DEBRIS AND OTHER MATERIAL. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER, MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. COMPLY WITH THE REQUIREMENTS OF SECTION 01570, CONSTRUCTION WASTE MANAGEMENT, FOR REMOVAL AND DISPOSAL OF CONSTRUCTION DEBRIS AND WASTE.

6. TRENCH OR FOUNDATION DE-WATERING. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED AREAS THAT ARE SPECIFICALLY DESIGNATED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFER DAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.

7. STREET SWEEPING.

8. PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

A. DISCHARGES FROM FIRE-FIGHTING ACTIVITY,
B. FIRE HYDRANT FLUSHINGS,
C. DUST CONTROL RUNOFF,
D. ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVLOVE DETERGENTS,
E. PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURED, UNLESS ALL SPILLED MATERIAL HAS BEEN REMOVED) IF DETERGENTS ARE NOT USED,
F. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE,
G. UNCONTAMINATED GROUNDWATER OR SPRING WATER,
H. FOUNDATION OF FOOTING DRAIN WATER WHERE FLOWS ARE NOT CONTAMINATED,
I. UNCONTAMINATED EXCAVATION DEWATERING,
J. POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS,
K. LANDSCAPE IRRIGATION.

9. NO DISCHARGE FROM THE FOLLOWING IS ALLOWED. UNAUTHORIZED NON-STORMWATER DISCHARGES ARE:

A. WASTEWATER FROM WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, OR OTHER CONSTRUCTION MATERIALS,
B. FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE,
C. SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING,
D. TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

E. INSPECTION AND MAINTENANCE

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORM WATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETION OF PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORM WATER CONTROLS, INCLUDING THE STANDARDS IN ALL DEP AND MUNICIPAL COMPANION DOCUMENTS, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE MODIFIED OF IF ADDITIONAL BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

2. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME AND QUALIFICATIONS OF THE PERSON PERFORMING THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE: BMPS THAT NEED TO BE MAINTAINED, LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF THE INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS MUST ALSO BE INDICATED IN THE LOG AND DATED, INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

3. INSPECTIONS DURING CONSTRUCTION SHOULD BE PERFORMED AT LEAST ONCE PER WEEK AND AFTER EVERY RAINFALL EVENT.

F. CONSTRUCTION SCHEDULE & SEQUENCE

1. INSTALL TEMPORARY EROSION CONTROL MEASURES IN THE VICINITY OF THE CONSTRUCTION AREA, INCLUDING A STABILIZED CONSTRUCTION ENTRANCE AT LOCATIONS DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, SEDIMENT BARRIERS, AND SILT FENCE. NOTE: TEMPORARY EROSION CONTROL MEASURES FOR WINTER CONDITIONS SHALL BE IMPLEMENTED.

2. GRUB THE SITE, STOCKPILE REUSABLE MATERIAL, AND DISPOSE OF UNUSABLE AND/OR SURPLUS MATERIAL. INSTALL UNDERGROUND UTILITIES AND BUILD DRIVE AND PARKING TO GRADE.

3. EXCAVATE FOUNDATIONS.

4. CONSTRUCT BUILDING.

5. CONSTRUCT OTHER SITE IMPROVEMENTS, INCLUDING PAVEMENT.

6. PLACE LOAM, SEED, AND MULCH.

7. FOLLOWING PERMANENT STABILIZATION OF THE SITE, REMOVE TEMPORARY EROSION CONTROL MEASURES.

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20
CURRENT ISSUE STATUS:

STATE OF MAINE
JEFFREY T. KROLL
PCETC
No. 6418
LICENSED PROFESSIONAL ENGINEER

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

EROSION & SEDIMENT CONTROL NOTES

SHEET TITLE:

0 1/2" 1" 2" 3"

SCALE:

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	CE001-19206	SHEET No.	CE001

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION

SULLIVAN RECREATION AND FITNESS COMPLEX
FFE 44.74

OAKHURST DAIRY

FUTURE PARKING GARAGE

SOUTHWORTH PLANETARIUM

EXISTING STEAM MANHOLE HP3

EXISTING STEAM LINE ST #6

STEAM MANHOLE PR HP 20 CU501

STEAM TRENCH ST #2 CU501

STEAM MANHOLE PR HP 30 CU501

STEAM TRENCH ST #3 CU501

EXISTING STEAM MANHOLE HP5

STEAM TRENCH ST #4 CU501

EXISTING STEAM LINE ST #7

CENTRAL HEAT PLANT
FFE 31.18

DURHAM ST.

EXISTING STEAM MANHOLE HP4

STUDENT SUCCESS CENTER
FFE 37.00

RESIDENCE HALL
FFE 25.66

EXISTING STEAM LINE ST #1

STEAM MANHOLE PR HP 10 CU501

LUTHER BONNEY HALL

MASTERTON HALL

RESIDENCE HALL
FFE 25.66

BEDFORD ST.

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

JEFFREY [illegible] ACETO
No. 6418
LICENSED PROFESSIONAL ENGINEER
STATE OF MAINE

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

STEAM LINE PLAN

SHEET TITLE:

0 15' 30' 60' 90'

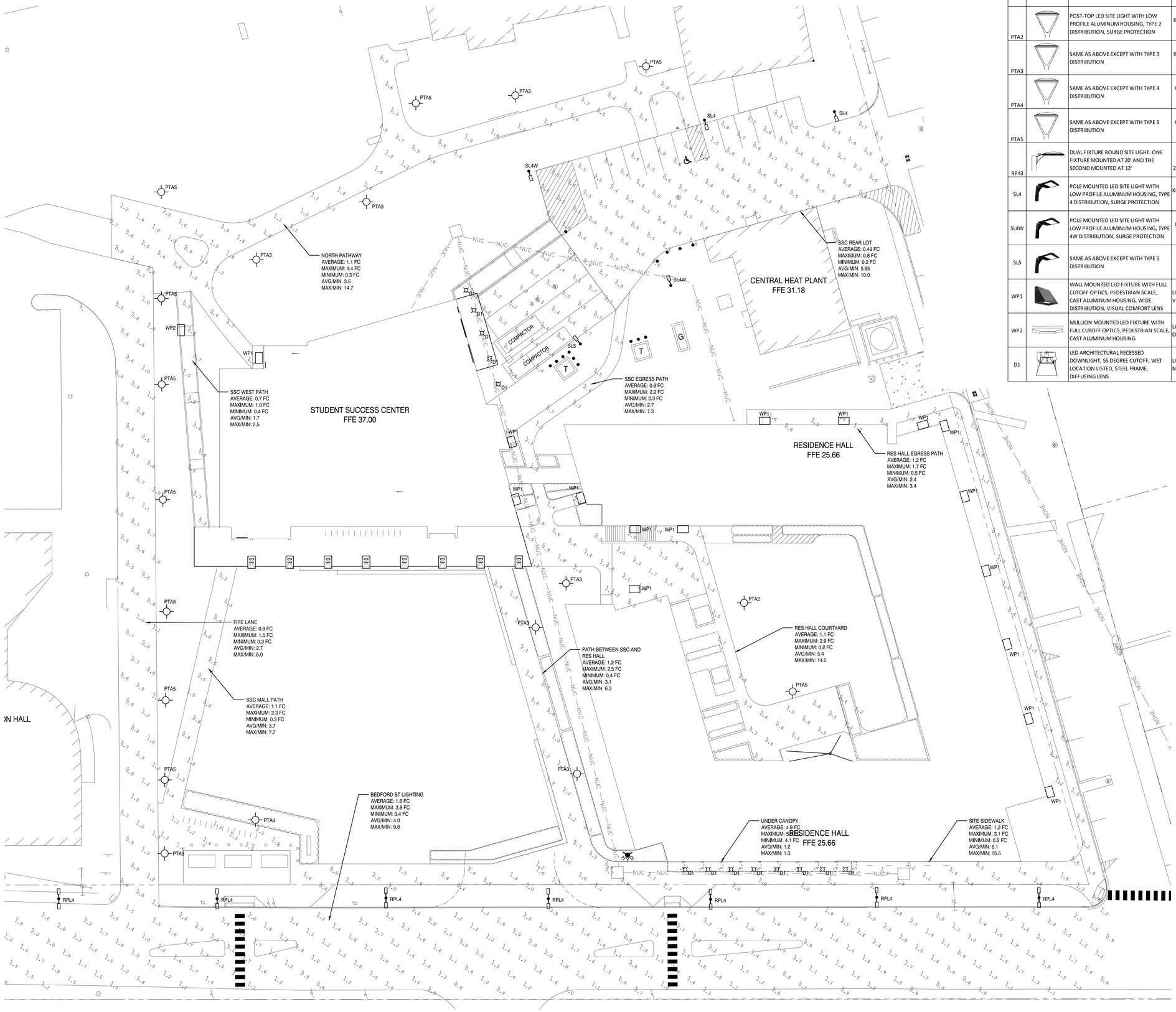
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		CU102
DRAWN BY:	WSM		
SMRT FILE:	CU102-19206	SHEET No.	

©COPYRIGHT 2020 SMRT INC.

NOT FOR CONSTRUCTION

24x36



SITE & LANDSCAPE LIGHTING SCHEDULE

LABEL	IMAGE	DESCRIPTION	MANUFACTURER & MODEL NUMBER	QUANTITY	BUG RATING	FULL CUTOFF?	WATTAGE	OUTPUT	CONTROL METHOD	MOUNTING
PTA2		POST-TOP LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 2 DISTRIBUTION, SURGE PROTECTION	KIM LIGHTING UR20-24L-25-3K7-2-PT-UNV-BLT-SF	1	B1-U0-G1	YES	25 W	3,000 LUMENS	TIME CLOCK	12' TALL ROUND 4" OD ALUMINUM POLE
PTA3		SAME AS ABOVE EXCEPT WITH TYPE 3 DISTRIBUTION	KIM LIGHTING UR20-24L-25-3K7-3-PT-UNV-BLT-SF	7	B1-U0-G1	YES	25 W	3,000 LUMENS	TIME CLOCK	ROUND 12' X 4" ALUMINUM POLE
PTA4		SAME AS ABOVE EXCEPT WITH TYPE 4 DISTRIBUTION	KIM LIGHTING UR20-24L-25-3K7-4W-PT-UNV-BLT-SF	1	B1-U0-G2	YES	25 W	3,000 LUMENS	TIME CLOCK	ROUND 12' X 4" ALUMINUM POLE
PTA5		SAME AS ABOVE EXCEPT WITH TYPE 5 DISTRIBUTION	KIM LIGHTING UR20-24L-25-3K7-5W-PT-UNV-BLT-WSP-40F-1-SF	10	B2-U0-G1	YES	25 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE
RP43		DUAL FIXTURE ROUND SITE LIGHT. ONE FIXTURE MOUNTED AT 20' AND THE SECOND MOUNTED AT 12'	KIM LIGHTING 12': UR20-24L-25-3K7-3-UNV-BLT-SF 20': UR20-56L-75-3K7-4W-UNV-BLT-SF	7	B2-U0-G1 B1-U0-G2	YES	100 W		TIME CLOCK & MOTION SENSOR	ROUND 12' X 4" ALUMINUM POLE
SL4		POLE MOUNTED LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 4 DISTRIBUTION, SURGE PROTECTION	KIM LIGHTING ALT1-28L-20-3K7-4-UNV-A34-BLT-NXSP30F-SF	2	B1-U0-G1	YES	20 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE
SL4W		POLE MOUNTED LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 4W DISTRIBUTION, SURGE PROTECTION	KIM LIGHTING ALT1-28L-20-3K7-4W-UNV-A34-BLT-NXSP30F-SF	2	B1-U0-G1	YES	20 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE
SL5		SAME AS ABOVE EXCEPT WITH TYPE 5 DISTRIBUTION	KIM LIGHTING ALT1-28L-20-3K7-5R-UNV-A34-BLT-NXSP30F-SF	1	B2-U0-G2	YES	20 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE
WP1		WALL MOUNTED LED FIXTURE WITH FULL CUTOFF OPTICS, PEDESTRIAN SCALE, CAST ALUMINUM HOUSING, WIDE DISTRIBUTION, VISUAL COMFORT LENS	LITHONIA WDGE2-LED-P1-30K-80CRI-VW-MVOLT-PIRH-DBLBXD	15	B0-U0-G0	YES	10 W	1,200 LUMENS	TIME CLOCK & MOTION SENSOR	SURFACE, 12' AFG
WP2		MULLION MOUNTED LED FIXTURE WITH FULL CUTOFF OPTICS, PEDESTRIAN SCALE, CAST ALUMINUM HOUSING	LUMINAIRE LED BLD 36-15W 3000K BLK OCC	1	B0-U0-G0	YES	15 W	1,500 LUMENS	TIME CLOCK & MOTION SENSOR	SURFACE, 8' AFG
D1		LED ARCHITECTURAL RECESSED DOWNLIGHT, 55 DEGREE CUTOFF, WET LOCATION LISTED, STEEL FRAME, DIFFUSING LENS	LITHONIA LDN4-30-05-L04AR-LSS-MVOLT-EZ1	13	NA	YES	6 W	500 LUMENS	TIME CLOCK	RECESSED

REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

WILLIAM R. WARREN No. 7560 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE
7/24/20

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PHOTOMETRIC PLAN

SHEET TITLE:

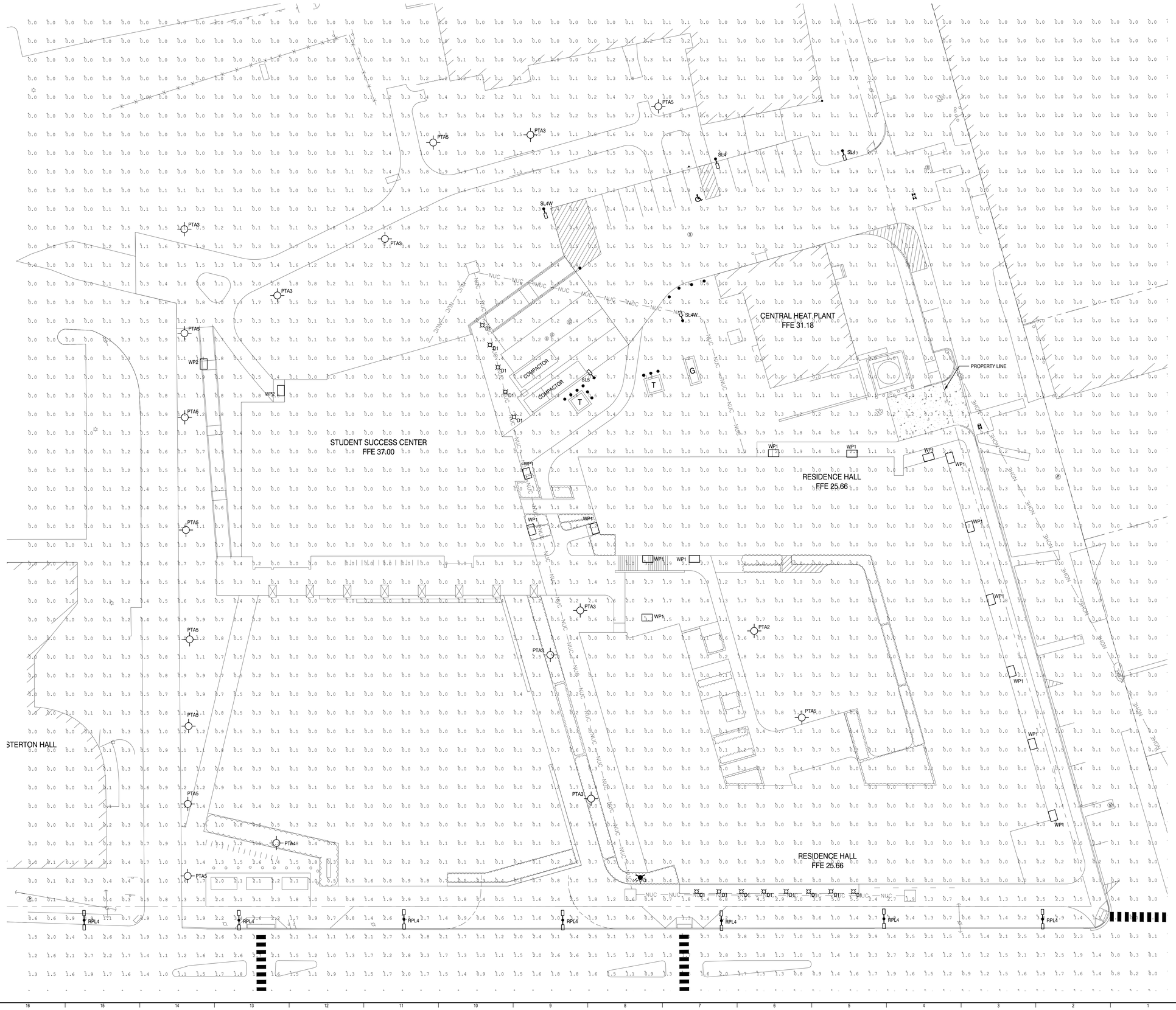
0 10' 20' 40' 80'

SCALE: 1" = 20'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	WRH		
JOB CAPTAIN:	SDL		
DRAWN BY:	RBB		
SMRT FILE:	ES103-19206	SHEET No.	ES103

©Copyright 2020 SMRT Inc

NOT FOR CONSTRUCTION



REV	DESCRIPTION	DATE
1	REISSUED FOR PERMITTING	7-24-20
0	ISSUED FOR SD AND PERMITTING	3-6-20

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH

TRUE NORTH:

STATE OF MAINE
WILLIAM R. BROWN
No. 7680
LICENSED
PROFESSIONAL ENGINEER
7/24/20

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PHOTOMETRIC PLAN

SHEET TITLE:

0 10' 20' 40' 30'

SCALE: 1" = 20'

PROJECT MANAGER:	KD
A/E OF RECORD:	WRH
JOB CAPTAIN:	SDL
DRAWN BY:	RBB
SMRT FILE:	ES104-19206

PROJECT NO: 19206

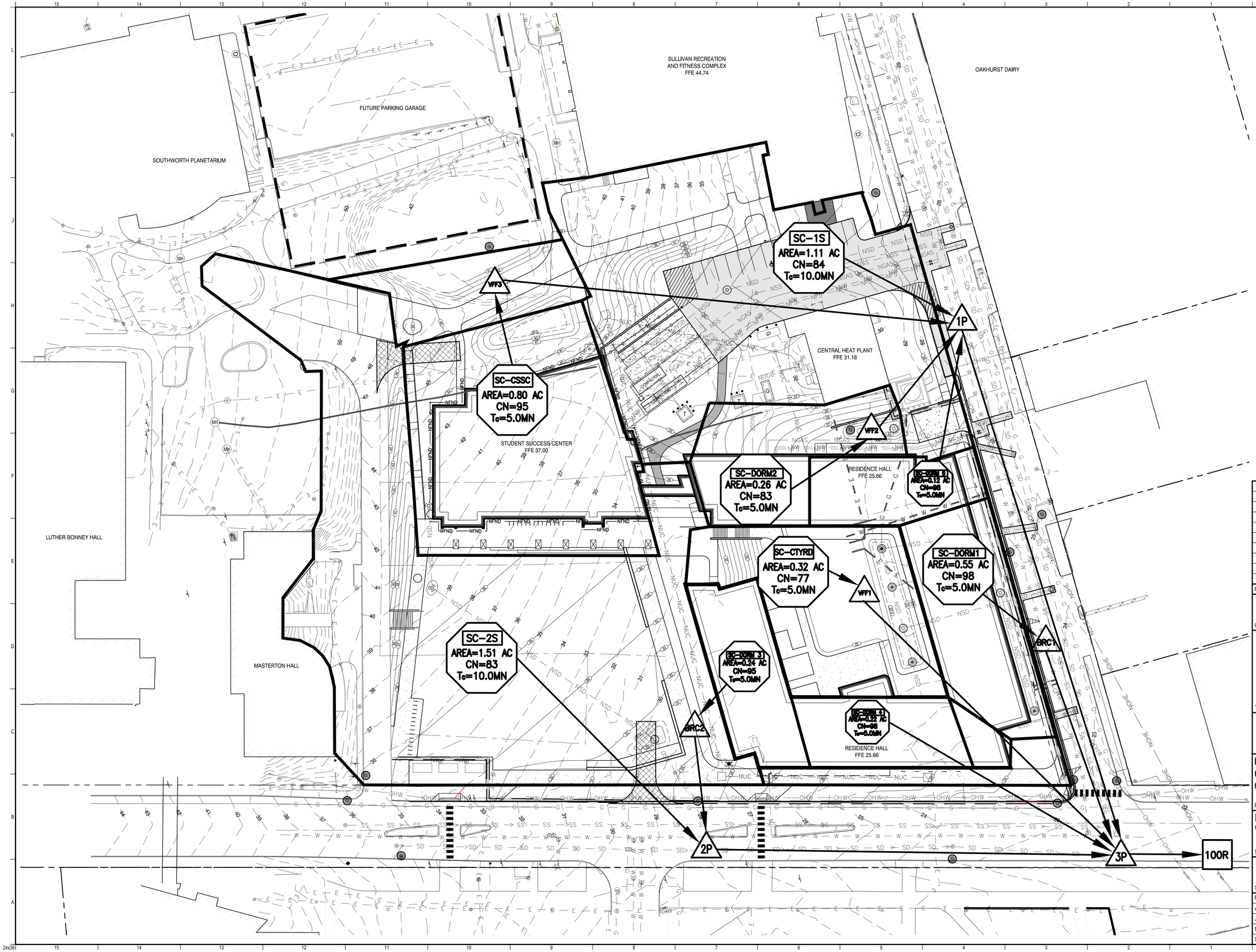
ES104

SHEET No.

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

30x42



REV	DESCRIPTION	DATE

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

POST-DEVELOPMENT WATERSHED PLAN

SHEET TITLE:

0 15' 30' 60' 90'

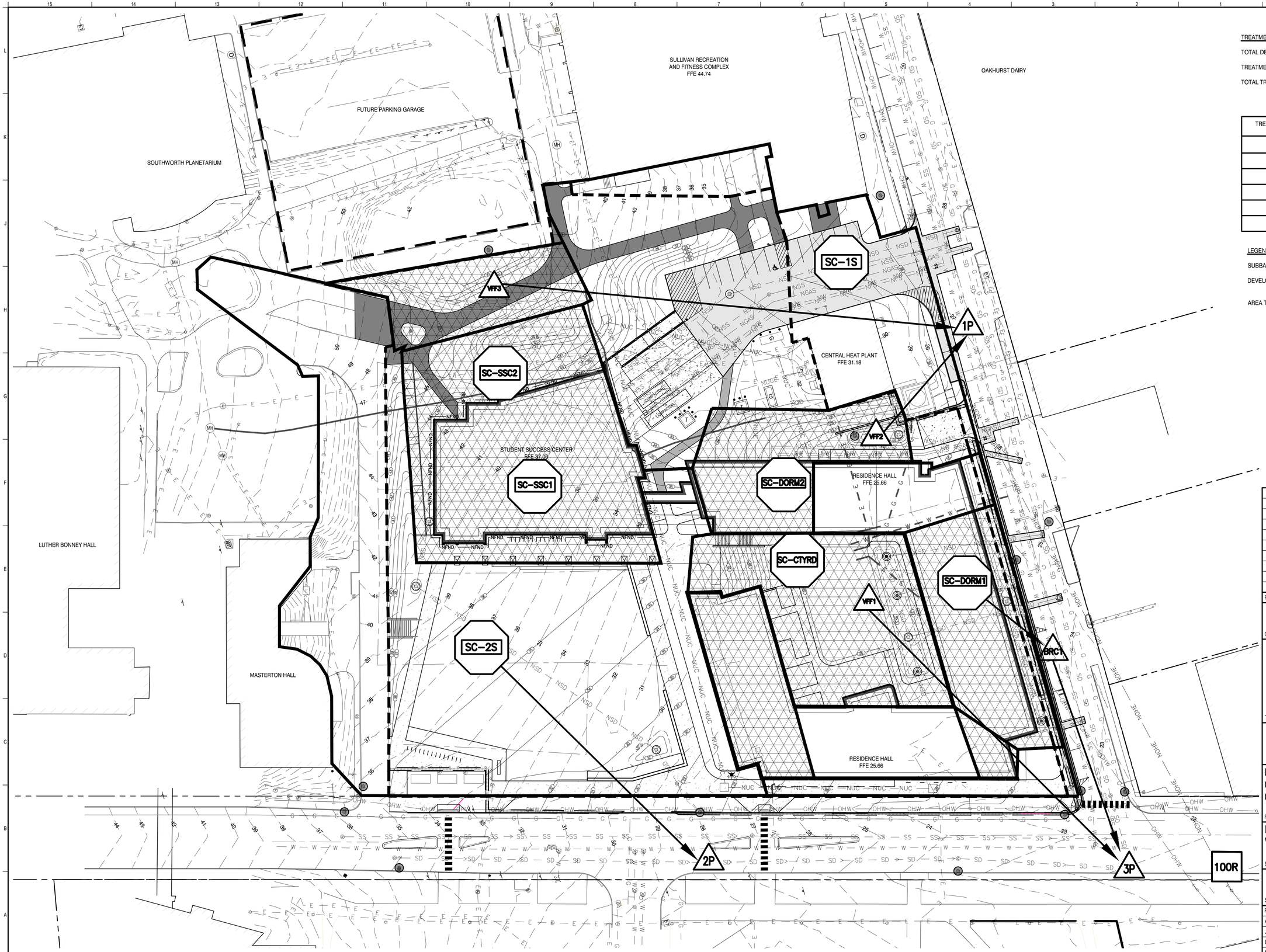
SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		C-121
DRAWN BY:	WSM		
SMRT FILE:	C-121-19206	SHEET No.	

©COPYRIGHT 2020 SMRTINC

NOT FOR CONSTRUCTION

24x36



TREATMENT SUMMARY:

TOTAL DEVELOPED AREA =157, 972 SF

TREATMENT REQUIRMENT (50% DEVELOPED AREA) = 78,986 SF

TOTAL TREATMENT PROVIDED = 80,594 SF

TREATMENT BMP	DEVELOPED AREA TREATED (SF)
VFF 1	14,050
VFF 2	11,496
VFF 3	34,500
BRC 1	10,548
BRC 2	10,000
TOTAL	**80,594 SF**

LEGEND

SUBBASIN BOUNDARY

DEVELOPED AREA BOUNDARY

AREA TREATED BY BMP

REV	DESCRIPTION	DATE

REISSUED FOR PERMITTING
7-24-20

CURRENT ISSUE STATUS:

TRUE NORTH:

SMRT Architects and Engineers
75 Washington Avenue, Suite 3A
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

POST-DEVELOPMENT
WATER QUALITY PLAN

SHEET TITLE:

0 15' 30' 60' 90'

SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	C-121-19206	SHEET No.	C-122

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

24x36

13. CONSTRUCTION MANAGEMENT PLAN

A Construction Management Plan has been prepared by PC Construction for the proposed development. The Contractor will be required to provide adequate safety fencing and signage directing pedestrians safely around the construction area. The Construction Management Plan is attached to this Section for your reference.

13.1 Attachments

- Construction Management Plan prepared by PC Construction (Uploaded to the Construction Management Plan folder on Eplan)

Progress plan 06/28/20

1	UPDATED	6/11/20
2	REDUCED SIZE OF STUDENT CENTER	6/12/20
	FENCE & GATE CHANGE AT HEATING PLANT	6/18/20

CONSTRUCTION

TRUE NORTH:

SMRT Architects and Engineers
144 Fore Street/P.O. Box 618
Portland, Maine 04104
1.877.700.7678
www.smrtinc.com

LOGISTICS PLAN

SCALE: 1" = 30'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		CG101
DRAWN BY:	WSM		
SMRT FILE:	CG101-19206	SHEET No.	

© COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

Construction Management Plan
Capstone Development Partners and PC Construction

February 28, 2020

Project: University of Southern Maine Portland Campus- Student Housing & Student Center

A. Construction Management Principles

All aspects of this Construction Management Plan are designed and intended to mitigate or minimize construction related impacts to public ways (including Bedford & Durham Streets), surrounding neighborhood(s), and ongoing operations of USM and other abutters. PC Construction will work collaboratively with Capstone Development Partners, USM, project consultants, subcontractors, and The City of Portland to ensure the most efficient and least disruptive construction project possible This goal will be attained through detailed and consistent planning, coordination, execution and seamless communication with all parties and stakeholders.

B. Development and Review of Construction Management Plan

PC Construction will refine and update the Construction Management Plan throughout the course of the project as conditions change and in order to optimize the logistical and safety related measures being employed in the interest of public safety. The overriding goal is to eliminate or minimize adverse impacts to the construction site, surrounding areas and public ways by protecting the public, local residents, construction personnel and property, while simultaneously ensuring pedestrian, university, and other abutter activities are able to continue unabated and in a safe manner. Please refer to the attached Construction Management Site Logistics Plan.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, & Permits

Prior to scheduling a preconstruction meeting and the issuance of city required permits, Capstone Development Partners and PC Construction shall meet all requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable include:

Street Opening & Street Occupancy Permit: Construction activity in a public right-of-way is controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapter 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan. Though still under design, the majority of new to existing utility connections to the project are anticipated to be on Durham Street. Temporary lane closures are anticipated during utility tie in work. All temporary directional signage, and traffic control to be utilized during this work. It is also anticipated that sidewalk occupancy will be required for construction purposes adjacent to the new Resident Hall on Durham and Bedford Streets. All required signage to be provided. The public bus stop located on the southeast corner of the construction site on Bedford St is anticipated to be maintained through construction and accessed from the existing ADA compliant crosswalk on Bedford St.

Blasting: Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual. Based on preliminary Geotech findings, subsurface rock maybe encountered on the western side of the project. Mechanical means in removal of rock at this area is anticipated in lieu of blasting.

Building Code: The project will employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

Capstone Development Partners and PC Construction will implement a continuous communication strategy and program through preconstruction and the construction phases of the project. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. Capstone and PC will work closely with the University, adjacent abutters, businesses, nearby construction sites, and will keep all parties regularly informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. PC will also prominently display appropriate signage indicating construction entrances and exits, pedestrian access around the site, and signage directing visitors to construction field office. Site signage to also include PC and Capstone 24hr/7days/wk. contact information. All temporary signage to be modified appropriately as conditions may change and will be removed at the conclusion of the project.

E. Construction Schedule

Construction is anticipated to commence mid-summer 2020 and be substantially complete by August 2022 allowing student occupancy of the residence hall and student center for fall semester 2022. Detailed construction schedule currently under development.

Work hours to follow City of Portland Sections 17-18, Construction Activities for Building Permit, and Section 25-129, Noise, dust, and debris. Work hours will generally be restricted to 7:00am – 7:00pm, Monday thru Friday. In the event of Saturday work, hours to be limited to 8:00am – 4:00pm. Any further off hour work will be coordinated directly with the City.

Material deliveries will comply with normal work hours. This project is anticipated to utilize LEAN “just in time” delivery techniques with the intent that materials delivered to the site are promptly installed/put in place. Temporary storage location for materials is identified on PC’s Site Logistics Plan document.

F. Security & Public Safety

As depicted in the Site Logistics Plan, the entire project site including the sidewalks on Bedford and Durham Street on the project side of those streets will be enclosed by temporary chain link construction fencing. Primary construction site access to be swinging gate entrance from Bedford Street with secondary gated entrance from entrance roadway leading to the “P1” parking lot located to the northwest of Masterton Hall. Gates will be secured during non-working hours and equipped with “Knox” boxes as required by the city.

Project work activities will be conducted in accordance with PC and OSHA regulations and will further comply with all City of Portland and/or State of Maine safety related regulations. A comprehensive Fire Safety/Fire Dept Access and Fire Safety Plan will be developed, reviewed with the City of Portland prior to implementation as well as a project incident response process to be followed in the event of emergencies.

In the interest of public safety and other USM and City of Portland requirements, appropriate informational and directional signage with other precautions as required will be provided directing pedestrians around the immediate areas of the enclosed construction site.

G. Construction Permitting and Traffic Control Plans

Construction Activity in Public Streets: In order to minimize impacts, disruption, and provide safe and efficient passage, PC will

implement best practices traffic control in compliance with all City of Portland requirements during the duration of the project. This includes signage, measures to mitigate idling construction related delivery traffic, construction service vehicles, traffic flaggers, temporary traffic flow modifications, signage & barriers at temporary partial street closings, and any other measures required to control work taking place in public ways. In instances where utility connection excavations may need to be left open overnight, measures including barriers, traffic/pedestrian signage, and other mandated requirements will be implemented.

Sewer and Stormwater: Sewer and stormwater water system connections (in addition to water and electrical connection) will be required. Most tie in connections to existing services are anticipated to occur on Durham Street.

Traffic Control Plans: Construction activities that impacts the existing public street system will be controlled to protect the safety of the construction workers, pedestrians, and the travelling public. In addition to utility connections, temporary lane closures of Durham and Bedford Streets are anticipated during period of construction of building elevations facing those streets. Traffic control measures are described above and will be further articulated and elaborated upon for specific relevant activities and as part of street opening or street occupancy/sidewalk occupancy permitting.

H. Site Management and Controls

PC will implement and manage continuous program of containing soils onsite, public street cleaning and onsite dust control. Program to comply with University and City of Portland requirements and will include tracking pads at construction exits, water trucks to control dust, street sweeping equipment and other measures are required.

Trash dumpsters will be utilized onsite for regular removal of all construction related trash & debris. The site and building areas under construction will be kept orderly and as clean as possible throughout the construction period.

Noise and vibration will be maintained at minimal levels and will follow all University and City of Portland requirements.

Snow plowing and surface treatment of the project site within the limits of construction will be the responsibility of PC Construction.

I. Erosion Control and Preservation of Trees

Prior to commencement of construction activities, erosion and sedimentation controls as contained in the approved erosion and sedimentation control plan shall be installed. These controls shall be inspected regularly and maintained on a consistent basis.

All tree and other landscaping preservations measures shall be as depicted in the landscaping design documents. Any onsite material storage will be away from any existing to remain landscaping plantings.

J. Construction Staging Area

Refer to Site Logistics Plan for anticipated locations of temporary site office and/or storage trailers and material staging and storage areas. Dumpster locations to be dependent on optimal locations based on activities. Truck wheel washing stations to be located at entry/exit points to the site.
Deliveries: Material deliveries will be carefully planned to not encumber the site or adjacent public way with material delivery vehicles. All efforts will be made to avoid queueing of delivery vehicles on public ways. In the instance of consistent deliveries of large quantities construction product, offsite remote marshalling area will be utilized for trucking. Truck deliveries will enter the site at the Bedford Street construction gate, or the secondary gate located off the entry drive to Masterson Hall parking log (P1).

Truck Routes: It is anticipated truck deliveries will arrive to the USM campus from the Forest St exit at route 295 to the east or Forest Ave to Bedford St from the west.

K. Parking During Construction

Construction Parking: On site construction parking will be dedicated to primarily delivery and contractor service vehicles with minimal parking onsite availability for construction workers. PC Construction is in process of sourcing additional temporary construction personnel parking offsite and in proximity of the project site.

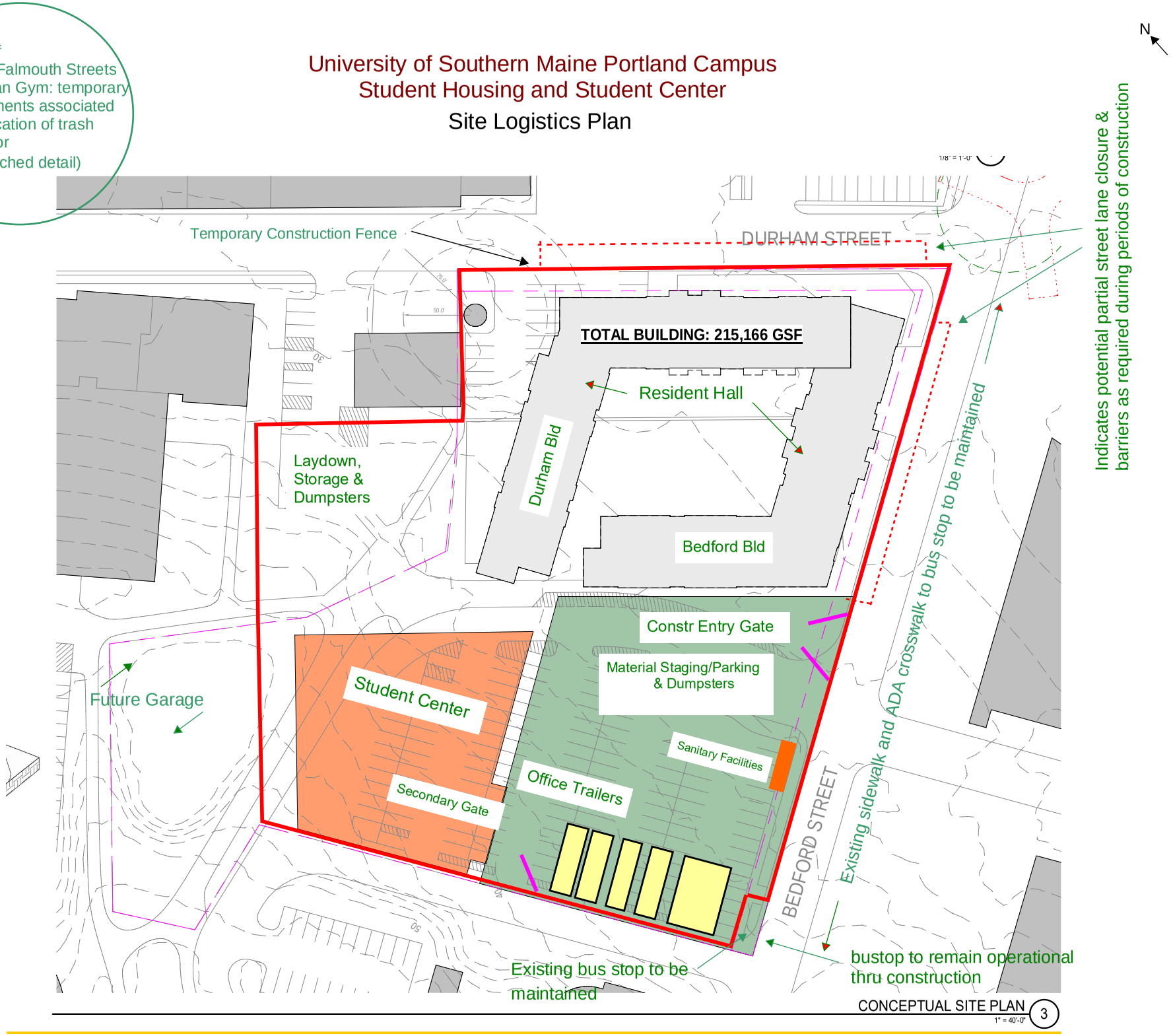
L. Dewatering Plans

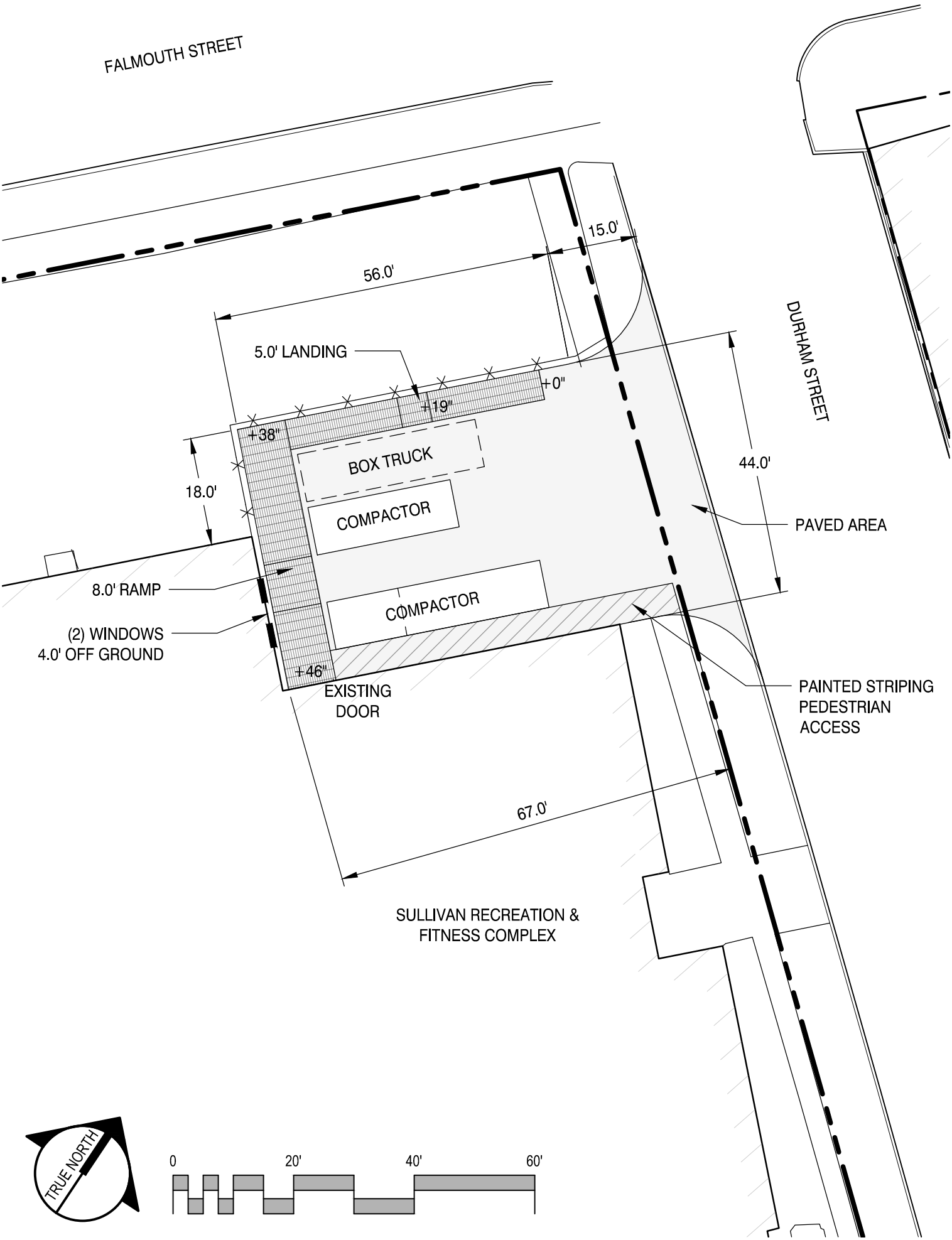
PC will work with the city to develop a basic dewatering plan and inspection program as necessary, including addressing all sedimentation controls that may be required. Due to the nature of anticipated ground water levels as described in the preliminary Geotechnical Report dewatering is expected to be confined to pumping of rainwater and sump pumping techniques at utility or other deep excavations.

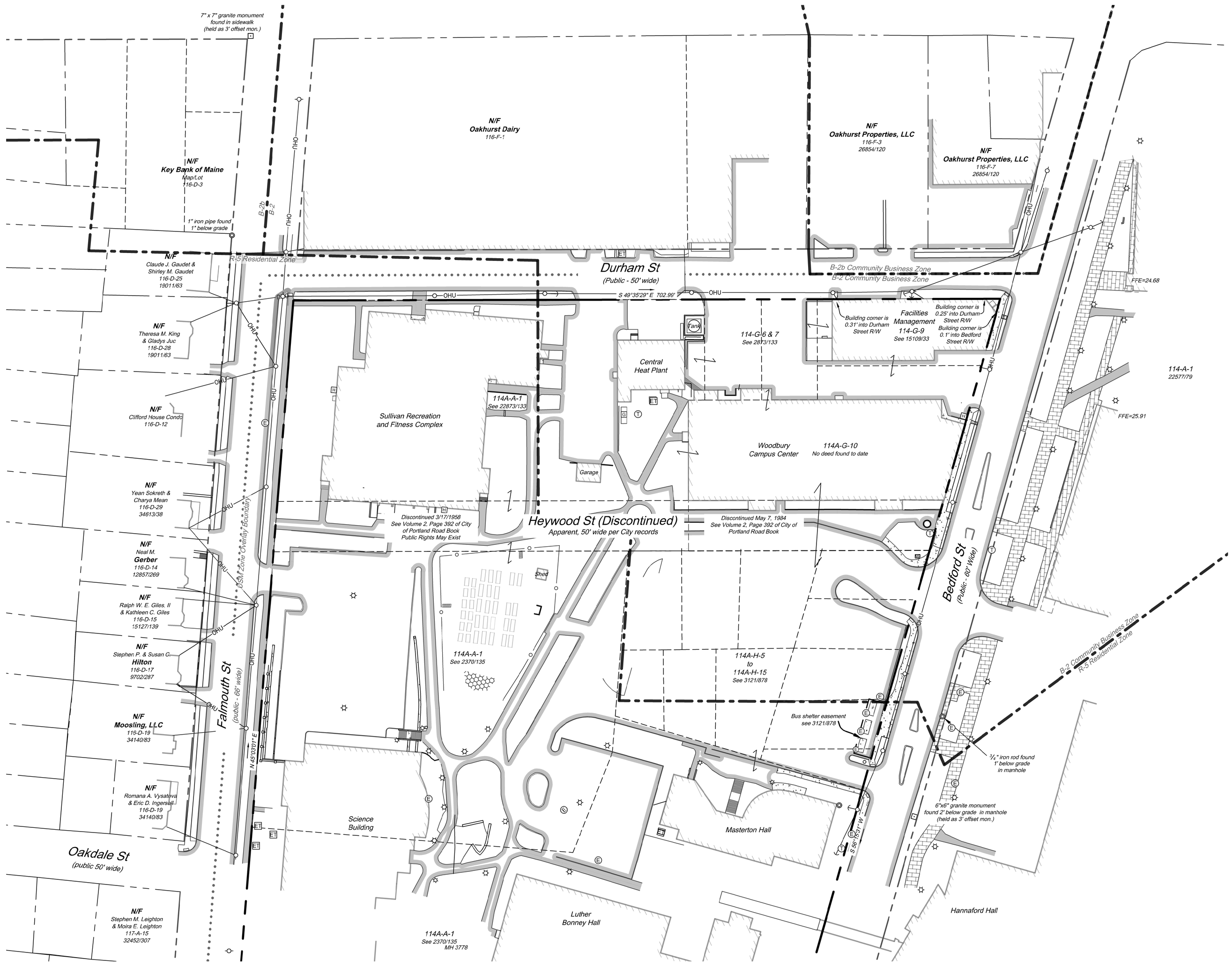
M. Special Measures as Necessary

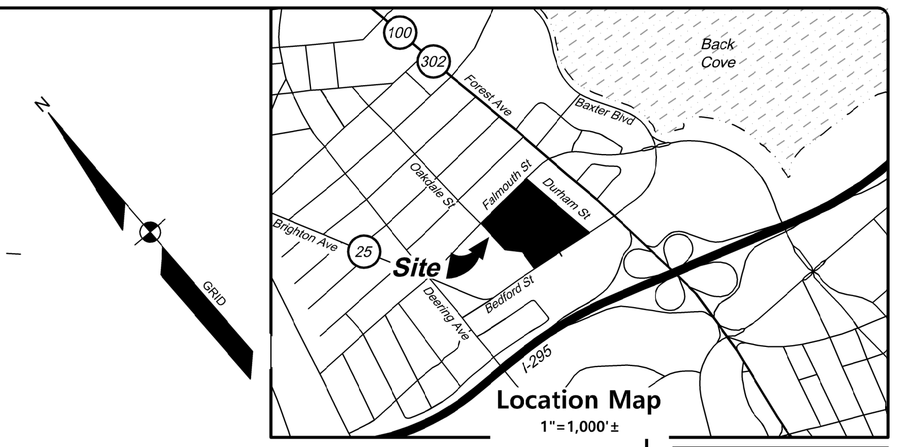
In consideration of the project's location on the USM campus, PC will provide pre construction survey and documentation of existing conditions at surrounding abutters property and will develop appropriate plans in conjunction with the City as necessary to mitigate any potential impacts to surrounding abutters property, buildings or structure.

University of Southern Maine Portland Campus
Student Housing and Student Center
Site Logistics Plan




FALMOUTH STREET
15.0'
56.0'
DURHAM STREET
5.0' LANDING
+0"
+19"
+38"
BOX TRUCK
COMPACTOR
18.0'
44.0'
PAVED AREA
8.0' RAMP
COMPACTOR
(2) WINDOWS
4.0' OFF GROUND
+46"
EXISTING
DOOR
PAINTED STRIPING
PEDESTRIAN
ACCESS
67.0'
SULLIVAN RECREATION &
FITNESS COMPLEX
TRUE NORTH
0
20'
40'
60'





General Notes:

1. The purpose of this plan is show the results of a boundary retracement survey performed by SurveyWorks, Inc. in January 2020. This plan is for the sole use of the University of Southern Maine for the planning and design of a student success center and residence hall only and is not to be used by any other entity or persons. This is Sheet 1 of 3. This sheet only depicts information that may be relevant to a boundary survey. For more information regarding the existing conditions, topography and/or utilities within the project area, refer to Sheets 2 & 3.
2. All Book and Page numbers refer to the Cumberland County Registry of Deeds, unless otherwise noted.
3. The record owner of the subject parcel is the University of Maine System by various deeds listed hereon.
4. The subject parcel is shown on the City of Portland Parcel Viewer Maine Parcel Viewer as Parcel ID's 114A-A-001, 114A-G-006, 114A-G-007, 114A-G-009, 114A-G-010, & 114A-H-005 to114A-H-015 and are located in the B-2b Community Business & R-5 Residential Zone, as shown. All of the subject parcels are located in the "USM" Overlay Zone as well.
5. Plan References:
   - A. "Blue Sheets" for Falmouth Street, Bedford Street, Durham Street, Brighton Avenue & Forest Avenue on file at the City of Portland.
   - B. "University of Southern Maine, Portland Campus, Campus Center." Surveyed by Dennis P. Durgin, dated August 1983. Unrecorded.
   - C. "Plan made for Deering Heirs, February 5, 1925," prepared by E.C. Jordan & Co., supplemented November 1937. Unrecorded.
6. Plan orientation is Grid North, Maine State Plane Coordinate System, West Zone 1802-NAD83.
7. Underground utilities are shown based on markings provided by DigSmart at the time of survey. Utilities depicted hereon may not necessarily represent all existing utilities. Owners, contractors, and/or designers need to contac Dig-Safe Systems, Inc. (call 811) and field verify existing utilities prior to digging or breaking ground.

Legend:

Existing

- Property Line/R.O.W.
- Abutter Line/R.O.W.
- Deed/Plan Line/R.O.W.
- Tie Line
- Building Setback Line
- Easement Line
- Buffer Line
- Building
- Building Overhang
- Deck/Steps
- Edge of Pavement
- Edge of Concrete
- Pavement Paint
- Edge of Gravel
- Curb Line
- Chain Link Fence
- Guard Rail
- G — Gas Line
- W — Water Line
- S — Sewer Line
- FM — Force Main
- SD — Storm Drain
- UD — Under Drain
- OHU — Overhead Utilities
- UGU — Underground Utility
- Monument (as noted)
- Light Pole
- Utility Pole
- Guy Wire
- RipRap

STATE OF MAINE, Cumberland County, SS
REGISTRY OF DEEDS

Recieved _____

At ___ h ___ m ___M and recorded in

Plan Book _____, Page _____

Attest _____
Registrar

Surveyor's Statement:

This survey was performed under my direct supervision and to the best of my knowledge and belief, it was done in accordance with Chapter 90, Part 1 (Professional Standards of Practice) and Part 2 (Technical Standards of Practice) of the Maine Board of Licensure for Professional Land Surveyors.

Jimmy C. Courbron, PLS — 02/27/2020 Date

STATE OF MAINE
JIMMY C. COURBRON
No. PLS2532
PROFESSIONAL LAND SURVEYOR

Rev.	Date	Drawn	Checked	Note
02/14/20		DJH	JCC	Issued to Client for Review
02/18/20		DJH	JCC	Added notes at facilities management building
02/27/20		DJH	JCC	Updated utility information

This plan shall not be modified without written permission from SurveyWorks, Inc. Any unauthorized use of this survey shall be at the user's sole risk and without liability to SurveyWorks, Inc.

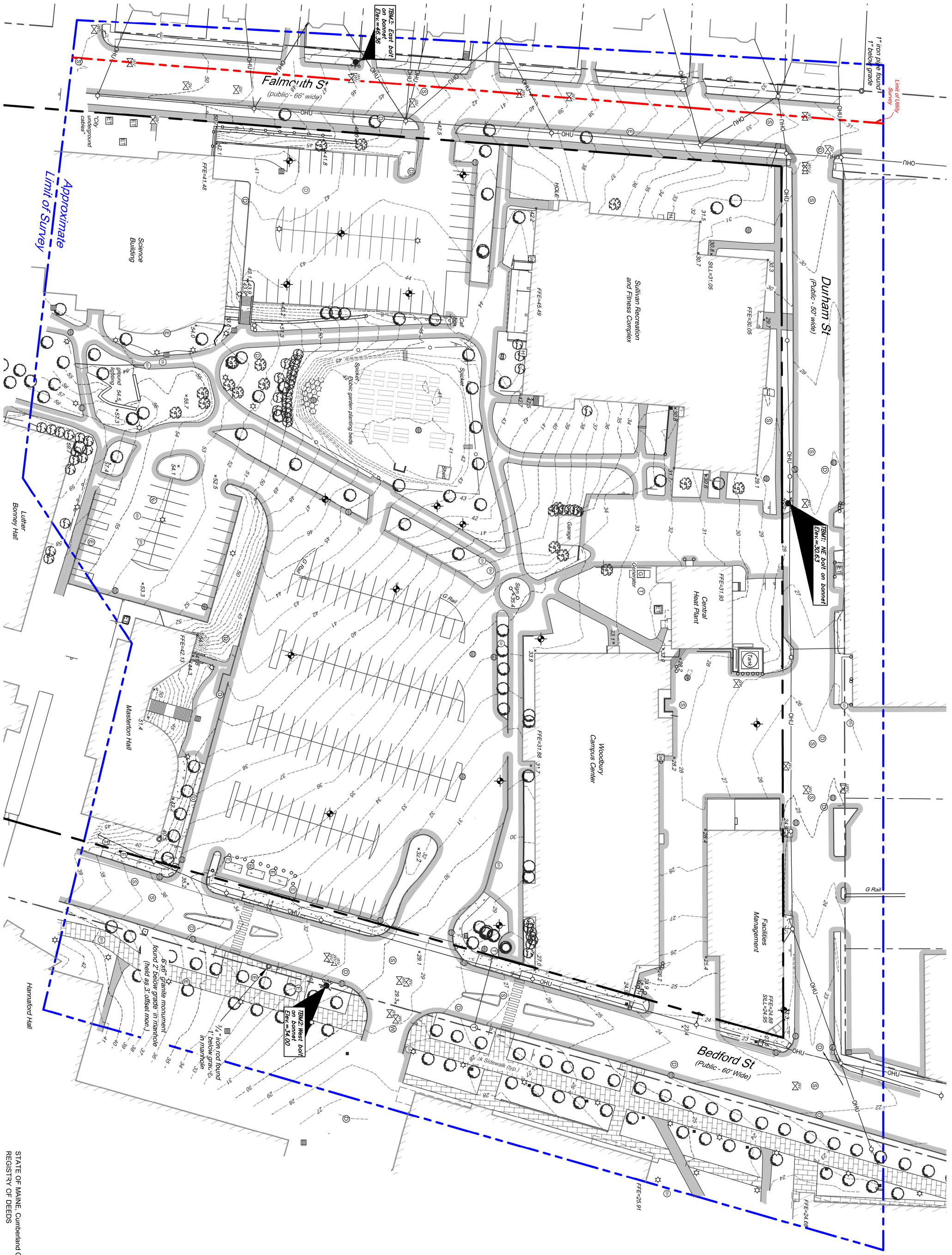
SURVEYWORKS, INC.
SURVEYING & MAPPING SERVICES
T (207) 200-1678
www.surveyworksinc.com
7 Cobblestone Drive, Suite 4 Turner, ME 04282

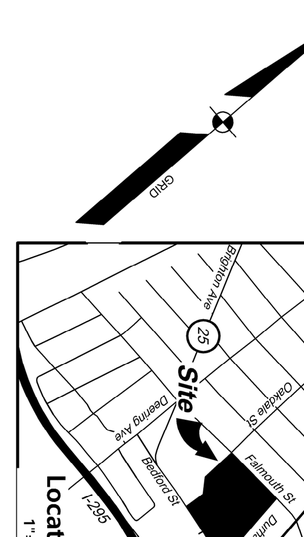
Boundary Retracement Survey Plan
of a portion of
University of Southern Maine Campus
Bedford St, Durham St & Falmouth St
Portland, Maine
for Record Owner:
University of Maine System
5703 Alumni Hall
Orono, ME 04469

Project #19-4075
Date: 02/14/2020
Scale: 1" = 50'
Sheet No. 1 OF 1

Sheet Size: 24"X 36"

C:\Dwd\Inet\SurveyWorks, Inc\SWI Shared Files - Documents\Projects\2019\19-4075\CAD\Drawings\Survey\19-4075-SBM-01.dwg





General Notes:

1. The purpose of this plan is show the results of an existing conditions survey of the project area performed by SurveyWorks, Inc. in January 2020. This plan is for the sole use of the University of Southern Maine for the planning and design of a student success center and residence hall only and is not to be used by any other entity or persons. This is Sheet 2 of 3 and does not depict any underground conduits, structure numbers or rim elevations. Please refer to Sheet 3, "Utility Plan" for these items as well as the associated structures spreadsheet with pipe and invert data, on file at SurveyWorks, Inc.
2. The subject parcel is shown on the City of Portland Parcel Viewer as Parcel ID's 114A-A-001, 114A-G-006, 114A-G-007, 114A-G-009, 114A-G-010, & 114A-H-005 to114A-H-015 and are located in the B-2b Community Business & R-5 Residential Zone, as shown. All of the subject parcels are located in the "USM" Overlay Zone as well.
3. Boundary & topographic information shown hereon is based on an on-the-ground survey performed by SurveyWorks, Inc. in January 2020.
4. Plan References:
   A. "Blue Sheets" for Falmouth Street, Bedford Street, Durham Street, Brighton Avenue & Forest Avenue on file at the City of Portland.
   B. "City of Portland Public Works Department Contract Drawings, Bedford Street Sewer Seperation Project, Portland Water District Main Replacement," issued for bid February 2018.
   C. "University of Southern Maine, Portland Campus, Campus Center," Surveyed by Dennis P. Durgin, dated August 1983. Unrecorded.
   D. Plan set, "University of Southern Maine Portland Campus Utilities Master Plan," HA Project No. 10584, prepared/compiled by Harriman Architects & Engineers, approximate dates of October 7, 2010 through April 28, 2011. Unrecorded.
5. Plan orientation is Grid North, Maine State Plane Coordinate System, West Zone 1802-NAD83. Elevations depicted hereon are based on the City of Portland's Datum approximating NGVD29 based on a benchmark found under a manhole cover at the intersection of Bedford Street and the former location of Winslow Street.
6. The subject parcel is located within Zone X, Areas of Minimal Flood Hazard, as delineated on the Flood Insurance Rate Map for the City of Portland, Cumberland County, Community-Panel Number 2300510003B, having an Effective Date of July 17, 1986.
7. Underground utilities depicted hereon are based on markings provided by Dig Smart of Maine, Inc. at the time of survey. Utilities depicted hereon may not necessarily represent all existing utilities. Owners, contractors, and/or designers need to contact Dig-Safe Systems, Inc. (call 811) and field verify existing utilities prior to digging or breaking ground.

Legend:

Existing

- Property Line/R.O.W.
- Abutter Line/R.O.W.
- Deed/Plan Line/R.O.W.
- Tie Line
- Building Setback Line
- Easement Line
- Buffer Line
- Building
- Building Overhang
- Deck/Steps
- Edge of Pavement
- Edge of Concrete
- Pavement Paint
- Edge of Gravel
- Curb Line
- Major Contour
- Minor Contour
- Spot Elevation
- Chain Link Fence
- Guard Rail
- Overhead Utilities
- Monument (as noted)
- Bollard
- Sign
- Gas Gate Valve
- Gas Meter
- Gas Manhole
- Water Gate Valve
- Hydrant
- Sewer Manhole
- Drainage Manhole
- Catch Basin
- Yard Drain w/ Beehive Grate
- Transformer Pad
- Electrical Manhole
- Electric Meter
- HVAC Unit
- Telephone Manhole
- Light Pole
- Utility Pole
- Guy Wire
- RipRap
- Proposed Boring Location

STATE OF MAINE, Cumberland County, SS
REGISTRY OF DEEDS

Recieved _____

At ___ h ___ m ___M and recorded in

Plan Book _____, Page _____

Attest _____

Registrar

Sheet Size: 24" X 36"

Existing Conditions & Topographic Survey

of a portion of

University of Southern Maine Campus

Bedford St, Durham St & Falmouth St
Portland, Maine

for Record Owner:

University of Maine System

5703 Alumni Hall
Orono, ME 04469

Rev. Date	Drawn	Checked	Note
02/14/20	DJH	JCC	Issued to Client for Review
02/18/20	DJH	JCC	Corrected note 7 and minor cosmetic changes
02/27/20	DJH	JCC	Updated utility information

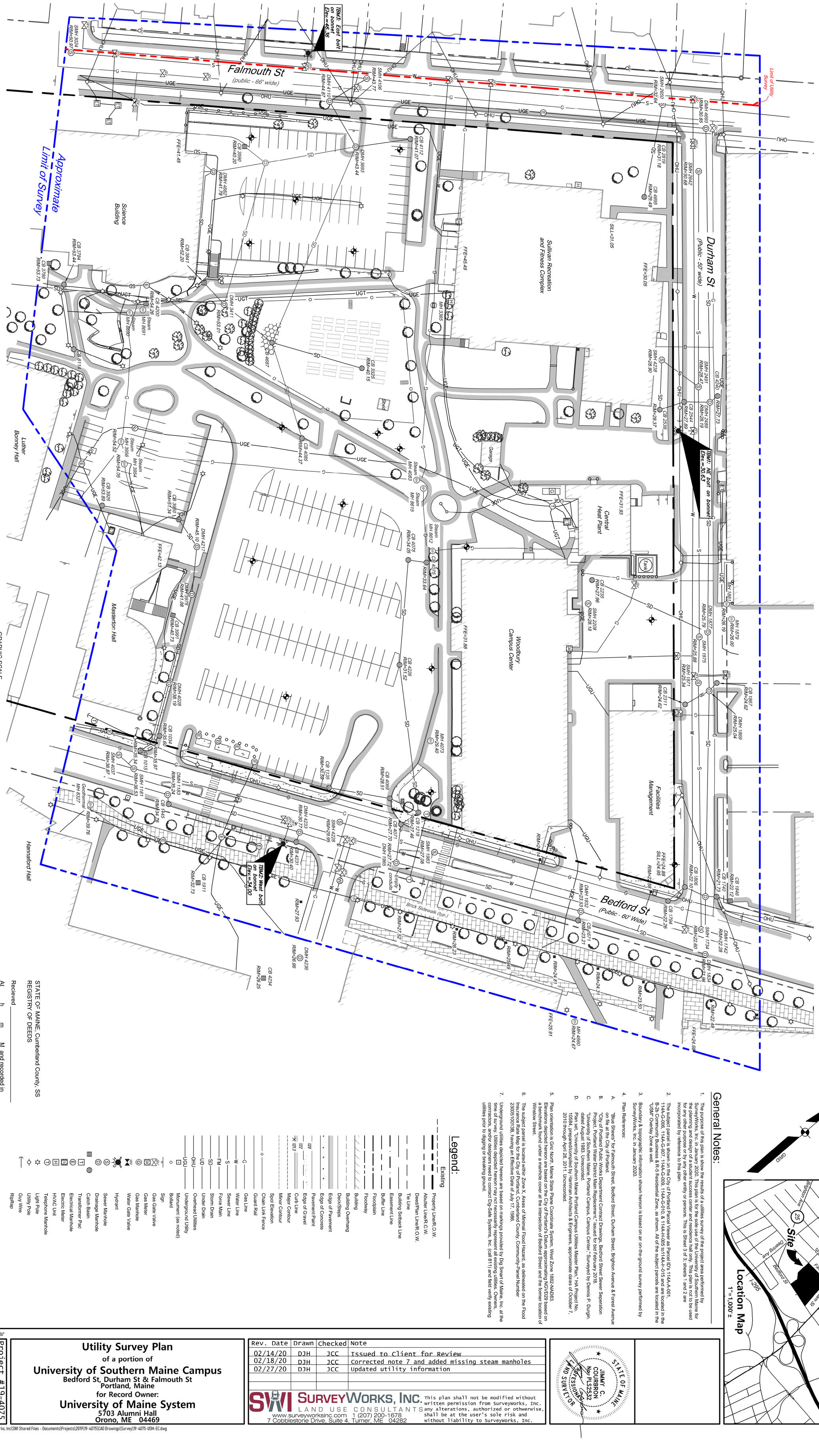
SURVEYWORKS, INC.
LAND USE CONSULTANTS
www.surveyworksinc.com 1 (207) 200-1678
7 Cobblestone Drive, Suite 4, Turner, ME 04282

This plan shall not be modified without written permission from SurveyWorks, Inc. any alterations, authorized or othwerwise, shall be at the user's sole risk and without liability to SurveyWorks, Inc.

STATE OF MAINE
JIMMY C. COURBRON
No. PLS2532
PROFESSIONAL LAND SURVEYOR

Project #19-4075
Date: 02/14/2020
Scale: 1" = 40'
Sheet No. 2 OF 3

C:\OneDrive\SurveyWorks, Inc\SWI Shared Files - Documents\Projects\2019\19-4075\CAD Drawings\Survey\19-4075-USM-EC.dwg



General Notes:

1. The purpose of this plan is show the results of a utilities survey of the project area performed by SurveyWorks, Inc. in January 2020. This plan is for the sole use of the University of Southern Maine for the planning and design of a student success center and residence hall only. This plan is not to be used for any other purpose or by any other entity or persons. This is Sheet 3 of 3; sheets 1 and 2 are incorporated by reference to this plan.
2. The subject parcel is shown on the City of Portland Parcel Viewer as Parcel ID's 114A-A-001, 114A-G-006, 114A-G-007, 114A-G-009, 114A-G-010, & 114A-H-005 to 114A-H-015 and are located in the B-2b Community Business & R-5 Residential Zone, as shown. All of the subject parcels are located in the "USM" Overlay Zone as well.
3. Boundary & topographic information shown hereon is based on an on-the-ground survey performed by SurveyWorks, Inc. in January 2020.
4. Plan References:
   - A. "Blue Sheets" for Falmouth Street, Bedford Street, Durham Street, Brighton Avenue & Forest Avenue on file at the City of Portland.
   - B. "City of Portland Public Works Department Contract Drawings, Bedford Street Sewer Seperation Project, Portland Water District Main Replacement," issued for bid February 2018.
   - C. "University of Southern Maine, Portland Campus, Campus Center," Surveyed by Dennis P. Durgin, dated August 1963. Unrecorded.
   - D. Plan set, "University of Southern Maine Portland Campus Utilities Master Plan," HA Project No. 10584, prepared/compiled by Harriman Architects & Engineers, approximate dates of October 7, 2010 through April 28, 2011. Unrecorded.
5. Plan orientation is Grid North, Maine State Plane Coordinate System, West Zone 1802-NAD83. Elevations depicted hereon are based on the City of Portland's Datum approximating NGVD29 based on a benchmark found under a manhole cover at the intersection of Bedford Street and the former location of Winslow Street.
6. The subject parcel is located within Zone X, Areas of Minimal Flood Hazard, as delineated on the Flood Insurance Rate Map for the City of Portland, Cumberland County, Community-Panel Number 2305100013B, having an Effective Date of July 17, 1986.
7. Underground utilities depicted hereon are based on markings provided by Dig Smart of Maine, Inc. at the time of survey. Utilities depicted hereon may not necessarily represent all existing utilities. Owners, contractors, and/or designers need to contact Dig-Safe Systems, Inc. (call 811) and field verify existing utilities prior to digging or breaking ground.

Legend:

Existing

- Property Line/R.O.W.
- Abutter Line/R.O.W.
- Deed/Plan Line/R.O.W.
- Tie Line
- Building Setback Line
- Easement Line
- Buffer Line
- Floodplain
- Floodway
- Building
- Building Overhang
- Deck/Steps
- Edge of Pavement
- Edge of Concrete
- Pavement Paint
- 120 Edge of Gravel
- 122 Curb Line
- 121.3 Major Contour
- Minor Contour
- Spot Elevation
- Chain Link Fence
- Guard Rail
- Gas Line
- Water Line
- Sewer Line
- Force Main
- Storm Drain
- Under Drain
- Overhead Utilities
- Underground Utility
- Monument (as noted)
- Bollard
- Sign
- Gas Gate Valve
- Gas Meter
- Gas Manhole
- Water Gate Valve
- Hydrant
- Sewer Manhole
- Drainage Manhole
- Catch Basin
- Transformer Pad
- Electrical Manhole
- Electric Meter
- HVAC Unit
- Telephone Manhole
- Light Pole
- Utility Pole
- Guy Wire
- RipRap

STATE OF MAINE, Cumberland County, SS
REGISTRY OF DEEDS

Recieved _____

At ___ h ___ m ___M and recorded in

Plan Book _____, Page _____

Attest _____

Registrar

JIMMY C. COURBRON
No. PLS2532
STATE OF MAINE
PROFESSIONAL SURVEYOR

Sheet Size: 24" X 36"

Project #19-4075
Date: 02/14/2020
Scale: 1" = 40'
Sheet No. 3 OF 3

Utility Survey Plan

of a portion of

University of Southern Maine Campus

Bedford St, Durham St & Falmouth St
Portland, Maine

for Record Owner:

University of Maine System

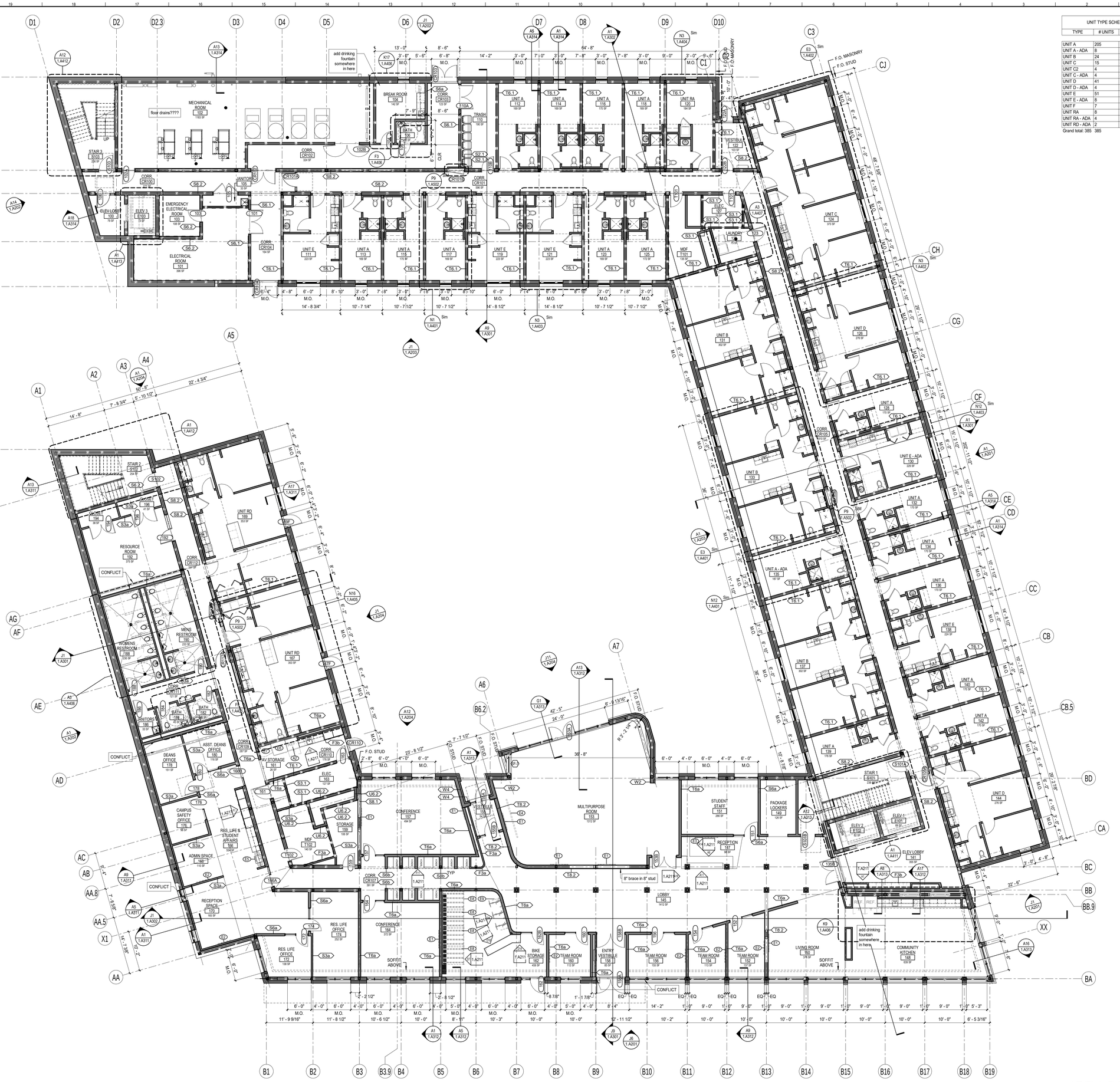
5703 Alumni Hall
Orono, ME 04469

Rev. Date	Drawn	Checked	Note
02/14/20	DJH	JCC	Issued to Client for Review
02/18/20	DJH	JCC	Corrected note 7 and added missing steam manholes
02/27/20	DJH	JCC	Updated utility information

SURVEYWORKS, INC.
LAND USE CONSULTANTS
www.surveyworksinc.com 1 (207) 200-1678
7 Cobblestone Drive, Suite 4, Turner, ME 04282

This plan shall not be modified without written permission from SurveyWorks, Inc. any alterations, authorized or othwerwise, shall be at the user's sole risk and without liability to SurveyWorks, Inc.

C:\OneDrive\SurveyWorks, Inc\SWI Shared Files - Documents\Projects\2019\19-4075\CAD Drawings\Survey\19-4075-USM-EC.dwg



UNIT TYPE SCHEDULE TOTAL			
TYPE	# UNITS	# BEDS	TOTAL BED
UNIT A	205	1	205
UNIT A - ADA	8	1	8
UNIT B	24	4	96
UNIT C	15	4	60
UNIT C2	4	4	16
UNIT C - ADA	4	4	16
UNIT D	41	2	82
UNIT D - ADA	4	2	8
UNIT E	51	1	51
UNIT E - ADA	8	1	8
UNIT F	7	2	14
UNIT RA	8	1	8
UNIT RA - ADA	4	1	4
UNIT RD - ADA	2	2	4
Grand total: 385	385		580

PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

APPLIANCE SCHEDULE	
TYPE MARK	COMMENTS
A1	24" REFRIGERATOR
A2	30" REFRIGERATOR
A3	24" RANGE
A4	30" RANGE
A5	18" DISHWASHER
A6	24" DISHWASHER
A7	MICROWAVE - OVER RANGE
A8	MICROWAVE - UNDER COUNTER
A9	MICROWAVE - COMPACT COUNTERTOP
A10	24" RANGE HOOD
A11	30" RANGE HOOD
A12	WASHER - COMPACT
A13	WASHER
A14	DRYER - HEAT PUMP
A15	DRYER – GAS
BATHROOM ACCESSORIES SCHEDULE	
TYPE MARK	COMMENTS
B1	FRAMED MIRROR 60" X 48"
B2	FRAMED MIRROR 24" X 48"
B3	HORIZONTAL MOUNTED BABY CHANGING STATION
B4	SANITARY NAPKIN DISPOSAL
B5	TOILET TISSUE DISPENSER
B6	18" VERTICAL GRAB BAR
B7	48" GRAB BAR
B8	36" GRAB BAR
B9	ROBE HOOK
B10	TOWEL BAR 24"
B11	SHOWER CURTAIN ROD
B12	TOILET TISSUE DISPENSER
B13	HAND DRYER
B14	TOWEL BAR 18"

EQUIPMENT SCHEDULE	
TYPE MARK	COMMENTS
E1	TV 60"
E2	TV 46"
E3	TV 55"
E4	PROJECTOR
E5	PRINTER
E6	VENDING - SNACK
E7	VENDING - BEVERAGE
E8	FLOOR MOUNTED BIKE STORAGE SYSTEM AS SPECIFIED
E9	WALL MOUNTED BIKE STORAGE SYSTEM AS SPECIFIED

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 1 - FLOOR PLAN

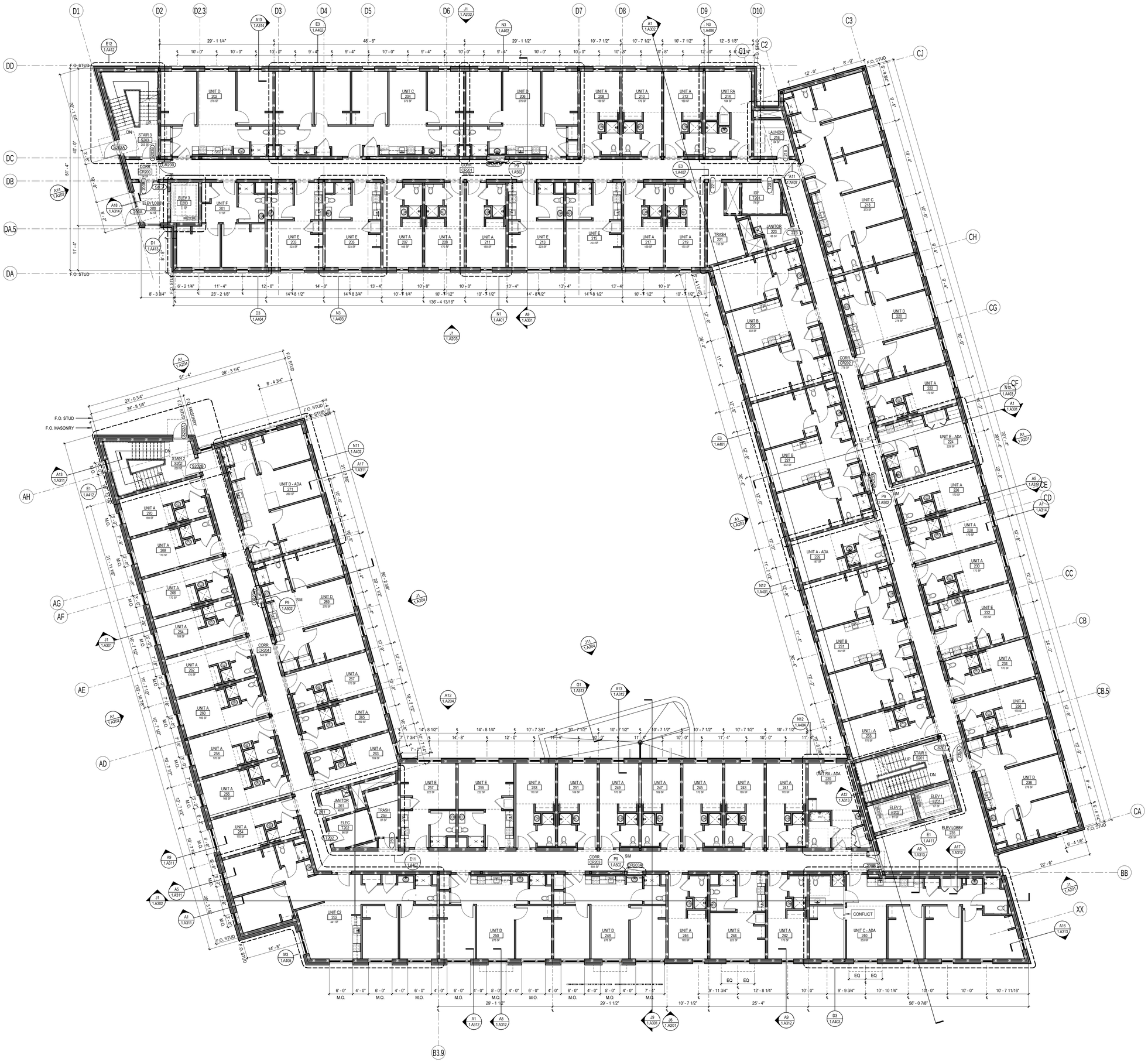
SHEET TITLE:

SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A101
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A101-19206	SHEET No.	

COPYRIGHT SMRT ARCH

NOT FOR CONSTRUCTION



PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 2 - FLOOR PLAN

SHEET TITLE:

SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A102
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A102-19206	SHEET No.	

COPYRIGHT SMRT ARCH

NOT FOR CONSTRUCTION

LEVEL 2 - FLOOR PLAN A1
1/8" = 1'-0"

PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

LEVEL 3 - FLOOR PLAN A1
1/8" = 1'-0"

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

Architecture • Engineering • Planning

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 3 - FLOOR PLAN

SHEET TITLE:

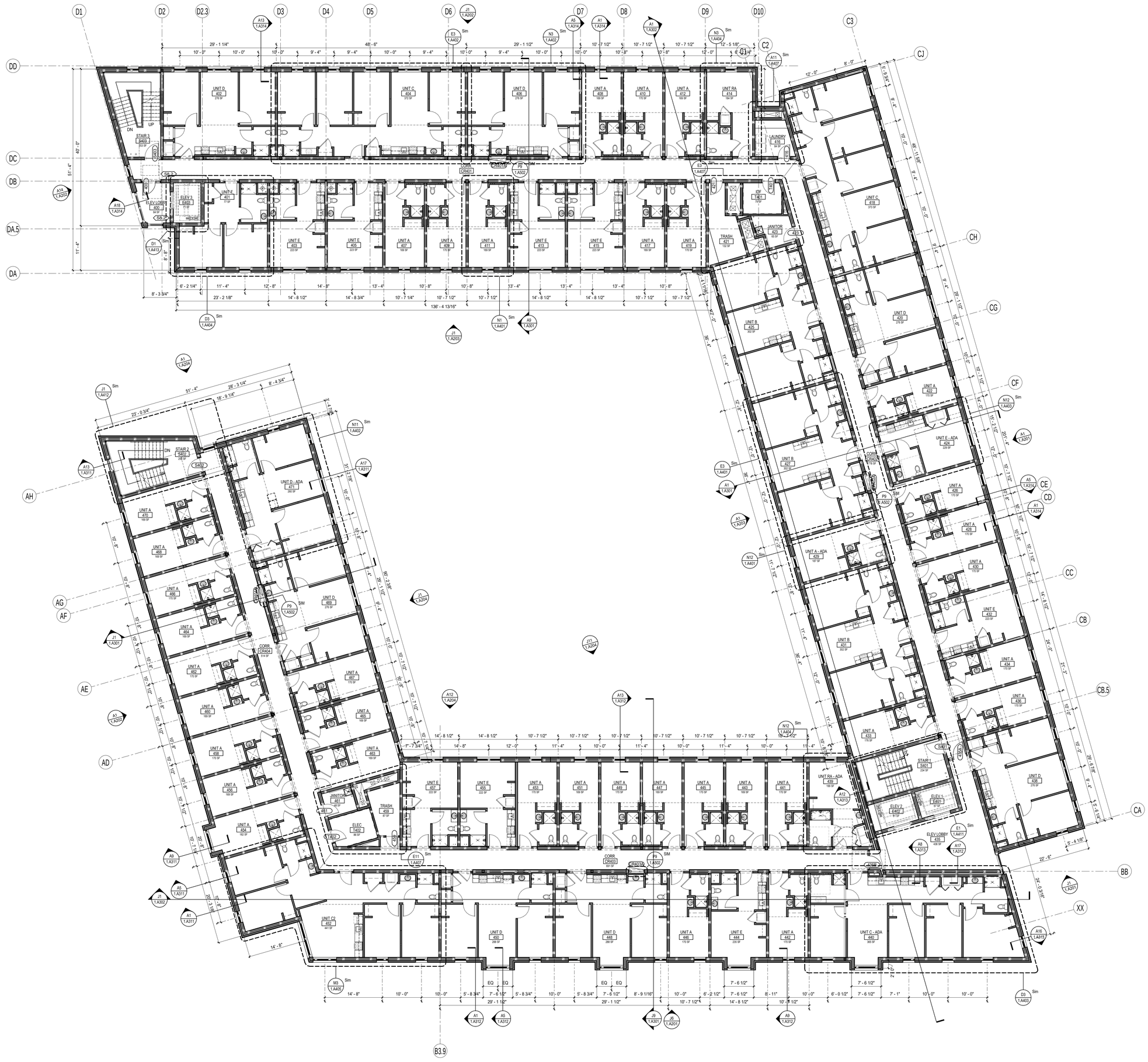
0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	POC		
JOB CAPTAIN:	SDL		1.A103
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A103-19206	SHEET No.	

©COPYRIGHT 2019 SMRT INC

NOT FOR CONSTRUCTION



PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

LEVEL 4 - FLOOR PLAN (A1)
1/8" = 1'-0"

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 4 - FLOOR PLAN

SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	POC		
JOB CAPTAIN:	SDL		1.A104
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A104-19206	SHEET No.	

COPYRIGHT 2018 SMRT INC

NOT FOR CONSTRUCTION

PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 5 - FLOOR PLAN

SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"

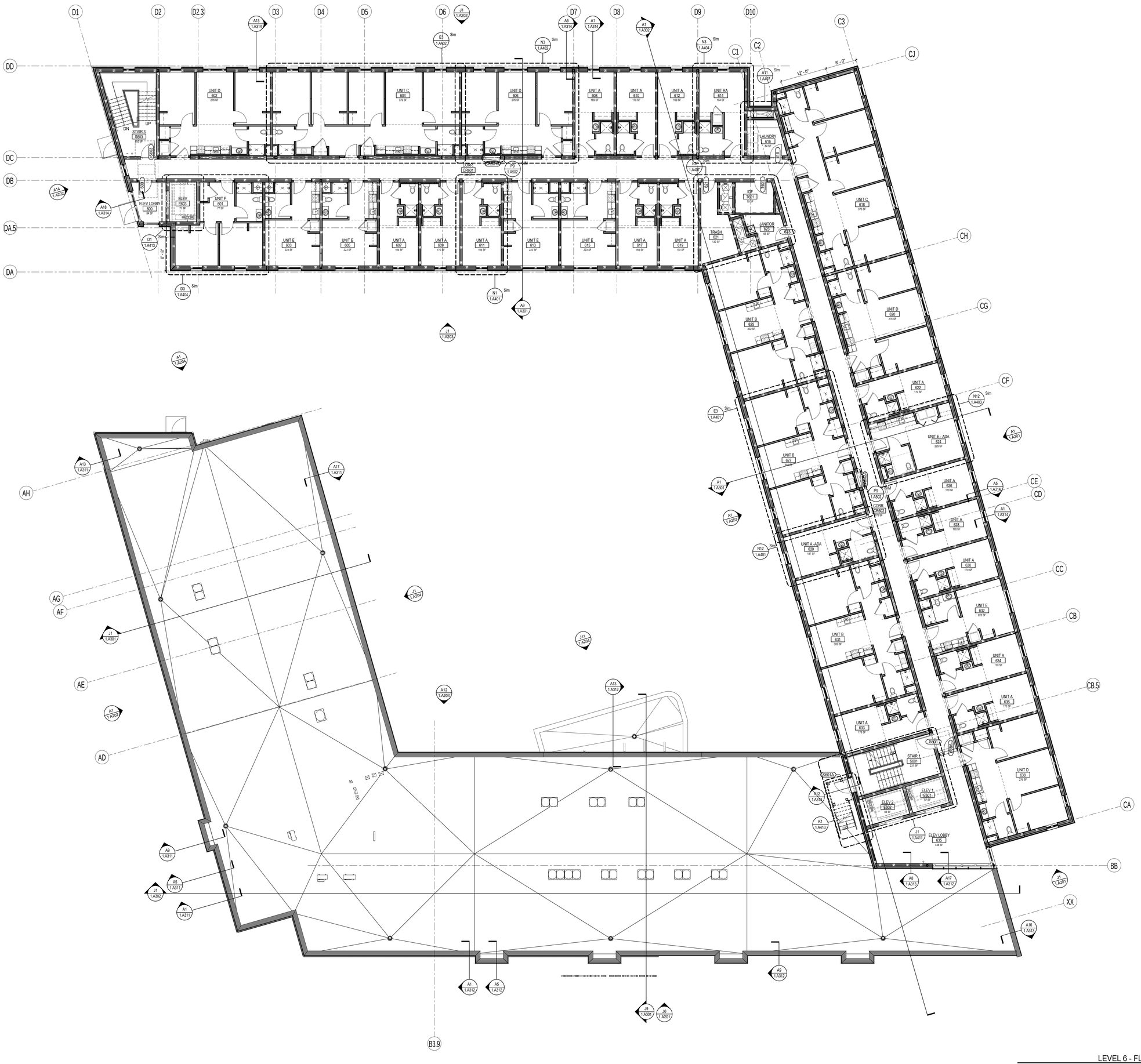
SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A105
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A105-19206	SHEET No.	

©COPYRIGHT 2018 SMRT ARCHITECTS

NOT FOR CONSTRUCTION

LEVEL 5 - FLOOR PLAN
1/8" = 1'-0" A1



PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 6 - FLOOR PLAN

SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"

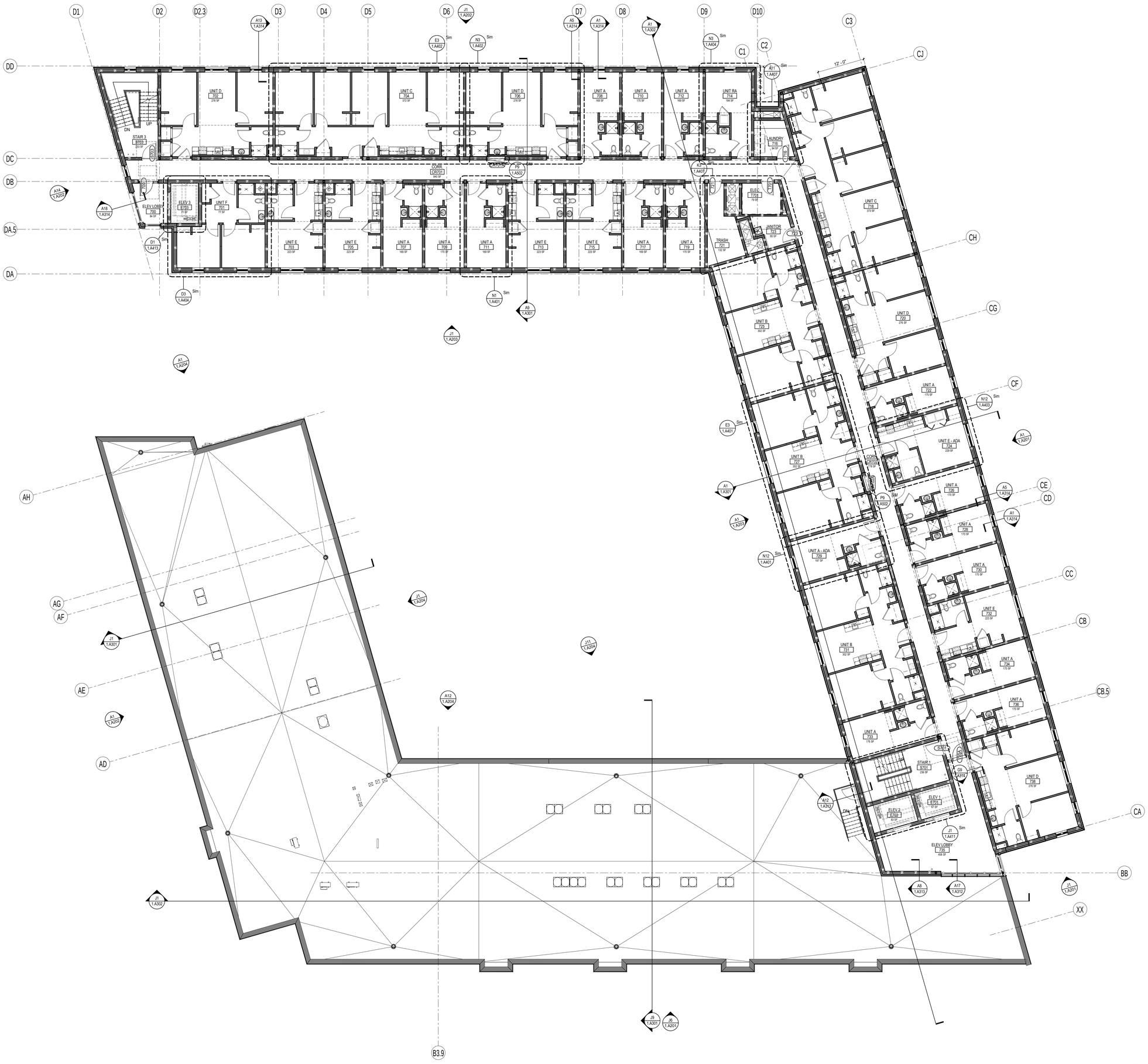
SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A106-19206	SHEET No.	1.A106

©COPYRIGHT 2018 SMRT ARCHITECTS

LEVEL 6 - FLOOR PLAN A1
1/8" = 1'-0"

NOT FOR CONSTRUCTION



PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

LEVEL 7 - FLOOR PLAN
1/8" = 1'-0" (A1)

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

Architecture • Engineering • Planning

ELKUS MANFREDI ARCHITECTS
25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 7 - FLOOR PLAN

SHEET TITLE:

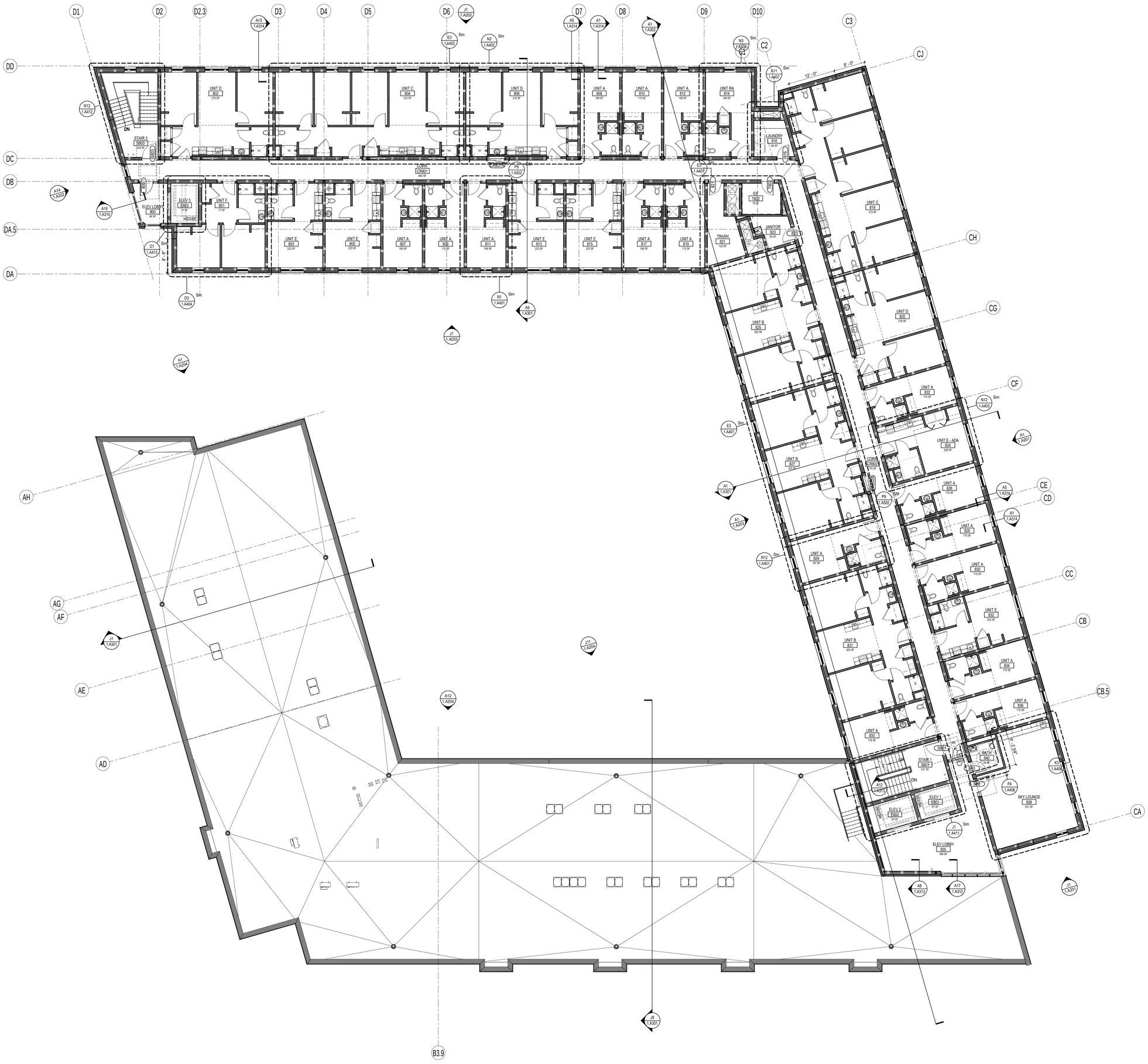
0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A107-19206	SHEET No.	1.A107

©COPYRIGHT 2018 SMRT INC

NOT FOR CONSTRUCTION



PLAN NOTES:

1. SEE 1.GI001 FOR GENERAL PROJECT NOTES, LEGENDS ABBREVIATIONS AND GENERAL MOUNTING HEIGHTS.
2. SEE 1.GI002 FOR TOP OF WALL DETAILS AND PARTITION TYPES.
3. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CODE COMPLIANCE PLANS AND NOTIFYING THE ARCHITECT OF CONFLICTS BETWEEN WHAT IS IN THE FIELD AND ON THE CODE DOCUMENTS.
4. DIMENSIONS ARE FACE OF CONCRETE, FACE OF MASONRY AND CENTERLINE OF STUD, UNLESS NOTED OTHERWISE.
5. DOOR JAMBS (HINGE SIDE) SHALL BE 6" FROM CORNER IN STUD PARTITIONS AND 8" FROM CORNER IN MASONRY PARTITIONS UNLESS NOTED OTHERWISE.
6. REFER TO DETAILS FOR ADDITIONAL DIMENSIONING INFORMATION.
7. REFER TO ENLARGED PLANS FOR PARTITION TYPES AND DIMENSIONS IN AREAS WHICH ARE DETAILED AT A LARGER SCALE.
8. FURNITURE AND OWNER PROVIDED EQUIPMENT ARE INDICATED BY DASHED LINE TYPE.
9. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF OWNER PROVIDED EQUIPMENT INCLUDING BUT NOT LIMITED TO DIMENSIONAL INFORMATION, AND MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS.

LEVEL 8 - FLOOR PLAN
1/8" = 1'-0" (A1)

REV	DESCRIPTION	DATE

DESIGN DEVELOPMENT
7-31-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

LEVEL 8 - FLOOR PLAN

SHEET TITLE:

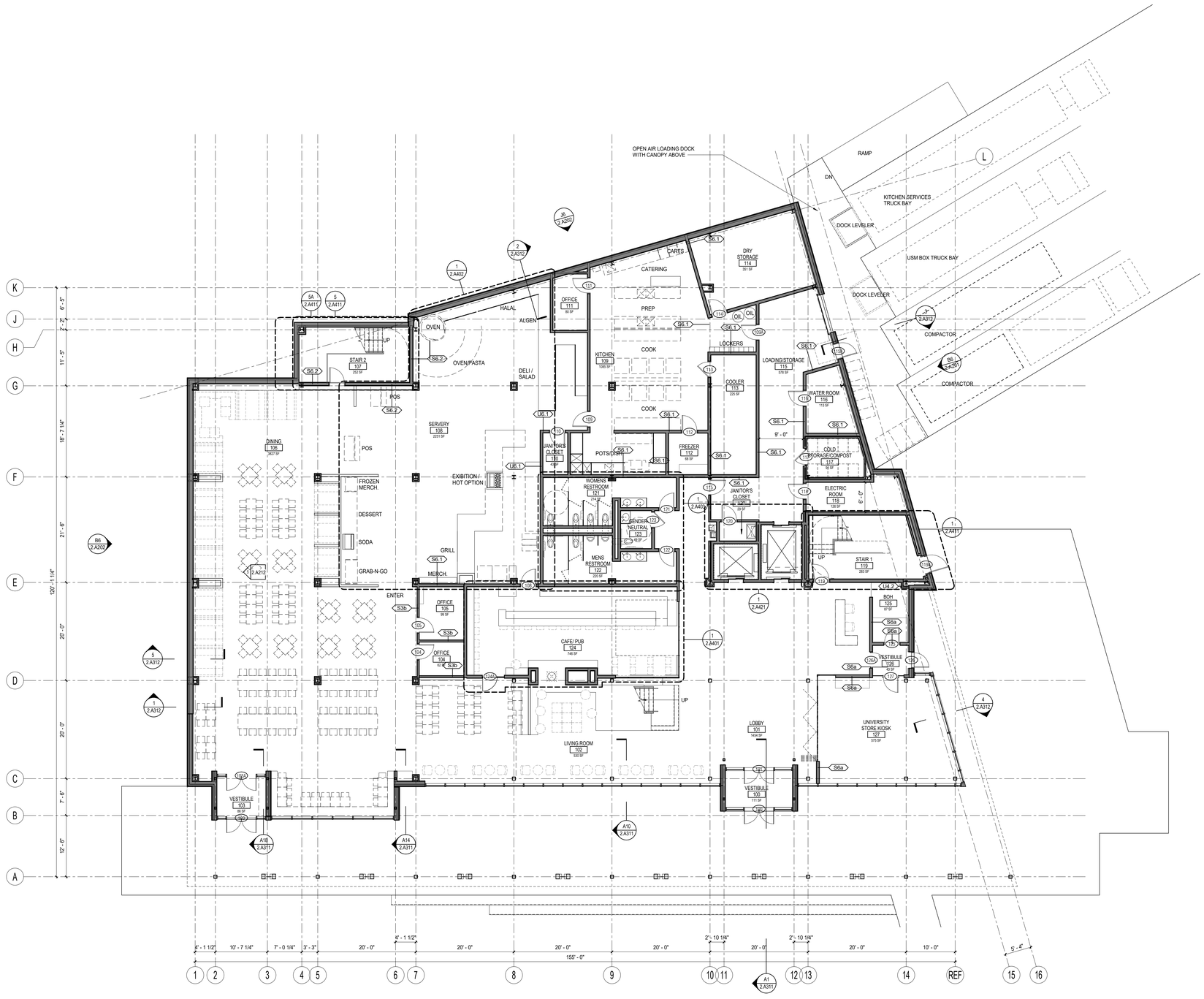
0" 1/4" 1/2" 1" 2" 3"

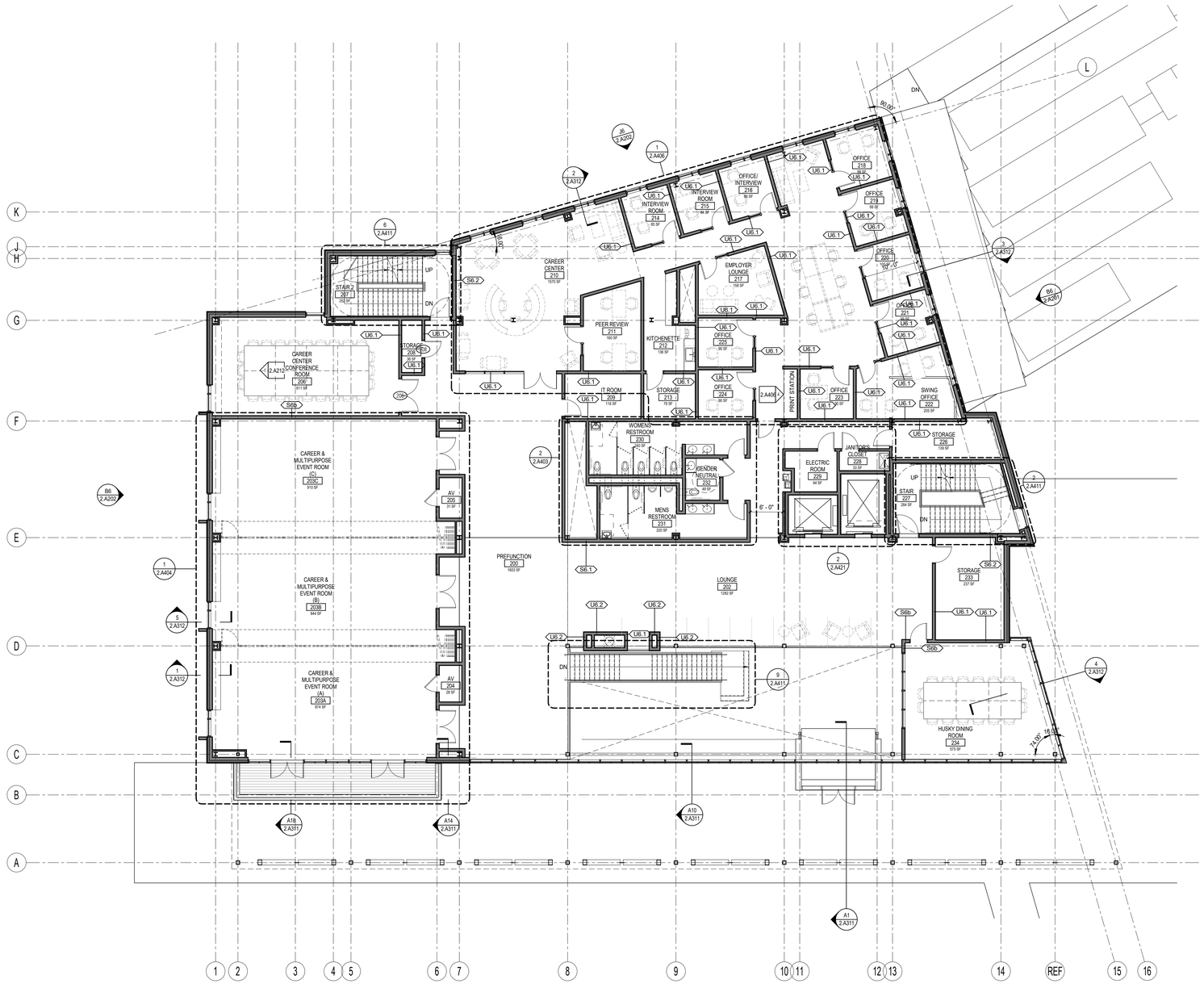
SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A108-19206	SHEET No.	1.A108

©COPYRIGHT 2019 SMRT INC

NOT FOR CONSTRUCTION


OPEN AIR LOADING DOCK WITH CANOPY ABOVE
RAMP
DN
KITCHEN SERVICES TRUCK BAY
DOCK LEVELER
USM BOX TRUCK BAY
DOCK LEVELER
COMPACTOR
COMPACTOR
CARTS
CATERING
DRY STORAGE 114 551 SF
PREP
OIL
OIL
LOCKERS
LOADING/STORAGE 115 578 SF
COOK
COOK
COOLER 113 225 SF
WATER ROOM 116 113 SF
COLD STORAGE/COMPOST 117 98 SF
ELECTRIC ROOM 118 126 SF
JANITOR'S CLOSET 120 29 SF
STAIR 1 119 203 SF
BOH 125 67 SF
VESTIBULE 126 63 SF
UNIVERSITY STORE KIOSK 127 570 SF
LOBBY 101 1404 SF
VESTIBULE 100 111 SF
OFFICE 111 80 SF
HALAL
ALGEN
OVEN
OVEN/PASTA
STAIR 2 107 252 SF
UP
DELI / SALAD
KITCHEN 109 1080 SF
POS
SERVERY 108 220 SF
DINING 106 3827 SF
POS
FROZEN MERCH.
DESSERT
SODA
GRILL
GRAB-N-GO
MERCH.
EXIBITION / HOT OPTION
JANITOR'S CLOSET 116 47 SF
POTS/DISH
FREEZER 112 98 SF
WOMENS RESTROOM 121 214 SF
GENDER NEUTRAL 123 56 SF
MENS RESTROOM 122 220 SF
ENTER
OFFICE 105 99 SF
OFFICE 104 82 SF
CAFE/ PUB 124 748 SF
LIVING ROOM 102 330 SF
UP
VESTIBULE 103 86 SF
ENTER
ENTER
ENTER



LEVEL 2 - FLOOR PLAN
1/8" = 1'-0"

REV	DESCRIPTION	DATE

PROGRESS
07-26-20
CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

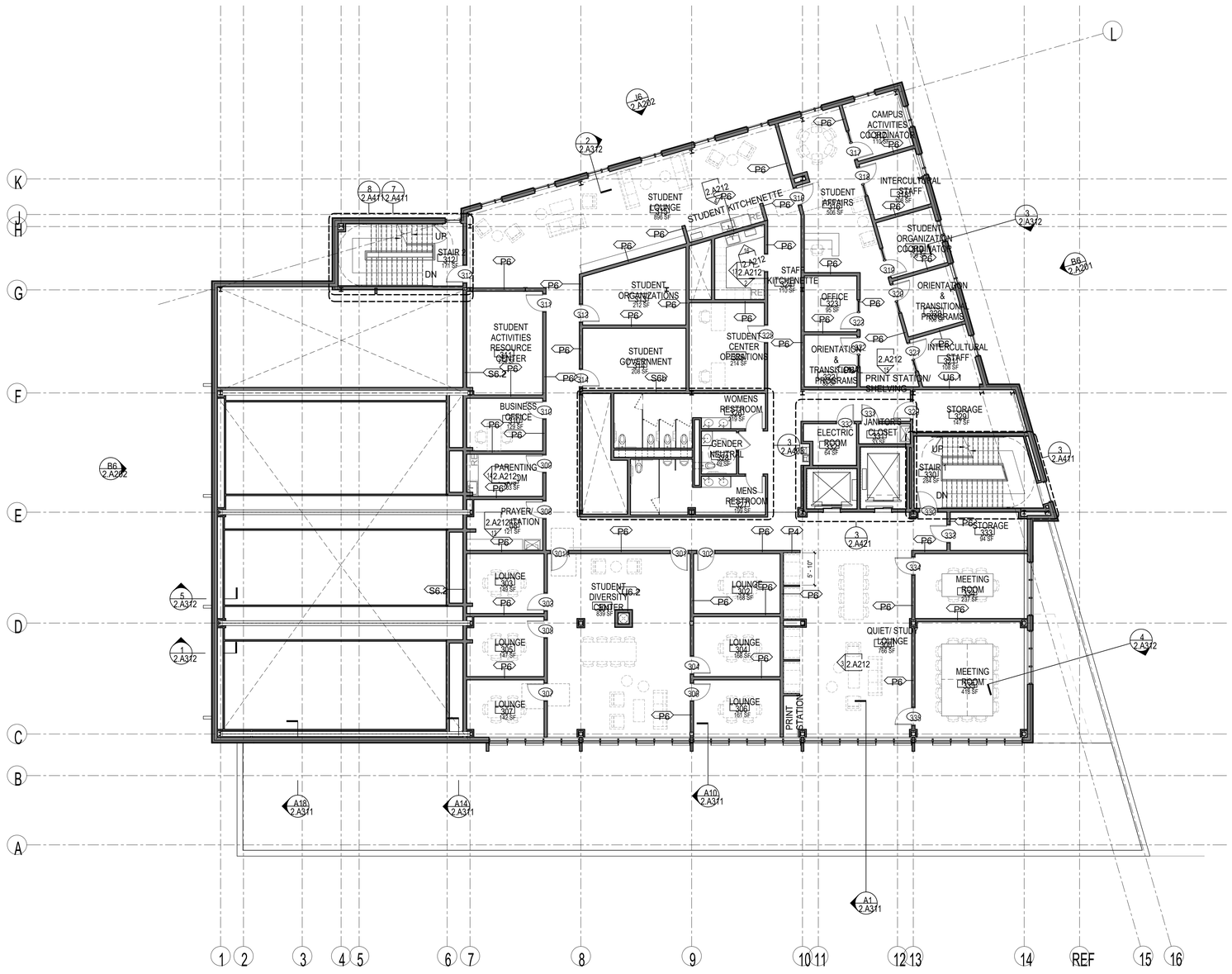
LEVEL TWO - FLOOR PLAN

SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

PROJECT MANAGER:	XXX	PROJECT NO:	00000
A/E OF RECORD:	Checker		
JOB CAPTAIN:	XXX		2.A102
DRAWN BY:	Author		
SMRT FILE:	2.A102-00000	SHEET No.	

NOT FOR CONSTRUCTION



AFL03 - FLOOR PLAN

1/8" = 1'-0"

REV	DESCRIPTION	DATE

PROGRESS
07-26-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

Architecture • Engineering • Planning

ELKUS MANFREDI ARCHITECTS
25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN
CAREER AND STUDENT SUC
CENTER & PORTLAND COMM
PROJECT LOCATION

LEVEL THREE - FLOOR PLAN

SHEET TITLE:

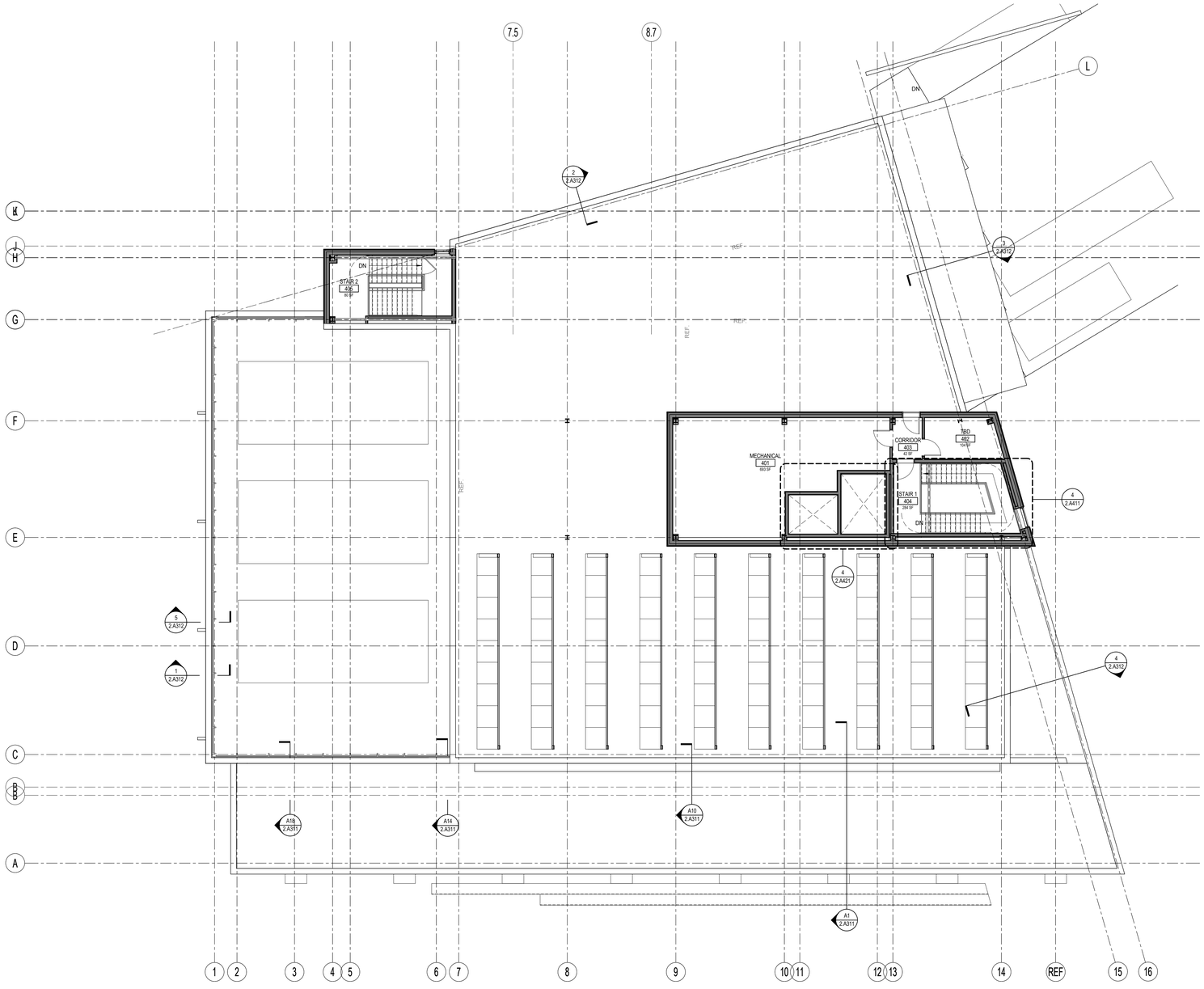
0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	XXX
PROJECT NO:	00000
A/E OF RECORD:	Checker
JOB CAPTAIN:	XXX
DRAWN BY:	Author
SMRT FILE:	2.A103-00000

2.A103

NOT FOR CONSTRUCTION



AFL04 - PENTHOUSE PLAN 1

1/8" = 1'-0"

REV	DESCRIPTION	DATE

PROGRESS
07-26-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

PENTHOUSE - FLOOR PLAN

SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

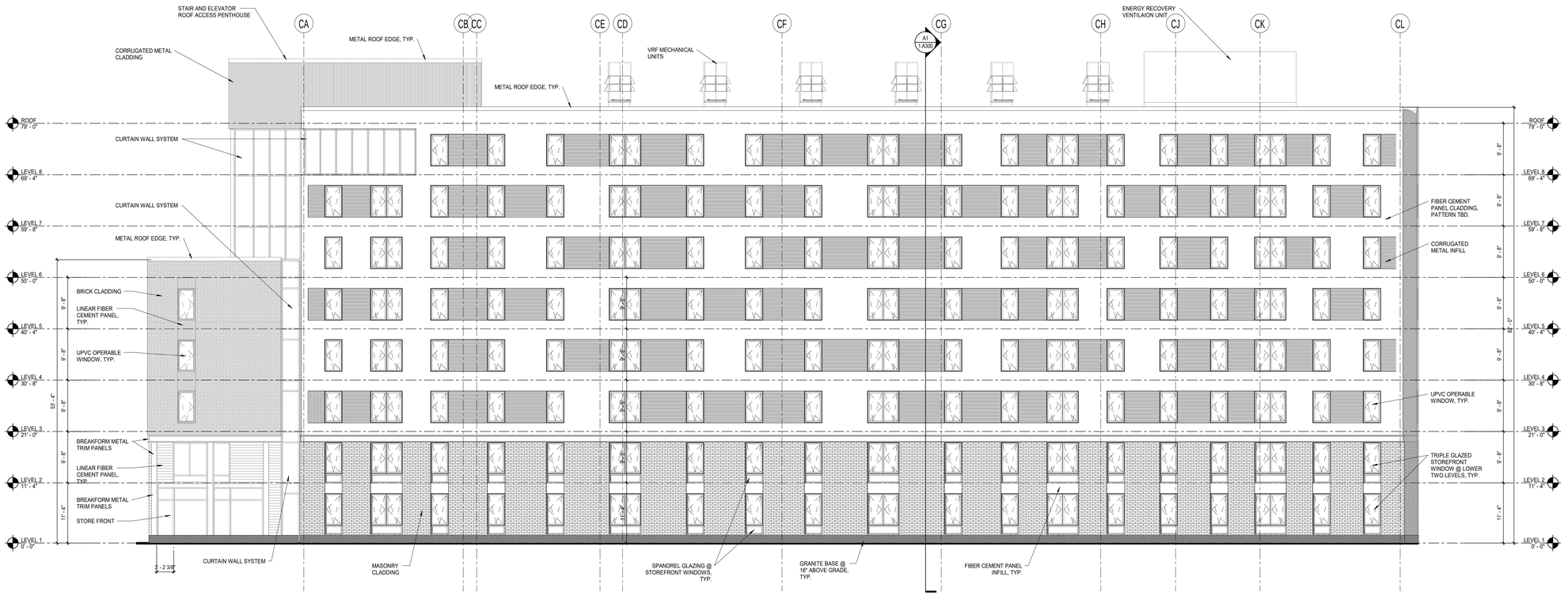
PROJECT MANAGER:	XXX	PROJECT NO:	00000
A/E OF RECORD:	Checker		
JOB CAPTAIN:	XXX		
DRAWN BY:	Author		
SMRT FILE:	2.A104-00000	SHEET No.	2.A104

©COPYRIGHT SMRT 20

NOT FOR CONSTRUCTION



EXTERIOR ELEVATION - SOUTH (K1)
1/8" = 1'-0"



EXTERIOR ELEVATION - EAST (A1)
1/8" = 1'-0"

REV	DESCRIPTION	DATE

ISSUED FOR SCHEMATIC DESIGN
3-6-20
CURRENT ISSUE STATUS:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL
Portland, ME

EXTERIOR ELEVATIONS
SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

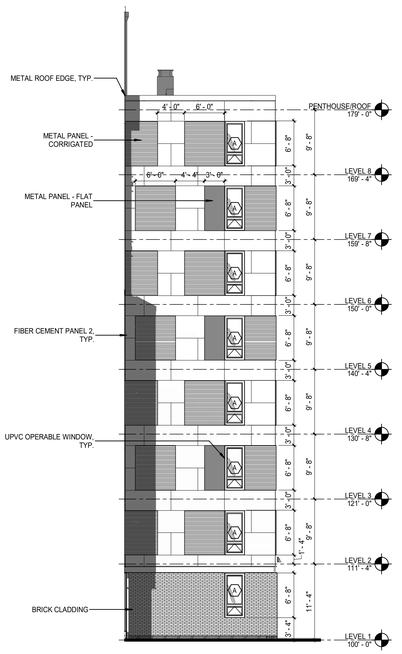
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A200
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A200-19206	SHEET No.	

©COPYRIGHT 2019 SMRT INC

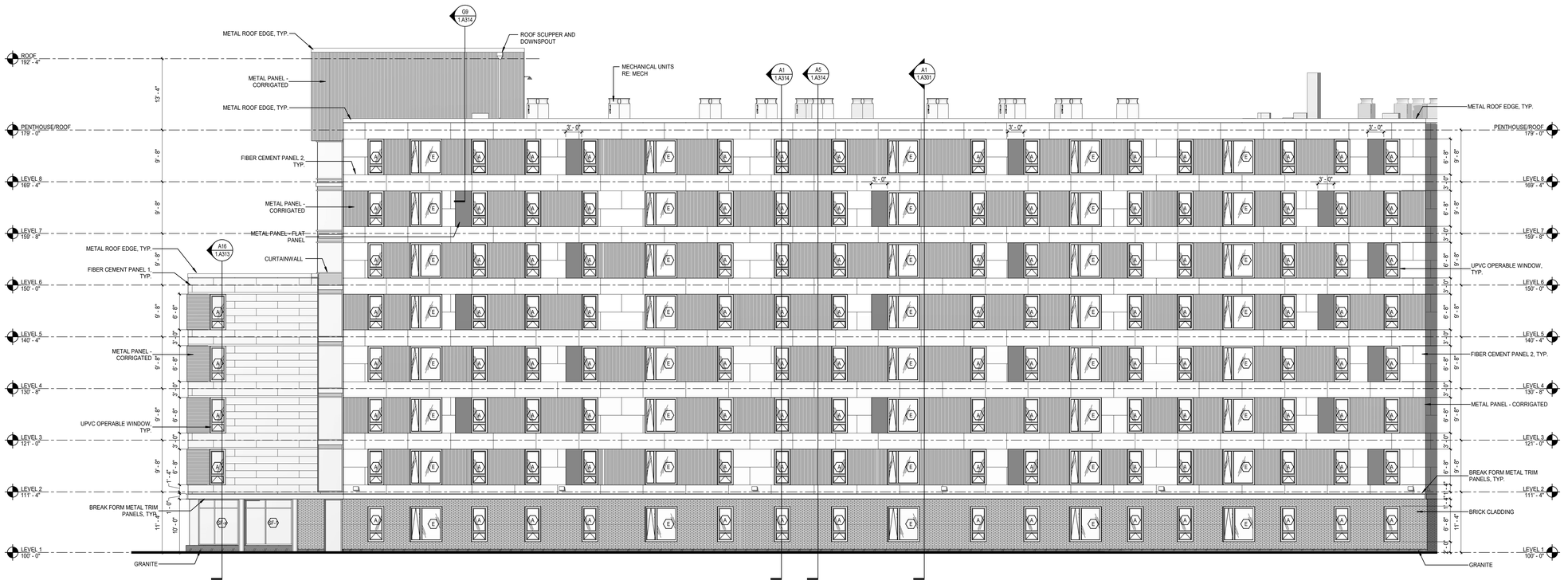
NOT FOR CONSTRUCTION



SOUTH ELEVATION - BEDFORD STREET J6
1/8" = 1'-0"



SOUTH ELEVATION - PARTIAL J1
1/8" = 1'-0"



EAST ELEVATION - DURHAM STREET A1
1/8" = 1'-0"

ELEVATION NOTES:

1. REFER TO FIRE PROTECTION, MECHANICAL, PLUMBING, ELECTRICAL DRAWINGS FOR ALL RESPECTIVE FIXTURE/ DEVICE LOCATIONS, COUNTS, & ASSOCIATED RECESSED BOXES AT EXTERIOR WALLS.
2. SEE SPECIFICATIONS FOR PREPARATION OF WALL MOUNTING SURFACE FOR INSTALLATION OF EXTERIOR FIXTURES.
3. PROVIDE MASONRY CONTROL JOINTS AT ALL INSIDE MASONRY CORNERS AND ALIGN WITH OPENINGS WHEN POSSIBLE.

REV	DESCRIPTION	DATE

PROGRESS PRINT
7-17-20
CURRENT ISSUE STATUS:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

Architecture • Engineering • Planning

ELKUS | MANFREDI ARCHITECTS
25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS
PROJECT LOCATION

EXTERIOR ELEVATIONS
SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

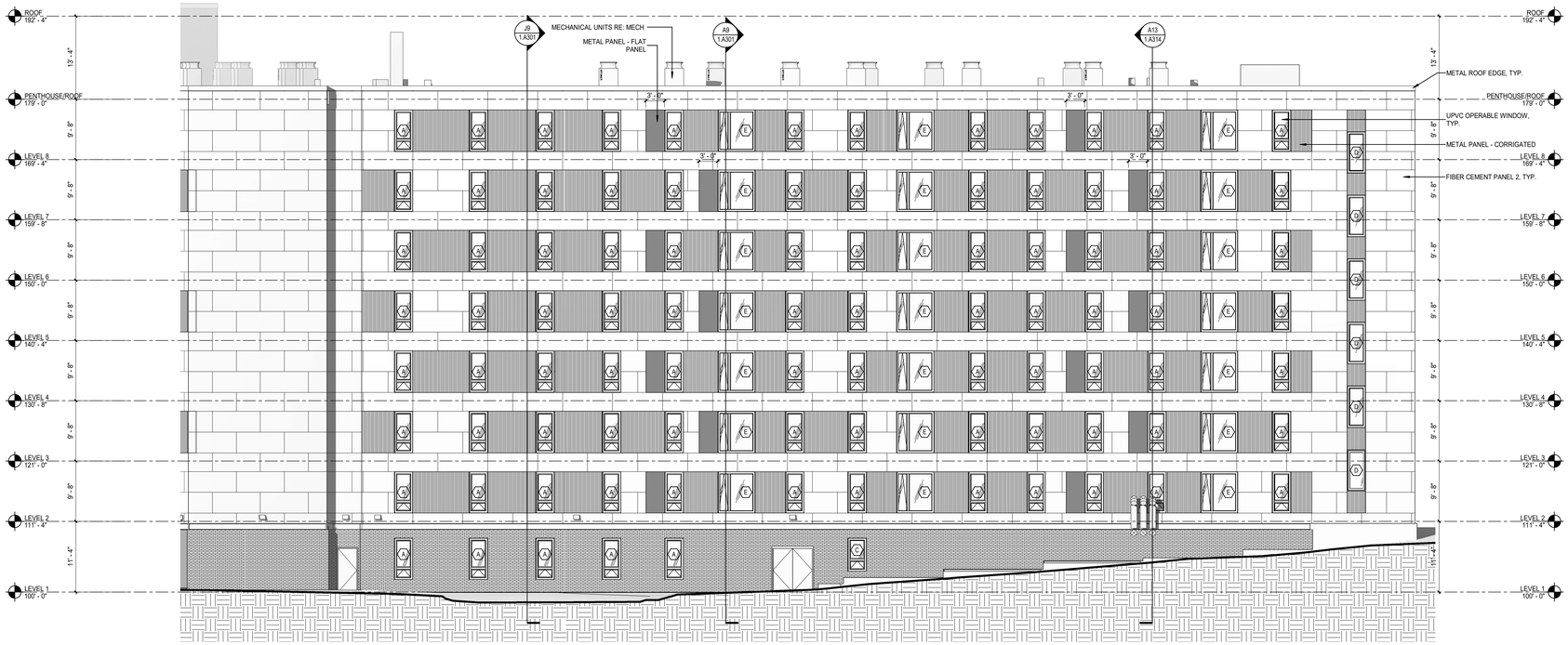
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A201
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A201-19206	SHEET No.	

©COPYRIGHT 2019 SMRT INC

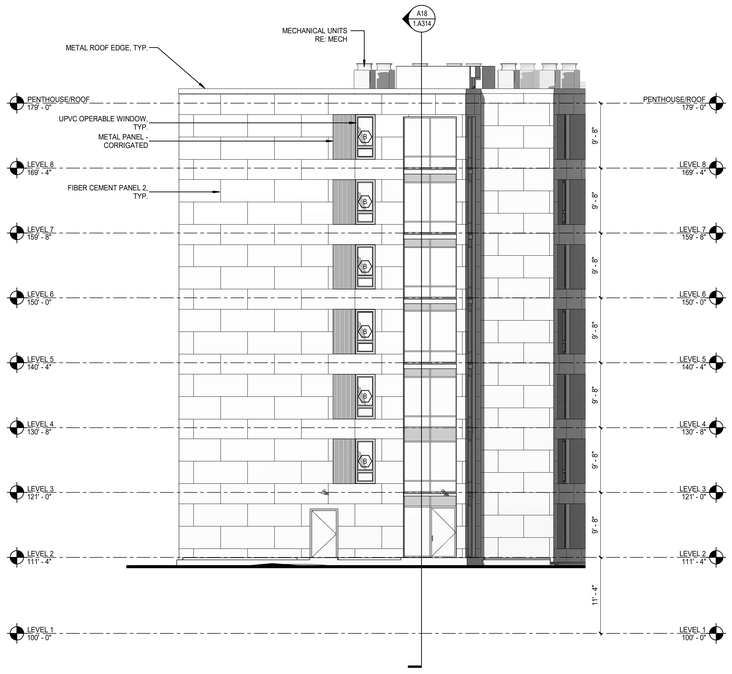
NOT FOR CONSTRUCTION

ELEVATION NOTES:

1. REFER TO FIRE PROTECTION, MECHANICAL, PLUMBING, ELECTRICAL DRAWINGS FOR ALL RESPECTIVE FIXTURE/ DEVICE LOCATIONS, COUNTS, & ASSOCIATED RECESSED BOXES AT EXTERIOR WALLS.
2. SEE SPECIFICATIONS FOR PREPARATION OF WALL MOUNTING SURFACE FOR INSTALLATION OF EXTERIOR FIXTURES.
3. PROVIDE MASONRY CONTROL JOINTS AT ALL INSIDE MASONRY CORNERS AND ALIGN WITH OPENINGS WHEN POSSIBLE.



NORTH ELEVATION J1
1/8" = 1'-0"



WEST ELEVATION A14
1/8" = 1'-0"



WEST ELEVATION A1
1/8" = 1'-0"

REV	DESCRIPTION	DATE

PROGRESS PRINT
7-17-20
CURRENT ISSUE STATUS:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

ELKUS | MANFREDI ARCHITECTS
25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

EXTERIOR ELEVATIONS

SHEET TITLE:

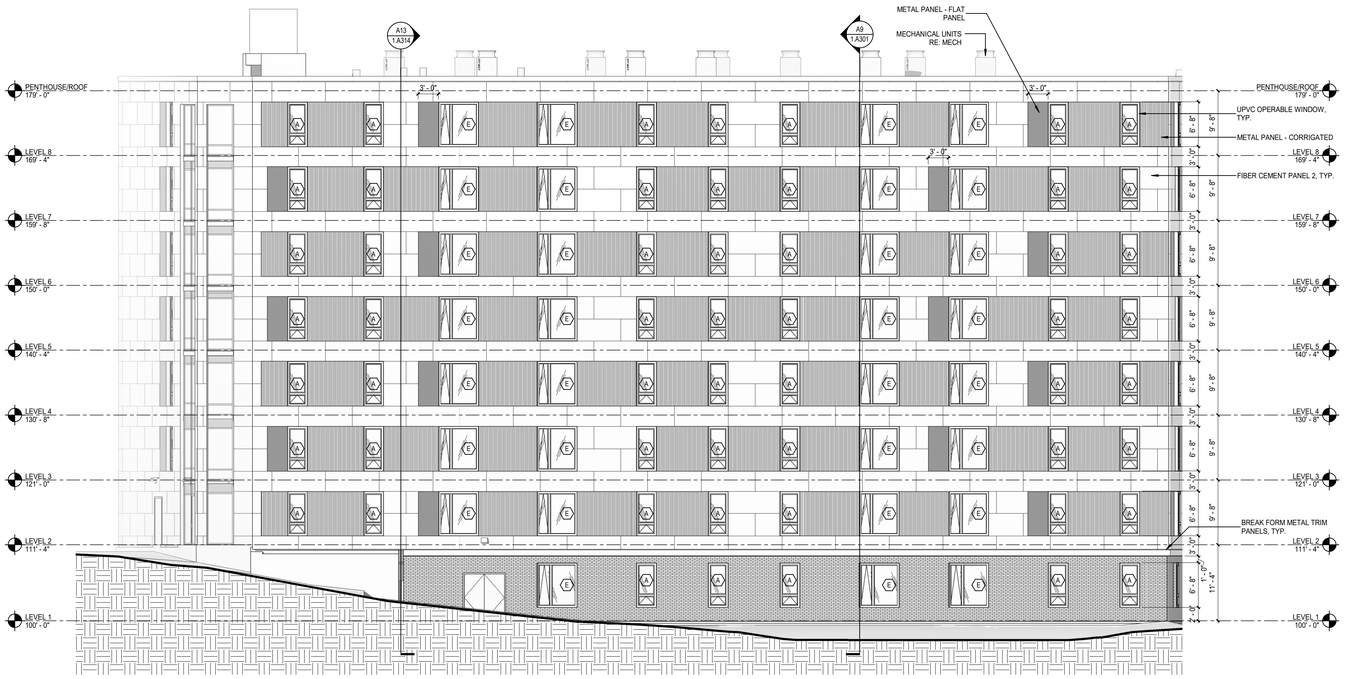
0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

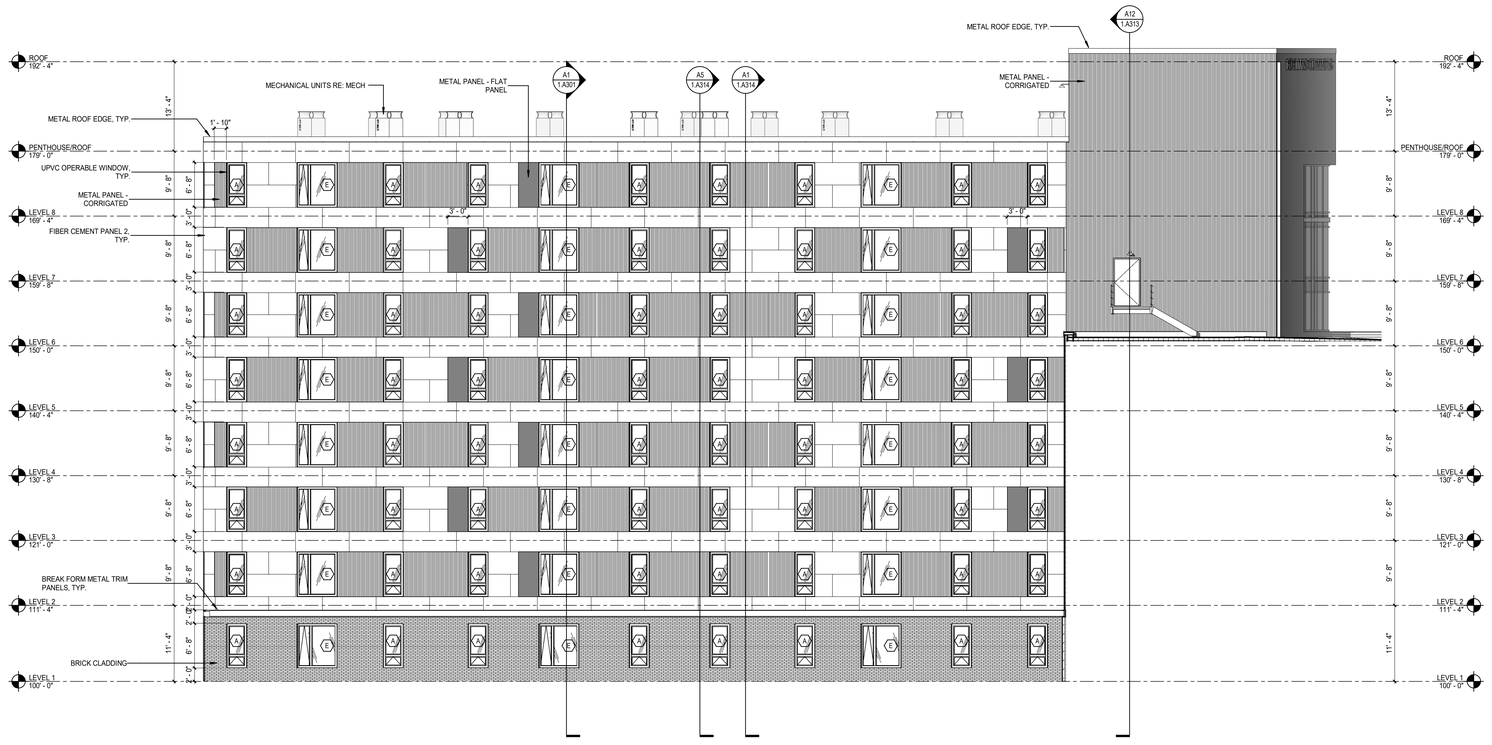
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A202
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A202-19206	SHEET No.	

©COPYRIGHT 2019 SMRT INC

NOT FOR CONSTRUCTION



SOUTH ELEVATION - COURTYARD J1
1/8" = 1'-0"



WEST ELEVATION - COURTYARD A1
1/8" = 1'-0"

ELEVATION NOTES:

1. REFER TO FIRE PROTECTION, MECHANICAL, PLUMBING, ELECTRICAL DRAWINGS FOR ALL RESPECTIVE FIXTURE/ DEVICE LOCATIONS, COUNTS, & ASSOCIATED RECESSED BOXES AT EXTERIOR WALLS.
2. SEE SPECIFICATIONS FOR PREPARATION OF WALL MOUNTING SURFACE FOR INSTALLATION OF EXTERIOR FIXTURES.
3. PROVIDE MASONRY CONTROL JOINTS AT ALL INSIDE MASONRY CORNERS AND ALIGN WITH OPENINGS WHEN POSSIBLE.

REV	DESCRIPTION	DATE

PROGRESS PRINT
7-17-20
CURRENT ISSUE STATUS:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS CENTER & PORTLAND COMMONS
PROJECT LOCATION

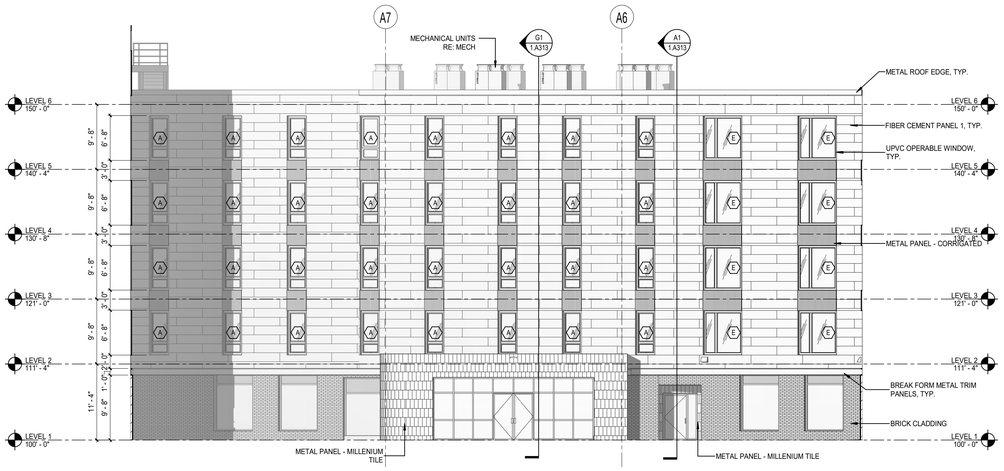
EXTERIOR ELEVATIONS
SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		1.A203
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A203-19206	SHEET No.	

©COPYRIGHT 2019 SMRT INC

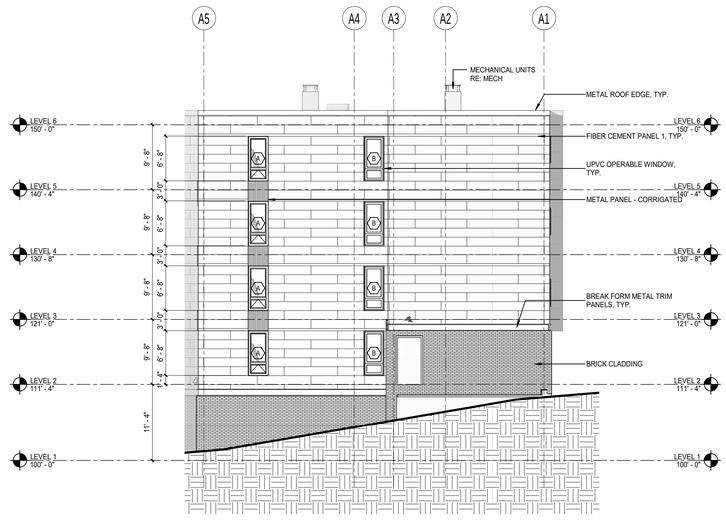
NOT FOR CONSTRUCTION



NORTH ELEVATION - COURTYARD J11
1/8" = 1'-0"



EAST ELEVATION - COURTYARD J1
1/8" = 1'-0"



NORTH ELEVATION - PARTIAL A1
1/8" = 1'-0"

ELEVATION NOTES:

1. REFER TO FIRE PROTECTION, MECHANICAL, PLUMBING, ELECTRICAL DRAWINGS FOR ALL RESPECTIVE FIXTURE/ DEVICE LOCATIONS, COUNTS, & ASSOCIATED RECESSED BOXES AT EXTERIOR WALLS.
2. SEE SPECIFICATIONS FOR PREPARATION OF WALL MOUNTING SURFACE FOR INSTALLATION OF EXTERIOR FIXTURES.
3. PROVIDE MASONRY CONTROL JOINTS AT ALL INSIDE MASONRY CORNERS AND ALIGN WITH OPENINGS WHEN POSSIBLE.

REV	DESCRIPTION	DATE

PROGRESS PRINT
7-17-20
CURRENT ISSUE STATUS:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER & STUDENT SUCCESS
CENTER & PORTLAND COMMONS
PROJECT LOCATION

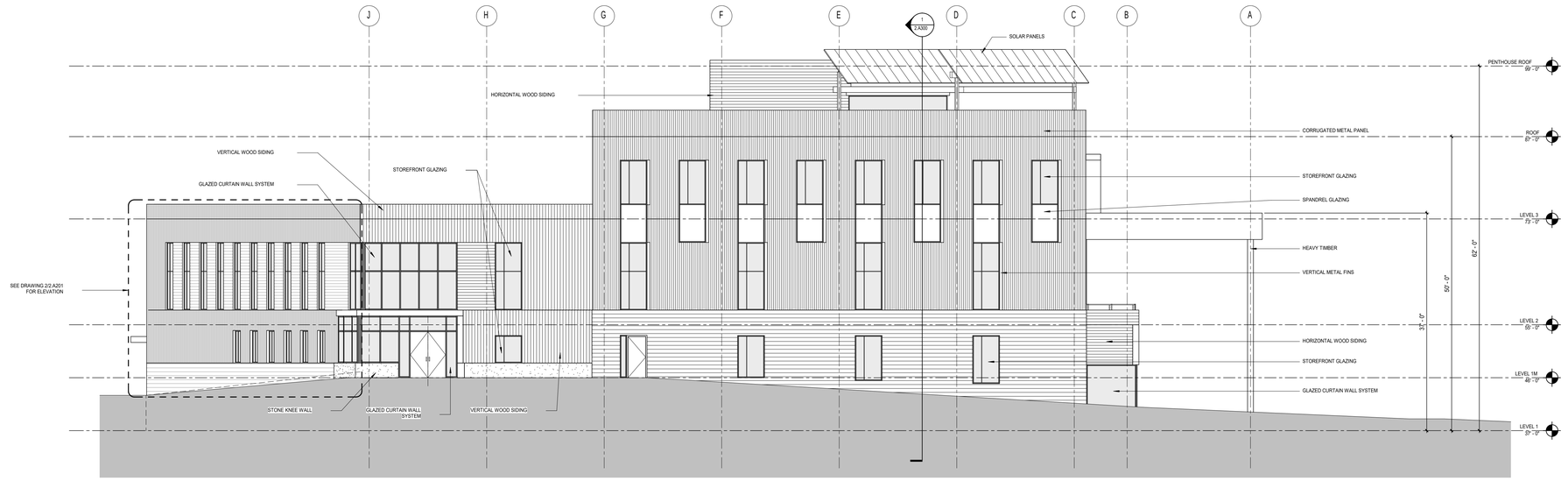
EXTERIOR ELEVATIONS
SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

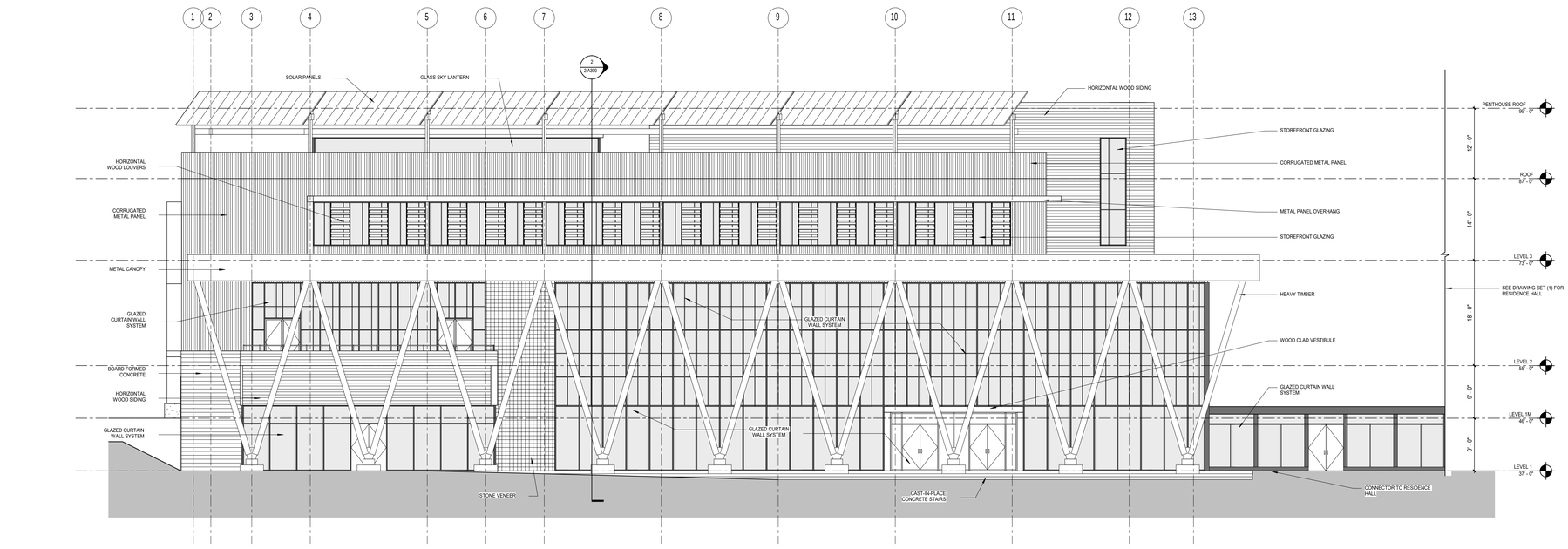
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	PDC		
JOB CAPTAIN:	SDL		
DRAWN BY:	SDL/CAF		
SMRT FILE:	1.A204-19206	SHEET No.	1.A204

©COPYRIGHT 2018 SMRT AE

NOT FOR CONSTRUCTION



SOUTHWEST
1/8" = 1'-0"
2



SOUTHEAST
1/8" = 1'-0"
1

REV.	DESCRIPTION	DATE

ISSUED FOR SD AND PERMITTING
3-06-20
CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL
PROJECT LOCATION:

EXTERIOR ELEVATIONS
SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

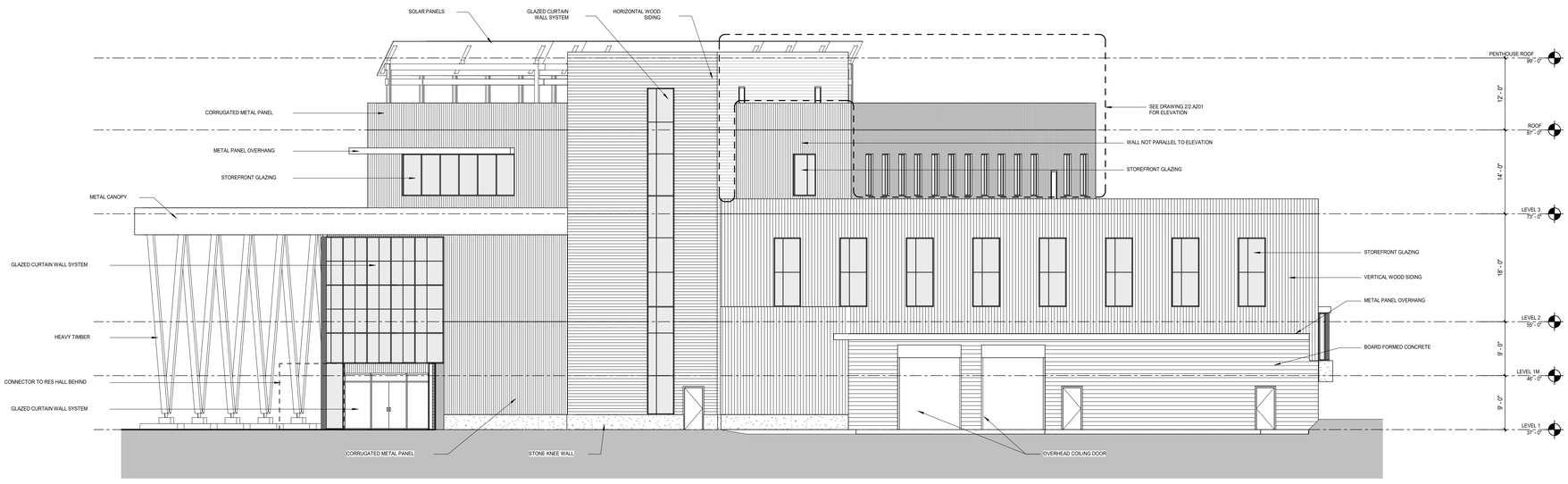
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	Checker		
JOB CAPTAIN:	KD		2.A200
DRAWN BY:	Author		
SMRT FILE:	2.A200-19206	SHEET No.	

COPYRIGHT 2019 SMRT INC.

NOT FOR CONSTRUCTION



NORTHWEST
1/8" = 1'-0"
2



NORTHEAST
1/8" = 1'-0"
1

REV	DESCRIPTION	DATE

ISSUED FOR SD AND PERMITTING
3-06-20

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PROJECT LOCATION

EXTERIOR ELEVATIONS

SHEET TITLE:

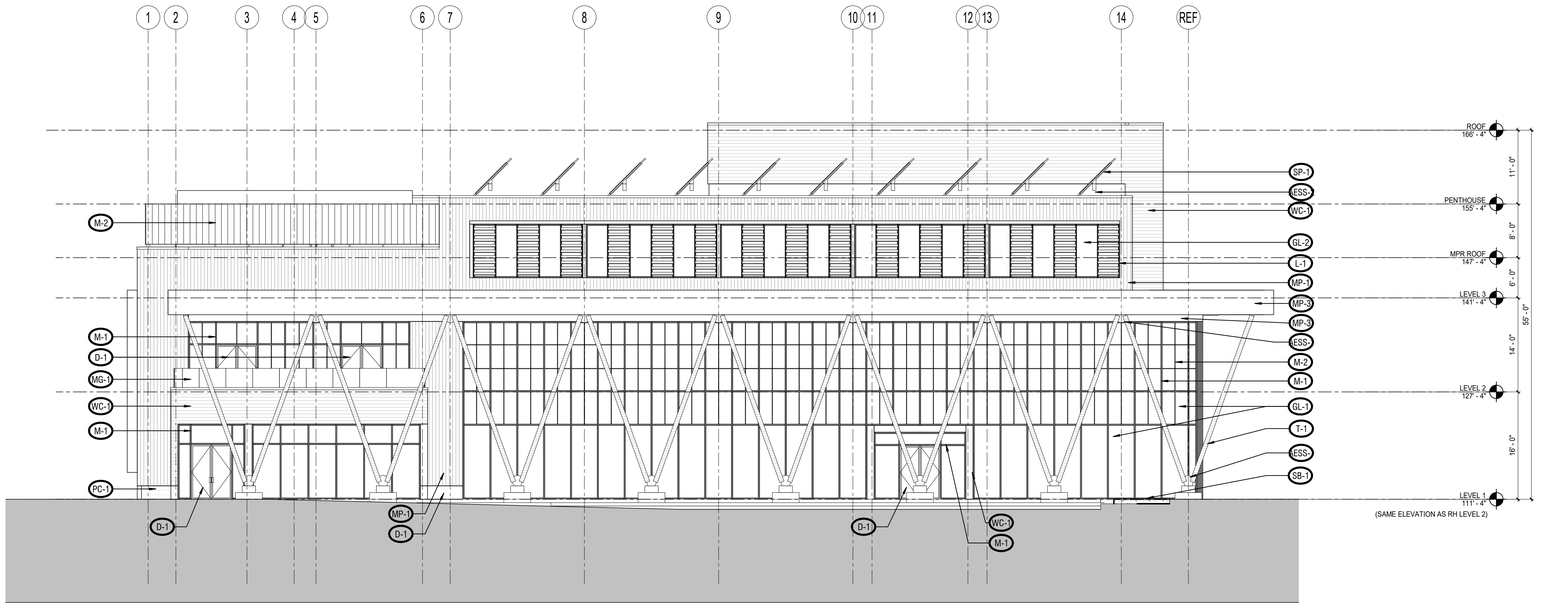
0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	Checker		
JOB CAPTAIN:	KD		2.A201
DRAWN BY:	Author		
SMRT FILE:	2.A201-19206	SHEET No.	

©COPYRIGHT 2019 SMRT INC

NOT FOR CONSTRUCTION



(SAME ELEVATION AS RH LEVEL 2)

South Elevation J6
1/8" = 1'-0"



East Elevation B6
1/8" = 1'-0"

ELEVATION KEY NOTE

NOTE:
SEE EXTERIOR MATERIALS FINISH SCHEDULE ON A200FS FOR COLOR AND FINISH OF EACH KEY NOTE EXTERIOR MATERIAL

TAG	MATERIAL	DESCRIPTION
ESS-1	EXPOSED STRUCTURAL STEEL (PAINTED)	EXPOSED STRUCTURAL STEEL (EXPOSED TO VIEW)
ESS-2	EXPOSED STRUCTURAL STEEL	SOLAR PANEL & SCREEN WALL FRAMING
CP-1	ALUMINUM COPING CAP	
CP-2	ALUMINUM COPING CAP	
D-1	ALUM. FRAMED GLASS DOOR AT CURTAINWALL	HEAVY DUTY ALUM FRAMED DOOR WITH 1" INSULATING GLASS
D-2	HOLLOW METAL DOOR TYPE 1	INSULATED HOLLOW METAL DOOR
D-3	OVERHEAD COILING DOOR	
GL-1	GLAZING TYPE 1	
GL-2	GLAZING TYPE 2	
GL-3	GLAZING TYPE 3	
L-1	WOOD LOUVER TYPE 1	
M-1	CURTAINWALL MULLION TYPE 1	
M-2	CURTAINWALL MULLION TYPE 2	
M-3	CURTAINWALL MULLION TYPE 3	
MG-1	METAL GUARDRAIL	
MP-1	METAL PANEL TYPE 1	CORRUGATED METAL PANEL
MP-2	METAL PANEL TYPE 2	SCREEN WALL
MP-3	METAL PANEL TYPE 3	FLAT METAL WALL PANELS
PC-1	PRECAST CONCRETE	
S-1	SIGNAGE	N.I.C. (BY TENANT)
SB-1	STAINLESS STEEL	STAINLESS STEEL BASE
SP-1	SOLAR PANELS	
SBX	SHADOW BOX ASSEMBLY	TYPE GL-1 GLAZING, ALUMINUM PANEL, INTEGRAL INSULATION AND GALVANIZED STEEL AIR SEAL SHEET (REFER TO PROJECT SPEC. AND DETAILS ON A410-A419)
T-1	TIMBER COLUMNS	8" x 8"
WC-1	RAINSCREEN WOOD SIDING	BASIS OF DESIGN - CAMBIA THERMALLY MODIFIED POPLAR SIDING IN CLIP PROFILE

GENERAL NOTE

1. ALL CURTAINWALL SYSTEM TO BE UNITIZED ALUM. CURTAINWALL WITH HIGH THERMAL PERFORMANCE, REFER TO PROJECT SPECIFICATION FOR DESIGN AND PERFORMANCE CRITERIA.

2. REFER TO PROJECT SPECIFICATION FOR DESIGN AND PERFORMANCE CRITERIA OF GROUND FLOOR STOREFRONT SYSTEM.

3. REFER TO PROJECT SPECIFICATION FOR ASSEMBLY OF GLAZING TYPES 1-6

4. REFER TO PROJECT SPECIFICATION AND PROJECT DETAILS FOR UNITIZED CURTAIN WALL AND STOREFRONT MULLION CONFIGURATIONS, ASSEMBLIES AND PERFORMANCE CRITERIA

REV	DESCRIPTION	DATE

PROGRESS
07-26-20
CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & PORTLAND COMMONS

PROJECT LOCATION

EXTERIOR ELEVATIONS

SHEET TITLE:

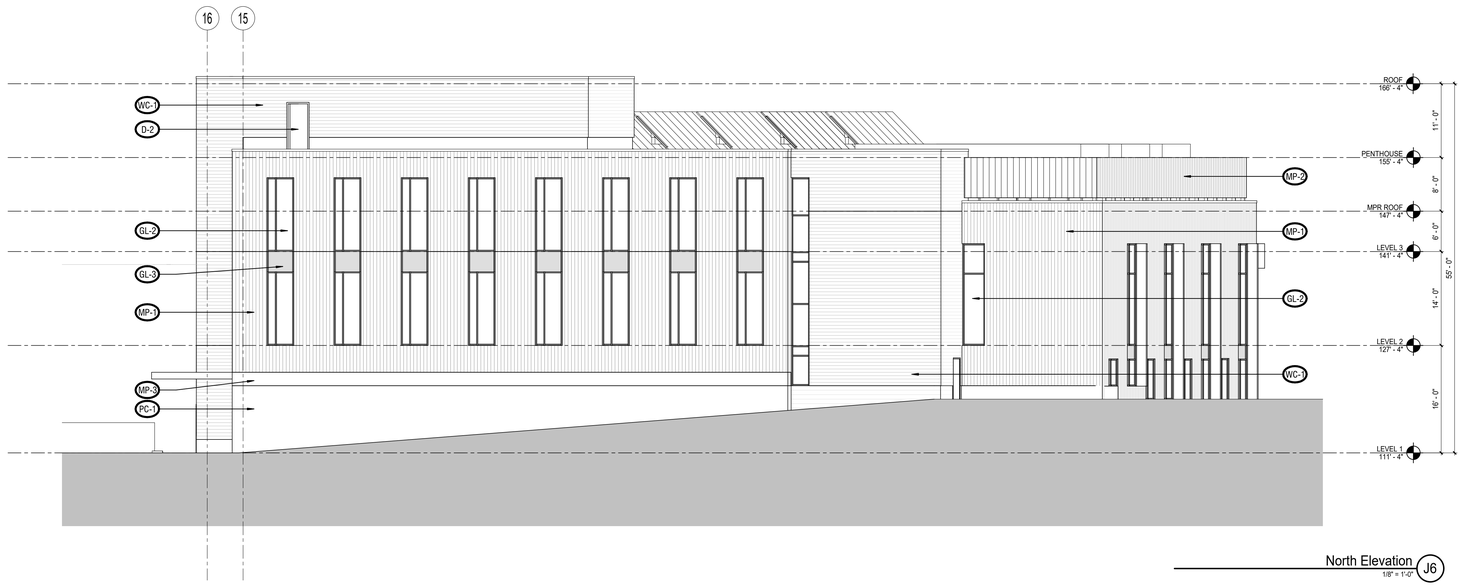
0" 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	XXX	PROJECT NO:	00000
A/E OF RECORD:	Checker		
JOB CAPTAIN:	XXX		2.A201
DRAWN BY:	Author		
SMRT FILE:	2.A201-00000	SHEET No.	

©COPYRIGHT 2018 SMRT INC

NOT FOR CONSTRUCTION



North Elevation J6
1/8" = 1'-0"



West Elevation B6
1/8" = 1'-0"

ELEVATION KEY NOTE

NOTE:
SEE EXTERIOR MATERIALS FINISH SCHEDULE ON A200FS FOR COLOR AND FINISH OF EACH KEY NOTE EXTERIOR MATERIAL

TAG	MATERIAL	DESCRIPTION
ESS-1	EXPOSED STRUCTURAL STEEL (PAINTED)	EXPOSED STRUCTURAL STEEL (EXPOSED TO VIEW)
ESS-2	EXPOSED STRUCTURAL STEEL	SOLAR PANEL & SCREEN WALL FRAMING
CP-1	ALUMINUM COPING CAP	
CP-2	ALUMINUM COPING CAP	
D-1	ALUM. FRAMED GLASS DOOR AT CURTAINWALL	HEAVY DUTY ALUM FRAMED DOOR WITH 1" INSULATING GLASS
D-2	HOLLOW METAL DOOR TYPE 1	INSULATED HOLLOW METAL DOOR
D-3	OVERHEAD COILING DOOR	
GL-1	GLAZING TYPE 1	
GL-2	GLAZING TYPE 2	
GL-3	GLAZING TYPE 3	
L-1	WOOD LOUVER TYPE 1	
M-1	CURTAINWALL MULLION TYPE 1	
M-2	CURTAINWALL MULLION TYPE 2	
M-3	CURTAINWALL MULLION TYPE 3	
MG-1	METAL GUARDRAIL	
MP-1	METAL PANEL TYPE 1	CORRUGATED METAL PANEL
MP-2	METAL PANEL TYPE 2	SCREEN WALL
MP-3	METAL PANEL TYPE 3	FLAT METAL WALL PANELS
PC-1	PRECAST CONCRETE	
S-1	SIGNAGE	N.I.C. (BY TENANT)
SB-1	STAINLESS STEEL	STAINLESS STEEL BASE
SP-1	SOLAR PANELS	
SBX	SHADOW BOX ASSEMBLY	TYPE GL-1 GLAZING, ALUMINUM PANEL, INTEGRAL INSULATION AND GALVANIZED STEEL AIR SEAL SHEET (REFER TO PROJECT SPEC. AND DETAILS ON A410-A419)
T-1	TIMBER COLUMNS	8" x 8"
WC-1	RAINSCREEN WOOD SIDING	BASIS OF DESIGN - CAMBIA THERMALLY MODIFIED POPLAR SIDING IN CLIP PROFILE

GENERAL NOTE

1. ALL CURTAINWALL SYSTEM TO BE UNITIZED ALUM. CURTAINWALL WITH HIGH THERMAL PERFORMANCE. REFER TO PROJECT SPECIFICATION FOR DESIGN AND PERFORMANCE CRITERIA.

2. REFER TO PROJECT SPECIFICATION FOR DESIGN AND PERFORMANCE CRITERIA OF GROUND FLOOR STOREFRONT SYSTEM.

3. REFER TO PROJECT SPECIFICATION FOR ASSEMBLY OF GLAZING TYPES 1-6

4. REFER TO PROJECT SPECIFICATION AND PROJECT DETAILS FOR UNITIZED CURTAIN WALL AND STOREFRONT MULLION CONFIGURATIONS, ASSEMBLIES AND PERFORMANCE CRITERIA

REV	DESCRIPTION	DATE

PROGRESS
07-26-20
CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
144 Fore Street
Portland, Maine 04101
1.877.700.7678
www.smrtinc.com

25 Drydock Avenue
Boston, Massachusetts 02210
1.617.426.1300
www.elkus-manfredi.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & PORTLAND COMMONS
PROJECT LOCATION

EXTERIOR ELEVATIONS
SHEET TITLE:

0" 1/4" 1/2" 1" 2" 3"
SCALE: AS NOTED

PROJECT MANAGER:	XXX	PROJECT NO:	00000
A/E OF RECORD:	Checker		
JOB CAPTAIN:	XXX		
DRAWN BY:	Author		
SMRT FILE:	2.A202-00000	SHEET No.	2.A202

COPYRIGHT 2018 SMRT INC

NOT FOR CONSTRUCTION

Rendering

Site Plan



Rendering

Site Plan



Existing



Proposed

Rendering

Aerial



Rendering

Aerial



Existing



Proposed

Career & Student Success Center
Residence Hall
Overall Bird's Eye



Career & Student Success Center Residence Hall

Bedford Street View in Spring



Career & Student Success Center
Residence Hall
Bedford Street View in Winter



Career & Student Success Center
Residence Hall
Entry View of Residence Community



Career & Student Success Center
Residence Hall
Long View of CSSC from Bedford Street Crosswalk



Rendering

Across Bedford St



Career & Student Success Center
Residence Hall
Career & Student Success Center South Facade



Career & Student Success Center
Residence Hall
Career and Student Success Center Portico



Rendering

Courtyard



Career & Student Success Center
Residence Hall
Residence Hall View Along Durham Street



COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

March 5, 2020

James Rather
Development Review Services Manager
City of Portland
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine – 23 Bedford Street
Career and Student Success Center and Residence Hall
Level III Site Plan Application
Site Location of Development Amendment Application

Dear James:

On behalf of the University of Southern Maine, Woodard & Curran is pleased to submit applications for a Level III Site Plan Review and a Site Location of Development (SLOD) Amendment for a new Career and Student Success Center and a new Residence Hall to be located at 23-29 Bedford Street. The project represents a significant implementation of the University's Facilities Master Plan. In addition to the approximately 60,000 SF Student Success Center and the 580-bed Residence Hall (approximately 220,000 SF) the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services; site lighting; and other site amenities.

The Site Plan application has been prepared in accordance with the City of Portland's Chapter 14, Land Use Code of Ordinances and the applicable sections of the City of Portland Design and Technical Manuals. The SLOD Amendment has been prepared in accordance with Maine Department of Environmental Protection Chapter 500 Rules. It is our understanding that the City will be reviewing the SLOD Amendment under its Delegated Review Authority.

The application materials, supporting documents, and design drawings will be uploaded into the ePlan folder when it becomes available for the project. Thank you for coordinating the review of this important project. If you have any questions regarding this application, please feel free to contact me at (207) 558-3662 or by email at dstairs@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Darrin Stairs, PE
Project Manager

cc: Alexander Porteous - University of Southern Maine
Keith Brown - Capstone Development Group
Craig Piper – SMRT Architects

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

Via Electronic Mail

July 15, 2020

Department of Planning & Development
Attn: Matthew Grooms
City of Portland
389 Congress Street
Portland, ME 04101

Re: USM Career & Student Success Center and Residence Hall
Neighborhood Meeting Certification

To Whom It May Concern:

I, Darrin Stairs, PE of Woodard & Curran, hereby certify that a neighborhood meeting was held on July 15, 2020, at via a virtual (Zoom) meeting, at 6:00 pm regarding the Level III Site Plan Submittal for the proposed **USM Career & Student Success Center and Residence Hall** project located at 23 Bedford Street.

I also certify that on July 2, 2020, invitations were mailed to the following:

1. All addresses on the abutters list provided by the Planning Division which includes property owners within 500 feet of the proposed development.

2. Residents on the "interested parties" list.

Signed,

WOODARD & CURRAN INC.

Darrin Stairs, PE
Project Manager

Attached to this certification are:

1. Copy of the invitation sent
2. Attendees List
3. Meeting Notes
4. Presentation Slides

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

July 2, 2020

Dear Neighbor:

On behalf of the University of Southern Maine (Applicant), please join us for a neighborhood meeting to discuss the University's plans for a new Career and Student Success Center and Residence Hall, to be located at 23 Bedford Street in Portland, Maine. A Level III Site Plan Application for the development has been filed with the City of Portland Planning Division on behalf of the Applicant.

Meeting Location: Virtual Zoom Meeting. Register at the following link to receive a Zoom invitation to the meeting: https://usm.maine.edu/finance/forms-0

Meeting Date: Wednesday, July 15, 2020

Meeting Time: Meeting open at 5:30 PM, EST; Presentation to begin at 6:00 PM EST

The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list" be invited to participate in a neighborhood meeting. Attendance will be taken, and minutes recorded and submitted to the Planning Board.

If you have any questions, please contact Darrin Stairs at (207) 558-3662 or via email at dstairs@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Darrin Stairs, PE
Project Manager

Note: Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plan was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division, 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to jrather@portlandmaine.gov.

USM CSSC & Portland Commons Neighborhood Meeting
July 15, 2020 6:00pm-7:00pm
Attendees List

Name	email address	Address
Aaron Witham	aaron.z.witham@maine.edu	1677 Royalsborough Rd, Durham, ME
Alec Porteous	alexander.porteous@maine.edu	USM
Ann Vashon	ann.vashon@maine.edu	Maine
Brenda Nicholas	rnichol1@maine.rr.com	
Carolyn McDonough	cmcdonou@maine.edu	5765 Service Building
Craig Piper, SMRT Architec	cpiper@smrtinc.com	105 Loveitts Field Road, South Portland, Maine 04106
Darrin Stairs	dstairs@woodardcurran.com	41 Hutchins Drive
DAVID E WEEKS	dweeks01@maine.rr.com	355 Forest Avenue
David E. Roussel	david.roussel@maine.edu	
Dawn Gay	dgay@llbean.com	8 Chamberlain Ave
Glenn Cumings	glennc@maine.edu	24 Nevins Street
Jeanne Paquette	jeanne.paquette@maine.edu	USM Bedford Street, Portland, Maine
Joe Picoraro	jpicoraro@pcconstruction.com	193 Presumpscot Street
John Lewandowski	jrl@maine.rr.com	132 Brighton Ave
John Souther	John.souther@maine.edu	42 Bailey Farm Rd, Freeport Me 04032
Kate Snyder	ksnyder@portlandmaine.gov	389 Congress Street
Katie Mahoney	katherine.mahoney@maine.edu	494 Deering Avenue
Kristin Sweeney	sweeneykg@gmail.com	167 Caleb St
Lachelle Lackey	lachelle.lackey@maine.edu	25 Bedford St.
Mary Costigan	mcostigan@bernsteinshur.com	100 Middle St
Paul A Kuplinski	paul.kuplinski@maine.edu	PO Box 9300, Portland, ME
Philip Chaney	pchaney@smrtinc.com	80 Brentwood Street
Ross Cameron	rcameron@elkus-manfredi.com	25 Drydock Ave
Samantha Warren	samantha.warren@maine.edu	70 Kent Street
STEPHEN WILKINS	Swilkins@pcconstruction.com	
Susan Fekety	sfekety@gwi.net	125 Bolton Street
Thomas Blanchard	thomas.blanchard@maine.edu	25 Bedford St, Portland, ME 04101
Jennifer Conley		
Laurie Davis		
Annie Anderson		72 Pitt Street

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

NEIGHBORHOOD MEETING NOTES

PROJECT: USM Career & Student Success Center and Portland Commons Residence Hall

MEETING DATE: 7/15/2020

LOCATION: Virtual Meeting (Zoom)

This neighborhood meeting for the proposed USM Career & Student Success Center and Portland Commons Residence Hall was held virtually via the Zoom platform on July 15th.

The zoom meeting was opened at 5:30pm to allow for attendees to log in and resolve technical difficulties.

The presentation began at 6:00pm and lasted approximately 45 minutes. A link to the presentation was shared with all registered attendees earlier in the day, and a copy of the presentation is attached.

Alec Porteous, Chief Operating Officer & Chief Business Officer for USM, opened the meeting and welcomed attendees.

Darrin Stairs, Project Manager at Woodard & Curran, reviewed the meeting details, including the application currently being considered, contacts at City Planning and the University, and specifics on how to ask questions or comment via the virtual platform at the end of the meeting.

Mr. Porteous then introduced executive and senior staff in attendance from USM and the University of Maine System, as well as the project team of which he would speak in more detail later in the meeting.

Mr. Porteous then introduced USM President Glenn Cummings.

President Cummings welcomed all attendees and recognized Mayor Snyder who was in attendance and is a resident of the neighborhood. Mr. Cummings thanked the Mayor for her support of the project.

President Cummings spoke of the transformational effects that the proposed projects would have on the Portland campus, including replacing the existing parking lot with a green quad that would become the centerpiece of the campus. This quad will be a resource for the students and staff as well as the surrounding community. The President also described the Career & Student Success Center, including a dining room, café/pub, fireside student lounge, a state-of-the-art Career services center, and dedicated student life offices. President Cummings explained that the proposed 577-bed residence hall will add a residential life component not currently present on the campus that will couple with the state-of-the-art student center. Students that will reside in the new hall will be primarily be upper-level and graduate students. The President then turned the presentation back over to Mr. Porteous.

Mr. Porteous gave an overview of the project, beginning with the timeline that began with the Project initiation in June of 2018 and will culminate with the completion of construction in the Spring of 2013.

Mr. Porteous introduced the project team by organization and described the role that each is playing on the project.

Mr. Porteous reviewed the project background for the Residence Hall (Portland Commons). He shared a rendering view from Bedford Street and explained the architects would share a description of the design elements later in the presentation.

Mr. Porteous stated that enrollment at USM from 2015 to 2020 has grown by 7.3%. He explained that this has led to over-occupancy on the Gorham Campus, and that even during the current pandemic USM is seeing housing requests in excess of occupancy for the Gorham Dorms. Upper Class, Graduate and Law School students struggle to find affordable housing in the Greater Portland area. Portland Commons

will alleviate this housing shortage and enable USM and UMS to take advantage of the national and international appeal of the Portland Area. Mr. Porteous explained that the 2018 Brailsford and Dunlavey market analysis justified 550-600 beds on the Portland campus without cannibalizing occupancy on the Gorham Campus.

Mr. Porteous reviewed the Project Details for Portland Commons, including that it would be the largest Passive House residence hall in New England and among the five largest in the U.S. He explained that the Portland Campus has had Portland based residential options in the past, but never on-campus housing. The residence will be a short walk from the new quad, the student center, and academic buildings.

Mr. Porteous shared project background for the Career & Student Success Center, including that it will be approximately 40,000 sf, will seek LEED Certification, and will feature mass timber and cross laminated timber. Mr. Porteous reviewed the building programming, including: first floor – dining, pub/café. University Store and welcome center; second floor- 13,500 sf Career Center with multipurpose event room overlooking the quad, interview rooms for employers; and third floor – student affairs offices, student government, student lounges and study spaces. Mr. Porteous acknowledged the generous support of the Maine voters in 2018 that authorized $49 Million in bonding to modernize UMS facilities to attract and retain students to Maine. Mr. Porteous then turned the presentation over to Aaron Witham, Assistant Director of Facilities Management for Sustainability, to review Transportation and Parking related issues.

Mr. Witham reviewed the transportation studies that have been completed to date by VHB, including: A Parking Study, Transportation Demand Management (TDM) study, and a Traffic Study. He reviewed the current status of parking supply on campus – showing a map of current lots and parking counts. Mr. Witham recounted that findings of the parking study that showed peak parking times are generally in the middle of the week days, between 12:00 and 1:30.

Mr. Witham then reviewed other related Parking Projects that are not part of this application. These included: A Structured Parking Feasibility Study completed by Platz in 2019; the plan to construct a 425-500 space parking garage near the Sullivan Gym; and the construction of the Wishcamper Parking lot in 2021. Mr. Witham shared a map that showed the future parking supply with the displaced spaces lost to construction of the City Roundabout project and the CSSC/Residence Hall, and the added spaces expected from the Wishcamper Parking lot renovation and the new structured parking garage.

Mr. Witham then concluded reviewing the Traffic Impact Analysis expected with this project. He explained that the Residence Hall is not a creator of new trips to the campus, but rather replaces a significant number of commuter trips with students now able to walk to classes and activities rather than drive. The net result is a decrease in peak daily trips - with the majority of resident trips occurring outside of peak hours and on weekends. The Student Center is also not believed to be a generator of trips, as it is an accessory function to campus activities and is replacing the existing student center. The exception would be some special events. Mr. Witham explained the primary driver for increased trips on the campus will come from increases in enrollment. The slight increases expected in traffic at area intersections are already being accommodated for with current and proposed City improvement projects, including the roundabout at Deering and Brighton Avenue. Mr. Witham then turned the presentation over to Craig Piper of SMRT Architects.

Mr. Piper reviewed the Project Design and Architectural standards. The proposed residence hall anchors the corner of Durham and Bedford Streets, providing a strong corner to mark the arrival to the center of the campus moving west on Bedford Street, the primary urban arterial that moves through the campus. Reflecting the geometry of the Durham and Bedford intersection, the four wings of the residential building

form a parallelogram that encloses a ½ acre semiprivate courtyard for the residents. The Residence Hall building has a large perimeter, which is mitigated by creating a five story lower portion that frames Bedford Street and the new Central Quad and a higher, eight story portion that frames Durham Street and the northern edge of the courtyard against the existing campus utility plant. The height of the lower Bedford Street wing is approximately the same height of the Wishcamper Center and Osher Map Library directly across the street. Together these buildings serve to define the street walls that mark the entrance to this part of the campus. The lower Bedford Street wing of the residence hall turns to run parallel to Durham Street, forming the eastern edge of a new large, one-acre Central Quad. This quad is an open, gently sloping green lawn that will become the signature open space for the University, framed by Masterton Hall on the west, the new residence hall on the east, and set back almost 200' from the road, the new Career and Student Success Center ("CSSC") on the north. The CSSC serves as a fulcrum in the overall campus plan, reconciling the non-parallel geometries of Bedford and Falmouth Streets. The façade facing Bedford Street terminates the Central Quad and offers a south facing grand portico, providing comfortable shade in the spring, summer and fall while providing weather protection in the winter. The west façade parallels the east façade of Masterton Hall and defines an important north – south cross-campus connector. The north or rear façade roughly parallels Falmouth street and creates the possibility that the future parking garage will work with the CSSC to frame and further extend the series of open spaces that loosely form an east – west green connector from Deering Avenue all the way to the Sullivan fitness center. The east façade, facing the utility plant, is parallel to Durham Street and serves as a loading dock for the CSSC.

The buildings are designed to be a visual and tactile manifestation of the University's desire to "to build a sustainable, iconic academic campus in the heart of Portland enhancing the commuter experience while creating a welcoming residential community." Creating buildings that are didactically sustainable, welcoming, and tied directly to visual language of the nearby campus buildings have become the imperatives for our design. The residential building aspires to weave itself into the fabric of the campus in both its footprint and its fenestration while the Student Success Center seeks to become the iconic center of the campus. The buildings draw their material palette and fenestration patterns both from the immediate context of the campus and the "heart of Portland" – the downtown and the waterfront.

The lower volume of the residence hall is characterized by essentially complete transparency all along the Bedford Street façade. The first floor behind this glass houses all of the public functions of the residence hall – the community kitchen, the living room, two seminar / classrooms, the bike room and the building's entry lobby. These spaces activate the sidewalk throughout the day and late into the evening, spilling light onto the sidewalk and making the campus a more welcoming, attractive and safe place. A long horizontal canopy leads pedestrians from the Wishcamper crosswalk and the corner of the Central Quad along Bedford Street to the bike and pedestrian lobbies, which form the primary entry to the residence hall.

Up above, along Durham Street and the edge of the existing Physical Plant the taller, 8-story volume of the residence hall is comprised of lighter materials, both in weight and color. The upper ranges of all the facades are a combination of large widows with passive house compliant frames, cement fiber panels and metal panels, creating a basket weave of windows and metal panels that alternate within bands of fiber-cement panels.

The intersection of the taller and lower volumes at the corner of Durham and Bedford Streets provides an opportunity to mark this as a prominent corner for the University. The lower volume frames Bedford Street, but the taller volume sets back and places student lounges at the southern edge of the wing to create visual permeability into the building as well as a beacon of light emanating from the building in the evening and nighttime.

The residence hall employs myriad strategies to embrace the overarching objective of didactic sustainability. These strategies are highlighted within the building to educate the residents about their choices and the effects of those choices on all aspects of sustainability: environmental stewardship, social justice, and economic equity. One of the most aggressive sustainable features of the building is that it is designed to Passive House (PHIUS) standards. When completed, this building will use very little energy while providing residents with year-round comfort.

The Residence Hall and Career Student Success Center will be transformative projects for the University of Southern Maine in Portland. Designed with the imperatives of sustainability, accessibility, and legibility, these buildings tell the story of a University dedicated to the education and practice of living a sustainable lifestyle; welcoming people of all cultures and abilities; and being an iconic, innovative engine that drives the State's economy.

Mr. Piper turned the presentation over to Alec Porteous who concluded with the reaffirmation that the CSSC and the new residence hall and campus quad will fulfill a significant portion of the Portland Campus Master Plan and will transform the campus.

At this time the meeting was opened to questions and comments from the neighborhood. No questions were asked, but the following comments were received.

Comment 1: Really appreciate the presentation and the planning that has been done. Thank you

Comment 2: This is very exciting to see! The architecture is stunning and it feels like what USM had needed.

Comment 3: No questions, but agree that it is attractive project that will help to define the campus. Good work!

After waiting for a few minutes and seeing no additional questions or comments, both Mr. Porteous and President Cummings thanked all for their attending and for the kind comments that were received.

The Neighborhood Meeting concluded at approximately 7:00 PM.

UNIVERSITY OF SOUTHERN MAINE

Career & Student Success Center / Portland Commons

Neighborhood Meeting

July 15, 2020

Presentation Details

- Level III Site Plan Application: PL-001040-2020, 23-25 Bedford Street
- City of Portland Planning Division – 207.874.8719
- Planner Assigned: Matthew Grooms
- Development Review Services Manager: James Rather

- Q&A Discussion
  - Raise hand feature
  - Chat feature
  - Technical issues: Please contact Katie Mahoney (katherine.mahoney@maine.edu)
  - Future project inquires: Alec Porteous (alexander.porteous@maine.edu)

Presentation Agenda

1. *Welcome / Introductions*
2. *Project Overview*
3. *Project Background – Portland Commons*
4. *Project Background – Career & Student Success Center*
5. *Related Parking & Transportation Planning*
6. *Project Design & Architectural Renderings*
7. *Questions / Discussion*

Transforming USM's Portland Campus

- **USM's proposed Career and Student Success Center (CSSC) and Portland Commons Residence Hall will have a transformational effect on the University's Portland campus.**

- Portland campus adds residential life component → **Project adds a 577-bed residence hall** to a campus that has never had on-campus housing and couples that with a state-of-the-art student center.

- Career & Student Success Center takes center stage → Building will include a spacious dining room flanked by a café/pub, and fireside student lounge. The second floor will include office, meeting, and event space dedicated to career services, and the third floor will be dedicated to student affairs offices, lounges and programming.

- Surface parking lot centerpiece becomes Green Quad → **central quad will serve as entry-point to Portland campus,** providing key functionality and aesthetic appeal. The quad will be a resource for all students, staff and faculty and the surrounding community, as well.

Career & Student Success Center Residence Hall

Aerial



PROJECT OVERVIEW

Project Overview – Timeline / Process

Work-to-Date

- **June 2018:** Project initiation → Formation of USM President's P3 Committee (USM & UMS committee members).

- **January 2019:** UMS Trustees approve USM's Master Plan, which includes the concept of a Career & Student Success Center as well as a significant residence hall and the transformation of the Portland campus' Bedford Street Parking Lot into a green quad.

- **July – December 2019:** USM/UMS conduct RFQ and RFP processes.
  - Capstone Development Partners selected in a competitive project process to develop jointly CSSC / Portland Commons

- **January 2020 – Present:** BOT approval of PDA, project advances.
  - USM/UMS and Capstone team advance project through design stages; reevaluate plans due to COVID-19; execute PDA

Project Overview – Timeline / Process (cont'd)

Next Steps

- **July 15, 2020:** Neighborhood meeting.
- **Late Summer / Fall 2020 :** City of Portland Planning Board Process.
- **Spring 2021:** Demolition of Woodbury Student Center and 25 Bedford Street (Department of Facilities Management building).
- **Spring 2021:** Begin construction of CSSC and Portland Commons project.
- **Spring 2023:** Complete construction and open to students and University community.

Project Overview – Team

UNIVERSITY OF SOUTHERN MAINE

Maine's Public Universities
UNIVERSITY OF MAINE SYSTEM

CAPSTONE DEVELOPMENT PARTNERS

SMRT

ELKUS | MANFREDI ARCHITECTS

PC CONSTRUCTION

cmp CAPSTONE MANAGEMENT PARTNERS

WOODARD & CURRAN

Steven Winter Associates, Inc.

PROJECT BACKGROUND – PORTLAND COMMONS

Career & Student Success Center
Portland Commons Residence Hall
Bedford St. Corner – Spring Scene



Project Background – Portland Commons

- **From 2015 to 2020, USM grew student enrollment by 7.3%.**
  - Robust enrollment growth has led to over-occupancy in residence halls on the Gorham campus
  - Even during the COVID-19 pandemic, USM is seeing housing requests exceed natural occupancy for the Gorham dorms

- **Upper Class, Graduate and Law School students struggle to find affordable housing in the Greater Portland area.**
  - Portland Commons will help alleviate this housing shortage and will enable USM and the University of Maine System to take advantage of the City of Portland's national and international appeal

- **A 2018 Brailsford and Dunlavey market analysis demonstrated that USM could add 550 to 600 beds** on the Portland campus without cannibalizing occupancy in the Gorham campus residence halls.

Project Details – Portland Commons

- **577-bed, 220,000 square foot Portland Commons Residence Hall will be built to Passive House standards.**
  - Portland Commons will be the largest Passive House residence hall in New England and will be among top five largest in the U.S.
  - Passive House lowers energy use and emissions, cutting utility bill by >50% compared to building to current standard code
- **Portland Commons achieves two major goals of establishing Portland as a residential campus and adding an affordable housing option** for upper class, graduate and Maine Law students.
  - While USM has had Portland-based residential options in the past, the Portland campus has never had on-campus housing
  - Fronted by a green quad, Portland Commons will be a short walk to all Portland campus academic buildings and the proposed Graduate Student Center
  - With Portland housing prices continuing to climb, and demand continuing to grow, Portland Commons will offer a unique alternative to students seeking to live and study in the city

PROJECT BACKGROUND – CAREER & STUDENT SUCCESS CENTER

Career & Student Success Center
Residence Hall
Long View of CSSC from Bedford Street Crosswalk



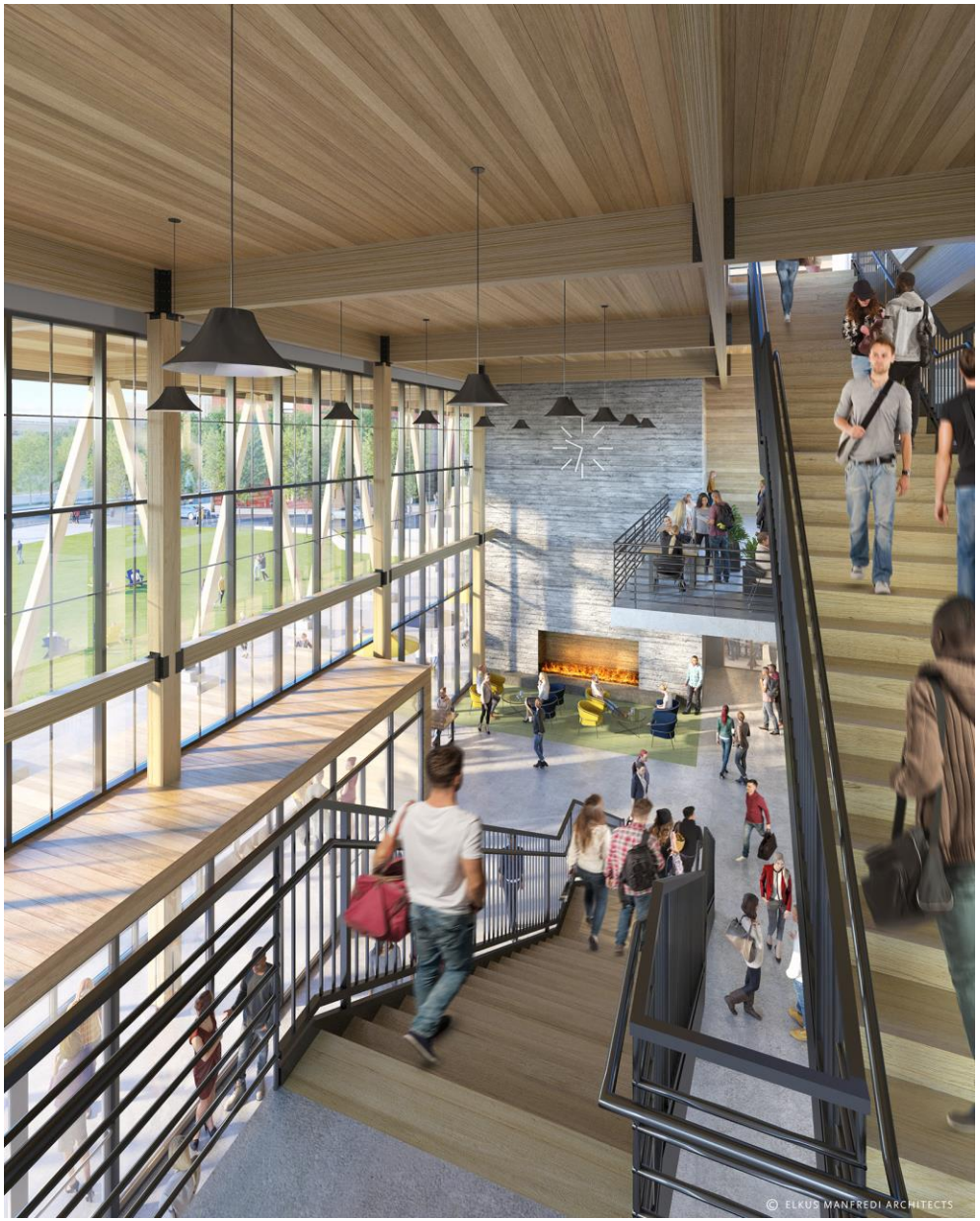
Project Background – Career & Student Success Center

Approx. 40,000 square feet;

LEED Certification;

Mass Timber / Cross Laminated Timber

- Dining Services
- Career Services / Career Hub
- Student Organizations
- Open Spaces / Lounges for Students
- Diversity Center
- Multi-purpose room
- University Store
- SGA
- Husky Dining Room



Project Details – Career & Student Success Center

- **The Career & Student Success Center will help fulfill the needs of USM's growing and increasingly diverse student body.** Key input from students and Student Affairs staff members has helped shape the composition of the CSSC.

  - **First Floor:** 300+ seat dining, adjacent café/pub, fireside student lounge, University Store and welcome center

  - **Second Floor:** 13,500 square foot Career Center, equipped with a multipurpose event room overlooking the green quad, office suite for career advisers, interview rooms for employers visiting campus or Zoom interviews, Husky Dining Room overlooking the first floor

  - **Third Floor:** Student Affairs focus, with 1,840 square foot Diversity & Intercultural Center overlooking the campus green, Student Government Office, Student Affairs Programming Office, student lounges and study spaces

Project Details – Career & Student Success Center (cont'd)

- **With the generous support of Maine voters,** the Career & Student Success Center will fulfill USM's commitment to enhanced career advisory and placement services that keeps Maine students in our state and attracts out-of-state students to live and work in Maine.

  - ***This commitment responds to the successful passage of Question 4 on the 2018 ballot,*** *which authorized $49 million in bonding for modernizing UMS facilities to attract and retain students to Maine.*

- **President Cummings and the USM Foundation led the bond campaign for USM,** and the President responded to the successful outcome by saying:

  - *"For our students, passage of Question 4 will translate to an enhanced learning environment, better preparation for future careers, and more integrated interaction with area employers. For the rest of us, yesterday marked a key date in our steady approach to becoming a truly great university."*

RELATED PARKING & TRANSPORTATION PLANNING

Transportation Studies

- In 2019 USM hired VHB, renowned transportation consultant, to conduct studies & guide planning efforts
  - Parking study
  - Transportation Demand Management (TDM) study
  - Traffic study



Parking Supply on Campus: Current Status



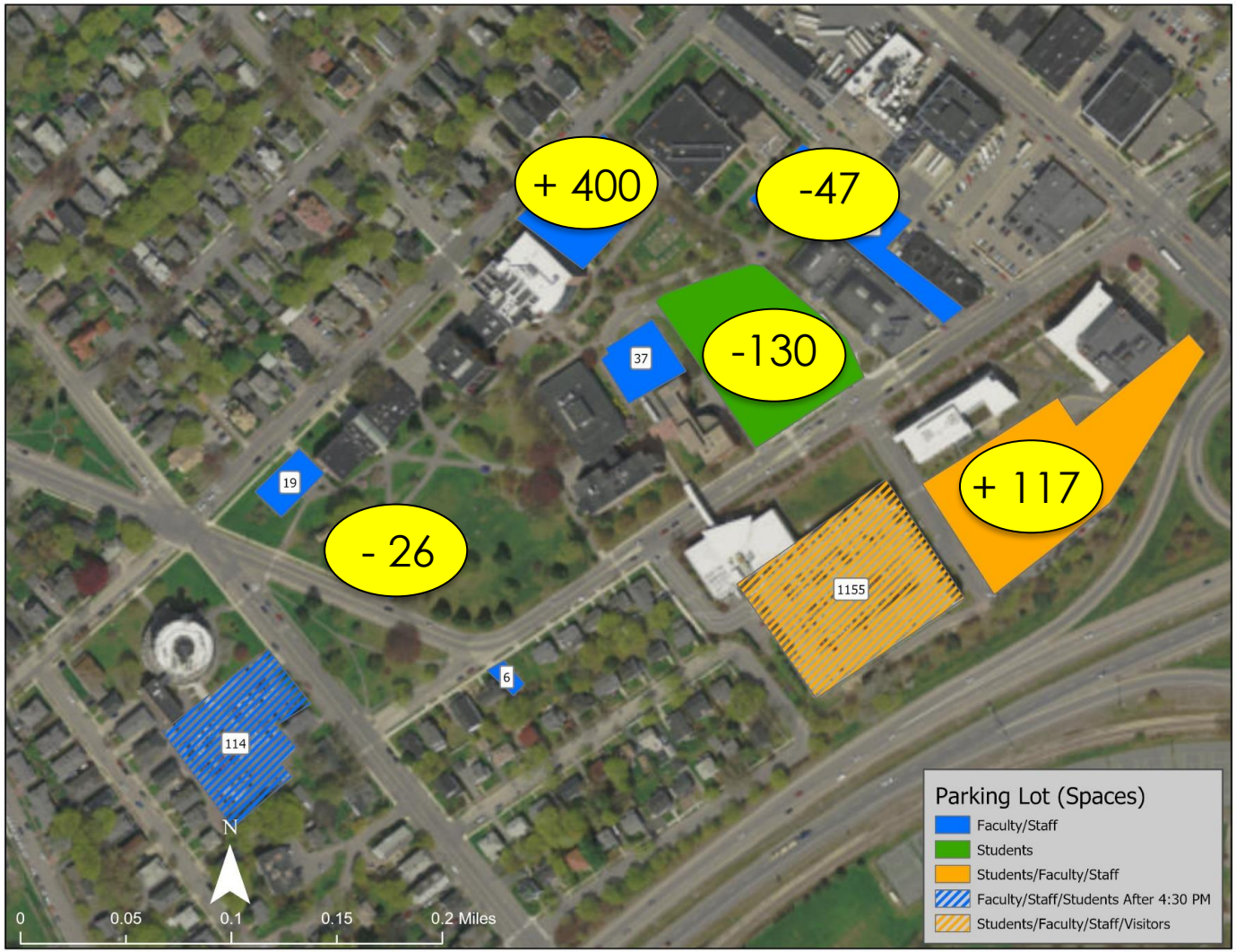
Related Parking Projects

- **Structured Parking Feasibility Study:** During Summer 2019, USM contracted with Platz Associates to review options for additional structured parking on USM's Portland Campus.

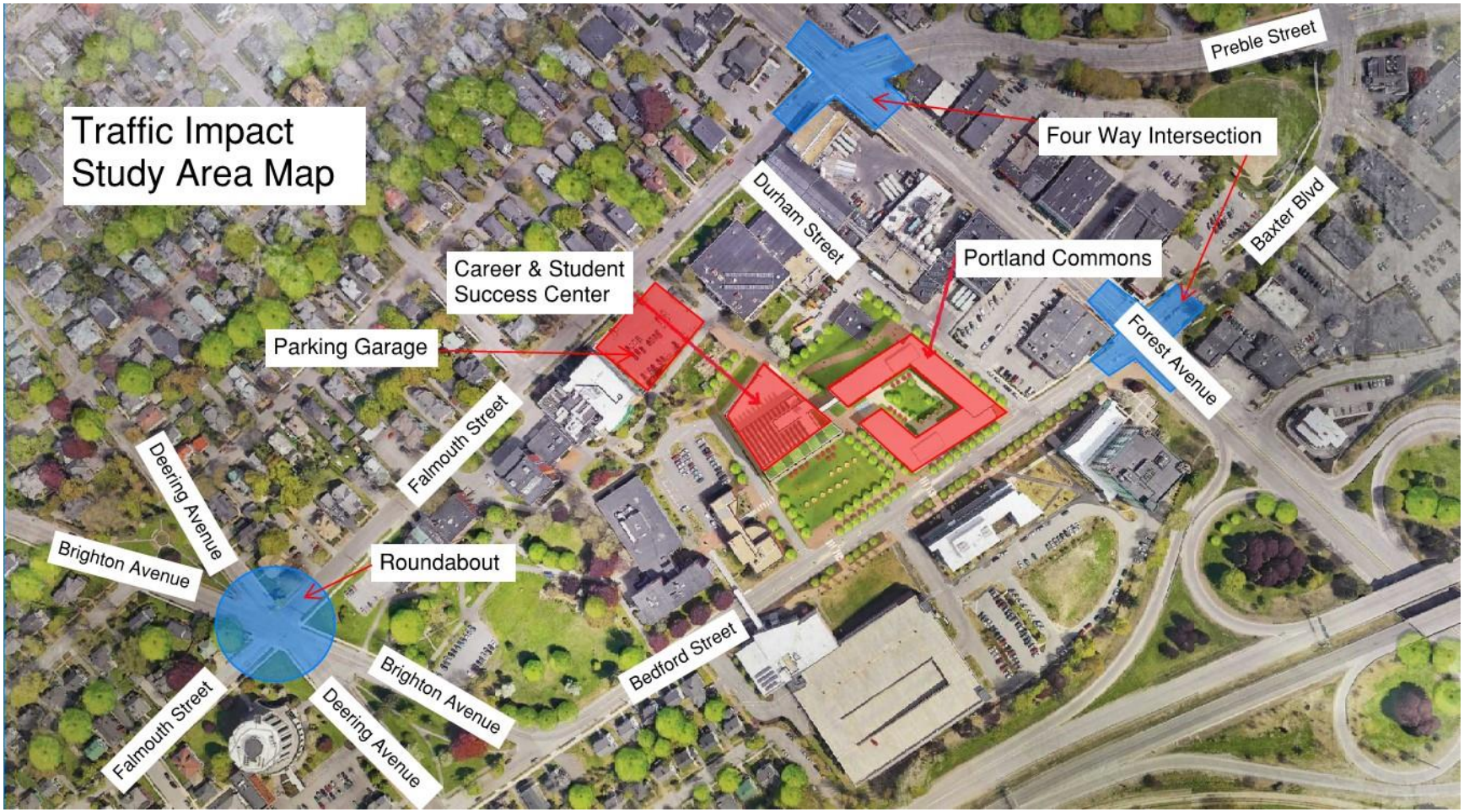
- **Sullivan Lot Garage:** In February, USM received BOT approval to construct a 425-500 space parking garage in the Sullivan Gym surface parking lot.
  - Desman Design Management selected to design garage
  - Project will have a separate Planning Board process
  - Construction to be completed in the Spring of 2023

- **Wishcamper Parking Lot:** In May, USM received approval from the City of Portland Planning Board to revise the Wishcamper Parking Lot, adding approximately 120 spaces.
  - Construction to be completed during Summer 2021

Parking Supply on Campus: Future Status



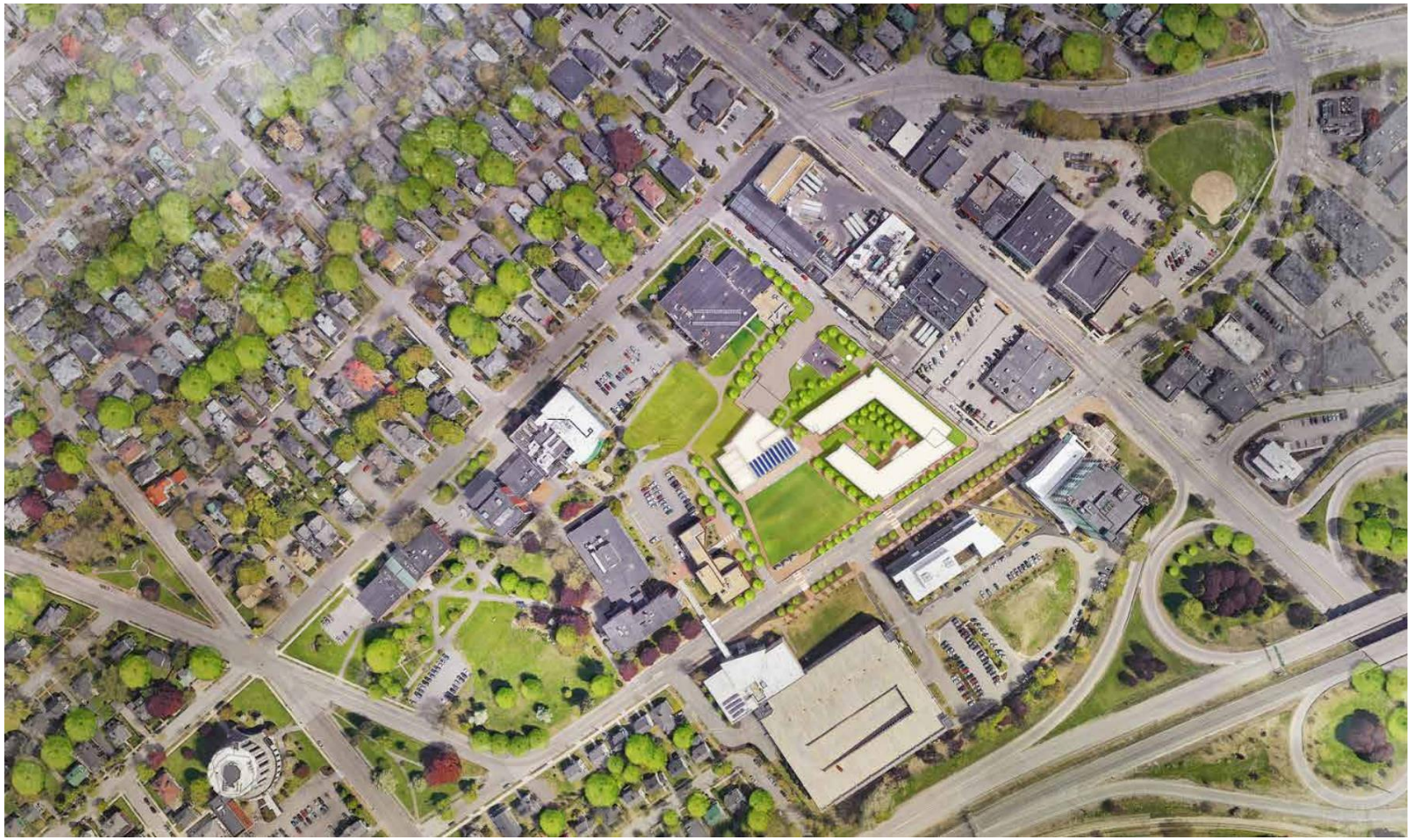
Traffic Impact Analysis



PROJECT DESIGN & ARCHITECTURAL RENDERINGS

Career & Student Success Center Residence Hall

Site Plan



Career & Student Success Center Residence Hall

Overall Bird's Eye



Career & Student Success Center
Residence Hall
Entry View of Residence Community



Career & Student Success Center
Residence Hall
Residence Hall View Along Durham Street



Career & Student Success Center
Residence Hall
Bedford Street View in Spring



Career & Student Success Center Residence Hall

Bedford Street View in Winter



Career & Student Success Center
Residence Hall
Long View of CSSC from Bedford Street Crosswalk



Career & Student Success Center
Residence Hall

Career & Student Success Center South Facade



Career & Student Success Center
Residence Hall

Career and Student Success Center Portico



Career & Student Success Center Residence Hall

Overall Bird's Eye



CONCLUSION

Conclusion

- The Career & Student Success Center, Portland Commons Residence Hall, and the Green Quad will **fulfill a significant portion of USM's Portland Campus Master Plan.**

- The project will transform USM's Portland campus, adding on-campus housing and creating a state-of-the-art Career & Student Success Center.
  - Students will be able to congregate to meet, dine, study and pursue career-related activities
  - **Project will frame a campus green that will become USM's Portland entryway**

- The project will be flanked by a modern parking garage and bolstered by a transportation demand management plan that ensures adequate parking and seeks to reduce campus traffic and distribute it more evenly.

QUESTIONS / DISCUSSION

University of Southern Maine (USM) Portland Campus

Transportation Demand Management (TDM) Plan

PREPARED FOR

University of Southern Maine
96 Falmouth Street
Portland, Maine 04103
(207) 228-8124

PREPARED BY

500 Southborough Drive, Suite 105B
South Portland, Maine 04106
207.889.3150

November 11, 2020

Table of Contents

1 Introduction 3

USM Portland 3
Commitment to TDM 4
Development Proposal: Facilities Master Plan Program Elements 5

2 Mobility Context 7

Walking and the Pedestrian Environment 7
Bicycling Environment and Infrastructure 9
Public Transit 12
Other Mobility 15
Parking Facilities and Policy 15
Regional TDM Program 17
TDM at USM 18

3 Existing Transportation Patterns 21

Transportation Survey: Mode Shares and Travel Behavior 21
Commute Trip Origins Based on Parking Permit Data 22
Alternative Mode Potential: Opportunities for TDM 26

4 TDM Coordinator (TC) 29

5 Transportation Demand Reduction Goals 30

6 Trip, Parking, Mode Split & GHG Reduction Strategies 33

7 Monitoring and Reporting Plan 41

List of Tables

Table No.	Description	Page
Table 1: Direct Transit Route Headways		14
Table 2: Suggested TDM Tactics from Sustainability Plan		19
Table 3: Overview of TDM Initiatives for USM		**Error! Bookmark not defined.**

List of Figures

Figure No.	Description	Page
Figure 1: 1-Mile Walkshed from USM Portland Campus		8
Figure 2: Portland Campus Map		9
Figure 3: Forest Avenue Bi-Passing I-295		10
Figure 4: Crosswalk Available on Forrest Avenue to Cut Across I-295		11
Figure 5: Bikeshed from USM		12
Figure 6: Transit Service at USM Portland		14
Figure 7: Parking Spaces at USM Portland		16
Figure 8: Distribution of Home (Commute Trip Origins) – Southern Maine Area		24
Figure 9: Distribution of Home (Commute Trip Origins) – Greater Portland Area		25
Figure 10: Walk Potential		26
Figure 11: Bike Potential		27
Figure 12: Transit Potential		28

1

Introduction

This Transportation Demand Management (TDM) plan provides a cohesive strategy for establishing and implementing a successful TDM program for the University of Southern Maine (USM) Portland campus. This plan seeks to enhance multimodal accessibility, ensure the use of non-vehicular modes, and discourage the use of driving through parking management, to achieve and build upon the parking demand reduction goals for the campus.

The TDM Plan expresses a TDM program of strategies and timeframe for when USM intends to implement the various strategies. The strategies aim at promoting walking and bicycling, improving transit service to promote ridership, promoting carpooling, changing time-of-day travel demands to eliminate or reduce vehicle trips, and managing parking demand via changes to USM's pricing and permit policies.

USM Portland

The University of Southern Maine (USM) Portland campus encompasses approximately 30 acres, with 27 buildings comprising 1,190,929 assignable square feet (ASF). Located less than one mile from the heart of downtown Portland, the Portland campus provides excellent access to social, cultural and internship opportunities. Linked to the Gorham campus ten miles to the west and the Portland city center via frequent bus service (METRO's Husky Line),

the Portland campus also has convenient access and visibility from Interstate Highway 295, with Forest Avenue serving as the primary roadway arrival point. A second important arrival point onto the campus is at the intersection of Deering Avenue, Brighton Avenue, and Falmouth Streets, soon to be transformed into a roundabout. Bedford Street bisects the campus providing access to most of the parking lots and garage for the campus.

The campus is in a completely developed urban neighborhood. The adjacent land consists of Interstate Highway 295 on the east, commercial uses on the north (along Forest Avenue), and residential uses on the west and south. The largest adjacent land use is the Oakhurst Dairy distribution center between the campus and Forest Avenue. The adjacent residential areas provide housing for some of USM's students but are generally a set of very solid and cohesive neighborhoods. Currently, no students reside on the Portland campus.

In 2017 and 2018, the University of Southern Maine undertook a process that resulted in a final *Facilities Master Plan* approval by the Board of Trustees in January 2019.[1] The process included information gathering via tours of all three campuses, extensive internal and external stakeholder interviews, and public input. The plan incorporates the visions, goals, facilities assessments, and the campus space needs assessments into a set of campus physical development recommendations. USM is now embarking in implementing specific capital projects identified in the plan.

Commitment to TDM

USM has a history of promoting Transportation Demand Management (TDM) strategies on its campuses. For starters, TDM clearly falls within two guiding principles of the University's Facilities Master Plan through its attempt to increase non-private vehicular transportation and reduce related transportation emissions:

- **Mobility**—the plan supports robust pedestrian, bicycle, shuttle bus, ride share and metropolitan and regional public transit systems that look beyond private vehicular parking to meet the transportation needs of the campus community.
- **Sustainability**—the plan supports all existing sustainability policies of the University.

TDM also indirectly relates to several other guiding principles as a result of potential outcomes from a TDM program:

- **Student Experience**—the process, plan and implementation focuses upon improving the students' academic, co-curricular and living experience on each of the campuses.
- **Public Safety**—the plan and subsequent implementation seeks to provide the safest campus environment possible through physical, programmatic and operational improvements, including those in response to public health threats like Covid-19.
- **Neighbors**—the plan seeks to establish campuses and campus communities that are positive members of the neighborhoods, mitigating negative impact and providing a beautiful and inviting campus landscape for all neighborhood members to enjoy.

[1] For more details, please visit *usm.maine.edu/president/master-plan*.

- **Aesthetics**—the visual quality of the campus facilities is important to creating an environment that meets the mission and goals of the University.

The implementation of TDM measures provides USM with the ability to make access to the campus more enjoyable and safer for affiliates (because of reduced traffic), improved relations with neighbors (because of decreased traffic and parking concerns), and decreased campus space dedicated to parking.

As a result, the University introduced TDM for the first time within its 2017 Sustainability Plan. The sustainability plan set a quantitative goal for sustainability efforts related to transportation and established a baseline of strategies to achieve that goal. Per the sustainability plan, the goal related to transportation was to reduce greenhouse gas emissions from transportation by 20 percent from a Fiscal Year (FY) 2006 baseline. TDM-related strategies suggested by the Sustainability Plan are presented in Chapter 3; one recommendation was to develop a TDM plan.

To further understand how TDM will play a role as the campus continues to transform, USM hired VHB to develop a comprehensive TDM Plan that will allow the University to meet their sustainability goals while responsibly meeting user parking demands (and limiting the additional parking supply requirements). To develop a strategic approach for USM transportation that leverages current realities in developing future outcomes, VHB and USM hosted a series of stakeholder meetings and interviews. These conversations helped inform the proposed strategies presented in this TDM plan.

Development Proposal: Facilities Master Plan Program Elements

Consistent with the USM *Facilities Master Plan* approved January 27, 2019, USM has several development program aspirations that have triggered the need to complete this TDM Plan. In the short-term, in the next three years, the University plans on embarking on building the new campus "heart", consisting of the following capital projects:

- **Career and Student Success Center**—This building will replace the dining and cocurricular activity space currently in the Woodbury Campus Center. In addition, the vision for this building is to provide a common place for programs and functions that support both the academic success and long-term professional success of the USM student. The building is anticipated to be approximately 41,000 square feet.
- **Student Housing**— This approximately 216,000 square-feet building will house upwards of 580 beds to accommodate upper class undergraduate students and graduate students.
- **"Quad"**—A key component of the transformation of the Portland Campus is a second campus open space, located adjacent to the residence halls and the Career and Student Success Center.

To accommodate parking needs for these uses, the master plan proposes increasing parking supply. (Actual proposed parking supply is based on a separate study produced in March of 2020 that shows the University will be short on parking supply at the opening of the new buildings even in a 0% enrollment increase scenario.)

The development noted above may be followed by additional capital projects on USM's Portland campus, including a Graduate Center for Professional Studies, housing The University of Maine School of Law, a University of Maine MBA Program, and the Muskie School of Public Service, and Center for the Arts serving as the new home for the USM School of Music.

2

Mobility Context

Understanding the transportation context that is available for students, faculty, staff, and visitors at USM Portland is important to be able to recommend targeted TDM program elements. This section discusses in detail all the different ways that one can access the USM campus as well as opportunities and challenges related to those options.

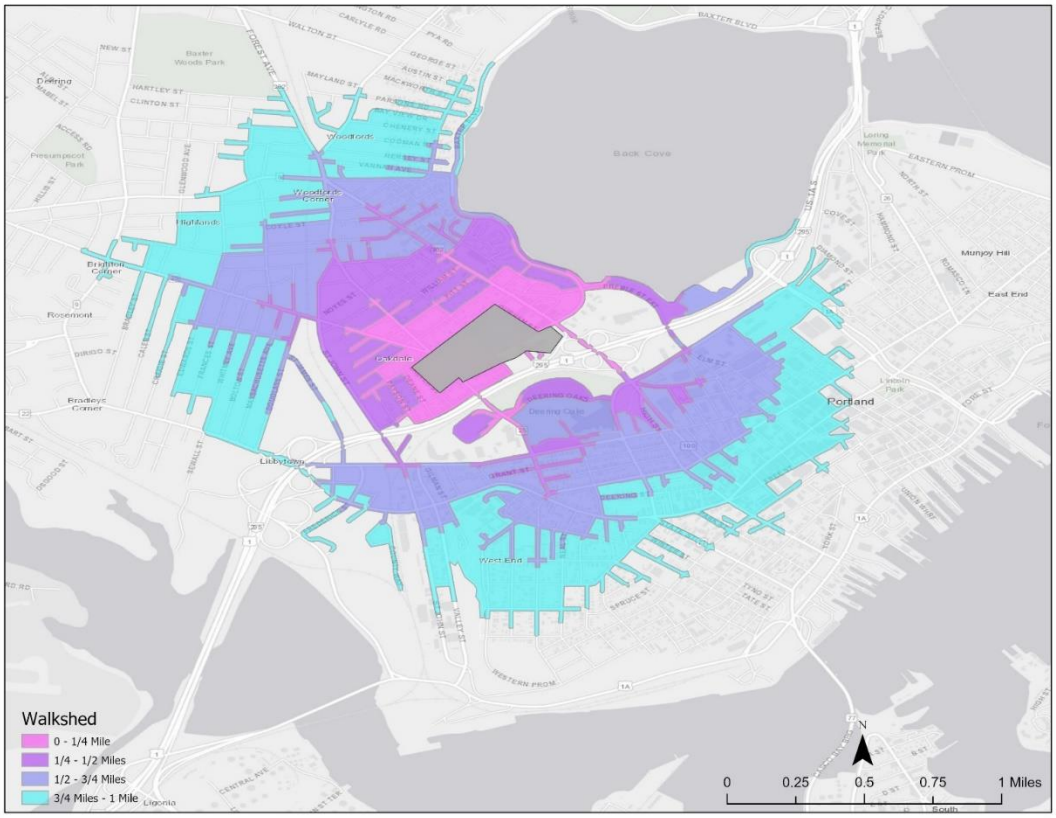
Walking and the Pedestrian Environment

USM's Portland campus is located on the edge of the Portland peninsula adjacent to the Oakdale residential neighborhood. Oakdale maintains a grid of streets, a majority with sidewalks, and low-volume, low-speed streets that make it generally comfortable and conducive for walking. The University is also adjacent to Forest Avenue, which offers local retail (including a grocery shop) within a short walk of the University. *Walkscore.com*, a real-estate site that evaluates walkability and transportation when choosing where to live, scores

USM a 78 out of 100 and considers it to be a "Very Walkable" location where most errands can be accomplished on foot.

Some built and natural barriers limit accessibility to areas on the south side because of the I-295 highway, to the west and southwest because of a below-grade railroad, and to the northeast because of the Back Cove. Although there is a comfortable shared use path under the interstate, I-295 can pose as a psychological barrier to some people for walking trips to downtown. Figure 1 shows the walkshed in quarter-mile increments out to a mile from the USM Portland campus.

Figure 1: 1-Mile Walkshed from USM Portland Campus



On campus, there is a robust network of pedestrian paths that connect all campus buildings (Figure 2). There are also information kiosks and wayfinding to assist pedestrians in their orientation around campus.

Figure 2: Portland Campus Map



In summary, walking is easy in and around USM; however, natural or human-made barriers may provide some real barriers and some psychological barriers. For example, the primary walk route to downtown from campus is on Forest Ave, which is a wide, fast street with large intersections and long wait times, despite the fact that there is a safe and comfortable shared used pathway crossing the on and off ramps of 295.

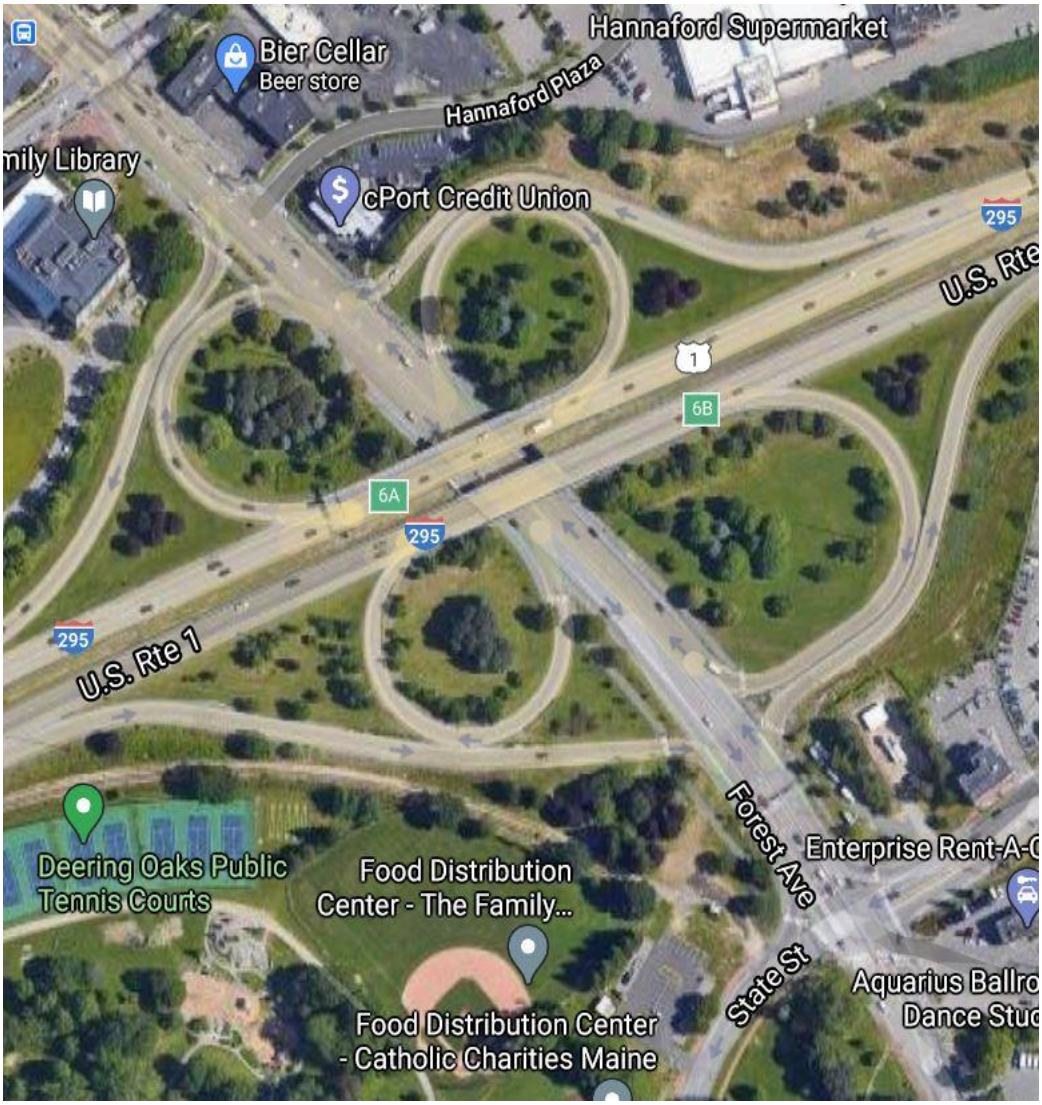
TDM strategies within this plan will seek to better connect the University despite these perceived or real barriers.

Bicycling Environment and Infrastructure

The *Walkscore.com* website lists USM at a Bikescore of 93 out of 100, the equivalent of a "Biker's Paradise." In fact, USM is located at the convergence of several key bike routes in the region that ultimately connect to the Portland Peninsula. Bike lanes around USM can be found along Brighton Avenue, Deering Avenue, Bedford Street, and Forest Avenue.

Some work is needed to teach the University community how to overcome certain psychological barriers. The best example, arose in stakeholder input sessions, was the perception that traveling on Forest Avenue to downtown is difficult. The root of the perception may be from the fact that there are six intersections, on ramps, or off ramps on each side of the road for a 1,200 foot-long stretch. See the aerial image in Figure 3 below:

Figure 3: Forest Avenue Bi-Secting I-295



The City has worked hard to increase the safety and comfort of this area by building and maintaining a shared used path on each side of Forest Avenue.

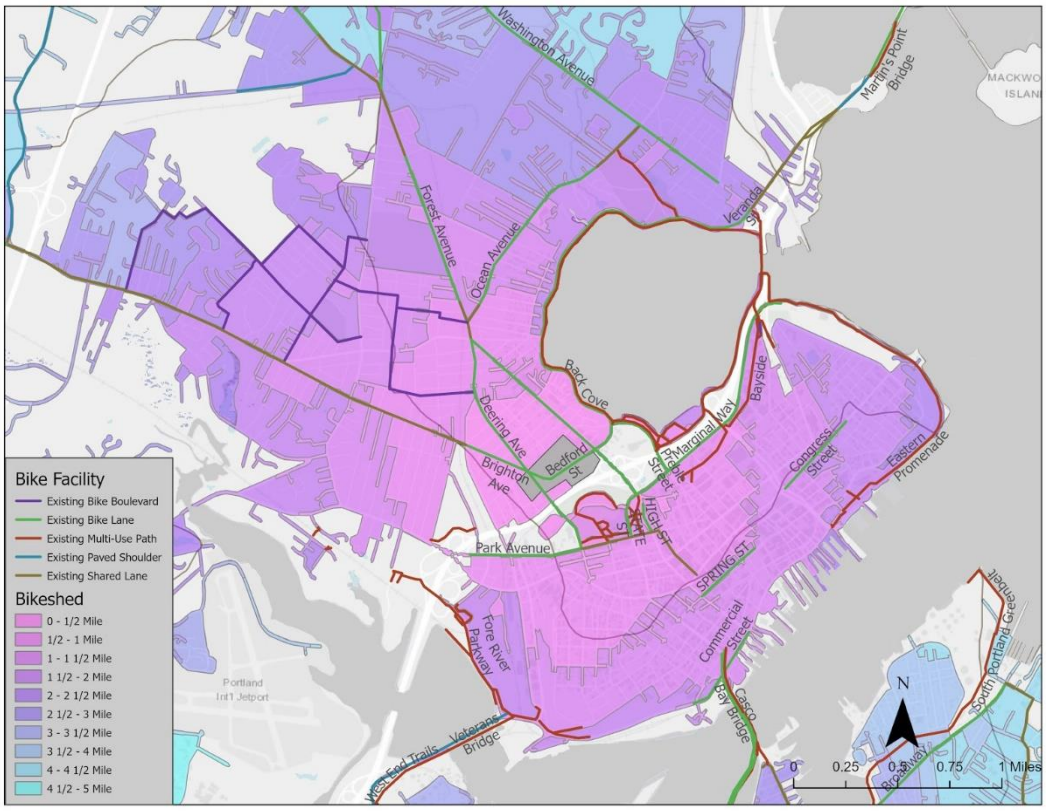
Figure 4: Shared Use Path Available on Forest Avenue Provides Access Under I-295



There is also a shared use path that runs parallel along the Back Cove. In addition to providing beautiful vistas of the downtown skyline, this path provides comfortable and safe bike/ped access to numerous Portland neighborhoods including the Back Cove, Woodfords, East Deering, and Bayside. Even the East End and the Old Port can be accessed this way, via the Eastern Prom Trail connected to the Back Cove path. Through the various shared use paths near the University, the entire Portland peninsula can be accessed within 2 miles of USM.

Within 5 Miles, one can also reach South Portland to the south, Westbrook to the west, and the border of Falmouth to the north. For the bike-to-transit trips, METRO buses serving the University are equipped with bike racks. The Husky line buses have slots for three bikes, and the other METRO buses serving the Portland campus have slots for two.

Figure 5: Bikeshed from USM



On-campus, there are 16 locations with bicycle racks and a bicycle repair stand adjacent to the Woodbury Campus Center. The locations of most of these racks are readily visible within the campus map (Figure 2) posted on kiosks throughout the campus and online. The majority of the racks are easily visible when on foot, except for the covered racks under Masterton's awning and in Abromson parking garage. The condition of the on-campus bicycle racks is fair; however, the Bike Fix-it Station needs repair: its tools have rusted and are bent and unusable. Shower access for campus affiliates is available at the Sullivan Gym. In order to gain access, they must show their campus ID.

In comparison to most places in the United States, the biking network in and around Portland and USM Portland campus is robust. On-campus, commuters have a place to store these bikes. TDM strategies related to biking should focus on marketing this commute option to overcome any fears about perceived barriers and thereby expand the potential pool of people that can bike. The University should also collaborate with the City as they seek to expand and improve the bicycle network.

Public Transit

USM affiliates are granted unlimited free METRO transit access as part of their enrollment and employment at USM. Transit access is paid by way of the student transportation fee and

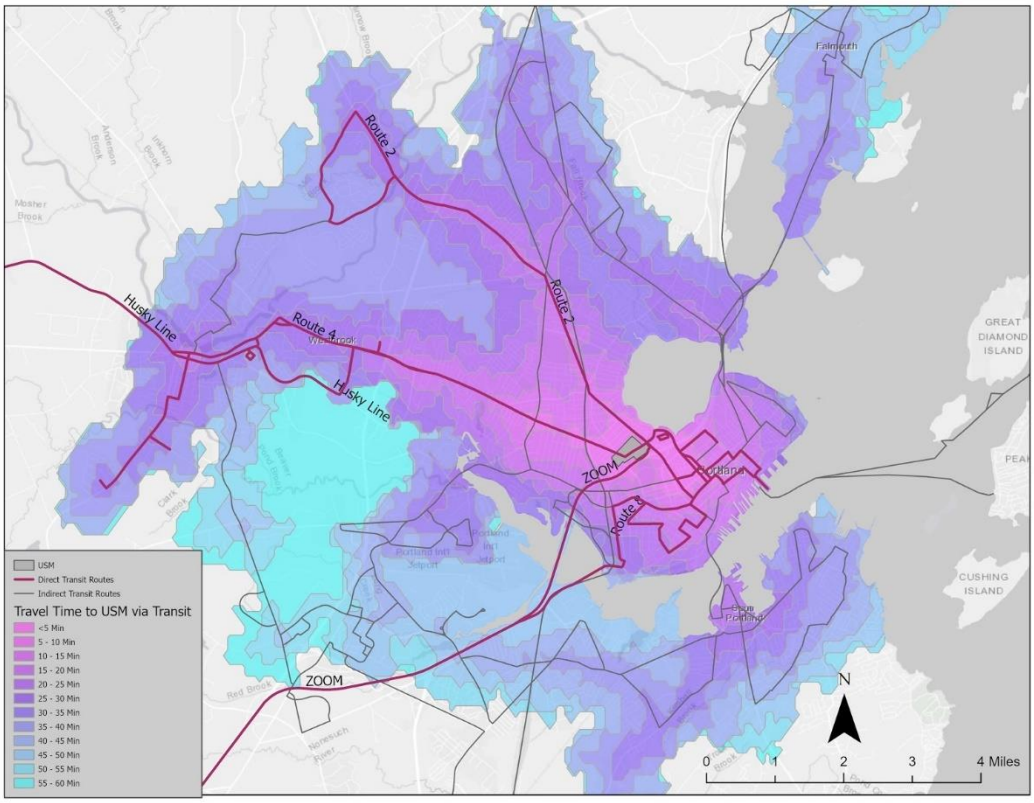
the employee parking permit fee. When boarding a METRO bus, USM affiliates must show their ID to the bus driver.

Four METRO bus routes serve the USM Portland campus: Route 4 and Husky Line serve the campus directly with a stop on Bedford Street, and within a quarter-mile, the Route 2 (via Forest Avenue) and Route 8 (at Hannaford Plaza). In addition to METRO service, the Lakes Region Explorer Bus ($2 one-way) is also nearby. Among the four, only the Husky Line has limited stop service all the way between the Portland and Gorham campuses.

On Bedford Street, at the heart of campus, there are shelters for Route 4 (Westbrook–Portland Pulse) and the Husky Line (USM Gorham via Westbrook–Portland Pulse). Route 2 (Forest Avenue) and Route 8 (Peninsula Loop) can be accessed at nearby Hannaford Plaza roughly a quarter-mile from campus. The Lakes Region Explorer (Windham Route), run by RTP, stops at the corner of Forest Avenue and Bedford Street.

Transit "accessibility" was determined by travel time, including time required to walk to the stop, wait for a transfer when applicable, ride the bus, and walk to the final destination. This differs from accessibility for walk and bike sheds where distance from campus generally determines accessibility. Expected transit travel time to the campus using the existing Portland transit network was mapped out in 5-minute increments (Figure 6). These increments include up to a maximum of a 15-minute walk for the total trip (to account for walk-access to transit).

Figure 6: Transit Service at USM Portland



Transit is not only a function of having a service route present nearby; other important pieces to consider are its span of service (i.e., is the service available at the times of day when needed) and service frequency (i.e., does the service operate at frequent intervals). Scheduled headways and service hours for direct services are included in Table 1 below.

Table 1: Direct Transit Route Headways

Route	Headways (minutes)							Span					
	Weekday			Saturday		Sunday		Weekday		Saturday		Sunday	
	Peak	Day	Evening	Day	Evening	Day	Evening	Start	End	Start	End	Start	End
Bedford St USM (0.0 Miles)													
Husky	30	30	50	45	45	45	45	6:30 AM	10:30 PM	8:30 AM	11:00 PM	8:00 AM	7:00 PM
4	30	30	60	30	60	45	-	5:30 AM	11:30 PM	6:00 AM	11:30 PM	8:30 AM	7:30 PM
Forest at Bedford St. (<0.25 Miles)													
2	20	30	60	60	60	60	-	6:00 AM	11:00 PM	6:30 AM	10:30 PM	8:30 AM	4:40 PM
Lakes Region Explorer	180	180	180	-	-	-	-	6:00 AM	10:30 PM	-	-	-	-
Hannaford Plaza (<0.25 Miles)													
8	30	30	-	60	-	60	-	7:00 AM	6:00 PM	8:00 AM	6:00 PM	9:00 AM	4:00 PM
?													
Zoom Turnpike Express	30	-	-	-	-	-	-	6:00 AM	6:40 PM	-	-	-	-

While all transit services adjacent to USM operate during the schedule of a normal business day and into the evening, the frequency can pose challenges to some of USM's population. As one can see above, the most frequent transit service (Route 2) runs every 20 minutes while the Husky Line, Route 4, and Route 8 run on 30-minute intervals. For many, these frequencies are satisfactory, especially given that the Husky Line is a limited stop service, cutting down on travel time. But, the frequencies don't yet meet the threshold for "transit

freedom" or the ability to travel without planning ("Transit freedom", per the definition by Jarrett Walker in *Human Transit*, is a frequency of at least 15 minutes all day[2]). People who are able to plan are facilitated by helpful resources like the Transit Tracker app and soon-to-be-installed transit screens at certain stops.

Other Mobility

In addition to walking, biking, and riding transit buses, USM affiliates can use ride-hailing services Uber, Lyft, or taxis, which are readily available in and around the peninsula. No carshare vehicles are located within a half-mile of USM. Also, no dedicated carpool parking spaces are designated on campus. Carshare and carpool are opportunities that the TDM Plan can leverage to reduce the number of people parking on campus.

Parking Facilities and Policy

Campus affiliates and visitors can park at 11 distinct parking lots (including one garage) across campus hosting a total of 1,701 spaces (Figure 7). By far, the largest parking facility on campus is the University Garage, which has a total of 1,155 parking spaces. Lots are designated by permit type and only users with that permit can park in that lot. Figure 7 identifies the location of these lots, permitted users, and the total number of spaces. The campus also has dedicated spaces for handicap, service vehicles, and an electric charging station.

[2] Source: humantransit.org/2011/12/how-frequent-is-freedom.html

Figure 7: Parking Spaces at USM Portland



Note: Although the 1,155-space Abromson Garage is primarily for student and visitor parking, faculty and staff may use the facility. The garage is access-controlled by a revenue control system.

All vehicles in University of Southern Maine (USM) parking lots on the Portland campus must display a valid USM parking permit, which comes in the form of a hang tag that must be hung from a vehicle's rear-view mirror. Permits may be obtained from the parking office or online through the University's parking web portal.

USM Portland has the following permit types:

- Student (Commuter, Gorham Residential) – All students are given the same parking privileges on the Portland Campus
- Employee (Faculty, Staff)

On the Portland campus, students may park at three different lots during the day (designated by a green sign) and at a fourth lot only after 4:30 PM. All students pay a transportation fee if registered for on-campus courses. The fee varies based on the number of credits for which they are registered: between $55 and $110 per semester. These payments are mandatory as part of enrollment and are made each semester: fall, spring, and summer.

On the Portland campus, employees are allowed to park in eight different lots on campus (designated by a blue sign). They pay $25 annually for their parking permit, which needs to be renewed each calendar year.

Short-term visitors to the campus may park in the parking garage for $2 an hour between the hours of 7 AM and 5 PM, Monday–Friday. Outside of these hours, visitor parking is free. There is a charge for overnight parking, except during snow bans. Prospective students and their families, campus guests, visitors, and volunteers receive free validation by the office or department they are visiting. To pay for parking, visitors must pay at the Parking Garage Office or use the pay-on-foot stations located by the doors to the parking garage on the first and second floors of Abromson Center and the ground floor of the parking garage by the vehicle exit.

A violation of parking guidelines may result in any number of consequences, including a parking ticket fine, towing of a vehicle (and responsibility of the owner/operator for payment of related towing and storage fees), or suspension of campus parking privileges. Parking tickets range from $25 to $200 depending on the infraction. Students and faculty must pay outstanding tickets before picking up a new permit.

Parking at USM is relatively unconstrained. Typical parking activity is accommodated with the present supply. Although on-street parking is also an option, many of the streets adjacent or near the campus are metered or have 1- or 2-hour parking limits during daytime hours. Recent observations conducted by VHB for USM found approximately one third of the on-street parking spaces available during peak parking periods.

Remote lots have been considered, but a large portion of USM students have one or more off-campus jobs, which require them to have ready access to their vehicles. To be more effective at discouraging parking on-campus, the University plans to make the transactional cost of parking more apparent for students.

The University reviewed parking rates around the City and around the New England market in general to see if there was room to use increased rates as a leverage point. This influenced the University to go from charging $0 for public parking to $2 per hour, which is still on the low to medium end of the market. The University is considering raising prices again to possibly $3-$4 per hour. However, the current plan is to keep it free for the early evening hours (5-11 pm), and to help out the neighborhood by allowing them to park for free during for snow bans from the hours of 5 pm to 8 am the following morning.

Regional TDM Program

At USM's disposal are several regional, state, and national-level TDM programs and services that are intended to support programs such as the one being reviewed by USM. Among these potential programs/services that could support USM include:

GO MAINE: Run by the Maine Turnpike Authority, this state-wide program serves as a rideshare matching service as well as a platform to log any kind of non-single occupancy trips, including non-motorized trips. The range of services include the following:

- ***Emergency Ride Home***- This program essentially serves as "insurance" to provide people an option to get home from work in case of an emergency. The rides are provided using a taxi or Enterprise rent-a-car. It is available to commuters who carpool, vanpool, take transit, bike or walk at least three days a week. The benefit may be used up to eight times per calendar year.
- ***Way 2 Go Maine***- *Way 2 Go Maine* is an annual commuter challenge in October that encourages employees of local businesses to use alternative transportation options through an inter-company competition. The competition recognizes companies for their successful participation and distributes prizes such as gift cards and swag to encourage participation.
- ***Vanpool Matching***- Vanpooling is a common, long-distance commute option for employees headed to the same general area consisting of between 5 to 15 commuters. GO MAINE assists to form these vanpools.
- ***Rewards Program***- GO MAINE has a rewards program for individuals who take greener trips, which include walking, biking, telecommuting, carpooling, vanpooling, or taking public transportation. Participants must sign-up and log their commutes daily. Rewards include gift cards and discounts to various local businesses.

Portland Slow Ride: To get people comfortable with biking, the Bicycle Coalition of Maine offers the "Portland First Friday Slow Ride". These rides are typically done at a relaxed pace and coincide with Portland's "First Friday" art walk event.

Smart Cycling Traffic Skills 101 and Educational Courses: Traffic Skills 101 is hosted by the Bicycle Coalition of Maine and is a course that teaches new and experienced cyclists how to ride in traffic. An individual or employer can specifically request a safety workshop.

Discounted Helmets: The Bicycle Coalition of Maine runs a helmet purchase discount program: when purchased in bulk (8-30 helmets) the cost is $7 per helmet.

Bicycle Benefit: As part of this national program, local businesses offer rewards to patrons who arrive at their establishments by bicycle.

Cycling Savvy: Is a program of the American Bicycling Education Association aimed at helping communities become more livable and sustainable by promoting a civil and cooperative environment on roads through complementary education and infrastructure design.

Best Employers for Commuters: This membership program provides qualified employers with national recognition and an elite designation for offering outstanding commuter benefits.

TDM at USM

TDM related to increasing multimodal transportation is not a new concept for USM. In 2017, the Office of Sustainability worked with various campus stakeholders to develop an eight-year sustainability plan that set a quantitative goal for sustainability efforts related to transportation and established a baseline of strategies to achieve that goal. Per the

sustainability plan, the goal related to transportation was to reduce greenhouse gas emissions from transportation by 20 percent from a FY 2006 baseline.

Table 2 below identifies the original strategies pursued by the sustainability plan as well as current strategies that came as a result of this original proposal:

Table 2: Suggested TDM Tactics from Sustainability Plan

Category	Original TDM Strategy	Present Day (Fall 2019) Response
Shuttle	Extend shuttle routes and improve shuttle footprint	USM has partnered with the Greater Portland bus system, METRO, allowing students, staff and faculty to ride anywhere in the METRO system for free and vastly expanding the reach of University affiliates.
Carsharing	Explore option of starting a carshare program on campus	USM has explored options with one company and discussed ways it could fit into the vehicle fleet.
Comprehensive TDM Strategy	Create a Comprehensive Transportation Demand Management (TDM) strategy	This document is a product of the development of a comprehensive TDM Plan.
Bicycle Infrastructure	Create adequate bicycle infrastructure & education on campus to support people who would consider biking including a bikeshare program.	To accommodate bicycles, USM provides bicycle racks around the campus (16 racks & 250 spaces total). The Portland campus also has a fix-it work stand which is the first of its kind in Portland and allows riders to make simple bike repairs on campus. The University transportation website also highlights the benefits of biking from a health and environmental perspective.
Carpooling	Create adequate carpooling infrastructure & education on campus to support people who would consider carpooling	USM researched different carpool apps and began interviewing stakeholders to create a plan.
Hybrid & EV Vehicle Discounts	Create modest incentives for hybrid or electric vehicles	An EV charging station is provided at the parking garage and is free to use. Additional charging stations are being considered for the garage, Wishcamper, and locations in Gorham.
Incentive Program	Explore a partnership with Rise-Up to award incentives for alternative transportation commuting	The Office of Sustainability has held brainstorming sessions with the Wellness Committee to determine what types of incentives would qualify for the health credit. The Wellness Committee has agreed to work on implementation.
Carbon On-Setting Project	Explore possibility of creating a carbon on-setting project with local low-income households	No transportation related actions were identified. The Office of Sustainability chose a home weatherization project instead.

Category	Original TDM Strategy	Present Day (Fall 2019) Response
Sustainable Business Travel	Develop mechanism for incentivizing more sustainable business travel	Measured carbon footprint of business travel in order to establish a baseline.
Parking Enforcement	Create a parking enforcement division of the University, separate from Public Safety, in order to maximize space utilization of existing lots	Division was created, staff were hired, and enforcement began.

The responsibilities for implementing these strategies have largely fallen on the Parking and Sustainability Offices. According to USM, approximately 0.1 FTE is spent currently implementing TDM strategies, not counting parking enforcement which exceed 1 FTE by itself

The Plan found that it would be useful to conduct a Transportation Survey of campus affiliates to understand transportation patterns, needs and barriers. USM most recently conducted a transportation survey effort in Spring 2019, yielding over 1,000 responses related to current commute patterns, inter-campus travel, and receptiveness of possible TDM strategies.

Not listed within the Sustainability Plan, but nevertheless worth mentioning as TDM measures that have been pursued by the University include:

- Establishing a new USM transportation website to communicate the availability of alternative modes of transportation.
- Charging USM employees, students, and visitors for parking.
- Having a University System-wide telecommuting policy, which allows for telecommuting in certain cases. In response to the global pandemic, this policy has been broadened to incorporate more people for longer periods of time. Post pandemic, the University could more heavily promote its pre-pandemic telecommuting policy.
- Having a larger portion of online classes in response to the global pandemic. Post pandemic, it is not yet known whether the University will continue offering such a high rate of online classes, as it will depend on long-term safety considerations and demand from students.

3

Existing Transportation Patterns

By exploring how USM students, faculty, and staff are currently traveling to campus we can identify which alternative modes may have the greatest potential to reduce drive alone commutes, and save on trips, parking and carbon emissions. This investigation allows for the development of targeted TDM strategies that offer a greater degree of changing commuter behavior.

VHB has reviewed USM affiliates' travel patterns using two data sources: a transportation survey and registered permit data. These data help identify how people are commuting to campus, what modes of transportation may interest commuters, and finally, what types of strategies would be most beneficial towards encouraging alternative commute modes.

Transportation Survey: Mode Shares and Travel Behavior

The Transportation survey conducted in Spring 2019 was done as part of the University's sustainability effort to chart emissions related to transportation. The online survey asked about current travel patterns between home and USM and about travel between the USM campuses. The survey also included questions about one's receptiveness to certain TDM strategies. About 1,000 USM affiliates participated.

Some key findings related to the survey (pulled from the "Final Survey Summary" prepared by USM) include:

- 78 percent of the USM population reported driving alone at least once a week to campus from home. About 72 percent of the population drives 2+ times per week to campus.
- 94 percent of USM employees park on campus; 81 percent of students park on campus.
- 25 percent of commuter students ride the METRO bus
- Dedicated, preferential carpool spots were the highest ranked activity to encourage students to use an alternative mode of transportation
- Per the survey, a new bike would be the best buyout reward for a parking cashout program, which may be a function of it being the highest value option ($500) compared to less valuable options of $100 cash, $200 discount on carshare/bikeshare, $200 discount on carshare/scootershare, $150 gift certificate to bookstore, and $150 gift certificate to dining services.

Additional conclusions from the survey data for the USM population who indicated making a trip to the Portland Campus include:

- 72 percent of USM Portland population reported having driven alone at least once a week to campus, 66 percent of the population drive 2+ times per week alone.
- 14 percent of the USM Portland population reported have taken transit at least once a week, 11.5 percent have taken transit at least twice per week.
- Considering only USM Portland commute trips (of employees and students), the Portland campus mode split is as follows: Drive Alone: 73 percent; Transit: 6 percent; Walk/Bike: 11 percent; Carpool: 8 percent; Motorcycle: 2 percent[3]
- USM's Walk/Bike mode split of 11% exceeds the typical average of 3% among Universities across the country, including those who have implemented TDM programs, according to VHB
- Average One-Way Commute Distance: 13.8 miles.
- 56 percent of the USM Portland population travels to other campuses
- For trips taken between the Portland and Gorham Campus, 40 percent take transit, 37 percent drive alone, 20 percent carpool, 3 percent bike, 1 percent use a motorcycle

Commute Trip Origins Based on Parking Permit Data

USM provided VHB with anonymized home address data for all their parking permit holders, which allows for an investigation of opportunities for providing incentives for reducing drive-alone trips to the campus. The following figures shows the distribution of commute trip origins based on the permit data. Major clusters of population are centered around the City of Portland, Westbrook, Gorham, Lewiston-Auburn, Brunswick, and Sanford (Figure 8). Figure

[3] It is important to note that this survey was taken before the Covid-19 pandemic. The next survey may show considerably different percentages for transit and carpooling.

9 shows a zoomed-in version of the same data, showing that major residential areas include: Portland, South Portland, Westbrook, Gorham, Biddeford, Scarborough, and Yarmouth.

Using the parking permit data, VHB calculated drive time for faculty and staff. About 50 percent live less than a 20-minute drive from the Portland campus and 94 percent live within a 60-minute drive of the campus.

Figure 8: Distribution of Home (Commute Trip Origins) – Southern Maine Area

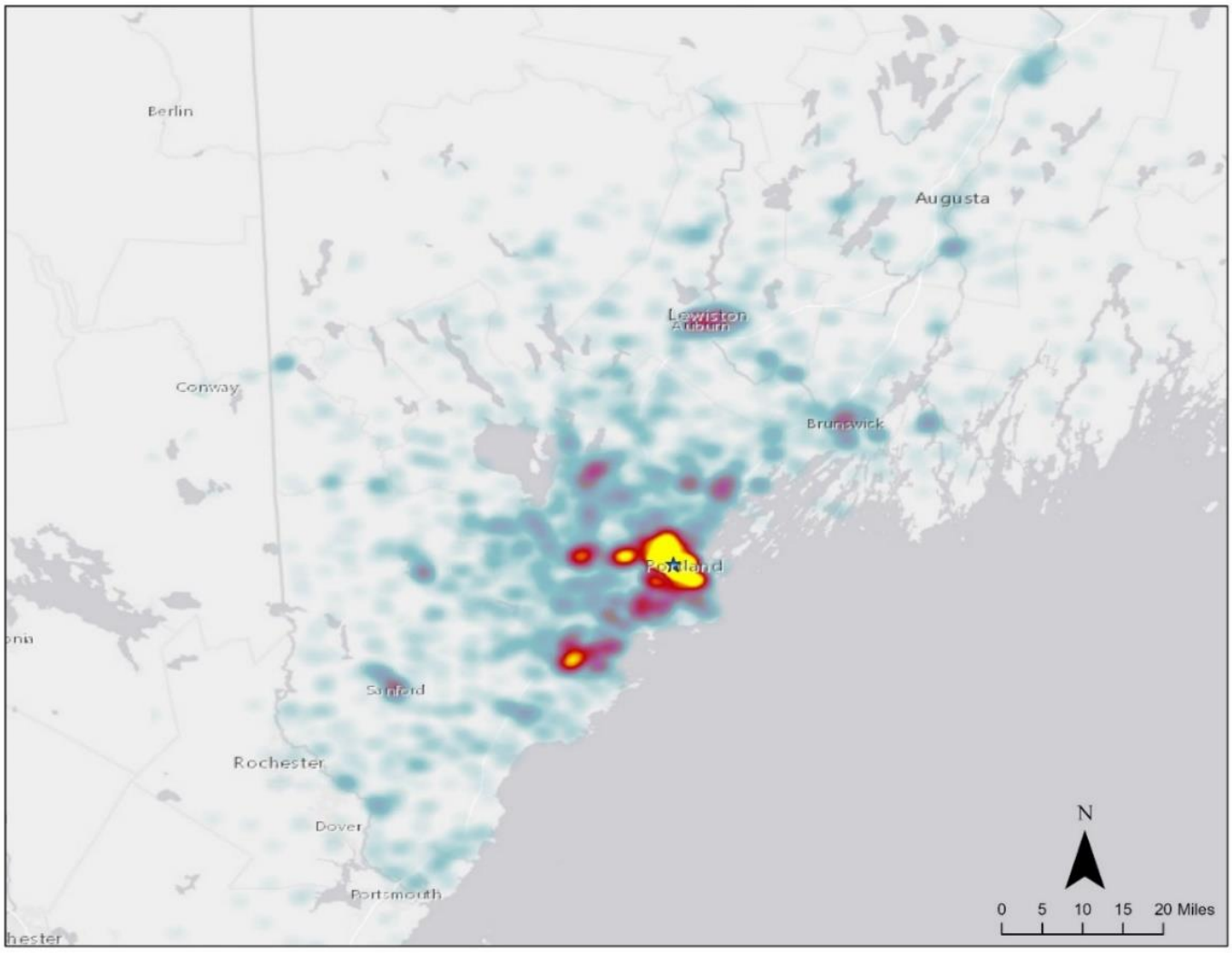
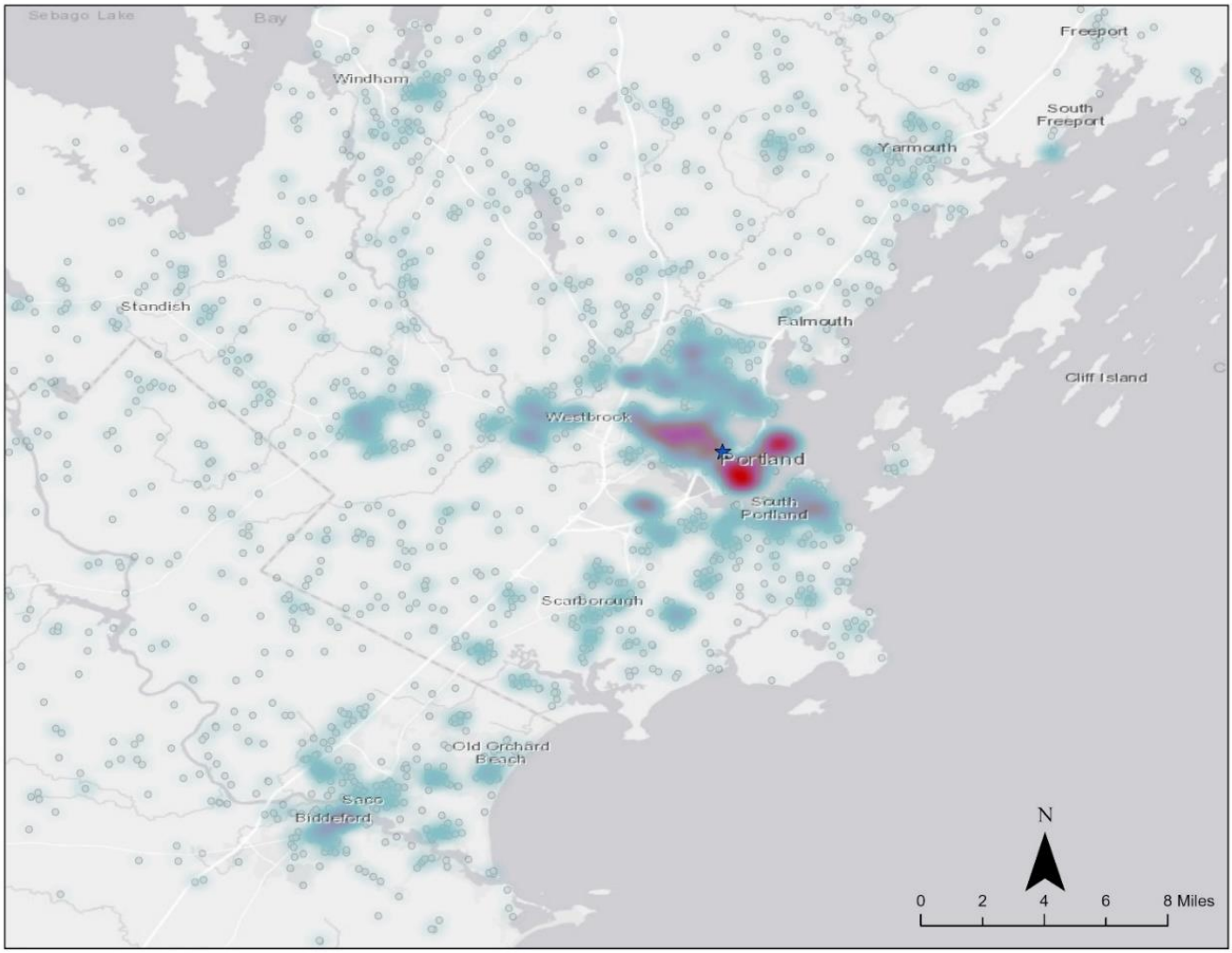


Figure 9: Distribution of Home (Commute Trip Origins) – Greater Portland Area



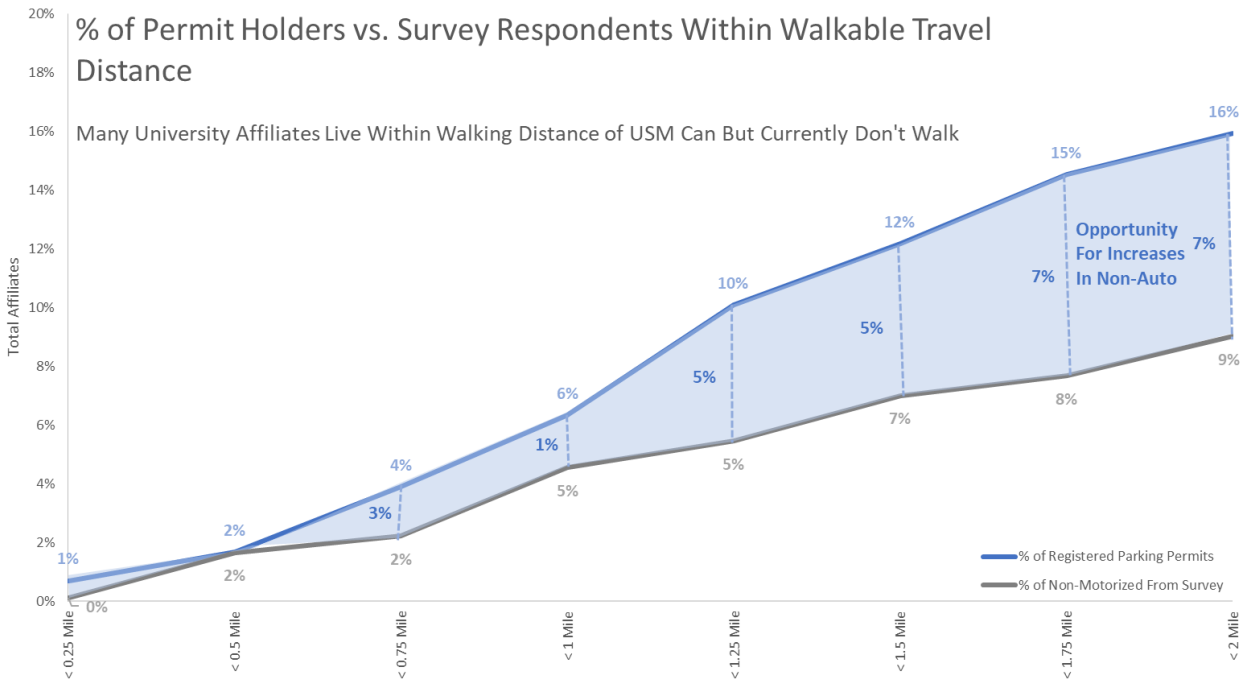
Alternative Mode Potential: Opportunities for TDM

To gauge the modal potential for walking, biking, and transit to USM, the geographic distribution of parking permit trip origin data was compared to the walking, bicycling, and transit travel market sheds. To get an understanding of current travel behavior versus potential travel choices, the 2019 transportation survey results are overlaid against this geographic distribution. The difference between the total number of people matched to a particular mode and the mode choice results from the survey form an "opportunity" zone for a potential increase in the use of a travel mode. People are represented here as FTE (Full-time equivalent) rather than headcount because FTE fits greenhouse gas reporting protocol and the University believes it is a better representation of how trip proportion impacts campus.

Walk Potential

Within a mile walking distance from campus, approximately 5 percent (an estimated 251 full-time equivalent individuals) of USM Portland students/employees reported using non-auto transportation to the USM Portland campus whereas per the permit data 6 percent of parking permit holders were geographically matched to reside a mile from USM (Figure 10). The delta between the two data points increases significantly as distance from campus increases. At 2 miles, only 9 percent of students/employees use non-auto travel modes (per the survey), whereas a total of 16 percent live within 2 miles of campus (per the permit data).

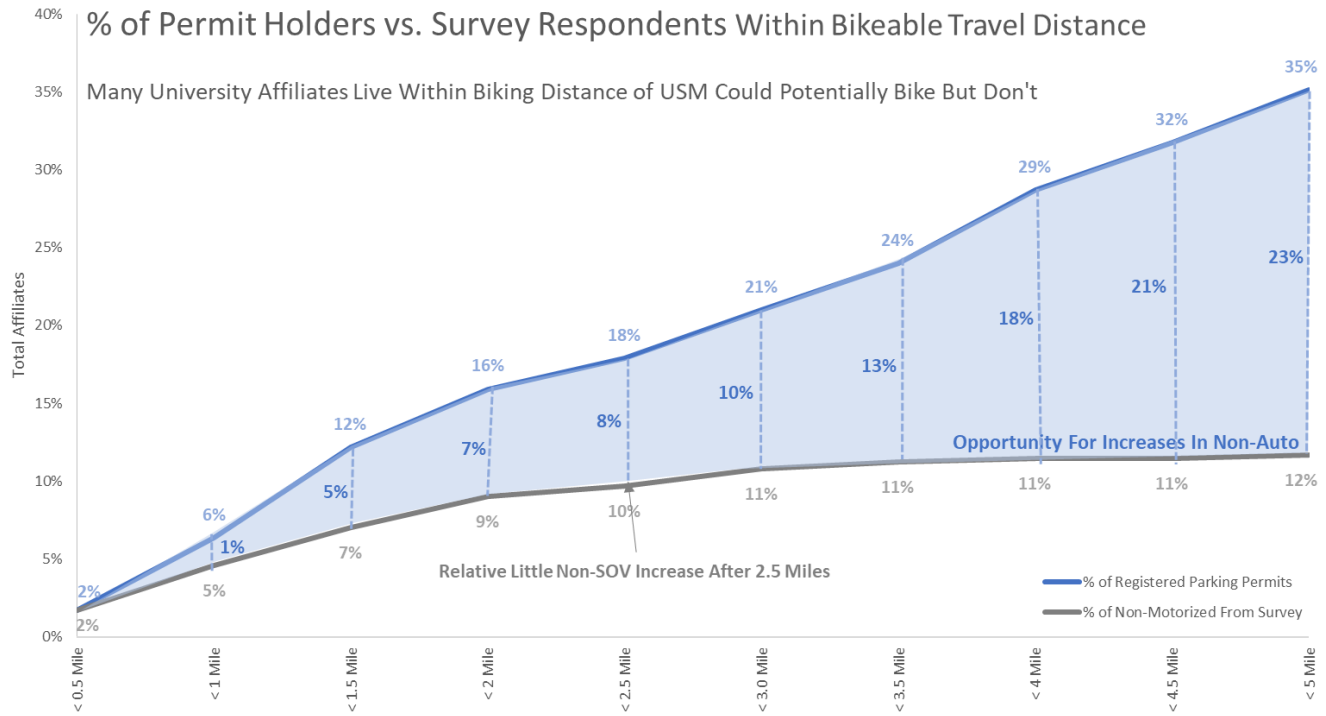
Figure 10: Walk Potential



Bicycling Potential

Biking distance for parking permit holders was compared to non-motorized users based on survey results (Figure 11). Based on the geocoded parking permit data, up to 35 percent of all USM employees and commuter students (an estimated 1,759 full-time equivalent individuals) live within 5 miles of campus, considered the upper limit for a reasonable biking distance for a commute. Per the transportation survey, however, only about 12 percent of commuters who live within 5 miles of campus use a non-motorized form of transportation. According to Figure 11, below, after 2½ miles, most people at USM stop using non-SOV[4] modes of transportation, which may be an indication of the cultural and environmental limits of biking in Maine. Although there is potential beyond 2 ½ miles, that potential should be tempered by barriers of safety, comfort, and weather.

Figure 11: Bike Potential

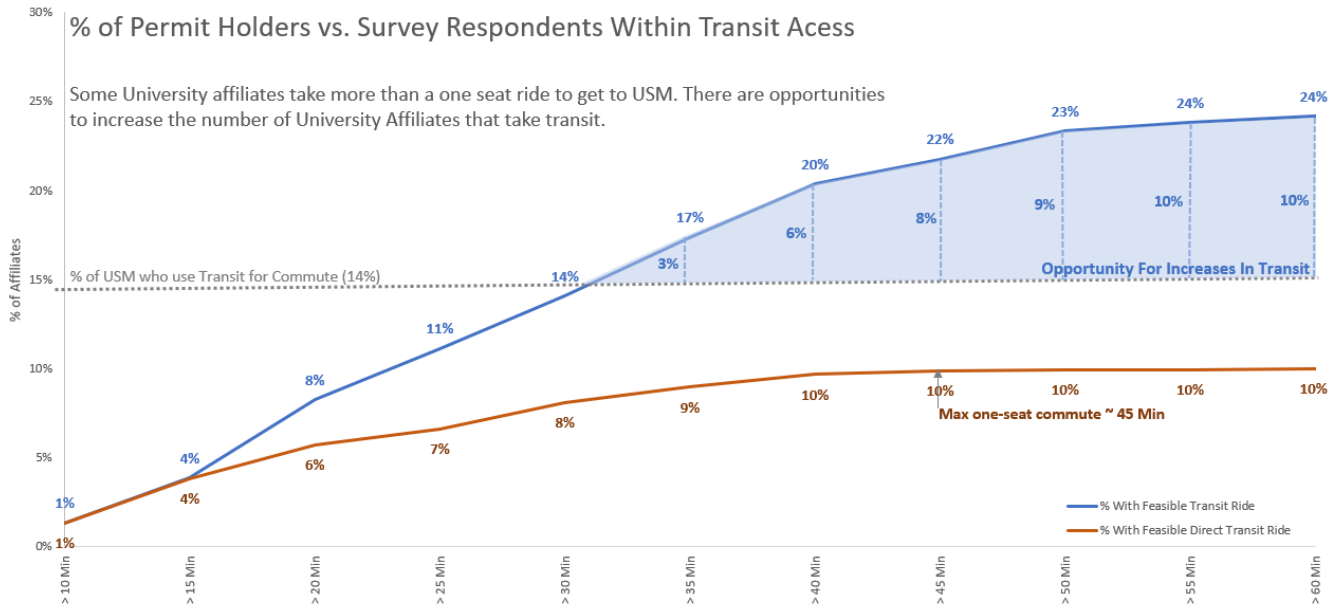


[4] SOV – single-occupancy vehicle (this mode is also referred to as *drive alone*)

Transit Potential

Transit-access time was compared to the percent of commuters from the survey who reported using transit (Figure 12). Up to 10 percent (or 503 FTE individuals) of USM affiliates live within walking distance of a direct transit route to USM Portland (based on the parking permit data). A further 14 percent (summing to 24 percent) can take a transit option that would take less than an hour to access USM Portland. This is 10 percent more than the existing number of University affiliates who indicated taking transit to USM (as reported in the transportation survey).

Figure 12: Transit Potential



Given the higher number of USM affiliates who noted taking transit than the number of affiliates within direct transit routes indicates that either a percentage of affiliates may be connecting on transit service or otherwise driving to a stop first (example driving to Gorham campus and then hopping on the Husky Line). Of all transit routes with direct access to the USM Portland campus, the Husky Line[5] has the highest number of permit holders who live within walking distance (459), followed by Route 4 (451), Route 2 (352), and Route 8 (270). Of all transit routes, the Route 9A and Route 9B serve the most affiliates within walking distance of stops (611), but these routes require a transfer to a transit bus line with direct service to the Portland campus.

[5] This analysis does not account for the fact that the Husky Line is a direct service route with few stops, whereas the other lines are more traditional services; however, the comparison serves to highlight what would be possible if the Husky Line or a route like it where to offer more stops in certain neighborhoods.

4

TDM Coordinator (TC)

TDM program management responsibilities will be designated to a single representative associated with the University.

USM will appoint Aaron Witham, Assistant Director of Facilities Management for Sustainability, as TDM Coordinator for USM; the Director of Auxiliary Services will play a supporting role.

The Assistant Director of Facilities Management for Sustainability can be reached via:

- email at aaron.z.witham@maine.edu
- phone at 207-780-5947.

The responsibilities of the Assistant Director of Facilities Management for Sustainability will include the following:

- Promote non-SOV transportation choices primarily to faculty, staff, students and residents
- Champion the implementation of new TDM strategies to reduce parking demand and increase the use of non-SOV transportation modes
- Conduct new student/new employee orientation to educate incoming affiliates regarding their transportation options to and from the campus.

- Coordinate the implementation of TDM strategies with Campus Scheduling, Human Resources, Parking, and any other departments.
- Work with the City of Portland, METRO, GoMaine, a private carpool app and other potential partners to improve non-SOV transportation access to the campus and to gain support for program implementation.
- Recruit and engage participants for any outreach events or campaigns associated with the TDM program over time.
- Review potential new alternative transportation technology or SOV reduction technology and coordinate implementation efforts associated with them.
- Coordinate all monitoring and evaluation activities necessary to measure the effectiveness of the TDM program in achieving the targets.
- Develop a TDM Report, which will provide an assessment of strategies implemented to date and outline the activities to be implemented in the upcoming year.

The responsibilities of the Director of Auxiliary Services will include the following:

- Provide consultation on TDM strategies that impact parking supply, services, and technology.
- Provide up-to-date data on parking volumes and patterns from the parking garage.
- Provide support for conducting additional parking assessments and measurements annually.
- Co-develop and implement financial parking incentives or disincentives as identified by the TDM plan.
- Maintain existing parking infrastructure and technology, with the support of Facilities Management and Capital Planning.
- Maintain parking services, including payments, campus notifications, and website updates.
- Carry-out parking enforcement.

5

Transportation Demand Reduction Goals

USM expects the TDM program to reduce the number of single-occupancy vehicle trips, thus reducing overall trips, demand for parking and greenhouse gas emissions.

Trip Reduction Goal: USM aims to reduce University-generated peak hour vehicle trips between 3-6% (17-35 trips) for the AM peak hour and by 3-6% (12-23 trips) for the PM peak hour by 2025. This goal is relative to a baseline of 581 and 381 trips, respectively, in the year 2023, at the opening of Portland Commons, the Career & Student Success Center, and a new parking garage (as determined by the Traffic Movement Permit analysis conducted in March of 2020). The peak hours are based on total traffic in the area, inclusive, but not limited to USM's contribution. They are noted to be between 7:30 am- 8:30 am and between 4:30-5:30 pm. Given that the morning hour is a higher peak overall, that hour will be the primary focus of the goal.

Parking Demand Reduction Goal: USM aims to reduce parking demand by 10-14% (159-222 vehicles) by 2025 during the hour of peak demand on campus[6]. The peak parking hour and baseline volume (1,587 vehicles) was established from 12:30-1:30 pm, Monday-Wednesday, inventoried in the Fall of 2018. As strategies are implemented to achieve this

[6] The peak hour for trips is related to the peak hour for parking, but they are not the same. For example, the first peak hour for trips occurs early in the morning when the maximum volume of people are on the road traveling. The peak parking hour occurs later, reflecting cumulative impact as a result of multiple hours of trips coming to campus. This is why the trip reduction goal is smaller than the parking reduction goal.

goal, the peak demand hour may change, so the goal will stand in reference to the volume, not the time, of parking demand measured at the original baseline peak hour in Fall of 2018.

Mode Split Reduction Goal: USM aims to decrease the percentage of SOV (single occupancy vehicle) trips to 70% and increase the percentage of non-SOV trips to 30% by 2030. The SOV category includes personal automobile trips without passengers and motorcycles, while the non-SOV category includes carpools, riding the bus, biking, and walking. The most recent data set of 2019 shows that USM is currently at approximately 75% SOV and 25% non-SOV. Given that measuring this goal relies on self-reported survey data and only includes a sample of the larger population, the University primarily wants to use this goal for internal planning purposes and for estimating greenhouse gas emissions. However, the University will provide the current estimate annually in its reports to the City.

Greenhouse Gas Reduction Goal: USM aims to reduce greenhouse gas emissions from commuting by 20% (or .4 MT of CO2e per capita) by the year 2025, in line with its goal to reduce all scope one emissions at the University by 20%[7]. The 2006 baseline greenhouse gas emissions from commuting on an annual, per capita basis is approximately 2 MT of CO2e. This goal is tied to a larger University pledge called the President's Carbon Commitment, a national commitment among hundreds of colleges and universities to reach carbon neutrality. USM signed the pledge in 2007, and set 2006 as the baseline with a goal of 2040 for carbon neutrality. Since FY 2006, per capita emissions from commuting at the University have fallen by an estimated 5%, according to the last carbon inventory conducted in 2017[8]. The remaining 15% is expected to be surpassed by a combination of the trip and parking goals stated above, promotion and enabling of more electric vehicles relative to gasoline-powered vehicles on campus, and the anticipated increase in fuel economy standards of traditional gasoline-powered vehicles. According to the United States' EPA[9], the SAFE[10] rule announced by the Trump Administration this year will require an increase in MPG by 1.5% every year from 2021 until 2026.

[7] There are three categories of emissions in GHG accounting. Under Second Nature, scope three is comprised of commuting, business travel, study abroad, downstream waste emissions, and transmission and distribution loss from electricity, as well as occasionally other sectors.

[8] The FY 2019 carbon inventory is on track to be completed by Spring of 2021, as it was unfortunately delayed due to pandemic resource constraints.

[9] https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule

[10] SAFE stands for Safer Affordable Fuel Efficient Vehicles Rule

6

Trip, Parking, Mode Split & GHG Reduction Strategies

The USM Portland TDM Plan establishes an aspirational vision and set of goals for transportation, mobility, and sustainability. The Plan builds off USM's multimodal strengths but pushes forward-thinking and multifaceted solutions.

Ultimately, USM will achieve success if one keeps in mind the following key concepts:

There is no "silver bullet" in TDM. The recommendations represent a package of reforms; implementing only one or two items will not solve USM's parking challenges.

Behavior change is difficult, but critical if USM would like to realize its vision. Future growth at the University will present critical challenges with parking. USM will need to depart from the status quo and rethink parking and transportation in order to grow sustainably.

The Plan is a "living" document. Key to the success of this plan is to implement, measure, learn, and adjust. Over time as the transportation context, technology, institutional culture, and user preferences change, so may the types of strategies that are pursued. This is true now, more than ever, given the current global pandemic, and the need to remain adaptable.

What is presented here is the University's current plan for Transportation Demand Management (TDM). It is subject to change as the global pandemic unfolds, as financial

constraints dictate, and as annual survey data and parking counts inform what is working and what is not working among USM's unique population.

Therefore, the University is not committing to launch every one of these initiatives necessarily or committing to keeping every initiative in place permanently if they prove to not be feasible. Rather, the University is aiming to achieve trip, parking, and greenhouse gas emissions reduction targets using the most effective suite of technologies and policies available and achievable for a particular year. That said, it is the desire of the University to launch most of these initiatives in order to provide a multi-modal suite of options to students, staff and faculty, not all of which have the privilege of owning a personal vehicle. Moreover, the University has identified certain initiatives as "core" initiatives that it is committed to implementing. These are indicated with an asterisk in Table 3.

The matrix below introduces a snapshot of the initiatives that USM hopes to implement. Following the matrix is a section outlining descriptions of the initiatives. To the extent possible, strategies are grouped by categories reflected in the *City of Portland's Technical Manual*. For each strategy, an anticipated launch date is provided.

Table 3: Overview of TDM Initiatives for USM

STRATEGY	LAUNCH DATE	INFRASTRUCTURE	INCENTIVES	EDUCATION
Walking				
Create Walk Spot Maps	Fall 2023			X
Publicize the "Complete City Project"	Fall 2021			X
Hold Fitness Challenges	Spring 2022		X	
Biking				
*Co-launch City Bikeshare	Spring 2023	X		
Build Bicycle Repair Station	Spring 2023	X		X
Promote Local Bike Activities	Spring 2021		X	X
Offer Discounted Bike Supplies	Spring 2021		X	
*Improve Bike Infrastructure	Spring 2023	X		
Apply for Bike Friendly University Certification	Fall 2022	X	X	X
Transit				
*Continue METRO Pass Program	Ongoing	X	X	
Propose Husky Line Improvements	Fall 2022	X		
Propose Transit Service Expansion Beyond Husky Line	Fall 2022	X		
Install Transit Screen	Spring 2023	X		
**Carpooling, Telecommuting & Time-of-Day*				
Establish Vanpool Vehicles	Fall 2022	X	X	
Designate Carpool/Vanpool Spaces	Fall 2022	X	X	

Develop Rideshare Matching Platform	Fall 2022	X		
Promote Telework & Flexwork	Ongoing		X	X
Restructure Course Schedule	Ongoing	X		
Parking Pricing				
Establish Commuter Parking Buyout Program	Fall 2021		X	
*Establish Residential Parking Buyout Program	Spring 2023		X	
Host Carshare Program to Support Buyouts	Spring 2023	X	X	
*Unbundle Student Parking Fees	Fall 2021		X	X
Build Additional EV Charging Stations	Fall 2021	X		
Review Parking Price Levels	Fall 2022		X	
Communications & Marketing				
*Hold New Student & Employee Orientations for Transportation	Spring 2021		X	X
*Revise Transportation Website	Spring 2021			X
*Publish Access Guide	Spring 2021			X
Offer Guaranteed Ride Home Service	Spring 2023		X	

*Core strategies that the University is committing to are indicated by *. In the case of the Carpooling, Telecommuting & Time-of-Day category, the category itself is considered core, but the University will maintain flexibility in which of these strategies it implements, depending on future conditions

Walking Initiatives

Create Walk Spot Maps: Partner with a class and utilize GIS resources to create a semester-long project to build out exciting walking maps that would be made available both online and in print, in high profile locations on campus. The maps would include walkable points of interest, such as bus stops, public restrooms, cafes, breweries, scenic areas, and parks. The online version could be a user interface where you can select your points of interest and create a preferred route around the city. The online version should also include a forum, or a place for individuals to leave comments so they may spread information about the safest and most scenic routes, and also work to create a community of walkers.

This potential initiative program could also be made into a bi-annual "Walking Challenge" where individuals keep track of the various routes and enter that information into a type of raffle or other contest where they win a gift certificate to a sporting goods or shoe store.

Publicize "The Complete City" project: Participate in this project through a class or creation of a stakeholder group. The project is being run by the Portland Society for Architecture. They are reaching out to the Greater Portland community to make the area more accessible, more attractive, more just and equitable. This includes creating what they

(and others) describe as "The Complete City," where within the city, each neighborhood has all it needs within a half mile, incentivizing alternative transportation by intentionally planning communities.

Hold Fitness Challenges: Partner with an existing health app or utilize the USM student app to create a fitness challenge for most steps per week. This will be accessible to most students, as most individuals have a smartphone that would be compatible with such an app. Each week, the app could send out a public note of congratulations to the walker with the most steps. The app could also create benchmarks where if a member of the community reaches a certain number of steps in a certain number of days, they receive a percent discount code to a local sporting goods store or shoe store.

Biking Initiatives

Co-Launch City Bikeshare: Partner with the City of Portland to co-launch a Bikeshare program that will cover, at a minimum, the USM-Portland campus, the back cove, Oakdale, Brighton, Bayside and Parkside. The University will provide financial support for Bikeshare parking spaces on the Portland campus if necessary.

Build Bicycle Repair Station: Install a new student-run bike repair station or shop (deemed "the Hub") in a central part of their campus. Shop will be located in a corner of the Abromson parking garage, a stand-alone shed or some other covered location, where it can be out of the wind and the rain. The University aims to make it a social hub as well, where information about alternative modes of transportation can be offered. If survey data suggests additional need, then we can build a stand-alone self-service fix-it station near the center of campus.

Promote Local Bicycle Activities: Promote the participation in (and facilitation of) local bike activities such as the Portland Slow Ride, Smart Cycling Traffic Skills 101, and Cycling Savvy events. At least one opportunity or event will take place each semester.

Offer Discounted Bike Supplies: Provide Discount Sales for Bike Supplies (through a partnership with Bicycle Coalition of Maine or another program). Sales will either be ongoing in the bookstore and/or combined with the special events noted above once per semester.

Improve Bicycle Infrastructure: Improve bicycle infrastructure on campus, and propose improvements off campus. The University plans to increase bicycle parking spaces to 2.5 times what is currently offered on the Portland campus. Currently there are 250 spaces with another 10 being planned for the Wishcamper lot remodeling. Forty-one of these spaces are covered.

USM plans to add 122 short-term (uncovered spaces) to campus, with a lot of them slated for the new quad and some of them being distributed throughout campus to fill in gaps. USM also plans to add 288 long-term (covered spaces). Forty of these long-term spaces are proposed for a bike room inside the Portland Commons residence hall, and 248 long-term spaces are proposed for another location somewhere near Portland Commons and the Career & Student Success Center (CSSC). Possible sites include the new parking garage if it is located near the other two new buildings, in a stand-alone shelter, or in a secure area of the

Abromson parking garage. In addition to spaces for personal bikes, the current plan is to offer dedicated spaces for the proposed bikeshare bikes. Bikeshare notwithstanding, the total spaces on campus by the Spring of 2023 is planned to be 670.

These volumes of new bike parking meet or exceed several important standards that align with the University's aggressive plan to increase biking among its students, staff and faculty:

- 5.5 times higher than City of Portland's Technical Specs, campus-wide[11]
- Double the amount suggested by APBP for short-term parking for students & employees[12]
- Meets APBP's recommended long-term space allocation per bed[13]
- Exceeds City of Washington D.C.'s requirement by over 50% for long-term spaces per dwelling units in residential apartments[14]
- Double City of Cambridge, MA's requirements for short-term spaces and exceeds their requirements for long-term spaces.[15]

Off campus, the University will collaborate with the City of Portland on identifying improvements to bicycling infrastructure along corridors traveled by USM commuters through the annual transportation survey.

Apply for Bike Friendly University Certification: Apply for Bike Friendly University Certification. The application process, completed every four years, will help the University identify areas for improvement, and inform the types of questions that need to be asked in the annual survey of students, faculty and staff.

Transit Initiatives

Bus ridership has obviously been impacted by the global pandemic by some customers deciding not to ride the bus and by bus capacity being limited to comply with Federal standards. Despite these challenges, VHB believes that transit ridership demand will fully rebound again within a couple of years, so they do not recommend changes to long-term ridership predictions at this point. However, they note that the ability for ridership to be accommodated depends on supply of seats being available, which could possibly be impacted by future policy decisions coming from the Federal government. For the time being, the University is not adjusting expected transit impact for TDM goals set on a 2023 horizon.

Continue METRO Pass Program: In 2018, the University established a program with the Greater Portland METRO to allow students, staff & faculty to ride any METRO route for no

[11] Per City of Portland Code of Ordinances, Section 14-526

[12] Per Association of Pedestrian & Bicycle Professionals' Bicycle Parking Guidelines, 2nd Edition, assuming that student & faculty vehicle spaces are a reasonable proxy for individuals on campus at one time

[13] Per Association of Pedestrian & Bicycle Professionals' Bicycle Parking Guidelines, 2nd Edition multi-family housing criteria of .5 spaces per bed

[14] Per Table 1: https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/DDOT%20bike%20parking%20guide_060118_Screen.pdf

[15] Per College or University Student Activity Facilities, page 4: https://www.cambridgema.gov/-/media/Files/CDD/Transportation/Bike/Bicycle_Parking_Guide_20130926_2017PictureEdits.pdf

cost to the individual, so long as they show a USM ID. The program has been popular for students, as it increased the number of trips offered between Portland and Gorham via the newly established limited stop Husky line. Post pandemic, it has great potential to shift USM commuters out of personal vehicles if they live on or near an existing line. As an initiative, the University endeavors to keep this program in place with METRO for the foreseeable future.

Propose Husky Line Improvements: Conduct graduate-level research on how to increase ridership on the METRO using a community-based social marketing model. Then, make a proposal to METRO with goal of increasing the frequency of the Husky Line to 15 minutes to achieve "transit freedom."

Propose Transit Service Expansion Beyond Husky Line: Conduct graduate-level research, using GIS and USM student, staff, and zip code data to analyze route potential. Then, make a proposal to METRO for potential local on-demand bus shuttle connecting downtown Portland to campus and/or increasing the frequency on other non-Husky line routes that serve the Portland campus.

Install Transit Screen: Install a real-time transit screen in the new Career & Student Success Center. Potential locations include the first floor lobby or near the elevators on the first or second floor. This effort will supplement METRO's own effort to install a transit screen in one of the bus shelters on campus.

Carpooling, Telecommuting & Time of Day Initiatives

The initiatives below, when taken together, are some of the strongest leverage points the University has and some of the most nimble. They are paired together here so that they can be substituted for one another when responding to the risks created by the pandemic. For example, under non-pandemic circumstances, the telework and class schedule initiatives could constitute 50% of the demand management that this category is capable of, while under a pandemic scenario they may need to constitute 100% of the demand management. The aggregate goal for this collection of initiatives is to get 125 vehicles out of parking lots during the peak parking demand hour.

Establish Vanpool Vehicles: Establish a program to lease vanpool vehicles and initiative vanpools in high commuter corridors. A candidate for the first potential vanpool is a Lewiston-Auburn Campus to Portland Campus trip.

Designate Carpool/Vanpool Spaces: Designate prime parking spaces for carpool or vanpool on the Portland campus, starting with 50.

Develop Rideshare Matching Platform: Develop rideshare matching platform or meet n' greet events to pair potential carpool participants. University will consider using Go Maine if Go Maine can increase safety measures for student ridership. The University has provided Go Maine with feedback on how to improve safety.

Promote Telework & Flexwork: Establish teleworking arrangements with more employees. The University would promote its existing voluntary telecommuting policy.

Restructure Course Schedule: Conduct course catalog review with the goal of spreading out courses by day, time, and/or location. A first iteration of this initiative was started this Fall semester, but the effects of it are currently invisible due to the high percentage of classes being taught online due to Covid-19.

Parking Pricing Initiatives

Establish Commuter Parking Buyout Program: Launch a parking buyout program to encourage employee and student commuters to give up their parking pass in exchange for an incentive of upwards of $500 per year. Only individuals who previously purchased a parking pass the semester before may enter the buyout program. Buyouts would be offered on a first come, first serve basis. A max of 50 buyouts would be given out the first year (so that the University can monitor and increase when/if effectiveness is proven). Ten emergency parking passes will be offered each semester, which gives individuals the right to park on campus if they have extenuating circumstances, such as childcare issues or emergent health challenges. Emergency passes could be printed from an online form that records number used per individual).

Establish Residential Parking Buyout Program: Launch a parking buyout program to encourage students residents on the Portland campus to give up their parking pass in exchange for a cash incentive, value toward a bikeshare subscription, and value toward a carshare subscription (if available). The value of each of the three incentives is proposed to be $20 per month, totaling $60 in value, for the nine months comprising the Fall, Spring and Winter semesters. The first 40 applicants would get secure, covered parking inside Portland Commons. The second 60 applicants could utilize secure, covered parking in the larger covered parking area in the vicinity. A max of 100 buyouts would be given out the first year (so that the University can monitor and increase when/if effectiveness is proven).

Host Carshare Program to Support Buyouts: Establish a carshare program in partnership with the City, that may be utilized as part of the residential student buy-out program (in subsidized form), or by commuter students, staff, faculty and non-USM community members. The University recognizes that the carshare business plan has been challenged by covid due to the financial losses sustained by car rental businesses, so this initiative may not prove reliable. To that end, it is not a critical leverage point within this TDM plan; rather it is supplemental to the buy-out initiative. The hope is that the industry will rebound by 2023.

Unbundle Student Parking Fees: Unbundle student transportation fee from their other tuition-related fees, so that the payment for a parking permit must be made separately through a manual opt-in program. This action which will draw attention to the cost of those applying and serve as a disincentive to some.

Build Additional EV Charging Stations: Install additional electric vehicle charging stations at select locations. Goal will be to ensure there are enough charging stations available to meet the next year's expected demand of staff & faculty driving EV vehicles to campus (as

indicated by annual survey), so that spaces to park do not limit potential EV drivers. Stations are likely to be pay-as-you-go. As part of this initiative, the University also endeavors to run conduit to future structured parking facilities, regardless of whether or not it currently has the funds to install EV charging stations at every space.

Review Parking Price Levels: Review of staff member parking to determine if there is a pricing model that will reduce transportation demand. Goal will be to achieve greater parity between employee and student parking pricing.

Communications & Marketing Initiatives

Communications & Marketing: Hold new student & employee orientations for alternative transportation modes, infrastructure, resources and incentives. This initiative may build upon current student and employee orientation programs to maximize participation.

Revise Transportation Website: Build upon current website (launched in May of 2019) by adding new & expanded alternative transportation options and benefits, and performing ongoing maintenance and updates.

Publish Access Guide: Develop a "slick sheet" access guide summarizing ways to travel to campus and nearby destinations.

Offer Guaranteed Ride Home Service: Promote a guaranteed ride home program from Go Maine or a private carpool app to compliment alternative mode use, and provide security to students, staff and faculty.

Potential Greater Portland Initiatives

The University recognizes that it is only one entity within a much larger complex system of transportation within the greater Portland. Toward that end, VHB researched potential improvements that could be considered by the METRO, the City of Portland, and other supporting entities to support USM's TDM plan. VHB also estimated the potential impact these initiatives could have on USM's trip generation and parking goals. The proposed initiatives and their potential impacts are summarized here:

- **Increase frequency of Husky Line to 15 minutes:** Reduction of 39 (2.5%) to 79 (5%) Peak Hour Parking Spaces
- **Increase frequency of METRO Routes 2 & 4 to 15 minutes**: Reduction of 39 (2.5%) to 79 (5%) Peak Hour Parking Spaces
- **Restructure departures and arrivals of all METRO routes serving the Portland campus in order to create 10 minute headways to downtown:** Reduction of 8 (0.5%) to 16 (1%) Peak Hour Parking Spaces, with even greater reductions possible if all routes were routed to serve the same stop on campus
- **Create local on-demand circulator route (shuttle):** Reduction of 56 (3.5%) to 111 (7%) Peak Hour Parking Spaces

- **Improve downtown METRO loop (Route 8) & route it through the USM campus:** Reduction of 43 (2.7%) to 86 (5.4%) Peak Hour Parking Spaces
- **In support of the above initiatives, METRO could begin to plan around USM as an anchor node in their network when the new residence hall comes online**
- **Create a better defined & safer bicycle/pedestrian corridor from USM to downtown:** Reduction too difficult to estimate until the goal is more defined

The reduction ranges featured above should be considered for each initiative individually, as opposed to being additive if all initiatives were implemented. In other words, some individual riders may be affected by more than one initiative. To further explore these initiatives, the University recommends that a coalition of METRO, the City, the University and others research what the potential cost per rider would be for implementing these strategies, in order to determine which may warrant further consideration.

7

Monitoring and Reporting Plan

Program monitoring and evaluation are important components of any successful TDM Program, because they provide a quantitative benchmark of the program's effectiveness in reducing single occupancy vehicle trips and parking demand. The Transportation Coordinator (TC) can use the information gathered via the monitoring plan to direct the ongoing implementation of the TDM Program, allowing for adjustments and the introduction of new strategies.

Furthermore, via regular periodic reports, USM will provide evidence to the City of the applicant's diligence in implementing the program.

There are different methods for collecting the data necessary to monitor a TDM Program, including surveys, program participation documentation, vehicle parking counts, and activity logs. USM's TDM program monitoring will use trip generation counts, vehicle parking counts and person surveys in evaluating the effectiveness of the program. Each of these tools is discussed below.

Trip Generation Counts

Trip generation counts refer to estimating the potential contribution of USM students, staff, and faculty to the total volume of vehicles on the roads feeding the Portland campus. The peak trip hours will be used as the boundary for this metric, and the data will originate from recorded vehicles entering and exiting the parking garage structures on campus, as well as observed vehicles entering and exiting the large surface lots on campus (defined as those lots with more than 20 parking spaces. The peak hours will be assumed to be between the hours of 7:30-8:30 am and 4:30-5:30 pm, Monday through Wednesday, in October, unless future analysis shows they should be at a different time.

The Director of Auxiliary Services at USM will provide vehicle count data from the automated garage entry systems. Data for the surface lots will be collected by direct observation from University staff or contractors hired to stand at the entries and exits and tally vehicles. Qualified University staff or a third-party contractor will compile and analyze the data.

Parking Occupancy Counts

Parking counts refer to a visual or automated account of occupied and/or empty parking spaces. These data are used to ensure that the amount of parking supply (spaces) on site is appropriate to meet peak hour parking demand (parked vehicles).

Under the direction of the Transportation Coordinator, the university will collect observations of vehicle parking during a representative (typically busy, classes-in-session) 3-day period in October. The TC will report the peak parking demand for the campus parking for those observed days.

Parking occupancy of the campus's garages will be based on data retrieved for the parking revenue control system, whereas occupancy of the campus's surface parking lots will require manual field observations. Observations of spaces occupied will be made during each hour in a ten-hour period of 8:00 AM to 6:00 PM.

The reporting of parking transactions and garage use should distinguish, to the extent possible, those users who are USM employees, students, and transient/visitors (hourly, public) users.

A parking occupancy rate relative to total supply of parking on campus will be reported.

Survey of Commuting Patterns, Mode Split & GHG Emissions

The Transportation Coordinator will administer a survey of both employees and students of USM Portland.

Surveys provide a qualitative understanding of how well TDM (and Parking Management) program elements are working. The survey will also be used to estimate greenhouse gas emissions associated with commuting, as well as the current mode split.

The TC will conduct the surveys in either the spring or fall session (e.g., March or October), depending on available resources and labor relative to the resources and labor required to conduct the trip generation and parking analysis. The survey will be completed during a week without any holidays and when classes are in session.

Survey questions will incorporate the following components, in addition to others:

- Type and frequency of modes of transportation used in a typical week
- Destinations traveled to via particular modes
- Reasons why people are driving alone
- Reasons why people are not driving alone
- Level of enthusiasm for incentives that would encourage drive-alone respondents to use an alternative mode
- Ideas for improvements to transportation system, including ideas for incentives
- Routes traveled by foot or bike & associated improvements desired
- Trip generation during time of day (in order to supplement USM-generated contribution to peak traffic generation)
- Ownership of electric vehicles
- Questions required for Bike Friendly University application
- Questions about health concerns (e.g. Covid-19) with different modes and how that is impacting behavior and expected to impact behavior in the future

Status and Monitoring Report

Each year, after data are conducted, the TC will prepare a report summarizing TDM program status and monitoring results. In addition to reporting the results of the data collection, the report will detail (1) what/when strategies were implemented, (2) an estimate of how many individuals participated in certain programs, (3) the lessons learned regarding the most effective TDM strategies, including barriers to not driving alone from the survey.

A core summary table of the goals will be provided in the report that includes baseline numbers, progress to date, goal numbers, and dates by which the University is striving to reach the goals. Goals included will be trip generation, parking counts, mode split, and greenhouse gases. The University will work with the City every year to ensure it is meeting expectations of the City regarding format of the report.

The TC will submit the report to the City of Portland's TDM Program Manager (a position currently staffed in the Planning and Transportation Division of the Planning and Urban Development Department). A report should be issued within 3 months following the last of

the three data collection activities (e.g., if the survey is done in March, then a report should be issued no later than June of that same year). The TC will meet with the City of Portland Planning Department and discuss suggestions for changes to the TDM Program, and will make adjustments before the start of the Fall semester.

Monitoring Schedule

Monitoring (survey, parking, and traffic data collection) should begin within the year following the opening of the planned residence hall. Monitoring will occur according to the schedule detailed below, until the year 2030, the horizon year of the *Facilities Master Plan*. Updates to the *Sustainability Strategic Plan* and/or *Facilities Master Plan* may conclude that further monitoring is warranted.

Annually, the University will:

- Conduct analysis of trip generation (as described above)
- Conduct parking occupancy observations (as described above)
- Conduct a travel survey (as described above)
- Prepare a TDM monitoring report (as described above)

Date: 11/4/2020

To: Christian Roadman, Planner, City of Portland

From: Aaron Witham, Asst. Dir. Facilities Management, University of Southern Maine

Project: PL-001040-2020, 25 Bedford St. (USM Career & Student Success Center and Residential Hall)

Re: University of Southern Maine Interim Parking Management Plan

---

This memo outlines a proposed interim parking management plan to accommodate the additional 396 spaces needed on the University of Southern Maine's Portland Campus for the proposed development project.

Formula for Parking Needs:

Pursuant to the Site Plan standards, the Planning Board shall determine the off-street parking requirement, based upon the applicant's parking study and a recommendation from the City Transportation Engineer, for projects in the USM Overlay zone. USM's parking study anticipates a total need of 396 off-street parking spaces generated by the project. That number is generated by the following components:

1. 394 parking spaces for Portland Commons. The number was derived by a review of the parking rate for the residential students on USM's Gorham campus which is 68%. Although students on the Portland campus may be less likely to have a car than on the Gorham campus, Portland Commons will be occupied by upper class and graduate students who are more likely to have a vehicle and an off-campus job. Therefore, USM found that the 68% rate is a reliable formula for the Portland Commons. Note that 394 is based on the current number of beds, 580, proposed for Portland Commons. A previous submittal based the number on an earlier count of 577 beds.
2. 66 parking spaces is the net number of spaces displaced by the project.
    - 130 spaces will be displaced from the Woodbury surface lot (P2) for the quad.
    - 41 spaces will be displaced from the Facilities Building lot (P7) for Portland Commons.
    - 6 spaces will be displaced in the Physical Plant lot (P8) for the loading dock.
    - 4 spaces will be displaced in the Law School lot (P6) for the relocation of the salt shed.
    - The expanded Wishcamper surface lot will add 115 spaces.
    - The net result is a total of 66 displaced spaces.

3. The revised TDM (submitted 10/29/2020) anticipates up to a 14% reduction in parking demand at the peak demand hour. 394+ 66 – 14% = 396

Primary Plan:

The University plans to build a new parking garage to satisfy this parking need. Toward that end, the University has hired a design consultant team led by Desman Design Management, a top-tier national firm specializing in structured parking. The University has begun working with Desman and is currently carrying out the site selection process. The University plans to submit a site plan application for this garage in Summer of 2021 and is confident that construction can be completed by Spring of 2023, ahead of the anticipated date of construction completion for Portland Commons and the Career & Student Success Center.

Interim Parking Plan:

The City of Portland has requested an interim parking plan in order to insure that the off-street parking needs will be satisfied for the project in the event the garage is not completed in time to meet those needs. To satisfy this request, the University has held over a dozen internal meetings to brainstorm, identify, research, and validate ways to accommodate 396 additional vehicles without a parking garage. Assistant Director of Facilities Management for Sustainability, Aaron Witham, and Director of Auxiliary Services, Richard Freund, met with the Registrar's Office and Parking Committee to identify candidate populations and locations for remote lot or on-campus valet solutions. They met with various stakeholders on campus, who may have populations of students or employees arriving to campus in cohorts. They also discussed possibilities with remote lot owners and commissioned analysis from VHB on strategies that could be employed, as well as physical constraints of various approaches.

The University offers the following set of plans as different options for a viable interim alternative if circumstances dictate. However, none of these options would be ideal, as will be discussed later. To determine which path is optimal, the University would have to develop incentives to entice students, staff or faculty to buy-in, and then test-drive those incentives through a survey. Through the survey, the University could determine which location(s) and which population(s) would be best to use, causing the least disruption.

Interim Parking Options

Option	Valet Participants	Valet Location	Spaces Used (Existing + Valet)	Remote Location	Spaces Used (Remote)
All Remote #1	N/A	N/A	N/A	Rock Row and/or Cinemagic	396
Valet/Remote Hybrid #1	Law & General Commuters	Law School Lot	156	Rock Row and/or Cinemagic	240
Valet/Remote Hybrid #2	OLLI, Law & General Commuters in Valet	Wishcamper Lot after Remodel	275	Rock Row and/or Cinemagic	121
Valet/Remote Hybrid #3	OLLI, Law & General Commuters in Valet	Abromson Parking Garage- Ground Floor	283	Rock Row and/or Cinemagic	113
Valet/Remote Hybrid #4	Law & General Commuters	Abromson Parking Garage- Top Floor	311	Rock Row and/or Cinemagic	85

*It is anticipated that the residential students of Portland Commons would be the anchor population for the remote lots

*The University may find more efficient options than what is listed in this table, depending on future conditions

The plan would be to make a remote lot the primary parking location for as many on-campus residential students as possible, and fulfill the remainder of the quota with those daily commuters who are on campus for the majority of the day. Waterstone Properties Group's Rock Row location is the development site in Westbrook bordered by Larrabee Rd, Brighton Ave. and Interstate 95. USM students and employees parking there would be shuttled back and forth to campus via METRO's Husky Line, which is free for them to use with their University ID. The Husky Line stops there every 30-35 minutes between 6:40 am and 10:29 pm, Monday through Friday. On Saturday, it stops there between 8:22 am and 11:05 pm, and on Sunday, from 9:12 am to 6:56 pm.

The Zyacorp Inc. (dba Cinemagic) Westbrook location is another viable option for a remote lot. It is located at 183 County Road in Westbrook, near Interstate 95 and the Portland International Jetport. The METRO doesn't currently stop at Cinemagic, but the Route 5 Jetport loop stops within .8 miles, with one to two-hour frequency during normal METRO run times, depending on the day of the week. The University would endeavor to arrange a stop at Cinemagic on Route 5. If successful, the Route 5 could then take the USM students and employees to the Pulse on Elm Street, where they could then take the Husky Line to campus. Alternatively, the University could provide a shuttle to this lot. To be viable, frequency would need to be at least hourly from approximately 6:00 am to 8:00 pm. Exact times would be determined through surveys.

What's referred to in short-hand as "valet" in the table above would most likely not be a full valet service; rather, it would likely be a parking attendant service, whereby drivers arriving to the lot would be told where to park, and after parking they would leave their keys with an attendant. Upon leaving, they would have to either rely on an attendant to retrieve their car or they could retrieve their own car, depending on whether or not the car is blocked in. The service would likely be limited in time from 6:00 am to 8:00 pm, for example, and could require two to four employees to manage. The University would focus on serving those populations whose schedules were found to be best suited to a parking attendant service from stakeholder interviews. One of these populations is a cohort within the Maine Law School (comprised of approximately 85 students and 30 employees) who are on campus between 8 am to 6 pm, Monday through Friday.

Another population is the morning and afternoon cohorts of OLLI (Osher Lifelong Learning Institute). The morning cohort of approximately 110 students has class between 9:30-11:30 am. The afternoon cohort of approximately 90 students has class between 12:30-2:45 pm.

Together, the Law and OLLI cohorts could utilize 215 parking spaces for the duration of the day. Given that this population size doesn't approximate the target for any of the viable valet/attended areas identified on campus, other populations would either have to be added or deleted to reach required numbers. In hybrid model #1, OLLI would be substituted for the more versatile general commuter population. In the other hybrid models, the general commuter population would have to supplement both Law and OLLI in order to make the valet approach a worthwhile effort. An attractive financial incentive would likely be needed to convince members of the general commuter population to engage in valet. Moreover, in order to maximize efficiency, those participating would have to be identified ahead of time through the issuance of a unique pass; otherwise, their numbers could overload the system.

Although the interim plan is viable if necessary, it is not ideal compared to building a parking garage because the University feels it could have a direct negative impact on enrollment and could result in additional parking on surrounding neighborhood streets. Remote lots pose challenges to participants due to requiring extra time to travel, presenting difficulty for participants to keep up with snow removal around their vehicles, and presenting safety issues. On-campus valet/attendant services also present challenges by requiring extra time to park, as well as presenting safety and liability issues.

As discussed, we are comfortable with a condition of approval that ultimately requires either a certificate of occupancy for the garage or a final management plan and an executed lease(s) for remote parking prior to the issuance of a certificate of occupancy for the residence hall. In addition, we would also be comfortable with an interim step requiring proof of commitment for remote parking, short of a lease, in the event a site plan application for a garage is not submitted within 6 months of issuance of the building permit for the residence hall.

Thank you for your consideration. Should you have any questions, please contact me.



Aaron Witham
Assistant Director of Facilities Management for Sustainability
University of Southern Maine

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE **FORM A PAGE 1**
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ **20 acre development** ☐ **Planning Permit** ☐ **Metallic Mining**	☐ **Marine Oil Terminal** ☐ **Structure** ☐ **Subdivision**	■ **Major Amendment** ☐ **Minor Amendment**

1. Name of Applicant:	University of Southern Maine	**6. Name of Agent (if applicable):**	Woodard & Curran, Darrin Stairs
2. Applicant's Mailing Address:	25 Bedford St, Portland, ME 04104	**7. Agent's Mailing Address:**	41 Hutchins Dr., Portland, ME
3. Applicant's Daytime Phone #:	207-780-4585	**8. Agent's Daytime Phone # :**	(207) 558-3662
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	john.souther@maine.edu	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	dstairs@woodardcurran.com

PROJECT INFORMATION

11. Name of Development:	USM Campus and Student Success Center and Residence Hall						
12. Map and Lot #'s:	**Map #:**	**Lot #:**	**13. Deed Reference #'s:**		**Book #:** 15109	**Page #:** 33	
14. Location of Project City/Town:	Portland	**15. County:**	Cumberland	**16. UTM Northing**	4835207.	**17. UTM Easting**	70.27361111
18. Brief Description of Project including total parcel size:	Amendment to existing SLOD for redevelopment of 3.8 acres with a new Career and Student Success Center and Residence Hall on campus.						

19. Type of Direct Watershed: (Check all that apply)

☐ Lake not most at risk ☐ River, stream or brook ☐ Coastal wetland
☐ Lake most at risk ☐ Urban impaired stream ☐ Wellhead or public water
☐ Lake most at risk, severely blooming ☐ Freshwater wetland

20. Name of Waterbody Project Site drains to:	Site drains to municipal sewer system; within the Back Cove watershed		
21. Amount of Developed Area:	Total acres: 3.8	Existing Developed area: 3.8 acres	New Developed area: 0 acres (Entire site to be redeveloped)
22. Amount of Impervious Area:	Total acres: 2.5	Existing Impervious areas 0 acres	New Impervious area: 2.5 acres (Net Reduction of 1.16 acres)

23. Development started prior to obtaining a license?:	☐ **Yes** ■ **No**		
24. .Development or any portion of the site subject to enforcement action?	☐ **Yes** ■ **No**	**If yes**, name of enforcement staff involved?	
25. Common scheme of development?:	☐ **Yes** ■ **No**	**26. Title, Right or Interest:**	■ **own** ☐ **lease** ☐ **purchase option** ☐ **written agreement**
27. Natural Resources Protection Act permit required?:	☐ **Yes** ■ **No**	**If yes:** ☐ **PBR** ☐ **Tier 1** ☐ **Tier 2** ☐ **Full Permit**	
28. Existing DEP Permit number (if applicable):	L-20438-22-D-A		
29. Names of DEP staff person(s) present at the pre-application meeting:	NA		
30. Does agent have an interest in project? If yes, what is the interest?	☐ **Yes** ■ **No**		

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)"..

Signed: _____ **Title** Project Manager **Date:** March 5, 2020

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** _____ **Date:** March 5, 2020

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): Darrin Stairs

Date: March 5, 2020

Re/Cert/Lic No.: _____

Engineer PE15118

Geologist _____

Soil Scientist _____

Land Surveyor _____

Site Evaluator _____

Active Member of the Maine Bar _____

Professional Landscape Architect _____

Other _____

Maine's Public Universities
UNIVERSITY OF MAINE SYSTEM

UNIVERSITY OF SOUTHERN MAINE
PORTLAND • GORHAM • LEWISTON • ONLINE

February 27, 2020

To: Local, State, and Federal Review Officials

The University of Southern Maine, a member of the University of Maine System, is preparing plans for the Career and Student Success Center (CSSC) at the University of Southern Maine, Portland, ME. The University has retained Woodard & Curran, Inc. to assist in the preparation of the applications associated with permitting approvals for this project. When necessary, Woodard & Curran, Inc. is authorized as its agent to represent the University in addressing questions on the plans, or applicable applications, for this project.

Sincerely,

John M. Souther,
Executive Director of Facilities Management,
University of Southern Maine for the
University of Maine System

Facilities Management
P.O. Box 9300, Portland, ME 04104-9300
(207) 780-4160, TTY (207) 780-5646, FAX (207) 780-4538
www.usm.maine.edu
A member of the University of Maine System

FORM D

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

A. Narrative

X 1. Objectives and details

X 2. Existing facilities (with dates of construction)

B. Topographic map

X 1. Location of development boundaries

X 2. Quadrangle name

C. Construction plan

X 1. Outline of construction sequence (major aspects)

2. Dates

D. Drawings

X 1. Development facilities

X a. Location, function and ground area

NA b. Length/cross-sections for roads

X 2. Site work (nature and extent)

X 3. Existing facilities (location, function ground area and floor area)

4. Topography

X a. Pre- and post-development (contours 2 ft or less)

X b. Previous construction, facilities and lot lines

X **Section 2. Title, right or interest** (copy of document)

Section 3. Financial capacity

X A. Estimated costs

B. Financing

X 1. Letter of commitment to fund

2. Self-financing

NA a. Annual report

NA b. Bank statement

3. Other

NA a. Cash equity commitment

NA b. Financial plan

NA c. Letter

NA 4. Affordable housing information

Section 4. Technical ability (description)

X A. Prior experience (statement)

X B. Personnel (documents)

Section 5. Noise

X A. Developments producing a minor noise impact (statement)

NA 1. Residential developments

NA 2. Certain non-residential subdivisions

X 3. Schools and hospitals

NA 4. Other developments

NA a. Type, source and location of noise

NA b. Uses, zoning and plans

NA c. Protected locations

NA d. Minor nature of impact

NA e. Demonstration
NA B. Developments producing a major noise impact (full noise study)
NA 1. Baseline
NA a. Uses, zoning and plans
NA b. Protected locations
NA c. Quiet area
NA 2. Noise generated by the development
NA a. Type, source and location of noise
NA b. Sound levels
NA c. Control measures
NA d. Comparison with regulatory limits
NA e. Comparison with local limits

X **Section 6. Visual quality and scenic character**(narrative, description, visual impact analysis)

X **Section 7. Wildlife and fisheries** (narrative)

NA **Section 8. Historic sites** (narrative)

NA **Section 9. Unusual natural areas** (narrative)

Section 10. Buffers
NA A. Site plan and narrative

Section 11. Soils
X A. Soil survey map and report
X 1. Soil investigation narrative
X 2. Soil survey map
X B. Soil survey intensity level by development type
1. Class A (High Intensity) Soil Survey
2. Class B (High Intensity) Soil Survey
3. Class C (Medium High-Intensity) Soil Survey
4. Class D (Medium Intensity) Soil Survey
C. Geotechnical Investigation
NA D. Hydric soils mapping

Section 12. Stormwater management
A. Narrative
X 1. Development location
NA 2. Surface water on or abutting the site
NA 3. Downstream ponds and lakes
X 4. General topography
X 5. Flooding
NA 6. Alterations to natural drainage ways
X 7. Alterations to land cover
X 8. Modeling assumptions
9. Basic standard
X 10. Flooding standard
X 11. General standard
X 12. Parcel size
13. Developed area
14. Disturbed area
15. Impervious area
B. Maps
X 1. U.S.G.S. map with site boundaries
X 2. S.C.S. soils map with site boundaries
X C. Drainage Plans (a pre-development plan and a post-development plan)

X 1. Contours
X 2. Plan elements
X 3. Land cover types and boundaries
X 4. Soil group boundaries
X 5. Stormwater quantity subwatershed boundaries
X 6. Stormwater quality subwatershed boundaries
X 7. Watershed analysis points
X 8. Hydrologic flow lines (w/flow types and flow lengths labeled)
X 9. Runoff storage areas
X 10. Roads and drives
X 11. Buildings, parking lots, and other facilities
X 12. Drainage system layout for storm drains, catch basins, and culverts
NA 13. Natural and man-made open drainage channels
NA 14. Wetlands
NA 15. Flooded areas
X 16. Benchmark
X 17. Stormwater detention, retention, and infiltration facilities
X 18. Stormwater treatment facilities
NA 19. Drainage easements
X 20. Identify reaches, ponds, and subwatersheds matching stormwater model
NA 21. Buffers

X D. Runoff analysis (pre-development and post development)
X 1. Curve number computations
X 2. Time of concentration calculations
X 3. Travel time calculations
X 4. Peak discharge calculations
X 5. Reservoir routing calculations

X E. Flooding Standard
X 1. Variance submissions (if applicable)
X a. Submissions for discharge to the ocean, great pond, or major river
X i. Map
X ii. Drainage plan
X iii. Drainage system design
NA iv. Outfall design
NA v. Easements
NA b. Insignificant increase
NA i. Downstream impacts

X c. Submissions for discharge to a public stormwater system
X i. Letter of permission
X ii. Proof of capacity
NA ii. Outfall analysis and design (pictures)
X 2. Sizing of storm drains and culverts
X 3. Stormwater ponds and basins
X a. Impoundment sizing calculations
X b. Inlet calculations
X c. Outlet calculations
NA d. Emergency spillway calculations
X e. Subsurface investigation report
NA f. Embankment specifications
NA g. Embankment seepage controls
NA h. Outlet seepage controls
X i. Detail sheet
j. Basin cross sections
X k. Basin plan sheet
NA 4. Infiltration systems
NA a. Well locations map
NA b. Sand and gravel aquifer map
NA c. Subsurface investigation report with test pit or boring logs

NA d. Permeability analysis
NA e. Infiltration structure design
NA f. Pollutant generation and transport analysis
NA g. Monitoring and operations plan
NA i. Locations of storage points of potential contaminants
NA ii. Locations of observation wells and infiltration monitoring plan
NA iii. Groundwater quality monitoring plan
NA 5. Drainage easement declarations.
X F. Stormwater quality treatment plan peak discharge calculations
X 1. Basic stabilization plan
NA a. Ditches, swales, and other open channel stabilization
NA b. Culvert and storm-drain outfall stabilization
NA c. Earthen slope and embankment stabilization
X d. Disturbed area stabilization
NA e. Gravel roads and drives stabilization

X 2. General Standard
X a. Calculations for sizing BMP
X b. Impervious area calculation
X c. Developed area calculation
X d. Summary spreadsheet of calculations

NA 3. Phosphorus control plan
NA a. Calculations for the site's allowable phosphorus export
NA b. Calculations for determining the developed site's phosphorus export
NA c. Calculations for determining any phosphorus compensation fees
NA 4. Offset Credits
NA a. Urban impaired stream
NA Offset credit calculation
NA b. Phosphorus credit determination
NA i. Location map
NA ii. Scaled plan
NA iii. Title and right
NA iv. Demolition plan
NA v. Vegetation plan
NA vi. Offset credit calculation
NA vii. Calculation for the new allowable export
NA 5. Runoff treatment measures
NA a. structural measures
NA i. Design drawings and specifications
NA ii. Design calculations
NA iii. Maintenance plan
NA iv. TSS removal or phosphorus treatment factor determinations
NA v. Stabilization plan
NA b. Vegetated buffers
NA i. Soil survey
NA ii. Buffer plan
NA iii. Turnout and level spreader designs
NA iv. Deed restrictions
NA 6. Control plan for thermal impacts to coldwater fisheries
NA 7. Control plan for other pollutants
X 8. Engineering inspection of stormwater management facilities

X G. Maintenance of common facilities or property
X 1. Components of the maintenance plan
X A. Maintenance of facilities by owner or operator
X 1. Site owner or operator (name legally responsible party)
X 2. Contact person responsible for maintenance
NA 3. Transfer mechanism

X 4. List of facilities to be maintained
X 5. List of inspection and maintenance tasks for each facility
NA 6. Identifications of any deed covenants, easements, or restrictions
___ 7. Sample maintenance log
___ 8. Copies of any third-party maintenance contracts
NA B. Maintenance of facilities by homeowner's association
NA 1. Incorporation documents for the association
NA 2. Membership criteria
NA 3. Association officer responsible for maintenance
NA 4. Establishment of fee assessment for maintenance work
NA 5. Establishment of lien system
NA 6. Reference to department order(s) in association charter
NA 7. Transfer mechanism from developer to association
NA 8. List of facilities to be maintained
NA 9. Identification of any deed covenants, easements, or restrictions
NA 10. Renewal of covenants and leases
NA 11. List of inspection and maintenance tasks for each facility
NA 12. Sample maintenance log
NA 13. Copies of any third-party maintenance contracts
NA C. Maintenance of facilities by municipality or municipal district
NA 1. Identification of the municipal department or utility district
NA 2. Contact person responsible for maintenance
NA 3. Evidence of acceptance of maintenance responsibility
NA 4. Transfer mechanism from developer
NA 5. List of facilities to be maintained
NA 6. List of inspection and maintenance tasks for each facility
NA 7. Identifications of any deed covenants, easements, or restrictions
NA 8. Sample maintenance log
X 2. General inspection and maintenance requirements
NA a. Drainage easements
X b. Ditches, culverts, and catch-basin systems
X c. Roadways and parking surfaces
X d. Stormwater detention and retention facilities
NA 1. Embankment inspection and maintenance
NA 2. Outlet inspection and clean-out
NA 3. Spillway maintenance
X 4. Sediment removal and disposal
NA e. Stormwater infiltration facilities
NA 1. Sediment protection plan
NA 2. Infiltration rehabilitation plan
NA 3. Sediment removal and disposal
NA 4. Groundwater monitoring plan
NA f. Proprietary treatment devices
NA g. Buffers
NA h. Other practices and measures

Section 13. Urban Impaired Stream Submissions

NA 1. Off-site credits
NA 2. Compensation fees (Urban Impaired Stream/Phosphorus)
NA 3. Development impacts

Section 14. Basic Standards

X A. Narrative
X 1. Soil types
NA 2. Existing erosion problems
NA 3. Critical areas
NA 4. Protected natural resources
X 5. Erosion control measures

X 6. Site stabilization
X B. Implementation schedule
X C. Erosion and sediment control plan
X 1. Pre-development and post-development contours
X 2. Plan scale and elements
X 3. Land cover types and boundaries
NA 4. Existing erosion problems
NA 5. Critical areas
X 6. Protected natural resources
X 7. Locations (general)
X 8. Locations of controls
X 9. Disturbed areas
10. Stabilized construction entrance
X D. Details and specifications (for both temporary and permanent measures)
NA E. Design calculations
X F. Stabilization plan
X 1. Temporary seeding
X 2. Permanent seeding
X 3. Sodding
X 4. Temporary mulching
X 5. Permanent mulching
X G. Winter construction plan
X 1. Dormant seeding
X 2. Winter mulching
NA H. Third-party inspections
NA 1. Inspector's name, address, and telephone number
NA 2. Inspector's qualifications
NA 3. Inspection schedule
NA 4. Contractor contact
NA 5. Reporting protocol

Section 15. Groundwater

NA A. Narrative
NA 1. Location and maps
NA 2. Quantity
NA 3. Sources
NA 4. Measures to prevent degradation
NA B. Groundwater protection plan
NA C. Monitoring plan
NA 1. Monitoring points
NA 2. Monitoring frequency
NA 3. Background conditions
NA 4. Monitoring parameters
NA 5. Personnel qualifications
NA 6. Proof of training
NA 7. Equipment and methods
NA 8. Quality assurance/quality control
NA 9. Reporting requirements
NA 10. Remedial action plan
NA D. Monitoring well installation report
NA 1. Well location map
NA 2. Elevation data
NA 3. Well installation data
NA 4. Well construction details
NA 5. Borehole logs
NA 6. Summary of depth measurements
NA 7. Characteristics of subsurface strata
NA 8. Well installation contract

NA 9. Schematic cross-sections
NA 10. Monitoring point summary table
NA 11. Protective casing
NA 12. On-site well identification

Section 16. Water supply

X A. Water supply method
NA 1. Individual wells (evidence of sufficient/healthful supply)
NA a. Support of findings by well drillers
NA b. Support of findings by geologist
NA 2. Common well(s) (reports)
NA a. Hydrogeology report
NA b. Engineering report
NA c. Well installation report
NA d. Long-term safe yield and zone of influence determination
NA e. Public water supply
NA i. Proposed well or wells
NA ii. Existing well or wells
NA iii. Water quality analysis
NA 3. Well construction in shallow-to-bedrock areas
NA 4. Additional information
X 5. Off-site utility company or public agency
NA 6. Other sources
NA B. Subsurface wastewater disposal systems (locations of systems and wells)
X C. Total usage (statement re: total anticipated water usage)

Section 17. Wastewater disposal

NA A. On-site subsurface wastewater disposal systems (investigation results)
NA 1. Site plan
2. Soil conditions summary table
NA 3. Logs of subsurface explorations
4. Additional test pits, borings or probes
NA a. Soil conditions A
NA b. Soils with Profiles 8 and 9 parent material
NA c. Soil conditions D
NA d. Disposal field length 60 feet or greater
NA 5. 3-bedroom design
NA 6. Larger disposal systems
a. System design details
NA b. Plan view
NA c. Cross sections
NA d. Test pit data
NA e. Mounding analysis
NA B. Nitrate-nitrogen impact assessment
NA 1. When required
NA a. Exempted NA
i. Conventional systems meeting certain setbacks
NA ii. Denitrification systems
NA b. Special conditions and other exemptions
NA 2. Assumptions
NA a. Initial concentration
NA b. Background concentration
NA c. Contribution from development
NA d. Mixing and dilution
NA e. Severe-drought scenario
NA f. Wastewater flow to subsurface wastewater disposal fields

NA 3. Assessment report minimum requirements
NA a. Narrative and calculations
NA b. Site plan
NA i. Well locations
NA ii. 10 mg/l and 8 mg/l isocons
NA iii. Groundwater contours and groundwater flow divides
NA c. References
NA 4. Denitrification systems
NA a. Design plans and specifications
NA b. Installation information
NA c. Monitoring plan
NA d. Maintenance
NA e. Backup system
X D. Municipal facility or utility company letter
NA E. Storage or treatment lagoons

X **Section 18. Solid waste** (list: type, quantity, method of collection and location)
X A. Commercial solid waste facility (final disposal location)
X B. Off-site disposal of construction/demolition debris (final disposal location)
C. On-site disposal of woodwaste/land clearing debris
NA 1. Applicability of rules (evidence re: applicability of rules)
2. Burning of wood wastes
NA a. Delineation on site plan
NA b. Plans for handling unburned woodwaste and woodash
NA c. Evidence of capacity to accept waste (approved facility)
NA d. Usage of materials
NA e. Data on mixing ratios and application rates
X D. Special or Hazardous Waste

Section 19. Flooding
NA A. Explanation of flooding impact
NA B. Site plan showing 100-year flood elevation
NA C. Hydrology analysis
X D. FEMA flood zone map with site boundaries

Section 20. Blasting
NA A. Site Plan or map
NA B. Report
1. Assessment
2. Blasting plan

Section 21. Air emissions (narrative and summary)
NA A. Point and non-point sources identified
NA B. Emission components (point sources)

Section 22. Odors
NA A. Identification of nature/source
NA B. Estimate of areas affected
NA C. Methods of control)

NA **Section 23. Water vapor** (narrative)

X **Section 24. Sunlight** (statement and drawing, if required)

Section 25. Notices
NA A. Evidence that notice sent
NA B. List of abutters for purposes of notice

Supplemental requirements for Wind Energy Developments only:

Section 26. Shadow flicker

NA A. A copy of the Windpro Analysis and associated narrative

Section 27. Public Safety

NA A. Design safety certifications or other documents attesting to the safety of the wind turbine equipment.
NA B. Evidence pertaining to overspeed controls
NA C. Site plan documenting safety setbacks zones for each wind turbine
NA D. Other documents as necessary to demonstrate safety considerations

Section 28. Tangible Benefits

NA A. Narrative demonstration of tangible benefits

Section 29. Decommissioning

NA A. Description of implementation trigger for decommissioning
NA B. Description of extent of decommissioning
NA C. Itemization of total cost to complete decommissioning
NA D. Demonstration of financial assurance for completeness of decommissioning plan

Section 30. Generating Facility-visual Quality and Scenic Character

NA A. (narrative, description, visual impact analysis)

USM Career and Student Success Center and Residence Hall

Site Location of Development

41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232656.00
University of Southern Maine
March 2020

TABLE OF CONTENTS

SECTION		PAGE NO.
1.	**DEVELOPMENT DESCRIPTION**	**1-1**
1.1	Objectives & Details	1-1
1.2	Existing Facilities	1-1
1.3	Topographic Map	1-1
1.4	Construction Plan	1-2
1.5	Drawings	1-2
1.6	List of Attachments	1-2
2.	**TITLE, RIGHT, OR INTEREST**	**2-1**
2.1	List of Attachments	2-1
3.	**FINANCIAL CAPACITY**	**3-1**
3.1	Estimated Costs	3-1
3.2	Financing	3-1
3.3	List of Attachments	3-1
4.	**TECHNICAL ABILITY**	**4-1**
5.	**NOISE**	**5-1**
6.	**VISUAL QUALITY & SCENIC CHARACTER**	**6-1**
7.	**WILDLIFE & FISHERIES**	**7-1**
7.1	List of Attachments	7-1
8.	**HISTORIC SITES**	**8-1**
8.1	List of Attachments	8-1
9.	**UNUSUAL NATURAL AREAS**	**9-1**
9.1	List of Attachments	9-1
10.	**BUFFERS**	**10-1**
11.	**SOILS**	**11-1**
11.1	List of Attachments	11-1
12.	**STORMWATER MANAGEMENT**	**12-1**
12.1	List of Attachments	12-1
13.	**URBAN IMPAIRED STREAM**	**13-1**
14.	**BASIC STANDARD**	**14-1**
14.1	List of Attachments	14-1
15.	**GROUNDWATER**	**15-1**
16.	**WATER SUPPLY**	**16-1**
17.	**WASTEWATER DISPOSAL**	**17-1**

18. SOLID WASTE 18-1

18.1 Solid Waste 18-1
18.2 Construction & Demolition Debris 18-1
18.3 Special & Hazardous Waste 18-1

19. FLOODING 19-1

19.1 List of Attachments 19-1

20. BLASTING 20-1

21. AIR EMISSIONS 21-1

22. ODORS 22-1

23. WATER VAPOR 23-1

24. SUNLIGHT 24-1

25. NOTICES 25-1

1. DEVELOPMENT DESCRIPTION

This narrative report is in support of a Site Location of Development (SLOD) Permit Amendment for the proposed USM Career and Student Success Center ("CSSC") and Residence Hall to be located at 23-29 Bedford Street in Portland, Maine. A letter authorizing Woodard & Curran to act at the agent on behalf of the Applicant is attached to this application.

1.1 OBJECTIVES & DETAILS

The University of Southern Maine comprises three campus locations in central and southern Maine, a region that is viewed nationally as among the most livable and desirable in the country. The three campuses, located in Portland, Gorham, and Lewiston, have different physical features and dynamics, and each offers a variety of educational, cultural, and recreational opportunities to USM students. This project represents a significant implementation of the USM Facilities Master Plan. In addition to the approximately 60,000 SF Student Success Center and the 580-bed Residence Hall (approximately 220,000 SF) the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services; site lighting; and other site amenities. The proposed work is shown on the drawings and renderings included with this application and is detailed below.

The proposed CSSC and Residence Hall project is located on the Portland Campus of USM, at approximately the corner of Bedford Street and Durham Street in Portland, Maine (Site). The attached Location Map and Tax Maps show the project location. The project is located within two underlying City Zones. Most of the project is in the R-5 Residential Zone, with a small portion on the eastern side in B-2 Community Business Zone. The entirety of the project is in the USM Overlay Zone. The purpose of the USM Overlay zone is to allow the University to continue and reasonably expand within defined boundaries, and to recognize the unique qualities of a university campus while at the same time protecting the value and integrity of established neighborhoods. This project is in alignment with that purpose. University buildings and structures are subject to the requirements of the underlying zoning districts, except as modified by the USM Overlay Zone.

The site is currently developed with the Facilities Building, the Woodbury Student Center, and several paved parking lots. The proposed project includes redevelopment of the site for a new Career and Student Success Center, Residence Hall, and Campus Quad. The project will also include reconstruction of the sidewalks along the project's frontages, and the addition of street trees and streetlights.

In addition to the SLOD permit, the proposed work requires the following permits:

- City of Portland Level III Site Plan;
- Maine Construction General Permit Notice of Intent; and
- FAA Notice of Proposed Construction.

1.2 EXISTING FACILITIES

The Existing Conditions Plan, included in the drawings submitted with this application, depicts the existing conditions of the project area, based on a ground-level survey and site observations completed by SurveyWorks, Inc in February 2020. The Site is currently fully developed with buildings and surface parking lots. There are no significant natural features or wetlands due to the intense level of existing development. Topography slopes generally from west to east towards the intersection of Bedford and Durham Streets, from approximate elevation 50' down to 23'.

1.3 TOPOGRAPHIC MAP

A USGS topographic map showing the approximate location of proposed project is attached to this Section for your reference. Topography slopes generally from west to east towards the intersection of Bedford and Durham Streets, from approximate elevation 50' down to 23'.

1.4 CONSTRUCTION PLAN

Construction is anticipated to begin in August of 2020. Erosion and sediment control measures will be installed prior to any ground disturbing activities, as described in Section 14 of this Report. A Construction Management Plan has been submitted to the City as part of the Site Plan Application review process.

The Site will be managed during construction to minimize impacts to the adjacent land uses. Maintaining access to adjacent properties and public facilities will be a priority. Traffic impacts to adjacent roadways, including Bedford, Durham and Falmouth Streets, will be minimized during construction to the greatest extent possible. Traffic controls will consist of temporary signage and barriers where necessary to manage vehicle, pedestrian, and bicycle traffic and direct it safely around the construction area. Street opening permits will be required for utility connections. Additionally, stormwater will be discharged through an outfall to Fore River.

Below is the anticipated sequence of construction activities for major aspects of the development:

- Installation of erosion and sediment control measures and traffic control measures;
- Demolition and site preparation activities;
- Construction of utilities, stormwater management system;
- Construction of the buildings;
- Installation of landscaping and final surface materials; and
- Removal of erosion and sediment control measures.

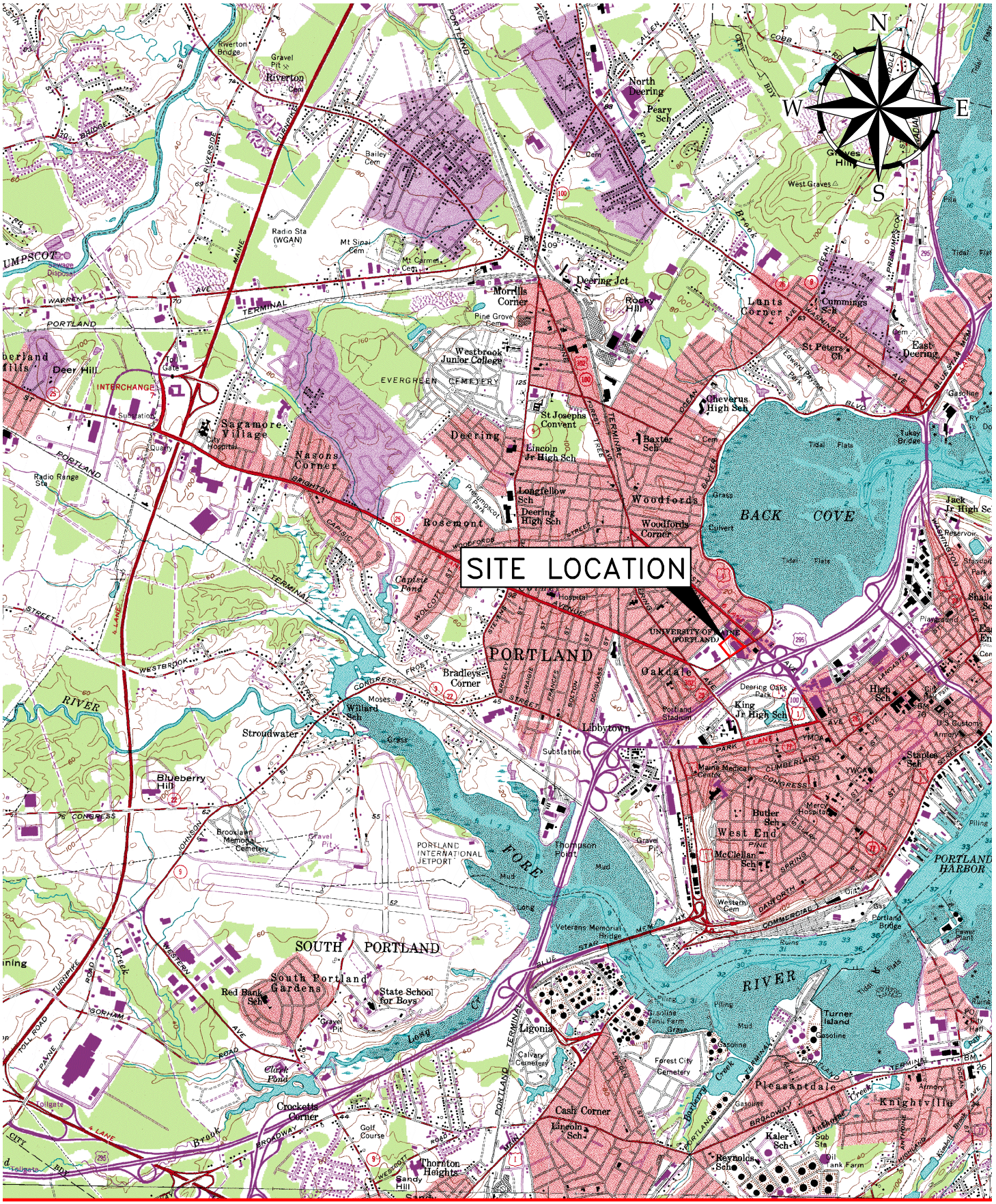
1.5 DRAWINGS

Design drawings showing the proposed development are attached to this Section.

1.6 LIST OF ATTACHMENTS

The following documents are attached to this Section:

- Topographic Map; and
- Design Drawings (Bound Separately).



41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

LOCATION MAP

DESIGNED BY: DS	CHECKED BY: DS
DRAWN BY: DS	0232656.00 LOCATION MAP*.dwg

UNIVERSITY OF SOUTHERN MAINE
PO BOX 9300
PORTLAND, ME

CAMPUS STUDENT SUCCESS CENTER
& STUDENT RESIDENTIAL
PORTLAND, MAINE

JOB NO:	0232656.00
DATE:	March 2020
SCALE:	1" = 1000'

Location Map

2. TITLE, RIGHT, OR INTEREST

The proposed development is located on properties owned by the Applicant and identified as Tax Map 114, Lots G-6 thru G-10; and Map 114A, lots H-5 thru H-15. Attached are copies of the deeds associated with these properties.

2.1 LIST OF ATTACHMENTS

- Deed, dated August 28, 1957, Cumberland County Registry of Deeds, Book 2370, Pg 135.
- Deed, dated December 24, 1964, Cumberland County Registry of Deeds, Book 2873, Pg 133.
- Deed, dated March 28, 1970, Cumberland County Registry of Deeds, Book 3121, Pg 878.
- Deed, dated October 14, 1999, Cumberland County Registry of Deeds, Book 15109, Pg 33.

378

4111 (90)

Know all Men by these Presents,

That FOREST CITY CHEVROLET ~~COMPANY~~ Company

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine in consideration of One Dollar ($1.00) and other valuable considerations,

paid by UNIVERSITY OF MAINE, a body politic and corporate, organized under the laws of the State of Maine,

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said University of Maine, its successors

~~heirs~~ and assigns forever,

a certain lot or parcel of land together with any improvements thereon situated on the northwesterly side of Bedford Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the northwesterly side of Bedford Street with the southwesterly side of Heywood Street; thence southwesterly by Bedford Street two hundred forty-three (243) feet, more or less, to land of University of Maine, being the land conveyed by Edward D. Noyes to Portland Junior College by deed dated December 31, 1956 and recorded in the Cumberland County Registry of Deeds, Book 2332, Page 151; thence northwesterly by said land of University of Maine two hundred forty-five (245) feet, more or less, to other land of University of Maine, being the land conveyed by Edward D. Noyes to Portland University Extension Courses, Inc. by deed dated July 1, 1948 and recorded in said Registry of Deeds, Book 1916, Page 364; thence northeasterly by said other land of University of Maine one hundred sixty-three (163) feet, more or less, to land of University of Maine, being the same land conveyed by Edward D. Noyes to it by deed dated April 9, 1958 and recorded in said Registry of Deeds, Book 2404, Page 15; thence southeasterly by said land and by an extension southeasterly of the line of said land which is the southwesterly side of Heywood Street three hundred (300) feet, more or less, to Bedford Street and the point of beginning.

Being the same premises conveyed to Forest City Motor Co. by deed of Beatrice M. Noyes and by deed of Canal National Bank, et al, as Trustees under the Will of Edward Deering Noyes, Jr. both deeds dated May 18, 1964, recorded in Cumberland County Registry of Deeds, Book 2821, Pages 354 and 346 respectively. The grantor herein is the successor in interest to said Forest City Motor Co. by change of corporate name duly recorded in said Registry of Deeds.

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said University of Maine, its successors

~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, its/ successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Forest City Chevrolet ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Philip Gemmer, its President ~~Treasurer~~, thereunto duly authorized, this 28 TH day of MARCH in the year one thousand nine hundred and seventy.

Signed, Sealed and Delivered in presence of

Helen A. Pinder

Forest City Chevrolet

~~Company~~

By Philip Gemmer

President ~~Treasurer~~

(CORPORATE SEAL)

FOREST CITY CHEVROLET INC. 1970

State of Maine

County of Cumberland **ss.** 19 70

Then personally appeared the above named

Philip Gemmer, President ~~Treasurer~~ **of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act**

(90) 135

Know all Men by these Presents,

That Portland Junior College ~~Company~~,

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine in consideration of one dollar and other valuable considerations

paid by University of Maine, a corporation organized and existing under the laws of the State of Maine and located at Orono in the County of Penobscot and State of Maine

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said University of Maine its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land with the buildings thereon situated in Portland aforesaid bounded and described as follows:

Beginning at a pipe set in the ground at the corner formed by the intersection of the easterly side of Brighton Avenue and the southerly side of Falmouth Street; thence by said southerly side of Falmouth Street in an easterly direction nine hundred eighty-two and sixty-seven hundredths (982.67) feet to a pipe set in the ground on said southerly side of Falmouth Street; thence southerly with an included angle of ninety-four degrees thirty-eight minutes (94° 38') three hundred fifty-two and eighty-nine hundredths (352.89) feet to a pipe; thence westerly on a line parallel with Falmouth Street and at an included angle of eighty-five degrees twenty-two minutes (85° 22') one hundred sixty-four and sixty-five hundredths (164.65) feet to a point, said point being on the line of a row of trees running approximately north and south; thence southwardly along the line of said row of trees two hundred forty-five (245) feet more or less to the northerly side of Bedford Street; thence westerly along the northerly side of said Bedford Street six hundred (600) feet more or less to the easterly side of Brighton Avenue; thence along the easterly side of Brighton Avenue four hundred eighty-seven and thirty-eight hundredths (487.38) feet more or less to the point of beginning.

Reference is made to three deeds to Portland University Extension Courses, Inc., the name of which, subsequently, by act of the Legislature has been changed to Portland Junior College, and a fourth deed to Portland Junior College, all from Edward Deering Noyes dated and recorded as follows: December 28, 1946, Book 1854 Page 424, June 30, 1947, Book 1875 Page 227, July 1, 1948, Book 1916 Page 364, and December 31, 1956, Book 2332 Page 151.

Portland Junior College to University of Maine -- War

135

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said

University of Maine, its successors

~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee , its successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;
that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that if and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee , its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Portland Junior College ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Philip I. Milliken , its Treasurer, thereunto duly authorized, this 28th day of August in the year one thousand nine hundred and fifty-seven.

Signed, Sealed and Delivered
in presence of

Jane C. Magnusson

Countersigned
Raymond S. Rracy
President

~~Company~~.
PORTLAND JUNIOR COLLEGE
By Philip I Milliken
Treasurer.

(CORPORATE SEAL)

State of Maine

County of Cumberland ss. August 28, 1957

Then personally appeared the above named Philip I. Milliken Treasurer of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Jane C. Magnusson Justice of the Peace.
~~Notary Public~~

AUG 28 1957
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 12 H 27 M P.M., and recorded in
BOOK 2370 PAGE 135 Register

Vogel

to

University of Maine

-

War

Know all Men by these Presents, That

I, BEATRICE N. VOGEL, of Falmouth, County of Cumberland and State of Maine, formerly known as Beatrice M. Noyes,

in consideration of one dollar and other valuable consideration s paid by UNIVERSITY OF MAINE, an educational corporation organized and existing under the laws of the State of Maine,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said University of Maine, its successors and assigns forever, a one-third (1/3) interest in common and undivided in and to a certain lot or parcel of land situated on the southwesterly side of Durham Street, City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the southwesterly side of Durham Street at the most northerly corner of land now or formerly of Allan G. Ballard, et al, which corner is situated one hundred eighty-two and eleven hundredths (182.11) feet, northwesterly of Bedford Street as measured along said southwesterly side of Durham Street; thence southwesterly by land of said Ballard and by land of International Harvester Co. a distance of one hundred (100) feet, more or less, to other land of said International Harvester Co.; thence northwesterly by said other land of international Harvester Co. a distance of one hundred twelve (112) feet, more or less, to land now of the University of Maine; thence northeasterly by land of the University of Maine one hundred (100) feet, more or less, to Durham Street; thence southeasterly by Durham Street a distance of one hundred twelve (112) feet, more or less, to the point of beginning.

Being a portion of the premises conveyed by James D. Fessenden, et al, to Nathaniel Deering, et als, dated January 21, 1879, recorded in the Cumberland County Registry of Deeds, Book 455, Page 49.

This conveyance is made subject to and with the benefit of a lease of the above described premises from Edward Deering Noyes, Jr., as Lessor to International Harvester Co. as Lessee dated September 9, 1947.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said University of Maine, its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances except as aforesaid, that I ha ve good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, I, Beatrice N. Vogel, and I, Leo G. Vogel, husband of the said Beatrice N. Vogel,

joining in this deed as Grantor, and relinquishing and conveying my rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this 24th day of December in the year of our Lord one thousand nine hundred and sixty-four

Signed, Sealed and Delivered in presence of

Robert B Lading
Robert B Lading

Beatrice N Vogel
Leo G Vogel

State of Maine, CUMBERLAND ss. December 24, 1964.

Personally appeared the above named Beatrice N. Vogel

and acknowledged the foregoing instrument to be her free act and deed.

Before me, H. Dawson Osgood
NOTARY PUBLIC.
MY COMMISSION EXPIRES SEPTEMBER 6, 1968

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*

Received DEC 30 1964 *at* 3 o'clock 30 *m.* P *M., and recorded*

in BOOK 2873 *PAGE* 133 *Attest:* Edward P. Thyson *Register.*

0075689 BK15109PG033

WARRANTY DEED
Maine Statutory Short Form

Know all Men by these presents,

That **Gary T. Gervais**, of Portland, Cumberland County, Maine, for consideration paid, grants to **University of Maine System**, a body politic and corporate, organized and existing under the laws of the State of Maine, with a mailing address of 107 Main Avenue, Bangor, Maine 04401, with Warranty Covenants, a certain lot or parcel of land, together with the buildings thereon, situated in Portland, Cumberland County, Maine, and situated at the northwesterly corner of Bedford Street and Durham Street and bounded and described as follows:

Beginning at the intersection formed by the northerly side of Bedford Street and the westerly side of Durham Street; thence southwesterly and along the northerly line of Bedford Street 68.93 feet to an iron pipe; thence northwesterly and parallel to the westerly line of Durham Street 163.20 feet to an iron pipe; thence northeasterly and at right angles to the last course 66.33 feet to an iron pipe in the westerly line of Durham Street; thence southeasterly and along the westerly line of Durham Street 182.11 feet to the point of beginning.

Being the same premises described in a deed from Mildred L. Cohen to Robert R. Gervais, Jr., and Gary T. Gervais, dated July 25, 1980, recorded in Cumberland County Registry of Deeds, Book 4637, Page 155, and from Robert R. Gervais, Jr., to Gary T. Gervais dated March 29, 1985, recorded in said Registry, Book 6719, Page 321.

This conveyance is made subject to a lease, as may be amended, between Gary T. Gervais and University of Maine System, dated November 8, 1989, as evidenced by a Memorandum of Lease dated February 28, 1990, recorded in Cumberland County Registry of Deeds, Book 9102, Page 319. Said lease is hereby terminated.

Also hereby conveying all rights, easements, privileges, and appurtenances belonging to the premises hereinabove described.

Witness my hand this 14th day of October 1999.

Signed and Delivered in
the presence of:

Gary T. Gervais

MAINE REAL ESTATE TAX PAID

BK15109PG034

STATE OF MAINE
CUMBERLAND, SS.

October 14, 1999

Then personally appeared the above named Gary T. Gervais and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Thomas S Leahy

~~Notary Public~~/Attorney at Law

Printed Name: Thomas S. Leahy

KJT\TGL\GERVAIS\Warranty Deed.doc

RECEIVED
RECORDED REGISTRY OF DEEDS
1999 OCT 15 AM 10:44
CUMBERLAND COUNTY
John B O'Brien

3. FINANCIAL CAPACITY

3.1 ESTIMATED COSTS

The construction budget for the proposed development is approximately $96M for the Career and Success Student Center and the Residence Hall.

3.2 FINANCING

A copy of a letter verifying the Applicant's financial capacity to undertake the project is attached to this Section.

3.3 LIST OF ATTACHMENTS

- Financial Capacity Letter

UNIVERSITY OF
SOUTHERN MAINE
Finance and Administration

March 5, 2020

Mr. Darrin Stairs
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

Dear Mr. Stairs:

The University of Southern Maine expects the Career and Student Success Center (CSSC) and residence hall projects to cost approximately $96 million combined.

To fund the project, the University would utilize the following resources:

(1) For the CSSC project ($31 million), USM has at its disposal $19 million in voter-approved general obligation debt and $1 million in philanthropic contributions.

(2) For the remaining $11 million in funding required for the CSSC, as well as the $65 million total cost of the residence hall, the University of Maine System would issue revenue bonds.

Thank you for your consideration.

Sincerely,

Alexander E. Porteous
Chief Business Officer

P.O. Box 9300, Portland, ME 04104-9300
(207) 780-4484 TTY (207) 780-5646, FAX (207) 780-4549
www.usm.maine.edu
A member of the University of Maine System

4. TECHNICAL ABILITY

The University of Southern Maine (USM) is a public university with over 8,000 undergraduate and graduate students taking courses online and at campuses in Portland, Gorham and Lewiston. Known for its academic excellence, student focus and engagement with the community, USM provides students with hands-on experience that complements classroom learning and leads to employment opportunities in one of the nation's most desirable places to live. USM is a member of the University of Maine System (UMS), the State's largest educational enterprise that includes seven universities and an annual enrollment of nearly 30,000 students.

Capstone Development Partners (CDP) is a student housing real estate development company exclusively focused on working with colleges and universities in public private partnerships. The Principals of CDP have a combined experience of more than 40 years helping colleges and universities overcome real estate development and housing challenges. Their mission is unique to the student housing industry in that they focus on projects where they are in partnership with the university— rather than simply building apartments in a community with little regard for its plans, its institutional objectives or its long and short-term goals. They have built a reputation on collaborating with schools and respecting and burnishing the unique campus culture of its partners. They work hard every day to establish creative solutions that align the interests of the municipal, private and university project stakeholders, inclusive of housing and student life professionals, finance executives, presidents, facilities personnel, and the many others involved in development on or near a college campus.

Woodard & Curran (W&C), a 1,000-person Portland-based firm, has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, stormwater and construction management services. W&C has completed projects for colleges, universities, and healthcare institutions that build strong, sustainable infrastructure and environmental programs serving both their business needs and the communities that make them so vibrant. With extensive experience in design and permitting for site development projects, W&C has completed many projects within the City of Portland and for the University of Maine System.

SMRT is a full-service firm of architects, engineers, planners and professionals committed to solving problems through design. Based in Portland, Maine, SMRT specializes in creating complex, 24-7 facilities for clients with challenges in education, healthcare, science/technology/industry, justice, government and workplace environments. Through collaboration, the project focus is to deliver buildings that further owner's business objectives through strong design, sustainable infrastructure and high functionality. SMRT has broad experience with projects for higher education including multiple projects for the University of Maine.

Elkus Manfredi Architects (EMA) is a full-service design firm providing architecture, master planning, urban design, interior architecture, historic preservation, space planning, programming, and experiential graphic design. EMA's portfolio of work includes a diversity of projects, including community-building higher education campus plans and facilities that create places for living, learning and innovating. The firm is at the forefront of sustainable design, with 8 of its 60 LEED projects at the Platinum-certified level. Elkus Manfredi has also signed on to the AIA's 2030 Commitment and has a rigorous process of early performance modeling to optimize design.

PC Construction (PCC) shares over half a century of industry-leading excellence with every client we meet. They offer general contracting, construction management, and design-build services to private and public companies for projects of all sizes — from a single office fit-up to water supply programs valued at over $300 million. With headquarters in Vermont and a network of locations in Georgia, Maine, New Hampshire, New York and North Carolina, PCC manage project offices up and down the east coast and boast an annual volume average of $500 million.

Copies of resumes and project references can be provided upon request.

5. NOISE

The proposed buildings will have a combination of roof-mounted and interior-located mechanical equipment for heating, ventilation, and air conditioning (HVAC). Two new generators with sound attenuating enclosures will be located in the service area near the existing generator, which is to remain. Noise levels at present are minimal and are not known to have created an unreasonably adverse impact on the surrounding campus and industrial (Oakhurst) areas. Proposed noise levels are anticipated to be similar. The generators will be exercised weekly and not run continuously unless there is a power outage. Note that the generators are located within the service core and flanked by existing and proposed buildings, providing partial shielding of the sound. Cut sheets for the proposed generators and enclosures are attached

5.1 LIST OF ATTACHMENTS

- Generator and Sound Enclosure Cut sheets



Image shown may not reflect actual configuration

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

Specifications

Generator Set Specifications	
Rating	80 ekW (100 kVA)
Voltage	480 Volts
Frequency	60 Hz
Speed	1800 rpm

Generator Set Configurations	
Emissions/Fuel Strategy	U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)

Engine Specifications		
Engine Model	C4.4 Vertical In-line 4, 4-cycle diesel	
Bore	105.0 mm	4.13 in
Displacement	4.4 L	268.5 in³
Stroke	127.0 mm	5.0 in
Compression Ratio	16.7:1	
Aspiration	Turbocharged Air-to-Air-Aftercooled	
Governor Type	Electronic	
Fuel System	Common Rail	

Package Dimensions*		
Length	2362 mm	93 in
Width	1110 mm	44 in
Height	1304 mm	51 in
Weight†	1130 kg	2491 lb

*Note: For reference only – do not use for installation design. Please contact your local dealer for exact weight and dimensions.

†Weight includes: Oversize generator, skid base, circuit breaker, oil, and coolant.

Benefits & Features

Cat® Diesel Engine

- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

Generator

- Matched to the performance and output characteristics of Cat engines
- Industry-leading mechanical and electrical design
- Industry-leading motor starting capabilities
- High efficiency

Cat EMCP Control Panel

The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 systems can be further customized to meet your needs through programming and expansion modules.

Seismic Certification

- Seismic certification available.
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.
- IBC certification requires that the anchoring system used is reviewed and approved by a professional engineer.
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007, CBC 2010.

Design Criteria

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.
- Cooling system designed to operate in 50˚C/122˚F ambient temperatures with an air flow restriction of 0.5 in. water.

UL 2200/CSA – Optional

- UL 2200 Listed
- CSA Certified

Certain restrictions may apply. Consult with your Cat dealer.

Single-Source Supplier

Fully prototype tested with certified torsional vibration analysis.

Worldwide Product Support

Cat dealers provide extensive post-sale support including maintenance and repair agreements. Cat dealers have over 1,800 dealer branch stores operating in 200 countries. The Cat S•O•S℠ program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

Standard Equipment

Air Inlet

- Single element Air filter

Cooling

- Radiator and cooling fan complete with protective guards
- Standard ambient temperatures up to 50°C (122°F)

Exhaust

- Exhaust flange outlet

Fuel

- Primary and secondary fuel filters
- Fuel priming pump
- Flexible fuel lines

Generator

- Matched to the performance and output characteristics of Cat engines
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- IP23 protection
- Integrated Voltage Regulation

Governor

- Electronic governor – ADEM™ A4

Control Panels

- EMCP 4.2 Series generator set controller

Mounting

- Rubber vibration isolators

Starting/Charging

- 12 volt starting motor
- Battery with rack and cables

General

- Paint – Caterpillar Yellow except rails and radiators gloss black

Optional Equipment

Exhaust

- Industrial, residential, critical mufflers

Generator

- Excitation: [ ] Permanent Magnet Excited (PM) [ ] Internally Excited (IE)
- Anti-condensation heater
- Oversize and premium generators

Starting/Charging

- Battery charger – UL 10 amp
- Battery disconnect switch
- Jacket water heater

General

- UL 2200
- CSA Certification
- Enclosures: sound attenuated, weather protective
- Sub-base dual wall UL Listed fuel tanks
- Automatic transfer switches (ATS)

C4.4
80 ekW/ 100 kVA/ 60 Hz/ 1800 rpm/ 480V/ 0.8 Power Factor

Rating Type: STANDBY

Emissions: U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)



Image shown may not reflect actual configuration

D80-8
80 ekW/ 100 kVA
60Hz/ 1800 rpm/ 480V

Package Performance	
Generator Set Power Rating with Fan @ 0.8 Power Factor	80 ekW
Generator Set Power Rating	100 kVA

Fuel Consumption		
100% Load With Fan	23.7 L/hr	6.3 gal/hr
75% Load With Fan	19.0 L/hr	5.0 gal/hr
50% Load With Fan	13.9 L/hr	3.7 gal/hr

Cooling System[1]		
Engine Coolant Capacity	7.0 L	1.8 gal
Radiator Coolant Capacity	10.0 L	2.6 gal
Engine Coolant Capacity with Radiator/Exp Tank	17.0 L	4.5 gal
Air Flow Restriction (System)	0.12 kPa	0.48 in. water

Inlet Air		
Combustion Air Inlet Flow Rate	7.8 m^3/min	275 cfm

Exhaust System		
Exhaust Stack Gas Temperature	630°C	1166°F
Exhaust Gas Flow Rate	17.6 m^3/min	620 cfm
Exhaust System Backpressure (maximum allowable)	15.0 kPa	60.2 in. water
Exhaust Flange Size (internal diameter)	64 mm	2.5 in

C4.4
80 ekW/ 100 kVA/ 60 Hz/ 1800 rpm/ 480V/ 0.8 Power Factor

Rating Type: STANDBY **Emissions: U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)**

Heat Rejection		
Heat Rejection to Coolant (total)	47.9 kW	2724 Btu/min
Heat Rejection to Exhaust (total)	77.7 kW	4419 Btu/min
Heat Rejection to Atmosphere from Engine	13.5 kW	768 Btu/min
Heat Rejection to Atmosphere from Generator	7.1 kW	404 Btu/min

Alternator[2]		
Motor Starting Capability @ 30% Voltage Dip	215 skVA	
Frame	LC3114D	
Temperature Rise	105°C	189°F
Excitation	Self Excited	

Lube System		
Sump Refill with Filter	8.4 L	2.2 gal

Emissions (Nominal)[3]	
NOx + HC	3.6 g/kW-hr
CO	0.9 g/kW-hr
PM	0.12 g/kW-hr

[1] For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to the existing restriction from the factory.

[2] Generator temperature rise is based on a 40°C (104°F) ambient per NEMA MG1-32.

[3] The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% Prime load. This information should not be used for permitting purposes and is subject to change without notice. Contact your Cat dealer for further details.

Rating Type: STANDBY **Emissions: U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)**

DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:
AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC,IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 72/23/EEC, 98/37/EC, 2004/108/EC.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Averagepower output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel Rates are based on fuel oil to specification EPA 2D 89.330-96 with a density of 0.845 – 0.850 kg/L (7.052 – 7.094 lbs/U.S. gal.) @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

Additional ratings may be available for specific customer requirements, contact your Cat representative for details.

©2016 Caterpillar
All rights reserved.

Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.

CAT, CATERPILLAR, their respective logos, ADEM, S•O•S, “Caterpillar Yellow”, the “Power Edge” trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.



Picture shown may not reflect actual configuration

Weather Protective and Sound Attenuated Enclosures

D40 to D60
D80 to D100
D125 to D200

Features

Highly Corrosion Resistant construction

- Stainless steel flush fitting latches and hinges tested and proven to withstand extreme conditions of corrosion
- Zinc plated or stainless steel fastener

Excellent Access

- Single side access for service and controls
- All non-service sides have removable doors and/or panels
- Radiator fill access
- Lube oil and coolant drains piped to the exterior of the enclosure base
- Large cable entry area for installation ease
- Double doors on both sides
- Vertically hinged doors with solid bar door stays to hold doors in place when open

Security and Safety

- Lockable access doors which give full access to control panel and breaker
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill, and battery can only be reached via lockable access
- Stub-up area is rodent proof

Transportability

- These enclosures are of extremely rugged construction to withstand outdoor exposure and rough handling common on many construction sites. The sound deadening material is of a self-extinguishing design
- This range of enclosures are designed on modular principles with many interchangeable components permitting on site repair

Options

- Weather Protective - constructed with 16 gauge steel; industrial silencer mounted within the main enclosure body
- Sound Attenuated Level 1 - constructed with 16 gauge steel; weather protective with critical silencer - silencer mounted in separate upward discharging radiator hood
- Sound Attenuated Level 2 - constructed with 16 gauge steel; weather protective with critical silencer and 100% lined with sound deadening material – silencer mounted in separate upward discharging radiator hood
- Sound Attenuated Aluminum constructed with 14 gauge Aluminum 5052 grade. Weather protective with critical silencer and 100% lined with sound deadening material – silencer mounted in separate upward discharging radiator hood
- Caterpillar Yellow* or white paint
- UL Listed sub base tanks
- Externally mounted emergency stop button
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010
- IBC certification for 180 mph wind loading

*Not available with Aluminium enclosures

Enclosure Sound Pressure Levels (SPL) at 100%

Weather Protective Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D40 (2/4)	40	1.7	3602	85
D50 (2/4)	50	1.7	3602	86
D60 (2/4)	60	1.9	4026	88
D80-8	80	3.2	6696	79
D100-8	100	3.6	7564	81
D125-8	125	4.6	9676	78
D150-10	150	4.6	9676	79
D175-4	175	5.9	12431	84
D200-2	200	5.9	12431	89

SA Level 1 Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D40 (2/4)	40	1.7	3602	66
D50 (2/4)	50	1.7	3602	66
D60 (2/4)	60	1.8	3899	71
D80-8	80	3.2	6696	78
D100-8	100	3.2	6696	79
D125-8	125	4.2	8899	74
D150-10	150	4.2	8899	74
D175-4	175	5.6	11830	78
D200-2	200	5.5	11654	81

SA Level 2 Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D80-8	80	3.2	6696	75
D100-8	100	3.2	6696	76
D125-8	125	4.2	8899	74
D150-10	150	4.2	8899	74
D175-4	175	5.2	11018	74
D200-2	200	5.1	10806	75

SA Aluminum Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D80-2	80	3.2	6696	73
D100-8	100	3.2	6696	74
D125-8	125	4.2	8899	74
D150-10	150	4.2	8899	75
D175-4	175	5.2	11018	75
D200-2	200	5.1	10806	75

The sound pressure level data shown above is quoted as free field and is forguidance only.
Actual levels produced may vary according to site conditions.

Enclosure Dimensions and Weights

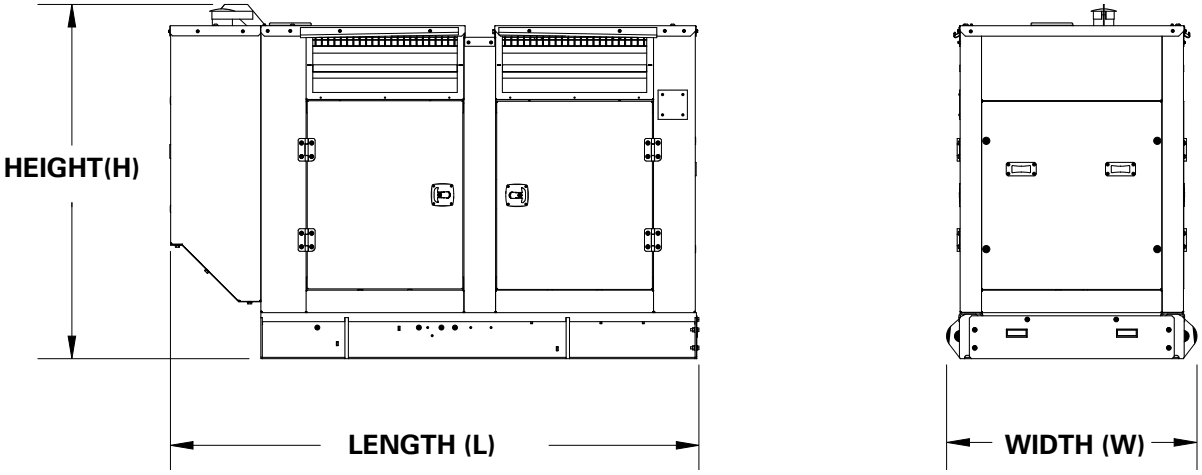


Image represents SA Level 1, SA Level 2 and SA Aluminum enclosures on skid base only

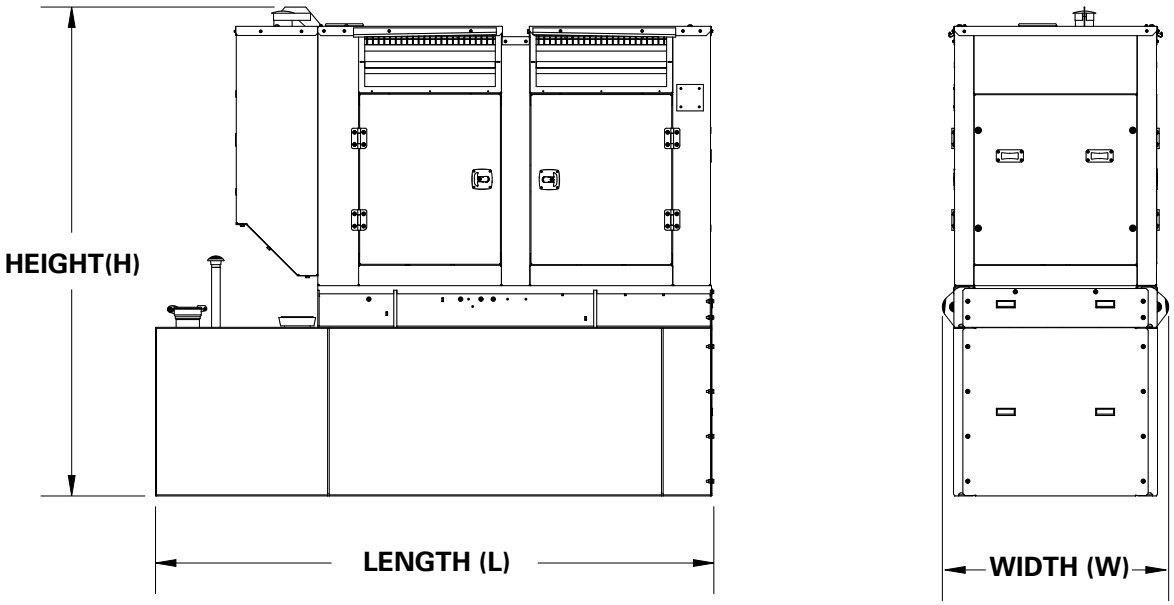


Image represents SA Level 1, SA Level 2 and SA Aluminum enclosures mounted on optional UL listed sub base tank

Model	Standby eKW	WP Industrial		SA Level 1		SA Level 2		SA Aluminum	
		kg	lb	kg	lb	kg	lb	kg	lb
D40-2	40	121	267	137	302	NA	NA	NA	NA
D50-2	50								
D60-2	60								
D80-8	80	263	580	313	690	321	708	142	312
D100-8	100								
D125-8	125	348	768	393	867	406	896	176	387
D150-10	150								
D175-4	175								
D200-2	200								

Enclosure weights (includes muffler)

Enclosure Dimensions Skid Bases

Engine Model	Generator Set Rating ekW	Enclosure	Width 'W'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in
C4.4	40	WP	1075	42.3	1972	77.6	1378	54.3
	50							
	60							
	40	SA Level 1, SA Level 2 and SA Aluminum	1075	42.3	1972	77.6	1378	54.3
	50							
	60							
C4.4	80	WP	1110	43.7	2523	99.3	1773	69.8
	100							
	80	SA Level 1, SA Level 2 and SA Aluminum	1110	43.7	2891	113.8	1852	72.9
	100							
C7.1	125	WP	1110	43.7	3204	126.1	1773	69.8
	150							
	175							
	200							
	125	SA Level 1, SA Level 2 and SA Aluminum	1110	43.7	3659	144.1	1852	72.9
	150							
	175							
	200							

Enclosure Dimensions on UL Listed Sub Base Tanks

Engine Model	Generator Set Rating ekW	Enclosure	137 Gallon Sub Base Tank				255 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C4.4	40	WP	2503	98.5	1912	75.3	2503	98.5	2241	88.2
	50									
	60									
	40	SA Level 1, SA Level 2 and SA Aluminum	2503	98.5	1912	75.3	2503	98.5	2241	88.2
	50									
	60									

Engine Model	Generator Set Rating ekW	Enclosure	209 Gallon Sub Base Tank				394 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C4.4	80	WP	3447	135.7	2258	88.9	3447	135.7	2608	102.7
	100									
	80	SA Level 1, SA Level 2 and SA Aluminum	3447	135.7	2337	92.0	3447	135.7	2687	105.8
	100									

Engine Model	Generator Set Rating ekW	Enclosure	402 Gallon Sub Base Tank				777 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C7.1	125	WP	4035	158.9	2420	95.3	5035	198.2	2706	106.5
	150									
	175									
	200									
	125	SA Level 1, SA Level 2 and SA Aluminum	4035	158.9	2499	98.4	5035	198.2	2785	106.5
	150									
	175									
	200									

Note: Weight includes oil and coolant but not fuel

Ref: WPIA, WPIB, WPIC, SATCBA, SATCBB, SAT, CBC, SATFBA, SATFBB, SATFBC, ENCAL02, ENCAL03, ENCAL04.

©201□ Caterpillar
All rights reserved.

Materials and specifications are subject to change without notice.
CAT, CATERPILLAR, their respective logos, “Caterpillar Yellow”, the “Power Edge” trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

6. VISUAL QUALITY & SCENIC CHARACTER

As further described in the City of Portland Site Plan Application for the proposed development, the architecture and landscaping have been designed to create a visual connection with existing campus buildings with a goal of achieving a cohesive campus appearance. The project will be characterized by excellence in architectural design, craftsmanship, materials, streetscape and landscape improvements, signage and lighting appropriate for a university in an urban setting in the Northeast.

The Site Plan Application includes renderings of the proposed development. It is not anticipated that the proposed development will result in any negative visual impacts.

7. WILDLIFE & FISHERIES

The Site has been previously developed and there are no known areas of significant natural features, including areas of significant wildlife habitats or wetlands. The attached Official Species List identifies the northern long-eared bat, which has been listed as a Federally Threatened Species, in association with the project area; however, there are no critical habitat areas located within the project area. Based on US Fish & Wildlife information, the northern long-eared bat typically lives in caves during the winter months and in trees larger than three inches in diameter during the summer, with migration between these two habitats in the spring in the fall. The project is located in an existing urban, developed area and no trees meeting the criteria for bat habitat are proposed to be impacted by the project. It is not anticipated that the proposed development will have a negative impact on the northern long-eared bat.

A letter has been sent to the Maine Department of Inland Fisheries and Wildlife (MDIFW) requesting information regarding any known threatened or endangered species or critical habitat relative to the project area; a copy of this letter is attached to this Section for your reference. A copy of the MDIFW response can be provided upon receipt.

7.1 LIST OF ATTACHMENTS

- Official Species List; and
- MDIFW Environmental Review Request Letter.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: February 24, 2020
Consultation Code: 05E1ME00-2020-SLI-0740
Event Code: 05E1ME00-2020-E-02458
Project Name: USM Portland Student Housing

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2020-SLI-0740

Event Code: 05E1ME00-2020-E-02458

Project Name: USM Portland Student Housing

Project Type: DEVELOPMENT

Project Description: Proposed development on the USM Portland campus on the corner of Bedford Street and Durham Street in Portland, ME

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.6628773524905N70.27456771513867W



Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, ME 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

March 5, 2020

Maine Department of Inland Fisheries and Wildlife
41 State House Station
Augusta, ME 04333

RE: USM Career and Student Success Center and Residence Hall – Environmental Review Request

Dear Reviewer:

The University of Southern Maine (USM), is proposing to construct a new Career and Student Success Center and a new Residence Hall to be located at 23-29 Bedford Street, on the Portland, Maine campus. The project represents a significant implementation of the USM Facilities Master Plan. In addition to the 58,200 SF Student Success Center and the 580-bed Residence Hall the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services; site lighting; and other site amenities..

The proposed work will require an amendment to the existing Maine Department of Environmental Protection Site Location of Development Permit (L-20438-22-D-A), which requires coordination with the Maine Department of Inland Fisheries and Wildlife (MDIFW). On behalf of USM, we are requesting a review of the project area for any known threatened or endangered species or critical habitat. A Site Location Map and Site Plan have been attached for your reference.

We appreciate your review of this project. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at (207)558-3662 or dstairs@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN

Darrin Stairs, P.E.
Project Manager

Enclosure(s) Site Location Map
Site Plan

PN: 0232656.00

8. HISTORIC SITES

A letter has been sent to the Maine Historic Preservation Commission (MHPC) requesting a review of the project area relative to historic properties; a copy of this letter is attached to this Section for your reference. A copy of the MHPC response can be provided upon receipt.

This project is not located within, or within 100 feet, of any City Historic District. There are no Historic Resources located within or within 100 feet of the project limits.

8.1 LIST OF ATTACHMENTS

- MHPC Project Review Request Letter.

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, ME 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

March 5, 2020

Kirk F. Mohney, Director
Maine Historic Preservation Commission
55 Capitol Street, 65 State House Station
Augusta, Maine 04333-0065

Re: USM Career and Student Success Center and Residence Hall – Project Review Request

Dear Mr. Mohney:

The University of Southern Maine (USM), is proposing to construct a new Career and Student Success Center and a new Residence Hall to be located at 23-29 Bedford Street, on the Portland, Maine campus. The project represents a significant implementation of the USM Facilities Master Plan. In addition to the 58,200 SF Student Success Center and the 580-bed Residence Hall the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services; site lighting; and other site amenities..

The proposed work will require an amendment to the existing Maine Department of Environmental Protection Site Location of Development Permit (L-20438-22-D-A), which requires coordination with the Maine Historic Preservation Commission (MHOC). On behalf of USM, we are requesting a review of the project area for any known threatened or endangered species or critical habitat. A Site Location Map and Site Plan have been attached for your reference.

We appreciate your review of this project. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at (207)558-3662 or dstairs@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN

Darrin Stairs, P.E.
Project Manager

Enclosure(s) USGS Map
Site Plan

PN: 232656.00

9. UNUSUAL NATURAL AREAS

The Site has been previously developed and there are no known unusual natural areas. A letter has been sent to the Maine Natural Areas Program (MNAP) requesting a review of the Site relative to rare and exemplary botanical features; a copy of this letter is attached to this Section for your reference. A copy of the MNAP response can be provided upon receipt.

9.1 LIST OF ATTACHMENTS

- MNAP Site Review Request Letter.

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, ME 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

March 5, 2020

Maine Natural Areas Program
177 State House Station
Augusta, ME 04333-0093

RE: USM Career and Student Success Center and Residence Hall – Site Review Request

Dear Reviewer:

The University of Southern Maine (USM), is proposing to construct a new Career and Student Success Center and a new Residence Hall to be located at 23-29 Bedford Street, on the Portland, Maine campus. The project represents a significant implementation of the USM Facilities Master Plan. In addition to the 58,200 SF Student Success Center and the 580-bed Residence Hall the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services; site lighting; and other site amenities..

The proposed work will require an amendment to the existing Maine Department of Environmental Protection Site Location of Development Permit (L-20438-22-D-A), which requires coordination with the Maine Natural Areas Program (MNAP). On behalf of USM, we are requesting a review of the project area for any known threatened or endangered species or critical habitat. A Site Location Map and has been attached for your reference.

We appreciate your review of this project. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at (207)558-3662 or dstairs@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN

Darrin Stairs, P.E.
Project Manager

Enclosure(s) Site Location Map

PN: 0232656.00

10. BUFFERS

The Site has been previously developed. There are no existing or proposed buffers. This Section is not applicable.

11. SOILS

Copies of the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey and the Geotechnical Report prepared for the Site are attached to this Section for your reference

11.1 LIST OF ATTACHMENTS

- United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey
- Geotechnical Report


70° 16' 35" W
70° 16' 21" W
43° 39' 49" N
43° 39' 43" N
397090
397120
397150
397180
397210
397240
397270
397300
397330
397360
397390
4835320
4835290
4835260
4835230
4835200
4835170
4835140
Falmouth
Durham St
302
WmB
Cu
Wood Rd
HrC
Bedford St
Bedford
Soil Map may not be valid at this scale.
Map Scale: 1:1,440 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 20 40 80 120
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cu	Cut and fill land	0.5	13.2%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	1.1	26.7%
WmB	Windsor loamy sand, 0 to 8 percent slopes	2.4	60.1%
Totals for Area of Interest		**4.0**	**100.0%**

REPORT

19-1813 S

January 28, 2020

Preliminary Geotechnical Engineering Services

Proposed Residential Hall
& Student Success Center
University of Southern Maine
Bedford Street and Durham Street
Portland, Maine

Prepared For:
University of Southern Maine
Capital Planning & Project Management
Attention: Ann Vashon, Project Manager
25 Bedford Street
Portland, Maine 04101

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Scope and Purpose 1
1.2 Site and Proposed Construction 1
2.0 EXPLORATION AND TESTING 2
2.1 Explorations 2
2.2 Testing 2
3.0 SUBSURFACE CONDITIONS 3
3.1 Soil and Bedrock 3
3.2 Groundwater 3
4.0 EVALUATION AND RECOMMENDATIONS 3
4.1 Foundation and Floor Slab Considerations 3
4.2 Excavation and Dewatering Considerations 4
4.3 Weather Considerations 5
4.4 Recommendations for Additional Study 6
5.0 CLOSURE 6

Appendix A Limitations
Appendix B Figures
Appendix C Exploration Logs & Key

19-1813 S

January 28, 2020

University of Southern Maine
Capital Planning & Project Management
Attention: Ann Vashon, Project Manager
25 Bedford Street
Portland, Maine 04101

Subject: Preliminary Geotechnical Engineering Services
Proposed Residential Housing & Student Success Center
University of Southern Maine
Bedford Street & Durham Street
Portland, Maine

Dear Ann:

In accordance with our Contract, dated January 14, 2020, we have reviewed prior subsurface explorations for the subject project. This report summarizes our findings and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to review our prior subsurface information at the site in order to assess suitable foundation types and earthwork considerations associated with the proposed building construction. Our scope of services included a review of prior explorations completed at the site in July 2019, a geotechnical assessment of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The site of the proposed construction is located on the University of Southern Maine (USM) Portland Campus and is situated on the easterly side of the intersection of Durham and Bedford Streets in Portland, Maine. The site is currently occupied by two buildings,

as well as paved and landscaped areas. We understand the existing Woodbury Campus Center and the adjacent facilities office building structures will be razed in favor of the proposed construction.

Based on conceptual information provided at this time, we understand redevelopment plans call for construction of a student housing structure and a student center building. The student housing structure will consist of two connected L-shaped structures; one 8-story and one 5-story, with on-grade floor slabs on the ground floor level. The Student Success Center is proposed on the westerly side of the Student Housing buildings in an area currently occupied by paved parking and landscaped areas. The proposed Student Center structure will be 4-stories.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Eight test borings (B-19-1 through B-19-8) were made at the site on July 30 and 31, 2020 by S. W. Cole Explorations, LLC. The exploration locations were selected by USM and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C.

2.2 Testing

The prior test borings were drilled using hollow stem auger techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. SPT blow counts and PPT results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further visual classification. Laboratory testing was not requested by the client.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Beneath a surficial layer of pavement or topsoil, test borings B-19-1, B-19-2, B-19-3, B-19-6, B-19-7 and B-19-8, made in the proposed Residence Hall and Student Success Center development area, encountered a soil profile generally consisting of uncontrolled fill overlying native deposits of glaciomarine sand, silt and clay, overlying a thin veneer of outwash sand, mantling refusal surfaces (probable bedrock) at depths varying from about 11 to 26 feet below the ground surface. The uncontrolled fills generally varied from 1 to 3 feet thick, except at B-19-6 where the uncontrolled fills extend down to probable bedrock at a depth of about 13 feet, and B-19-7 where the uncontrolled fill extend down to what appears to be native sand and silt at a depth of about 9 feet.

Test borings B-19-4 and B-19-5 were made northwest of the proposed development area and encountered a surficial layer of topsoil overlying native deposits of silty sand, overlying shallow refusal surfaces (probable bedrock) at depths of about 5 feet below the ground surface.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Groundwater was encountered at depths varying from about 8 to 16 feet in the borings within the proposed development area. Groundwater likely becomes perched on the relatively impervious silty clay and bedrock surfaces encountered at the test borings. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 Foundation and Floor Slab Considerations

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle foundation and floor slab considerations include:

Residential Hall: The subsurface conditions beneath the proposed Residential Hall are generally unsuitable for direct support of spread footing foundations; consequently, we recommend pile-supported foundations or, rigid inclusions be considered to improve the ground for support of spread footing foundations.

On-grade floor slabs bearing on a layer of compacted Structural Fill overlying properly prepared soil subgrades appear feasible for the Residential Hall.

Based on the available subsurface information, we preliminarily interpret the soil profile beneath the Residence Hall at correspond to Seismic Soil Site Class E (IBC 2015).

Student Success Center: Although none of the prior test borings are located directly beneath the Student Success Center, the nearby test borings suggest the trend of soil and bedrock conditions generally improves from east to west. We anticipate the Student Success Center is likely underlain by uncontrolled fills overlying stable native sands, overlying relatively shallow bedrock. At this time, based on the nearby exploration information, we recommend planning consider aggregate pier ground improvement or, over-excavation and replacement of unsuitable soils with compacted Structural Fill for support of spread footing foundations.

On-grade floor slabs bearing on a layer of compacted Structural Fill overlying properly prepared soil subgrades appear feasible for the Student Success Center.

Based on the available subsurface information, we anticipate the soil profile beneath the Student Success Center would correspond to Seismic Soil Site Class D (IBC 2015).

4.2 Excavation and Dewatering Considerations

Excavation work will generally encounter uncontrolled fills, silty sand, silt, clay soils, groundwater, and bedrock with depth. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur ideally during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays, when wet. Low ground pressure tracked equipment may be needed and temporary haul roads overlying geotextile fabric may be necessary. Final cuts to soil subgrades should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Based on the trend of subsurface findings, we anticipate bedrock removal may be required in the western portion of the development area. As blasting is restricted in the City of Portland, bedrock removal by hoe-ramming should be anticipated. We recommend pre-construction surveys be completed on surrounding structures, water supply wells and infrastructure prior to commencing excavation activities.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, water supply wells and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity.

Sumping and pumping dewatering techniques should be adequate to control groundwater in foundation and most utility excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

The on-site granular fills and native sands may be suitable for reuse as compacted Granular Borrow in paved and landscape areas. The drier native silts and clays are unsuitable for reuse in building and paved areas, but may be reused in landscape areas. The saturated silts and clays are unsuitable for reuse and should be properly disposed off-site.

4.3 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.4 Recommendations for Additional Study

We recommend additional test boring explorations and in-situ geophysical testing be performed at the site to further explore the subsurface conditions and Seismic Site Class.

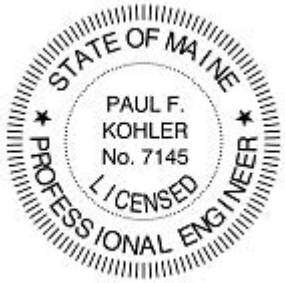
5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the design phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Paul F. Kohler, P.E.
Senior Geotechnical Engineer



TJB:pfk/emw

APPENDIX A

Limitations

This report has been prepared for the exclusive use of the University of Southern Maine (USM) for specific application to the proposed Residence Hall and Student Success Center on the USM Campus in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures



LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=60' SCALE PLAN OF THE SITE PROVIDED BY UNIVERSITY OF SOUTHERN MAINE, (USM) AND OVERLAID WITH A 1"=30' SCALE PLAN ENTITLED "BORING PLAN," PREPARED BY SMRT AND PROVIDED AS A PORTABLE DOCUMENT FORMAT (PDF) FILE.
2. THE BORING LOCATIONS WERE SELECTED AND ESTABLISHED IN THE FIELD BY USM AND LOCATED ON THIS PLAN BY MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND IS NOT TO BE USED FOR CONSTRUCTION.

0 30 60 Feet

S.W.COLE ENGINEERING,INC.

UNIVERSITY OF SOUTHERN MAINE

EXPLORATION LOCATION PLAN

PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED STUDENT HOUSING AND SUCCESS CENTER
BEDFORD STREET
PORTLAND, MAINE

Job No.:	19-1813	Scale:	1" = 30'
Date :	01/28/2020	Sheet:	1

R:\2019\19-1813\CAD\Drawings\19-1813-EEP.dwg 1/28/2020 1:23:05 PM, 11, CDeA, S. W. Cole Engineering Inc.

APPENDIX C

Exploration Logs and Key

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-1
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 25' Estimated | **TOTAL DEPTH (FT):** 25.5 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 16 ft 7/30/2019 Soils Saturated at 16 +/- ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0.4-2.4	24/18	4-7-6-6			0.3 Asphalt Pavement Medium dense dark brown fine to medium SAND with some silt and gravel (Fill)	
										2.0 Very stiff becoming stiff brown Silty CLAY with some brown sand layers	
20	5		2D		5-7 6-	24/24	3-5-9-10	q_P=7 to 8 ksf			
										9.0 Loose or soft brown Silty CLAY with silty sand layers	
15	10		3D		10-12 11-	24/20	WOH-2-3-5	q_P=5 to 7 ksf		11.0 Very stiff to stiff brown Silty CLAY with some brown silty sand layers	
					14-			q_P=2 ksf		14.0 Medium brown silty CLAY with brown silty sand layers	▽
10	15		4D		15-17	24/24	1-2-4-1				
					17-			q_P=0.3 ksf		16.5 Soft gray Silty CLAY	
										19.0 Medium gray sandy silty CLAY with gray sand layers	
5	20		5D		20-22 20.5-	24/24	3-3-7-10	q_P=1 ksf		21.0 Medium dense brown fine SAND with some silt, some clayey silt layers Some gravel	
0	25		6D		25-25.3	4/4	60/4"			25.0 Dense brown Silty SAND and GRAVEL	

Auger Refusal at 25.5 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-1

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-2
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 26.5' Estimated | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Brett Raiche | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 14 ft 7/30/2019 Saturated soils at 14 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
25			1D		0.3-2.3	24/18	6-2-2-4			0.3 Asphalt Pavement 0.5 Medium dense brown Silty CLAY and SAND (Mixed Fill) 1.2 Medium dense brown SAND, some silt, some gravel (Fill)	
	5		2D		5-7 5.5-	24/20	2-3-4-5	q_P=6 to 7 ksf		Very stiff brown Silty CLAY, occasional sand layers	
20										9.0 Soft or loose brown Silty Sandy CLAY	
	10		3D		10-12 11-	24/24	WOH- 2-2-4	q_P=1 to 1.5 ksf		10.5 Medium varved brown Silty CLAY with frequent sand layers	▽
15										14.5 Medium dense brown Silty SAND, some fine gravel, pieces of broken rock in tip of spoon	
	15		4D		15-16.3	16/8	6-10- 50/4"				
10											

Auger Refusal at 17.0 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-2

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-3
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 31.5' Estimated | **TOTAL DEPTH (FT):** 11.5 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 8 ft 7/30/2019 Sand seams wet at 8 +/- ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth
30			1D		0.3-2.3	24/14	6-8-4-4			0.3 Asphalt Pavement 1.0 Medium dense brown Gravelly SAND, trace silt (Fill)	
					2-			q_P=8 ksf		Very stiff brown Silty CLAY, some thin brown sand layers	
	5		2D		5-7	24/20	5-3-4-5				
25					6-			q_P=4 to 7 ksf			▽
										8.0 Medium dense brown SAND, some silt	
	10		3D		10-11.5	18/14	3-2-60				
20										11.0 Probable weathered BEDROCK Auger Refusal at 11.5 feet Probable Bedrock	

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-3

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-4
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 42' Estimated | **TOTAL DEPTH (FT):** 5.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0-2	24/12	1-3-5-9			Topsoil with organics	
										0.7 Medium dense light brown Silty SAND, trace fine gravel	
40											
										3.0 Medium dense brown Silty SAND, some gravel, pieces of broken rock in tip of spoon	
	5		2D		5-5.3	3/3	50/3"			5.0 Probable weathered BEDROCK	
										Auger Refusal at 5.3 feet Probable Bedrock	

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-4

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-5
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 42' Estimated | **TOTAL DEPTH (FT):** 5.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0-2	24/14	1-1-4-12			0.3 Topsoil with organics 0.8 Medium dense light brown Silty SAND, trace fine gravel	
40			2D		2-4	24/16	12-18-18-30			Medium dense to dense brown Silty SAND, some gravel, pieces of broken rock in tip of spoon	
	5									4.0 Probable weathered BEDROCK	

Auger Refusal at 5.0 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-5

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-6
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 41.5' Estimated | **TOTAL DEPTH (FT):** 13.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 11 ft 7/31/2019 Soils appear saturated at 11 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
40			1D		0-2	24/14	4-16-11-10			0.3 Topsoil with organics Medium dense brown Silty SAND, some gravel (Probable Fill or disturbed soil)	
			2D		2-4	24/16	8-11-13-10				
	5		3D		5-7	24/20	6-9-9-9				
35											
	10		4D		10-12	24/6	5-5-5-3			Possible loose blast spoils FILL	▽
30										13.0 Probable weathered BEDROCK Auger Refusal at 13.3 feet Probable Bedrock	

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-6

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-7
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 33.5' Estimated | **TOTAL DEPTH (FT):** 12.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0.5-2.5	24/15	20-16-12-9			0.5 Asphalt Pavement 0.8 Dense brown SAND and GRAVEL, trace silt (Pavement Base Fill) 1.5 Medium dense brown Gravelly SAND, trace silt (Pavement Subbase Fill)	
30										Medium dense to dense brown silty SAND, some gravel (Probable Fill)	
	5		2D		5-7	24/20	9-11-12-16				
25										9.0 Dense brown SAND and SILT with pieces of weathered rock	
	10		3D		10-11.7	20/16	11-28-38-50/2"			10.5 Very dense, highly weathered ROCK (Sapprolite) 11.7 Probable weathered BEDROCK	

Auger Refusal at 12.3 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-7

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-8
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 29' Estimated | **TOTAL DEPTH (FT):** 13.9 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 10 ft 7/31/2019 Soils appeared saturated at 10 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0.3-2.3	24/12	7-7-4-5			0.3 Asphalt Pavement 0.8 Medium dense brown Gravelly SAND, trace silt (Pavement Base Fill)	
										Loose brown silty SAND with brown silty CLAY (Mixed Fill)	
										3.0 Very stiff brown silty CLAY	
25	5		2D		5-7 6-	24/20	3-3-4-6	q_P=5 to 6 ksf			
20	10		3D		10-12 11-	24/20	4-6-8-7	q_P=1 to 2 ksf		9.0 Medium Dense, varved brown Silty SAND with brown silty clay layers	▽
										12.5 Probable cobbles or weathered BEDROCK	

Auger Refusal at 13.9 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-8

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

12. STORMWATER MANAGEMENT

The attached Stormwater Management Plan describes the proposed stormwater management measures for the project, as shown on the design drawings attached to Section 1 of this Report. A USGS map and a soils map are attached to Section 1 and Section 11 of this Report, respectively.

12.1 LIST OF ATTACHMENTS

- Stormwater Management Plan (Bound Separately)

13. URBAN IMPAIRED STREAM

The proposed development is not located within the watershed of an Urban Impaired Stream; the Urban Impaired Stream Standard does not apply.

14. BASIC STANDARD

The proposed project is located within a developed urban area; there are no other known protected resources associated with the Site. Based on a geotechnical investigation, the subsurface soil conditions at the site typically consist of uncontrolled fill overlying glaciomarine sand, silt, and clay. Bedrock was typically encountered at 5 to 26 feet below grade. Groundwater was encountered at depths ranging from 8 to 16 feet. The majority of the mapped surficial soils are stiff, silty clary which is most commonly classified as Hydrologic Type C soils. The Soil Erosion and Sediment Control Plan and compliance with the Basic Standard is described in the Stormwater Management provided as part of Section 12 of this Report.

During construction, the Contractor will be responsible for conducting inspections in accordance with the attached *Stormwater Erosion & Sediment Control Inspection Report Form* (or equivalent). Inspections shall be performed at least once a week, as well as before and after storm events. A person with knowledge of stormwater management and erosion and sediment control, including the standards and conditions of the permit approvals, shall conduct the inspections and perform maintenance of the facilities. If maintenance or modifications are necessary, implementation will be completed within seven days and prior to any rainfall event. After construction, the Owner will be responsible for inspecting and maintaining the Site's stormwater system.

14.1 LIST OF ATTACHMENTS

- Erosion & Sediment Control Inspection Report Form.

EROSION & SEDIMENT CONTROL
INSPECTION REPORT FORM

Inspectors: Date: ___ / ___ / _____

_____ of _____ (Project Owner)
_____ of _____ (Contractor)
_____ of _____
_____ of _____

Storm Event? ☐ Yes ☐ No Rainfall Amount _____ Storm Duration _____ hours

Visual Observations of Activity and Site Conditions:

Disturbed Soil Areas:

Storage Of Soils:

Sediment & Erosion Control Measures:

Construction Site Entrance:

Surface Stabilization:

Corrective Action Taken:

Attachments (if any):

Signature:

Name Title Date

15. GROUNDWATER

The proposed development is not located within a Significant Sand and Gravel Aquifer. As previously noted, the Site is comprised primarily of cut and fill land. The proposed development will not infiltrate to, or extract, groundwater and is not anticipated to result in any impacts to groundwater.

16. WATER SUPPLY

The proposed development will be provided with both fire protection water service and domestic water service as shown on the drawings that will connect to an existing public water main in Durham Street. SMRT has been working directly with the Portland Water District to determine the appropriate design for this work. An ability to serve determination will be provided upon receipt.

17. WASTEWATER DISPOSAL

The proposed development will be provided with sanitary sewer service to an existing sewer main located in Durham Street as shown on the drawings. A Wastewater Capacity Application will be submitted to the City under separate cover. A copy of the City's determination will be provided upon receipt.

18. SOLID WASTE

18.1 SOLID WASTE

All solid waste materials and recyclables from the proposed development will be transported and disposed of or recycled in accordance with applicable laws and regulations.

18.2 CONSTRUCTION & DEMOLITION DEBRIS

The proposed development will generate construction waste and demolition debris (CDD). The Contractor will be responsible for properly disposing of the CDD. The Contractor will be responsible for handling, managing, and disposing of all waste generated by construction in accordance with the Maine Solid Waste Management Regulations and all other applicable local, state, and federal regulations.

18.3 SPECIAL & HAZARDOUS WASTE

The proposed development is not anticipated to produce any hazardous waste. Site investigations identified the presence of typical urban fill, as is seen on redevelopment sites throughout the City. We anticipate that soils from the site may be classified as special waste and shall be handled and disposed of accordingly.

19. FLOODING

The proposed development is not located within a flood hazard zone, as shown on the FEMA Flood Insurance Rate Map attached to this Section. The proposed development will not cause or increase flooding or cause an unreasonable flood hazard to any adjacent structures. The 100-year flood plain is located off-site and is not within the viewport of the design drawings; therefore, the 100-year flood plain is not shown on the design drawings

19.1 LIST OF ATTACHMENTS

- FEMA Flood Insurance Rate Map

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION IN FT. (NGVD)[1]	DESCRIPTION OF LOCATION
RM 28	56.00	Disk set vertically in north face near the northwest corner of 3-story building housing the Casco Bank on Forest Avenue, 1.2 miles northwest along Forest Avenue from the Post Office near the intersection of Forest Avenue and Woodford Street.
RM 29	35.25	Copper bolt set in top of granite post flush with surface, located approximately 0.85 mile northwest along Forest Avenue from Post Office near intersection of Forest Avenue and Noyes Street, 9.0 feet northwest of northwest curb of Noyes Street and 8.5 feet southwest of southwest curb of Forest Avenue.
RM 30	25.36	Disk set in top of concrete foundation of Oakhurst Dairy building at No. 364 Forest Avenue, 35 feet southwest of north corner of building and level with street, approximately 0.55 mile northwest of Post Office near intersection of Hudson Street.
RM 31	11.88	MDOT plaque set in centerline of service doorway of Franklin Street Pumping Station at intersection of Franklin Street and Marginal Way.
RM 32	9.89	Brass disk set in top of reinforced concrete post 10 inches below present ground level, 250 feet south of C. Profenno Company, 127 Marginal Way, and 350 feet north of intersection of Preble Street and Marginal Way, 27.5 feet southeast of centerline of Marginal Way.
RM 33	36.80	Disk set vertically in northeast face of concrete foundation of 2-story brick building, 56 feet northwest of Seawall Street and 1 foot northwest of east corner of building, near Seawall Street Railroad Station and 360 feet north of crossing of Portland Terminal Railroad and Seawall Street.
RM 34	22.81	Disk set in sidewalk on west side of Saint John Street and opposite intersection of A Street at corner of entrance to Arlan's Shopping Center parking lot, in center of sidewalk and 4.28 feet west of western edge of Saint John Street and approximately 177.4 feet from Arlan's Store.
RM 35	12.83	Chiseled X cut in bolt on rim of fire hydrant on northwest side of Commercial Street, 550 feet northeast of High Street, 76 feet south of Pole No. 29.1, across from No. 322 Commercial Street.
RM 36	28.34	Disk set flush in top of concrete endwall railing at northwest end of Interstate 295 bridge over the Fore River, 21.7 feet south of Portland-South Portland city line sign, and 24.7 feet west of the centerline of Interstate 295 southbound, and 3.5 feet above pavement grade at curb line.
RM 37	22.23	Disk set vertically in center of south face of large rock set in second layer of masonry retaining wall on north of railroad tracks, 45.5 feet east of west end of wall, located .75 mile east from the overpass of U.S. Route 1 over tracks and 142 feet east of east edge of Emery Street foot bridge over tracks.
RM 38	15.56	Disk set vertically in southeast side of first concrete pier southeast of Commercial Street, 25.0 feet southeast of centerline of Commercial Street, 39 feet southwest of northeast end of pier, 0.85 mile west from Custom House at State Route 77 bridge over Fore River.

[1] National Geodetic Vertical Datum of 1929

Project Location

ZONE A2 (EL 10)
ZONE A4 (EL 11)
ZONE A1 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE C
ZONE C
ZONE C
ZONE C
ZONE C
ZONE B
ZONE B
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE A2 (EL 10)
ZONE V3 (EL 12)
ZONE A2 (EL 10)
ZONE A2 (EL 10)

BACK COVE
FORE RIVER
FORE RIVER
FORE RIVER

RM 28
RM 29
RM 30
RM 31
RM 32
RM 33
RM 34
RM 35
RM 36
RM 37
RM 38

THOMPSON POINT

CORPORATE LIMITS
CORPORATE LIMITS

WOODFORD STREET
REVERE
LINCOLN
COYLE
ASHMONT
BELMONT
FOREST STREET
NOYES STREET
DARTMOUTH
DEERING AVENUE
WILLIAM
FESSENDEN
HUDSON
DEERING AVENUE
RAILROAD
TERMINAL
PORTLAND
LUDLOW
BRIGHTON AVENUE
STEVENS AVENUE
CAPISIC STREET
FROST
CONGRESS
PORTLAND
TERMINAL RAILROAD
LASSEL
MITTON
POWDERLAND
DAVIS
SEAWALL STREET
DEERING AVENUE
PARK AVENUE
CUMBERLAND
VALLEY
A STREET
ST JOHN STREET
C STREET
D STREET
PROMENADE
CHADWICK
VAUGHAN
WESTERN PROMENADE
BRAMHALL
WINTER STREET
STATE STREET
HIGH STREET
SPRING
DANFORTH
EMERY
SALEM
BARRACKET ROAD
CANADIAN NATIONAL RAILWAY
COMMERCIAL
CANADIAN NATIONAL RAILWAY
RAILWAY
PLEASANT STREET
CONGRESS
SPRING
FORE STREET
MARGINAL WAY
SOMERSET
LANCASTER
PREBLE STREET
CEDAR
CHAPEL
STONE
CUMBERLAND
PEARL
WILMOT
ALDER
AMBRO
BRATTLE
HANOVER
AVENUE
STREET
COVE
ANDERSON
WASHINGTON AVENUE
HAMMOND AVENUE
DIAMOND
FOX
MADISON
KENNEDY
FRANKLIN
EAST
BOYD
MAYO
OXFORD
SMITH
STREET
AVENUE
PORTLAND HARBOR

100
302
22
9
295

ADJOINING AREA SHOWN AS INSET A ON PANEL 230051 0016 B

KEY TO MAP

500-Year Flood Boundary
100-Year Flood Boundary
Zone Designations*
100-Year Flood Boundary
500-Year Flood Boundary
Base Flood Elevation Line With Elevation In Feet**
Base Flood Elevation in Feet Where Uniform Within Zone**
Elevation Reference Mark
Zone D Boundary
River Mile

ZONE B
ZONE A1
ZONE A5
ZONE B
513
(EL 987)
RM7×
•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance and flood plain management purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas. The coastal flooding elevations shown may differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

For adjoining map panels, see separately printed Index To Map Panels.

Coastal base flood elevations shown on this map include the effects of wave action.

Coastal base flood elevations apply only landward of 0.0 NGVD.

INITIAL IDENTIFICATION:
APRIL 29, 1977
FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 17, 1986
FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE
400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND, MAINE
CUMBERLAND COUNTY

PANEL 13 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0013 B

EFFECTIVE DATE:
JULY 17, 1986

COASTAL BASE FLOOD ELEVATIONS APPLY ONLY LANDWARD OF 0.0 NGVD

Federal Emergency Management Agency

20. BLASTING

Based on geotechnical investigations completed to date, no blasting is anticipated for this project. Any rock removal required will be accomplished through mechanical means. The geotechnical report for this project is attached to Section 11.

21. AIR EMISSIONS

The project is not anticipated to require an air emissions license; this Section is not applicable.

22. ODORS

The proposed development will not involve any processes that emit significant odors; this Section is not applicable.

23. WATER VAPOR

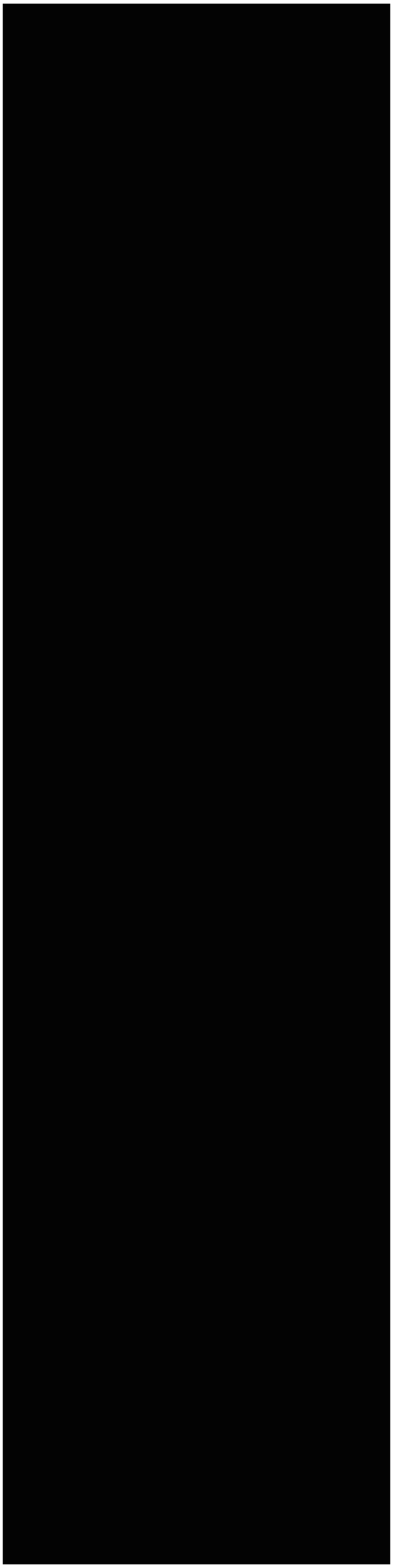
The proposed development will not involve any processes that emit water vapors; this Section is not applicable.

24. SUNLIGHT

The Oakhurst Dairy facility, which is separated from the USM property by Durham Street, has a series of solar panels located on a two rooftops; one set on a lower service building fronting on Durham Street, as well as several located on a taller portion of the facility adjacent to Forest Avenue. The proposed Residence Hall, which will be constructed within the allowable building height of the USM Overlay Zone, may partially block sunlight to the lower roof top at certain times of the day and year. It is not anticipated that the Residence Hall will block sunlight to the majority the Oakhurst rooftops for the majority of the year. There may be short portions of the day during the mid-winter months (when the sun is lowest on the horizon) that shadows may be cast on the lower rooftop.

25. NOTICES

The City of Portland has Delegated Review Authority for this application; as such, it is our understanding that the public notice requirements associated with MaineDEP Site Law do not apply.



WOODARD &CURRAN

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

USM CAREER AND STUDENT SUCCESS CENTER AND RESIDENCE HALL

LEVEL III SITE PLAN

Portland, ME

41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232656.00
University of Southern Maine
March 2020

TABLE OF CONTENTS

SECTION			PAGE NO.
1.	**APPLICATION CHECKLIST**		**1-1**
2.	**APPLICATION FEES**		**2-1**
3.	**PROJECT SUMMARY**		**3-1**
	3.1	Introduction	3-1
	3.2	Project Purpose and Need	3-1
	3.3	Existing Conditions	3-4
	3.4	Proposed Development	3-4
	3.5	Civil Engineering Approach	3-4
	3.6	Architectural Approach	3-6
	3.6.1	Building Organization	3-6
	3.7	Landscaping Approach	3-7
	3.7.1	The Public Streetscape	3-8
	3.7.2	The Campus Quad	3-8
	3.7.3	The Courtyard	3-8
	3.7.4	Materials	3-9
	3.8	Permit Summary	3-9
	3.9	Attachments	3-9
4.	**WAIVER REQUESTS**		**4-1**
	4.1	Attachments	4-1
5.	**EVIDENCE OF RIGHT, TITLE & INTEREST**		**5-1**
	5.1	Attachments	5-1
6.	**EASEMENTS AND OTHER BURDENS**		**6-1**
	6.1	Attachments	6-1
7.	**EVIDENCE OF STATE AND/OR FEDERAL APPROVALS**		**7-1**
8.	**EVIDENCE OF FINANCIAL & TECHNICAL CAPABILITY**		**8-1**
	8.1	Financial Capability	8-1
	8.2	Technical Capability	8-1
	8.3	Attachments	8-2
9.	**CONSISTENCY WITH PORTLAND DESIGN STANDARDS**		**9-1**
	9.1	Transportation	9-1
	9.2	Environmental & Landscape Features	9-5
	9.3	Environmental & Stormwater	9-6
	9.4	Public Infrastructure & Safety	9-6
	9.5	Site Design	9-6
	9.6	Attachments	9-8
10.	**CONSISTENCY WITH USM DESIGN PRINCIPLES AND STANDARDS**		**10-9**
	10.1	Applicability	10-9

10.2 Principles and Standards....10-9
11. ZONING ASSESSMENT....11-14
11.1 Attachments....11-14
12. CONSISTENCY WITH CITY COMPREHENSIVE PLAN....12-1
12.1 Comprehensive Plan Vision Statement....12-1
12.2 Comprehensive Plan Policy Guides....12-3
13. CONSTRUCTION MANAGEMENT PLAN....13-7
13.1 Attachments....13-7
14. BOUNDARY SURVEY....14-1
14.1 Attachments....14-1
15. AVAILABILITY & ADEQUACY OF PUBLIC UTILITIES....15-1
15.1 Water....15-1
15.2 Sewer....15-1
15.3 Gas....15-1
15.4 Electric....15-1
15.5 Solid Waste....15-1
15.6 Construction & Demolition Debris....15-2
15.7 Special & Hazardous Waste....15-2
15.8 Attachments....15-2
16. PORTLAND FIRE DEPARTMENT SITE REVIEW CHECKLIST....16-3
16.1 Attachments....16-3

1. APPLICATION CHECKLIST

[Attached separately]

CITY OF PORTLAND
Planning & Urban Development Department

LEVEL II and LEVEL III SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST

* Please upload each document and drawing as a separate PDF file
* Please upload all drawings in a 24 x 36 sheet size
* Please confirm each item by electronically checking the boxes to the left for each document/drawing
* Please fill out and upload separately the zoning assessment table and waiver table

(At the time of application submission, please contact the Department of Public Works regarding E-911 addressing of your project)

GENERAL APPLICATION DOCUMENTS	
Yes ☑ NA ☐	**Project Description** • Cover Letter with detailed project description
Yes ☑ NA ☐	**Completed Checklist – Level II and Level III Site Plan** (this document)
Yes ☑ NA ☐	**Right, Title and Interest** • Deeds, leases, or purchase and sales agreements
Yes ☑ NA ☐	**Evidence of State or Federal Approvals** • Permits or letters of non-jurisdiction, if applicable
Yes ☑ NA ☐	**Zoning Assessment** • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes ☑ NA ☐	**Existing and/or Proposed Easements or Covenants, applicable.** • Evidence of existing easements and any proposed easements
Yes ☑ NA ☐	**Waiver Requests** • Written request for waiver describing request and reason Waiver Table
Yes ☑ NA ☐	**Financial Capability** • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes ☑ NA ☐	**Technical Capability** • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

* Please provide assessment of compliance with standards and include supplemental documentation, as applicable
* Please upload each document as a separate PDF file

TRANSPORTATION

Yes	NA	
☑	☐	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable
☑	☐	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable
☑	☐	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable
☑	☐	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
☑	☐	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter
☑	☐	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
☑	☐	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)
☑	☐	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan
☑	☐	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES	
Yes ☐ NA ☑	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes ☑ NA ☐	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes ☑ NA ☐	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes ☐ NA ☑	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes ☑ NA ☐	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable
ENVIRONMENTAL AND STORMWATER	
Yes ☑ NA ☐	**Water Quality, Stormwater Management and Erosion Control (14-526 (b)3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY	
Yes ☑ NA ☐	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes ☑ NA ☐	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes ☑ NA ☐	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable
SITE DESIGN	
Yes ☑ NA ☐	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes ☑ NA ☐	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes ☑ NA ☐	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes ☐ NA ☑	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appen. 1)

Yes	NA	
☐	☑	**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
☑	☐	**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
☑	☐	**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
☑	☐	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
☑	☐	**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
Construction Management Plan		
☑	☐	**Construction Management Plan** • Construction Management Document and Plan

LEVEL II AND LEVEL III SITE PLAN DRAWINGS CHECKLIST

*** Please upload the following drawings with the listed details as separate pdfs**

(ALL drawings must be uploaded in a 24 x 36 sheet size)

RECENT BOUNDARY SURVEY (stamped by Maine Licensed Surveyor)

- [x] Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

Existing Conditions

- [x] Approximate location of structures on abutting property
- [x] Topography
- [ ] Locate water courses
- [ ] Delineate wetlands
- [x] Zone lines

Proposed Site Plan

- [x] Ground floor area, and grade elevations for all buildings

Access, Circulation, and Parking

- [x] Streets and intersections adjacent to site, any proposed geometric modifications
- [x] Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- [x] Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- [x] Location and dimensions of proposed loading areas
- [x] Existing and proposed transit infrastructure with dimensions/ engineering specifications
- [x] Location of vehicle and bicycle parking with dimensions and engineering specifications

Site Considerations

- [x] Identify snow storage areas
- [x] Location of fire hydrants
- [x] Location of solid waste management facilities

UTILITY PLAN including:

- [x] Existing utilities on site and within public streets
- [x] Location, sizing and directional flows of all existing and proposed utilities
- [x] Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- [x] Electric utility infrastructure

GRADING AND DRAINAGE PLAN including:

- [x] Existing grades and drainage
- [x] Proposed grades
- [x] Proposed stormwater management meeting Technical Manual (Section 5), standards
- [ ] Location and proposed alteration of a water course
- [ ] Preservation or alteration of wetlands

EROSION CONTROL

- [x] Must be in compliance with Technical Manual, Section 5

LANDSCAPE PLAN including:

- [x] Existing vegetation to be preserved and preservation measures
- [x] Proposed landscaping and buffers
- [x] Planting schedule

RECORDING PLAT, if applicable

- [ ] If Subdivision, must be in compliance with requirements of Section 14-496 (b)

ARCHITECTURAL PLANS AND RENDERINGS including:

- [x] Exterior building elevations, color renderings, illustrations of all sides
- [x] Location and dimensions of all existing and proposed HVAC and mechanical equipment, all proposed screening
- [x] Provide context drawings, if applicable (Design Manual, page 1)
- [x] Floor plans

2. APPLICATION FEES

A check for the required application fee(s) will be provided to the Planning Department. It is our understanding that the application fee includes:

• Level III Site Plan 200,000 to 300,000 SF	$7,000
• Site Location of Development Permit	$3,500
TOTAL:	$8,500

3. PROJECT SUMMARY

On behalf of the University of Southern Maine (USM), Woodard & Curran (W&C) is pleased to submit applications for a Level III Site Plan Review and a Site Location of Development (SLOD) Amendment for a new Career and Student Success Center ("CSSC") and a new Residence Hall to be located at 23-29 Bedford Street. The project represents a significant implementation of the USM Facilities Master Plan. In addition to the approximately 60,000 SF Student Success Center and the 580-bed Residence Hall (approximately 220,000 SF) the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services; site lighting; and other site amenities. The proposed work is shown on the drawings and renderings included with this application and is detailed below.

3.1 Introduction

The proposed CSSC and Residence Hall project is located on the Portland Campus of USM, at approximately the corner of Bedford Street and Durham Street in Portland, Maine (Site). The attached Location Map and Tax Maps show the project location. The project is located within two underlying City Zones. Most of the project is in the R-5 Residential Zone, with a small portion on the eastern side in B-2 Community Business Zone. The entirety of the project is in the USM Overlay Zone. The purpose of the USM Overlay zone is to allow the University to continue and reasonably expand within defined boundaries, and to recognize the unique qualities of a university campus while at the same time protecting the value and integrity of established neighborhoods. This project is in alignment with that purpose. University buildings and structures are subject to the requirements of the underlying zoning districts, except as modified by the USM Overlay Zone.

The site is currently developed with the Facilities Building, the Woodbury Student Center, and several paved parking lots. The proposed project includes redevelopment of the site for a new Career and Student Success Center, Residence Hall, and Campus Quad. The project will also include reconstruction of the sidewalks along the project's frontages, and the addition of street trees and streetlights.

3.2 Project Purpose and Need

The University of Southern Maine comprises three campus locations in central and southern Maine, a region that is viewed nationally as among the most livable and desirable in the country. The three campuses, located in Portland, Gorham, and Lewiston, have different physical features and dynamics, and each offers a variety of educational, cultural, and recreational opportunities to USM students.

In fall 2019, USM enrolled 8,429 students across its three campuses[1]. The growing student body is the most diverse in the state of Maine, and one of the most diverse in New England. USM's student enrollment has grown since 2015, and USM aims to grow to a total of 10,000 students in the near future.

Further details are provided in the table below regarding USM's fall 2019 student enrollment:

[1] Online students are not included in this figure

Table 1. USM's Population by Classification

Classification	Fall 2019 Enrollment
First-year undergraduate students	1,053
Second-year undergraduate students	1,043
Third-year undergraduate students	1,238
Fourth-year undergraduate students	1,887
Graduate and law students	1,754
Non-degree seeking students	1,454
Total	**8,429**

In fall 2019, 25% of USM's undergraduate students resided in residence halls on the Gorham campus. Almost all graduate and law students are accommodated in the off-campus market, with many living in the Portland area. The design capacity of the Gorham campus housing portfolio is 1,180 beds as of fall 2019. The housing portfolio is typically occupied beyond its design capacity, with fall 2019 occupancy at 119% of capacity.

USM has several strategic objectives and guiding principles for the planning, design and development of the new residential and student life community. Specifically, USM's priorities are as follows:

- To provide a safe, high quality and affordable student life environment that supports the overall well-being of its diverse student community
- To create a residential community for upper-division (third- and fourth-year) undergraduate, graduate and law students that is highly proximate to academic resources and support
- To construct a housing development that maintains affordability for students while assuring the financial sustainability of USM
- To design an iconic community that serves as a campus gateway, that is inviting to off-campus visitors while maintaining a safe and secure campus
- To create a development that serves as a catalyst for community development and connection between USM and Portland and elevates the presence of USM in the community
- To create a vibrant, connected student center environment to service both on-campus and off-campus student populations and sharing facilities infrastructure with the residence hall
- To demonstrate fiscal and environmental responsibility by striving for the sustainability goals outlined in USM's Facilities Master Plan[1]

USM completed a student housing market analysis in 2019 with Brailsford & Dunlavey (B&D), Inc. The analysis includes the following key findings[2]:

- The private housing market is very tight and rental rates are above what students can afford to pay. In B&D's student survey, 71% of USM students who live off campus indicated finding and securing housing accommodations to be at least somewhat difficult.

[1] The USM Facilities Master Plan is an internal plan and is not subject to review and approval by the City. Because this proposed project complies with the existing USM Overlay Zone, USM is not seeking an Institutional Overlay Zone at this time. The full Master Plan document can be viewed here: https://usm.maine.edu/president/master-plan.

[2] From "Housing Survey Market Analysis" - Brailsford & Dunlavey – August 2019

- In B&D's survey, 64% of USM students considered affordability to be the primary factor in their current housing decision. According to the survey, 63% of USM students who live off campus live outside of Portland and have an average one-way commute to campus of 28 minutes.
- B&D surveyed 7,083 rental housing units in the Portland market, the majority of which were not student focused units. The average reported rent was $1,296 per month without utilities, whereas 70% of the students who live off campus indicated paying less than $700 per month for housing, excluding utilities. As 58% of these students don't share a bedroom with another person, this further indicates students rely on the market outside the Portland area to find affordable living accommodations that offer the privacy they desire.
- Proximity to campus was also identified as a critical housing preference for upper-division, graduate, and law students. Forty-six percent (46%) of these students selected proximity to campus and on-campus resources as the second greatest factor which contributed to their decision where to live during the 2018-19 academic year. As these students are more likely to have the majority of classes on the Portland campus, this suggests a strong likelihood that students will prioritize any potential new on-campus housing offered on the Portland campus.
- B&D's survey of USM students tested a variety of unit types at varying rental rates. The survey specifically tested unit types at the rental rates that are comparable to the housing market in the City of Portland. B&D's proprietary demand-based programming model focused on the demand from upper-division, graduate and law students most likely to choose on-campus housing. B&D identified approximately 674 beds of demand for housing at the Portland campus for the current academic year (2018-19).
- Based on the demand analysis, B&D found that USM students seek the most affordable housing options while maintaining their privacy. This was demonstrated through students' unit-type preferences, in which they prioritized private (single bedroom) options with the least cost. Thirty-five percent (35%) of the demand for on-campus housing on the Portland campus was for the single bedroom with en-suite bathroom unit (the cheapest available option), and 40% of the demand was for a single bedroom in a two- or four-bedroom apartment.
- It is clear that USM students desire to maintain their privacy while maximizing affordability. Therefore, minimizing the size of residential units and out-of-unit programming space is paramount to ensuring affordability. As a result, residential support spaces must be limited, and alternative methods of fostering a vibrant, community-oriented atmosphere should be explored.

The multi-family housing market in the immediate area is primarily focused on accommodating the residential needs of the general (non-student) population. With no student housing available on its Portland campus, and limited student-friendly off-campus housing options in close proximity, USM needs to increase its capacity to house students and provide an appropriate and affordable residential experience for multiple class years. USM views the provision of dedicated housing on campus as an important mission-driven goal.

USM completed a Facilities Master Plan in January 2019, which was approved by the Board of Trustees for the University of Maine System. The Facilities Master Plan includes a new residence hall and student center on the Portland campus. The projects support USM's goals and objectives with respect to advancing student development, providing needed space for student activities, and strengthening of the USM community of residential and commuter students.

The University has instituted several strategic objectives and guiding principles for the planning, design and development of the new residential and student life community on the Portland Campus. The new Career and Student Success Center and Residence Hall represent significant advancement towards that vision. The following sections and attached plans and renderings describe the proposed project in more detail.

3.3 Existing Conditions

The Existing Conditions Plan, included in the drawings submitted with this application, depicts the existing conditions of the project area, based on a ground-level survey and site observations completed by SurveyWorks, Inc in February 2020. The Site is currently fully developed with buildings and surface parking lots. There are no significant natural features or wetlands due to the intense level of existing development. Topography slopes generally from west to east towards the intersection of Bedford and Durham Streets, from approximate elevation 50' down to 23'.

3.4 Proposed Development

Siting of the Career and Student Success Center and the Residence Hall generally follows the concepts established in the USM Facilities Master Plan (2019). The new 580-bed, approximately 220,000 SF Residence Hall will anchor the project at the corner of Durham and Bedford Streets. The approximately 60,000 SF Career and Student Success Center will be set back at a slight incline from Bedford Street and works in concert with Masterton Hall to the West and the new Residence Hall to the east to establish the edges of a new Campus Quad. In addition to the Career and Student Success Center and the Residence Hall the project will include: a new Campus Quad; pedestrian connections; integrated hardscape and landscape; a new service and loading area; stormwater management; new utility services and site lighting; and other site amenities.

3.5 Civil Engineering Approach

General Siting of Buildings

The proposed project will significantly alter approximately 3.6 acres of the Portland campus of the University of Southern Maine. The project area is the easterly corner of the block defined by Falmouth, Durham, and Bedford Streets which presently includes a large public parking lot, the Woodbury Student Center (approx. 21,701 sf), the Facilities Management building (8,950 sf), and associated service areas, parking, and infrastructure. While these functions are important to the campus operation, the siting of these features does not reflect a planned approach that identified a highest and best purpose for this part of the campus. Consistent with the Facilities Master Plan, the existing features are proposed to be replaced with a new Career and Student Success Center and a Residence Hall to more fully provide a campus experience with a higher functioning and aesthetic site layout. This project will remove all features in the project area and essential services, infrastructure, and offices will be relocated on campus prior to commencing demolition.

The project will replace the Woodbury Center with an updated and properly sized student activity center to be known as the Career and Student Success Center. The Career and Student Success Center will be an approximately 60,000 sf building with three stories to accommodate multiple campus uses including dining, bookstore, student activities, formal mass gatherings, and informal collaboration spaces. It has been sited to generally establish a center of the campus population with the intention that students will commonly use its amenities on a daily basis. The building is generally in the center of the block between Bedford and Falmouth Streets, and located amid three primary academic buildings, a physical recreation building, and the other new building, a residence hall. It was sited in the interior of the campus to establish a central connection to these buildings and emphasize that it be accessed by multiple adjacent pedestrian ways. The new Residence Hall will be approximately 220,000 sf and has been sited on the corner of Durham and Bedford Streets to establish a prominent, singular structure that will improve the campus gateway image. The building will be an approximately 31,000 sf footprint in a "C" shape with wings of 5- and 8-stories and provide housing for approximately 580 students in multiple dwelling unit layouts. The building will be set at 10' from the property line on Bedford Street and 4' from the property line on Durham Street to create an urban streetscape consistent with its mass and provide for hardscape and landscaping amenities for pedestrians. The residence hall will provide residential amenities

including informal gathering spaces, laundry, storage, and support spaces. A public main entrance on the ground floor will be located on Bedford Street and provide access to Residential Life offices and services. The other entrances and building areas including an interior courtyard will be secured for residents only. This is the first residence hall on the Portland campus and represents an important improvement in student services and campus experience.

The two buildings have been sited consistent with a Facilities Master Plan and in accordance with the University Overlay District in order to be consistent with existing building massing. The Residence Hall has been sited at the lowest grade on the campus to de-emphasis its eight-story height in addition to massing the eight-story portion of the building away from Bedford Street. The existing Glickman Library with 7 stories is across Bedford Street from the Residence Hall and the two buildings will be complimentary in their size and height. The Student Success Center was sited to be generally the center of campus and will be a similar height or lower than adjacent buildings such as the Science Building and Masterton Hall.

Site Layout (pedestrian and vehicular accesses, service areas)

Pedestrian access has been provided to both buildings through a combination of public and campus pedestrian ways. The existing sidewalk on Bedford Street will be reconstructed and widened to accommodate higher use by resident students. A new sidewalk will be constructed on Durham Street. Existing campus sidewalks will be maintained or improved to support the new buildings. Vehicle access to the Career and Student Success Center will be provided by expanding the existing service area adjacent to the Central Heating building. It will include a formal loading dock area facing Durham Street and this area will also include parking for dining and service vehicles. Student "move-in and move-out" activities are anticipated to be conducted along Durham Street where the existing one-way pattern will accommodate loading/unloading vehicles along the residence hall frontage. The crosswalks on Bedford Street will be unaltered by this project.

The campus is presently connected to City of Portland mass transit and the project will maintain and capitalize on these routes. The bus stop with shelter structures on Bedford Street will be unaltered by this project and allows for convenient access by resident students.

An associated project is anticipated to be a future parking garage to be constructed in the existing parking lot between Sullivan Hall and the Science Building. This garage is intended to replace the parking lost by the demolition for this project and include student resident parking. Garage access would be from Falmouth Street and allow for access through the garage to the parking lot between Luther Bonney and Masterton Halls. This function would allow for the existing access drive along Masterton Hall to be modified to a primary pedestrian way. The Masterton access drive will continue in service throughout the project construction period and the garage project will be addressed under separate submission to the City of Portland.

Site Grading

The new buildings have been sited to generally maintain and complement the existing topography of the project area. The residence hall ground floor has been set at a finish floor elevation that will complement the elevations along Bedford and Durham Streets. The second-floor finish floor elevation of the residence hall matches the ground floor of the Career and Student Success Center and allows for a potential bridge structure between the residence hall 3rd floor and the 2nd floor of the Career and Student Success Center. The grades between the Career and Student Success Center and Bedford Street will be generally flattened to be appropriate for a lawn while maintaining connection with the area in front of Masterton Hall. The service area grading near the Central Heating building will be generally unchanged with a retaining wall extending from the Career and Student Success Center loading dock to allow for an access ramp and maintain sidewalk grades near Sullivan Hall.

Site Utilities

Existing utility services to the demolished buildings will be abandoned and new services established from Durham Street to the Residence Hall and Career and Student Success Center. Utility services from the public right of way will include sanitary sewer, water, gas, and storm drain. Electrical, telecom, and steam service will be provided from internal campus infrastructure.

Other Site Features

The project provides several site improvements to enhance the campus experience for all student populations. The area between the front of the Career and Student Success Center and Bedford Street will be converted from paved parking to a lawn mall with landscaping and park amenities. This area will allow for both formal mass gathering use and informal recreational use and provide an aesthetic connection between campus buildings. The Career and Student Success Center will include a covered front porch for exterior student gathering and the residence hall courtyard will have landscaping and hardscape for resident recreation. Landscaping is provided adjacent to the new buildings and other frontage and accent areas.

A set of project design plans is attached to this application. The set includes site, utility, grading and drainage plans, and details to support the site design.

3.6 Architectural Approach

Architectural design plans have been provided and reflect the design approach described below.

3.6.1 Building Organization

Description of spaces

The programming at the ground floor of the Residence Hall is designed to enhance the gateway to the campus along Bedford Street and augment the boulevard and campus environment the University has been developing with other development projects.

The Bedford Street Ground floor uses include various meeting spaces, a large multipurpose room, a common kitchen, student lounge/living room, and direct access to the inner courtyard. Transparency is to be utilized to create a visual connection from Bedford Street through the ground floor and into the courtyard. The Student lounge/living room with an adjacent common use kitchen is located at the corner to celebrate student life and to create a welcoming gateway into the campus.

The bicycle storage room is also located along Bedford to encourage multimodal means of transportation.

The Durham Street side of the building contains ground floor residences with a planted buffer between the building and sidewalk to create privacy and separation. As the building returns perpendicular to Durham, maintenance and utility spaces have been located to keep them off street frontages and create a direct connection to the service yard.

The Career and Student Success Center is designed to be an open, permeable building inviting students and faculty to engage in ad-hoc collaboration and spontaneous interaction. A central place of gathering, it is envisaged to be a bustling hub at the core of the USM campus. The southern elevation of the student center fronts the new campus quad with a two-story lobby / lounge. There is a university store, café/pub and satellite radio station in the main lobby on level 1. The student dining center is located north of the lobby with a pedestrian connection to a second entrance enhancing campus connectivity. Level 2 contains a multi-purpose room and student career center. Level 3 contains the USM radio station and other administrative and student service spaces.

Heights, Grades

The Residence hall is situated on the corner of Bedford and Durham Streets. The site grading rises up along Bedford and continues to rise as it wraps around the building parallel with the new Quad towards the student center. We have utilized the site grade to allow for the active and social functions to occur on Bedford street, residences along Durham, and all service and maintenance space to occur back within the parcel, most of which is below grade.

The building form compromises two distinct wings: a five-story wing along Bedford and the new Quad, and an eight-story wing along Durham Street that returns into the heart of the campus. The design intent is for the building adjacent to Bedford to be similar in size—or volume— to the Osher Map Library, Muski School, Hannaford Hall, and Masterton Hall. This volume is also intended to be of brick construction and glass to maintain a look and feel consistent with the nearby buildings.

The shorter five-story wing allows more natural light to reach the courtyard and creates a larger amount of south facing windows within the eight-story wing, which help us meet our Passive House goals. In addition to increasing southern exposure, the eight-story wing is intended to align with building heights allowed along the Forest Avenue Corridor. The building components get smaller at the heart of the site before shifting into more residential aesthetic along Falmouth Street.

The Career and Student Success Center is three stories tall with a mechanical penthouse and an array of solar panels on the roof. The grades rise from the southeast corner of the large open porch to the northwest entry. The front of the building sits several steps above the quad which slopes gently southeast toward the Residence Hall.

Entrances and Egresses

The primary public entrance to the Residence Hall is located on Bedford Street in the middle of the building. This is the only access into the building from Bedford Street other than into the bicycle storage room, which has its own entrance but connects through the primary vestibule to gain access to the building. The only other “public” entrance is located between the CSSC and Residence Hall, which allows ADA accessible elevator access to the courtyard. There are doors located at each stairwell on the exterior of the building for emergency egress only. An additional egress point in the eight-story wing facing Sullivan gym can be used only for move-in/move-out days and emergency egress. There will also be access doors to the mechanical and utility spaces that face the service yard. The student center has a main entrance facing the new campus quad and a second ‘front door’ at the northwest corner of the building connecting to the larger campus context and the new proposed parking structure to the North.

The Career and Student Success Center has a large open porch across the entire front which faces the quad. There are several walks that lead up to the porch and the main entrance vestibule sits slightly to the right of center on the porch. There is another entrance at the northwest corner of the building.

3.7 Landscaping Approach

Landscaping for the new Career and Student Success Center and Residence Hall will be consistent with other campus landscaping improvements including landscape treatments associated with the Wishcamper Building. Landscaping will consist of street trees, accent trees, perennials and shrubs and lawn areas. The main landscape feature of the project will be a large open lawn area in front of the CSSC to create a Campus Quad. Landscaping will be provided to augment campus aesthetics, screen discordant uses (service area and residence hall), manage stormwater and provide recreation areas. The CSSC is intended to be a LEED certified building and as such plant species will be selected to be native or adaptive native plants that require minimal maintenance and be appropriate for the Portland climate.

3.7.1 The Public Streetscape

Proposed sidewalk improvements are provided for both the Durham Street and Bedford Street frontages. A new sidewalk within the street R.O.W is proposed on Durham Street where currently one does not exist. A new, detached sidewalk is proposed on Durham Street to create separation for pedestrians from the travel way and reflect the existing detached sidewalk across the street at the Wishcamper Building.

Existing crosswalks on Bedford Street and at the corner of Bedford St. and Durham Street will be maintained and pedestrian circulation to these locations will be reinforced by layout of campus walk connections.

Existing streetlights on Bedford St. and Durham Street will be maintained. Additional site lighting will be provided to provide safe and secure pathways to campus building structures and public ways.

Street trees are proposed along Bedford Street to meet City requirements and reinforce the existing landscape treatments in from of the Wishcamper Building.

The existing Bus stop on Bedford Street will be maintained and pedestrian access from the proposed project will be enhanced by new walk connections.

3.7.2 The Campus Quad

Hardscape within the quad consists of concrete walks of varying width to provide direct connections to crosswalks and building entrances. All walks will be ADA compliant and of sufficient width to accommodate university maintenance operations.

Landscape on the Quad primarily consist of lawn with accent trees along the edges to transition the building massing to pedestrian/human scale and to frame views to the CSSC. The University envisions that the Quad will be a focal point for student activities due to its central location, solar orientation and flexible space. Accent landscaping along the sides of the Quad include shrubs and perennials in areas where grades are steeper or as buffers between pedestrian walks and building bases.

Site walls will be required to achieve the maximum size of the Quad and to achieve ADA accessible routes. The site walls are also intended to become a landscape amenity for seating and impromptu gatherings and as such all walls have been designed to be a maximum of 3' high and most are proposed to be approximately 18-24" high for ease of seating. Materials for walls will be durable and aesthetically appropriate within the campus vernacular.

The Campus Quad has been located at the front of the CSSC . This location acts as the front yard of the Center and will complement the building uses as the main gathering space for the USM Portland Campus. The Quad is intended for impromptu and planned student activities and gatherings.

3.7.3 The Courtyard

The Courtyard within the Residence Hall Building is designed primarily for use by residents. The courtyard will provide more private outdoor use for the residents of the building and act as a backyard for those living on campus.

Primary access to the courtyard is from the more public spaces within the Residence Hall Building with secure restricted access from outside the building. This reinforces the intended more private use of the courtyard by the residents but allows for special events held within the Residence Hall common spaces to break out into the courtyard.

Landscaping within the Courtyard includes hardscape and softscape areas. Hardscapes (walks and patio) allow for year-round use. Softscape (trees, shrubs and lawn) allow for visual aesthetics, delineation of public and private spaces and buffering of Career and Student Success Center units from more public space.

3.7.4 Materials

Selection of trees, shrubs and ground covers will be appropriate for the Portland climate and site microclimates, maintenance capabilities of the University and intention of LEED standards.

Street trees will be appropriate for the Portland climate and site microclimates along with City requirements.

We anticipate working closely with the City Arborist on the final selection of these plant species.

3.8 Permit Summary

As noted above, this project is being submitted for Site Plan Approval from the City of Portland. The project's size and scale qualify it for a Level III Site Plan that will be reviewed and approved by the Planning Board. The project site is under an existing Maine Department of Environmental Protection (DEP) Site Location of Development Act (SLOD), or Site Law Permit, No. L-20438-22-D-A. An amendment to this permit is required, and it is our understanding that the project will be reviewed by the City of Portland under their Delegated Review Authority. A separate SLOD permit amendment application has been provided with this Site Plan Application, and 3 paper copies have also been provided for the City to supply to the Maine DEP.

3.9 Attachments

- Agent Letter
- Location Map
- Tax Map
- Student Housing Analysis by Brailsford & Dunleavy (Uploaded Separately to Eplan)
- Civil, Landscape, & Architecture Design Plans (uploaded to Drawings folder in Eplan)
- Architectural Renderings (uploaded to Drawings folder in Eplan)

Maine's Public Universities
UNIVERSITY OF MAINE SYSTEM

UNIVERSITY OF SOUTHERN MAINE
PORTLAND • GORHAM • LEWISTON • ONLINE

February 27, 2020

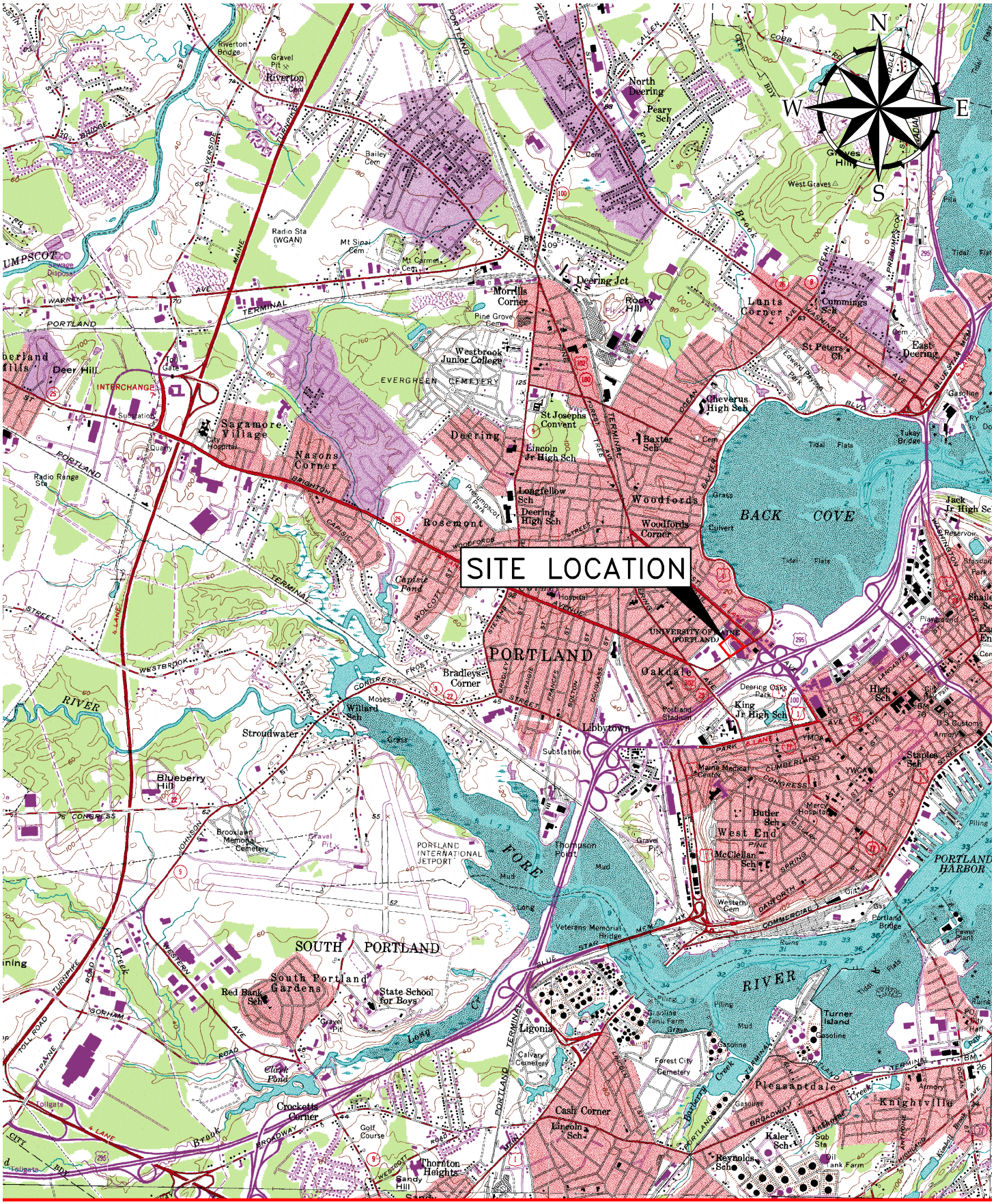
To: Local, State, and Federal Review Officials

The University of Southern Maine, a member of the University of Maine System, is preparing plans for the Career and Student Success Center (CSSC) at the University of Southern Maine, Portland, ME. The University has retained Woodard & Curran, Inc. to assist in the preparation of the applications associated with permitting approvals for this project. When necessary, Woodard & Curran, Inc. is authorized as its agent to represent the University in addressing questions on the plans, or applicable applications, for this project.

Sincerely,

John M. Souther,
Executive Director of Facilities Management,
University of Southern Maine for the
University of Maine System

Facilities Management
P.O. Box 9300, Portland, ME 04104-9300
(207) 780-4160, TTY (207) 780-5646, FAX (207) 780-4538
www.usm.maine.edu
A member of the University of Maine System



41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

LOCATION MAP

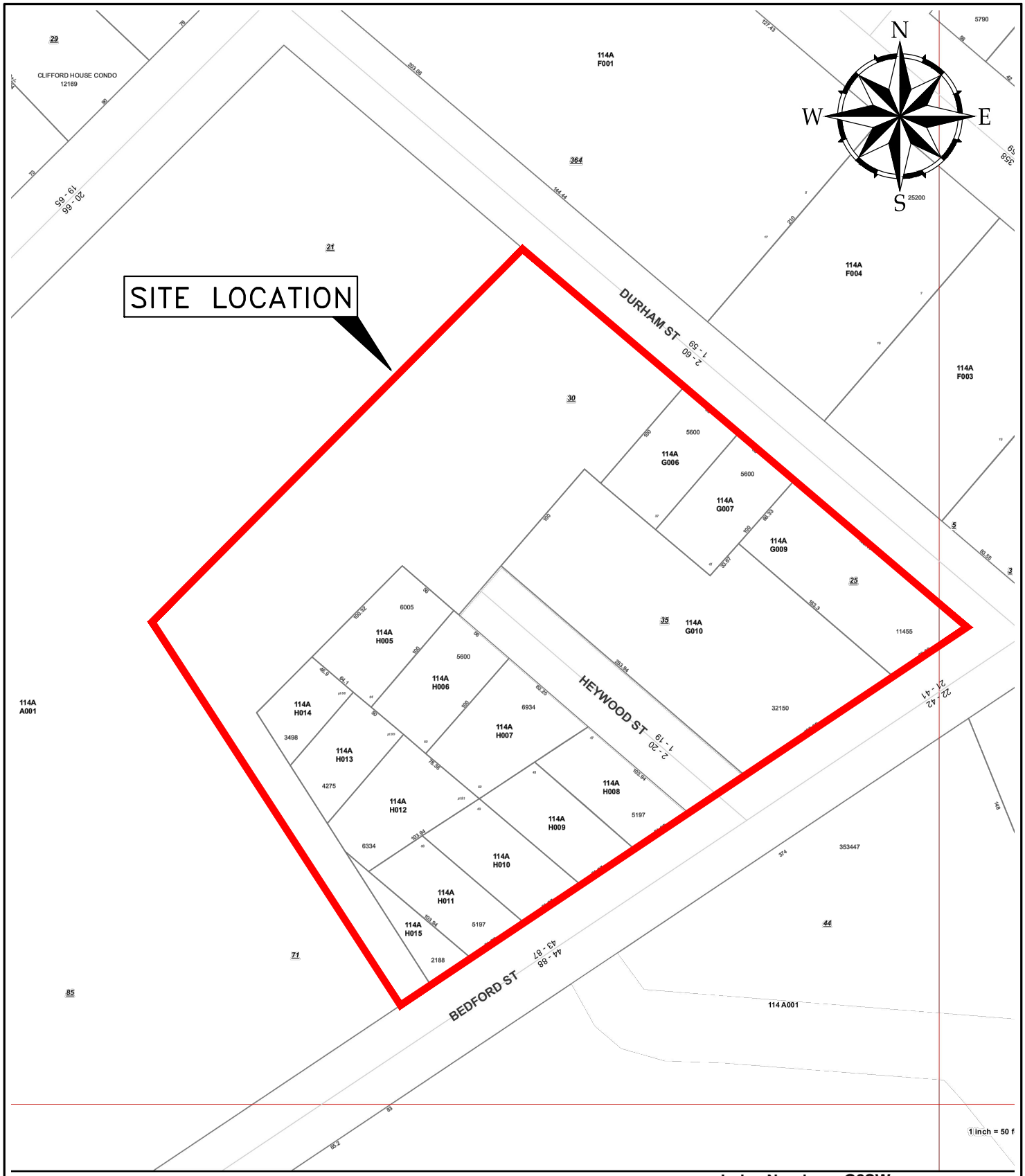
DESIGNED BY: DS	CHECKED BY: DS
DRAWN BY: DS	0232656.00 LOCATION MAP*.dwg

UNIVERSITY OF SOUTHERN MAINE
PO BOX 9300
PORTLAND, ME

CAMPUS STUDENT SUCCESS CENTER
& STUDENT RESIDENTIAL
PORTLAND, MAINE

JOB NO:	0232656.00
DATE:	March 2020
SCALE:	1" = 1000'

Location Map



Index Number - G8SW

50' 0 50' 100'

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

TAX MAP

DESIGNED BY: DS	CHECKED BY: DS
DRAWN BY: DS	0232656.00 TAX MAP.dwg

UNIVERSITY OF SOUTHERN MAINE
PO BOX 9300
PORTLAND, ME

CAMPUS STUDENT SUCCESS CENTER
& STUDENT RESIDENTIAL
PORTLAND, MAINE

JOB NO:	0232656.00
DATE:	February 2020
SCALE:	1" = 50'

Tax Map

4. WAIVER REQUESTS

At this time, we are requesting only one waiver related to the fiber cement panels. Per the City of Portland Design Manual - (e) University of Southern Maine Overlay Zone, Appendix 3 Standard D-7 "Low Grade Materials" such as fiber cement siding shall not be used on facades visible from the public rights of way. In the intervening years since the design standard was written, the quality of these materials has improved significantly, and they may now be considered long lasting. Fiber cement is currently seen in many high-quality projects throughout Portland.

4.1 Attachments

- City of Portland Waiver Table

Standard to be Waived: Cite Ordinance or Technical Manual Standard	Cite Standard Language: Cite specific language of applicable Ordinance or Technical Manual Standard	Waiver Being Sought: Describe waiver being sought. Ex. – We are requesting a two-way parking lot drive aisle width of 20' feet.	Justification for Waiver: Address specific waiver criteria, if applicable, and document reasons for the waiver request.
City of Portland Design Manual - (e) University of Southern Maine Overlay Zone, Appendix 3 Standard D-7 Materials	Paraphrased: Facades visible from public rights of way shall use natural building materials that are considered to be permanent for 100 years. .... Low grade materials such as panelized "thin brick", fiber-cement or cementitious panel siding, shall not be used on facades visible from public rights of way.	Requesting a waiver for the use of materials listed as "low grade".	In the intervening years since the design standard was written, the quality of these materials has improved significantly and they may now be considered long lasting. Fiber cement is currently seen in many high quality projects throughout Portland.

5. EVIDENCE OF RIGHT, TITLE & INTEREST

The proposed development is located on properties owned by the Applicant and identified as Tax Map 114, Lots G-6 thru G-10; and Map 114A, lots H-5 thru H-15. Attached are copies of the deeds associated with these properties.

5.1 Attachments

- Deed, dated August 28, 1957, Cumberland County Registry of Deeds, Book 2370, Pg 135.
- Deed, dated December 24, 1964, Cumberland County Registry of Deeds, Book 2873, Pg 133.
- Deed, dated March 28, 1970, Cumberland County Registry of Deeds, Book 3121, Pg 878.
- Deed, dated October 14, 1999, Cumberland County Registry of Deeds, Book 15109, Pg 33.

(90) 135

Know all Men by these Presents,

That Portland Junior College ~~Company~~,

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine in consideration of one dollar and other valuable considerations

paid by University of Maine, a corporation organized and existing under the laws of the State of Maine and located at Orono in the County of Penobscot and State of Maine

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said University of Maine its successors ~~heirs~~ and assigns forever,

a certain lot or parcel of land with the buildings thereon situated in Portland aforesaid bounded and described as follows:

Beginning at a pipe set in the ground at the corner formed by the intersection of the easterly side of Brighton Avenue and the southerly side of Falmouth Street; thence by said southerly side of Falmouth Street in an easterly direction nine hundred eighty-two and sixty-seven hundredths (982.67) feet to a pipe set in the ground on said southerly side of Falmouth Street; thence southerly with an included angle of ninety-four degrees thirty-eight minutes (94° 38') three hundred fifty-two and eighty-nine hundredths (352.89) feet to a pipe; thence westerly on a line parallel with Falmouth Street and at an included angle of eighty-five degrees twenty-two minutes (85° 22') one hundred sixty-four and sixty-five hundredths (164.65) feet to a point, said point being on the line of a row of trees running approximately north and south; thence southwardly along the line of said row of trees two hundred forty-five (245) feet more or less to the northerly side of Bedford Street; thence westerly along the northerly side of said Bedford Street six hundred (600) feet more or less to the easterly side of Brighton Avenue; thence along the easterly side of Brighton Avenue four hundred eighty-seven and thirty-eight hundredths (487.38) feet more or less to the point of beginning.

Reference is made to three deeds to Portland University Extension Courses, Inc., the name of which, subsequently, by act of the Legislature has been changed to Portland Junior College, and a fourth deed to Portland Junior College, all from Edward Deering Noyes dated and recorded as follows: December 28, 1946, Book 1854 Page 424, June 30, 1947, Book 1875 Page 227, July 1, 1948, Book 1916 Page 364, and December 31, 1956, Book 2332 Page 151.

Portland Junior College to University of Maine -- War

Vogel

to

University of Maine

-

War

Know all Men by these Presents, That

I, BEATRICE N. VOGEL, of Falmouth, County of Cumberland and State of Maine, formerly known as Beatrice M. Noyes,

in consideration of one dollar and other valuable consideration s paid by UNIVERSITY OF MAINE, an educational corporation organized and existing under the laws of the State of Maine,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said University of Maine, its successors and assigns forever, a one-third (1/3) interest in common and undivided in and to a certain lot or parcel of land situated on the southwesterly side of Durham Street, City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the southwesterly side of Durham Street at the most northerly corner of land now or formerly of Allan G. Ballard, et al, which corner is situated one hundred eighty-two and eleven hundredths (182.11) feet, northwesterly of Bedford Street as measured along said southwesterly side of Durham Street; thence southwesterly by land of said Ballard and by land of International Harvester Co. a distance of one hundred (100) feet, more or less, to other land of said International Harvester Co.; thence northwesterly by said other land of international Harvester Co. a distance of one hundred twelve (112) feet, more or less, to land now of the University of Maine; thence northeasterly by land of the University of Maine one hundred (100) feet, more or less, to Durham Street; thence southeasterly by Durham Street a distance of one hundred twelve (112) feet, more or less, to the point of beginning.

Being a portion of the premises conveyed by James D. Fessenden, et al, to Nathaniel Deering, et als, dated January 21, 1879, recorded in the Cumberland County Registry of Deeds, Book 455, Page 49.

This conveyance is made subject to and with the benefit of a lease of the above described premises from Edward Deering Noyes, Jr., as Lessor to International Harvester Co. as Lessee dated September 9, 1947.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said University of Maine, its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances except as aforesaid, that I ha ve good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs and assigns shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, I, Beatrice N. Vogel, and I, Leo G. Vogel, husband of the said Beatrice N. Vogel,

joining in this deed as Grantor, and relinquishing and conveying my rights by descent and all other rights in the above described premises, have hereunto set our hands and seals this 24th day of December in the year of our Lord one thousand nine hundred and sixty-four

Signed, Sealed and Delivered in presence of

Robert B Long
Robert B Long

Beatrice N Vogel
Leo G Vogel

State of Maine, CUMBERLAND ss. December 24, 1964.

Personally appeared the above named Beatrice N. Vogel

and acknowledged the foregoing instrument to be her free act and deed.

Before me, H. Dawson Osgood
NOTARY PUBLIC.
MY COMMISSION EXPIRES SEPTEMBER 6, 1968

STATE OF MAINE, CUMBERLAND COUNTY, SS. *REGISTRY OF DEEDS*

Received DEC 30 1964 *at* 3 o'clock 30 *m.* P *M., and recorded*

in BOOK 2873 *PAGE* 133 *Attest:* Edward P. Thyson *Register.*

378

4111 (90)

Know all Men by these Presents,

That FOREST CITY CHEVROLET ~~COMPANY~~ Company

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine in consideration of One Dollar ($1.00) and other valuable considerations,

paid by UNIVERSITY OF MAINE, a body politic and corporate, organized under the laws of the State of Maine,

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said University of Maine, its successors

~~heirs~~ and assigns forever,

a certain lot or parcel of land together with any improvements thereon situated on the northwesterly side of Bedford Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the northwesterly side of Bedford Street with the southwesterly side of Heywood Street; thence southwesterly by Bedford Street two hundred forty-three (243) feet, more or less, to land of University of Maine, being the land conveyed by Edward D. Noyes to Portland Junior College by deed dated December 31, 1956 and recorded in the Cumberland County Registry of Deeds, Book 2332, Page 151; thence northwesterly by said land of University of Maine two hundred forty-five (245) feet, more or less, to other land of University of Maine, being the land conveyed by Edward D. Noyes to Portland University Extension Courses, Inc. by deed dated July 1, 1948 and recorded in said Registry of Deeds, Book 1916, Page 364; thence northeasterly by said other land of University of Maine one hundred sixty-three (163) feet, more or less, to land of University of Maine, being the same land conveyed by Edward D. Noyes to it by deed dated April 9, 1958 and recorded in said Registry of Deeds, Book 2404, Page 15; thence southeasterly by said land and by an extension southeasterly of the line of said land which is the southwesterly side of Heywood Street three hundred (300) feet, more or less, to Bedford Street and the point of beginning.

Being the same premises conveyed to Forest City Motor Co. by deed of Beatrice M. Noyes and by deed of Canal National Bank, et al, as Trustees under the Will of Edward Deering Noyes, Jr. both deeds dated May 18, 1964, recorded in Cumberland County Registry of Deeds, Book 2821, Pages 354 and 346 respectively. The grantor herein is the successor in interest to said Forest City Motor Co. by change of corporate name duly recorded in said Registry of Deeds.

0075689 BK15109PG033

WARRANTY DEED
Maine Statutory Short Form

Know all Men by these presents,

That **Gary T. Gervais**, of Portland, Cumberland County, Maine, for consideration paid, grants to **University of Maine System**, a body politic and corporate, organized and existing under the laws of the State of Maine, with a mailing address of 107 Main Avenue, Bangor, Maine 04401, with Warranty Covenants, a certain lot or parcel of land, together with the buildings thereon, situated in Portland, Cumberland County, Maine, and situated at the northwesterly corner of Bedford Street and Durham Street and bounded and described as follows:

Beginning at the intersection formed by the northerly side of Bedford Street and the westerly side of Durham Street; thence southwesterly and along the northerly line of Bedford Street 68.93 feet to an iron pipe; thence northwesterly and parallel to the westerly line of Durham Street 163.20 feet to an iron pipe; thence northeasterly and at right angles to the last course 66.33 feet to an iron pipe in the westerly line of Durham Street; thence southeasterly and along the westerly line of Durham Street 182.11 feet to the point of beginning.

Being the same premises described in a deed from Mildred L. Cohen to Robert R. Gervais, Jr., and Gary T. Gervais, dated July 25, 1980, recorded in Cumberland County Registry of Deeds, Book 4637, Page 155, and from Robert R. Gervais, Jr., to Gary T. Gervais dated March 29, 1985, recorded in said Registry, Book 6719, Page 321.

This conveyance is made subject to a lease, as may be amended, between Gary T. Gervais and University of Maine System, dated November 8, 1989, as evidenced by a Memorandum of Lease dated February 28, 1990, recorded in Cumberland County Registry of Deeds, Book 9102, Page 319. Said lease is hereby terminated.

Also hereby conveying all rights, easements, privileges, and appurtenances belonging to the premises hereinabove described.

Witness my hand this 14th day of October 1999.

Signed and Delivered in
the presence of:

Gary T. Gervais

MAINE REAL ESTATE TAX PAID

BK 15109PG034

STATE OF MAINE
CUMBERLAND, SS.

October 14, 1999

Then personally appeared the above named Gary T. Gervais and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Thomas S Leahy

~~Notary Public~~/Attorney at Law

Printed Name: Thomas S. Leahy

KJT\TGL\GERVAIS\Warranty Deed.doc

RECEIVED
RECORDED REGISTRY OF DEEDS
1999 OCT 15 AM 10:44
CUMBERLAND COUNTY
John B O'Brien

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said University of Maine, its successors

~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, its/ successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Forest City Chevrolet ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Philip Gemmer, its President ~~Treasurer~~, thereunto duly authorized, this 28 TH day of MARCH in the year one thousand nine hundred and seventy.

Signed, Sealed and Delivered in presence of

Helen A. Pinder

Forest City Chevrolet

~~Company~~

By Philip Gemmer

President ~~Treasurer~~

(CORPORATE SEAL)

State of Maine

County of Cumberland **ss.** 19 70

Then personally appeared the above named

Philip Gemmer, President ~~Treasurer~~ **of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act**

135

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said

University of Maine, its successors

~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee , its successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;
that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that if and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee , its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Portland Junior College ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Philip I. Milliken , its Treasurer, thereunto duly authorized, this 28th day of August in the year one thousand nine hundred and fifty-seven.

Signed, Sealed and Delivered
in presence of

Jane C. Magnusson

Countersigned
Raymond S. Hastings
President

~~Company~~.
PORTLAND JUNIOR COLLEGE
By Philip I. Milliken
Treasurer.

(CORPORATE SEAL)

State of Maine

County of Cumberland ss. August 28, 1957

Then personally appeared the above named Philip I. Milliken Treasurer of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

Jane C. Magnusson Justice of the Peace.
~~Notary Public~~

AUG 28 1957
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 12 H 27 M P.M., and recorded in
BOOK 2370 PAGE 135 Register

6. EASEMENTS AND OTHER BURDENS

There are is a bus shelter easement located on the project Site on Bedford Street, as well as a discontinued ROW for a street formerly known as Heywood Street. The easement is shown on survey prepared by SurveyWorks, Inc., and a copy of the easement is attached. The Heywood Street ROW was discontinued on My 7, 1984 and as recorded in the City of Portland Road Book, Volume 2, Page 392.

6.1 Attachments

- Easements

378

4111 (90)

Know all Men by these Presents,

That FOREST CITY CHEVROLET ~~COMPANY~~ Company

a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine in consideration of One Dollar ($1.00) and other valuable considerations,

paid by UNIVERSITY OF MAINE, a body politic and corporate, organized under the laws of the State of Maine,

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said University of Maine, its successors

~~heirs~~ and assigns forever,

a certain lot or parcel of land together with any improvements thereon situated on the northwesterly side of Bedford Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at the intersection of the northwesterly side of Bedford Street with the southwesterly side of Heywood Street; thence southwesterly by Bedford Street two hundred forty-three (243) feet, more or less, to land of University of Maine, being the land conveyed by Edward D. Noyes to Portland Junior College by deed dated December 31, 1956 and recorded in the Cumberland County Registry of Deeds, Book 2332, Page 151; thence northwesterly by said land of University of Maine two hundred forty-five (245) feet, more or less, to other land of University of Maine, being the land conveyed by Edward D. Noyes to Portland University Extension Courses, Inc. by deed dated July 1, 1948 and recorded in said Registry of Deeds, Book 1916, Page 364; thence northeasterly by said other land of University of Maine one hundred sixty-three (163) feet, more or less, to land of University of Maine, being the same land conveyed by Edward D. Noyes to it by deed dated April 9, 1958 and recorded in said Registry of Deeds, Book 2404, Page 15; thence southeasterly by said land and by an extension southeasterly of the line of said land which is the southwesterly side of Heywood Street three hundred (300) feet, more or less, to Bedford Street and the point of beginning.

Being the same premises conveyed to Forest City Motor Co. by deed of Beatrice M. Noyes and by deed of Canal National Bank, et al, as Trustees under the Will of Edward Deering Noyes, Jr. both deeds dated May 18, 1964, recorded in Cumberland County Registry of Deeds, Book 2821, Pages 354 and 346 respectively. The grantor herein is the successor in interest to said Forest City Motor Co. by change of corporate name duly recorded in said Registry of Deeds.

To have and to hold, the aforegranted and bargained premises with all the privileges and appurtenances thereof to the said University of Maine, its successors

~~heirs~~ and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby COVENANT with the said Grantee, its/ successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances;

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will WARRANT AND DEFEND the same to the said Grantee, its/ successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Forest City Chevrolet ~~Company~~ has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Philip Gemmer, its President ~~Treasurer~~, thereunto duly authorized, this 28 TH day of MARCH in the year one thousand nine hundred and seventy.

Signed, Sealed and Delivered in presence of

Helen A. Pinder

Forest City Chevrolet

~~Company~~

By Philip Gemmer

President ~~Treasurer~~

(CORPORATE SEAL)

State of Maine

County of Cumberland **ss.** 19 70

Then personally appeared the above named

Philip Gemmer, President ~~Treasurer~~ **of said Grantor Corporation as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act**

7. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS

The following state and federal permits will be required for the proposed work:

- MaineDEP Site Location of Development Act Permit (reviewed by City of Portland under Delegated Review Authority);
- Maine Construction General Permit Notice of Intent; and
- FAA Notice of Proposed Construction.

Copies of these permit approvals can be provided to the City of Portland upon receipt.

8. EVIDENCE OF FINANCIAL & TECHNICAL CAPABILITY

8.1 Financial Capability

Attached is a copy of a letter verifying the Applicant's financial capacity to undertake the project.

8.2 Technical Capability

The University of Southern Maine (USM) is a public university with over 8,000 undergraduate and graduate students taking courses online and at campuses in Portland, Gorham and Lewiston. Known for its academic excellence, student focus and engagement with the community, USM provides students with hands-on experience that complements classroom learning and leads to employment opportunities in one of the nation's most desirable places to live. USM is a member of the University of Maine System (UMS), the State's largest educational enterprise that includes seven universities and an annual enrollment of nearly 30,000 students.

Capstone Development Partners (CDP) is a student housing real estate development company exclusively focused on working with colleges and universities in public private partnerships. The Principals of CDP have a combined experience of more than 40 years helping colleges and universities overcome real estate development and housing challenges. Their mission is unique to the student housing industry in that they focus on projects where they are in partnership with the university— rather than simply building apartments in a community with little regard for its plans, its institutional objectives or its long and short-term goals. They have built a reputation on collaborating with schools and respecting and burnishing the unique campus culture of its partners. They work hard every day to establish creative solutions that align the interests of the municipal, private and university project stakeholders, inclusive of housing and student life professionals, finance executives, presidents, facilities personnel, and the many others involved in development on or near a college campus.

Woodard & Curran (W&C), a 1,000-person Portland-based firm, has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, stormwater and construction management services. W&C has completed projects for colleges, universities, and healthcare institutions that build strong, sustainable infrastructure and environmental programs serving both their business needs and the communities that make them so vibrant. With extensive experience in design and permitting for site development projects, W&C has completed many projects within the City of Portland and for the University of Maine System.

SMRT is a full-service firm of architects, engineers, planners and professionals committed to solving problems through design. Based in Portland, Maine, SMRT specializes in creating complex, 24-7 facilities for clients with challenges in education, healthcare, science/technology/industry, justice, government and workplace environments. Through collaboration, the project focus is to deliver buildings that further owner's business objectives through strong design, sustainable infrastructure and high functionality. SMRT has broad experience with projects for higher education including multiple projects for the University of Maine.

Elkus Manfredi Architects (EMA) is a full-service design firm providing architecture, master planning, urban design, interior architecture, historic preservation, space planning, programming, and experiential graphic design. EMA's portfolio of work includes a diversity of projects, including community-building higher education campus plans and facilities that create places for living, learning and innovating. The firm is at the forefront of sustainable design, with 8 of its 60 LEED projects at the Platinum-certified level. Elkus Manfredi has also signed on to the AIA's 2030 Commitment and has a rigorous process of early performance modeling to optimize design.

PC Construction (PCC) shares over half a century of industry-leading excellence with every client we meet. They offer general contracting, construction management, and design-build services to private and public companies for projects of all sizes — from a single office fit-up to water supply programs valued at over $300 million. With

headquarters in Vermont and a network of locations in Georgia, Maine, New Hampshire, New York and North Carolina, PCC manage project offices up and down the east coast and boast an annual volume average of $500 million.

Copies of resumes and project references can be provided upon request.

8.3 Attachments

- Financial Capacity Letter

UNIVERSITY OF
SOUTHERN MAINE
Finance and Administration

March 5, 2020

Mr. Darrin Stairs
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

Dear Mr. Stairs:

The University of Southern Maine expects the Career and Student Success Center (CSSC) and residence hall projects to cost approximately $96 million combined.

To fund the project, the University would utilize the following resources:

(1) For the CSSC project ($31 million), USM has at its disposal $19 million in voter-approved general obligation debt and $1 million in philanthropic contributions.

(2) For the remaining $11 million in funding required for the CSSC, as well as the $65 million total cost of the residence hall, the University of Maine System would issue revenue bonds.

Thank you for your consideration.

Sincerely,

Alexander E. Porteous
Chief Business Officer

P.O. Box 9300, Portland, ME 04104-9300
(207) 780-4484 TTY (207) 780-5646, FAX (207) 780-4549
www.usm.maine.edu
A member of the University of Maine System

9. CONSISTENCY WITH PORTLAND DESIGN STANDARDS

Section 14-526 of the City of Portland's Land Use Code outlines the site plan standards that must be met by Level III Site Plan projects. The proposed development will follow the City's design standards as described in the following section.

9.1 Transportation

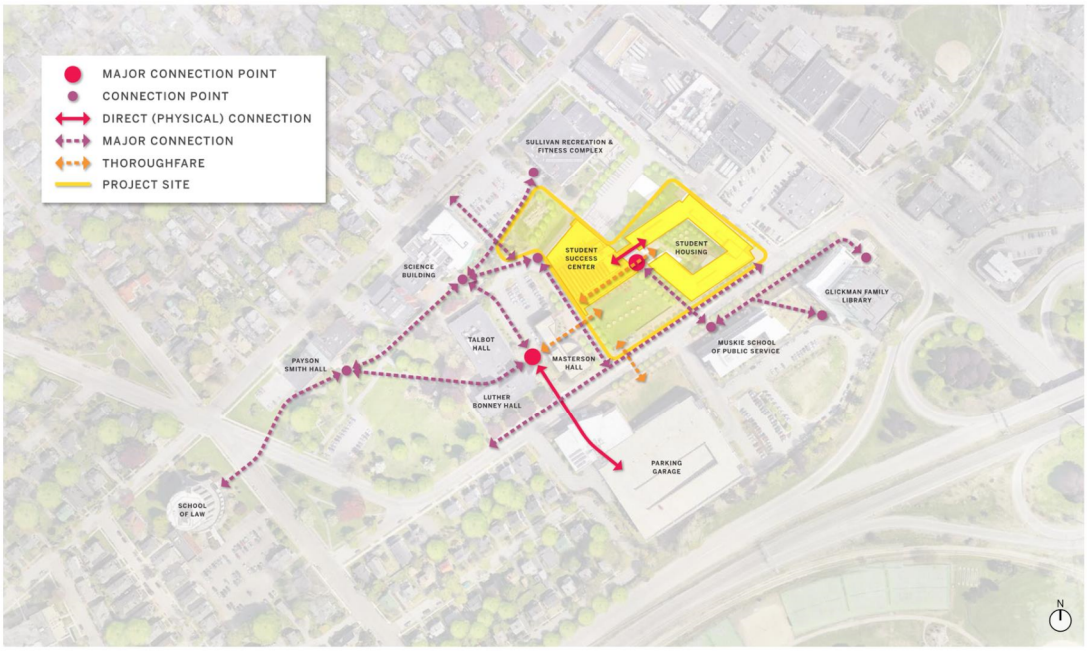
1. *Impact on Surrounding Street Systems*
   A Traffic Impact Study (TIS) was prepared by VHB for the proposed project and is attached. This study included an analysis for the proposed CSSC and the Residence Hall. Although a planned parking garage is not part of this application, the impacts from the garage were included. The analysis also incorporates the proposed Deering's Corner Roundabout, which will be constructed by the City in the next two years.

   The addition of the dormitory beds to the campus is anticipated to reduce vehicle trips as commuters convert to on-campus residences. The student center is expected to better serve the existing student population and is not expected to increase trips to the campus except perhaps for special events. In the future, with optimistic enrollment increases, and conservative methodology, vehicular trips are anticipated to increase between 163 and 174 during the weekday AM and PM peak hours. With these trips added to the roadway network, delay increases will be minimal at the signalized intersections along Forest Avenue and at the proposed roundabout at Falmouth Street and Brighton and Deering Avenues. Overall, this proposed project is not intended to adversely impact traffic operations in the vicinity of the USM campus.

2. *Access and Circulation*

   Pedestrian circulation on the USM campus is a priority and this project will maintain existing patterns and establish new circulation from its new uses. Pedestrian access along Bedford Street will be maintained through reconstruction of the existing sidewalk and a new sidewalk is proposed along Durham Street. The sites selected for the two new buildings were intended to enhance circulation and avoid pedestrian impacts. The site for the Residence Hall was previously covered by service areas that were non-student related and consequently avoids impacts to existing pedestrian corridors. The Career and Student Success Center is intended to be a building that students can conveniently and frequently access and subsequently its site is centrally located adjacent to several existing pedestrian corridors. Campus circulation is shown in the diagram below.

Campus Circulation Diagram



The University of Maine System is a Title II entity for ADA compliance and is committed to serving all campus populations. ADA accessibility will be provided for all pedestrian corridors associated with the project and access to the two new buildings. ADA parking specifically for the CSSC and Residence Hall will be provided in a future parking garage. There will continue to be ADA parking available in the Luther Bonney/Masterton Lot. It is noted that the courtyard of the Residence Hall is not intended as a public area and accommodated, controlled access will be provided through the building.

Vehicle access to the project areas is generally unchanged or improved by the project. Vehicle accesses to the service areas at the corner of Bedford and Durham will be removed and the existing vehicle access to the Central Heating Facility from Durham will be used to provide service areas to the CSSC. Access to the fuel tank off Durham will be maintained for fueling and maintenance and serve a dual-purpose to access mechanical areas on the ground floor of the Residence Hall.

There are no drive-up features associated with this project.

3. *Loading & Servicing*

An existing service area adjacent to the Central Heating Plant will be expanded to include new access to the CSSC and associated utilities. The CSSC will include a formal loading dock area facing Durham Street and include internal receiving and storage areas to support its bookstore, dining areas, and other student gathering uses. Typical delivery vehicles are anticipated to be food and beverage vehicles, shipping and delivery vehicles (i.e. USPS and UPS), and campus catering vehicles. Two solid waste compactors with removable dumpsters will be relocated from an existing facility off Durham Street to the loading dock area and will continue to serve as the Portland campus collector. During construction the solid waste compactors will be temporarily located on the NE corner of the Sullivan building, as described in the Construction Management Plan in Section 13. The new service area will also include parking for dining and facilities management vehicles and provide access to utility infrastructure including electric,

telecom, and emergency power. A new service access to an existing fuel tank will be created from Durham Street adjacent to a Residence Hall entrance that will also serve as an emergency and service access.

A truck turning area of 65-foot radius will be provided at the head of the loading area which is anticipated to accommodate single unit trucks up to 40 ft in length including the dumpster vehicles. Larger vehicles (i.e. dual unit trucks with 30 to 40 ft trailers) will back in from Durham Street which is consistent with existing large vehicle access to the Central Heating building and adjacent Oakhurst Dairy operations. Sketches created with AutoTurn software are enclosed as the basis of design.

4. *Sidewalks*

The project area that fronts on Bedford Street presently has a 6' bituminous sidewalk in poor condition. There is presently no formal sidewalk for the project area that fronts on Durham Street. The new Residence Hall will be located at a 10-foot setback from the property line on Bedford St. and 4' on Durham Street. A new 10' foot wide concrete sidewalk will be constructed along the face of the residence hall along Bedford to foster a streetscape/boulevard setting consistent with the public offices on the ground floor. A 10' wide esplanade will be constructed along the curb with a bioretention cell and street trees. A new 6-foot concrete sidewalk will be constructed along the Durham Street frontage in the right of way with a 6-foot landscaping buffer between the sidewalk and the building. This layout is consistent with establishing separation to the residents' rooms on the ground floor.

Existing crosswalks for Bedford and Durham Streets will be maintained and new ADA ramps and features will be constructed consistent with the City's Technical Manual at existing crosswalks and street corners.

Sidewalks in the interior of the site will range from 8 to 16 feet in width depending upon anticipated traffic and will be constructed of concrete.

5. *Public Transit Access*

No changes to public transit access are proposed as part of this project. There is an existing Metro stop located on Bedford Street near the southwest corner of the project that will be maintained in its current location during construction.

6. *Parking*

There are no proposed parking areas included in this project. The existing parking in the vicinity of the Central Heating Plant will be reconfigured and maintained.

To address parking on a campus-wide basis, the University commissioned a Parking Assessment in late 2019, and the study was completed in January of 2020. A copy of the Assessment is attached. The study was developed to provide a comprehensive profile of the current on-campus parking conditions and estimate future parking demand based on projections in student enrollment, employment growth, and changes to campus activities. It specifically included the completion of the Career and Student Success Center and the new Residence Hall in 2022 in its analysis.

Summarized findings of the Parking Analysis are as follows:

- The current (2019) parking capacity is 1,701
- The current peak parking hour is at 1pm and is 1,587 spaces, or 93%

- With construction of the Career and Student Success Center and Residence Hall, new parking capacity will be needed. See the attached parking analysis for the estimated demand for parking compared to supply over the course of future years.
- A moderately aggressive Transportation Demand Management (TDM) program could result in reductions of up to twelve percent for USM. The TDM is described in more detail in item (8) below.
- The expansion of the Wishcamper Parking Lot in 2020[1] will offset the anticipated loss of parking spaces in the Woodbury lot where the new Campus Quad will be located.

As evidenced in the Parking Analysis, additional parking will be required on campus to accommodate the needs of the new Residence Hall which is planned for occupancy in August of 2022. The University had a second study completed by Platz Associates to look at options to provide new structured parking on campus. This study considered two options: (1) a new parking structure located in the existing Sullivan Gym parking area on 68 Falmouth Street; and (2) expansion of the existing parking garage located on Bedford Street. There were several scenarios evaluated for each site.

The University has reviewed the options and will be pursuing a structured parking solution on the 68 Falmouth Street lot. It will be a multi-level structure and include primary access from Falmouth Street. It is expected that the new garage will provide approximately 400-500 parking spaces and may include a pedestrian skybridge to the new Career and Student Success Center, although the skybridge is not part of this project. The option of locating Campus Safety services within the garage is also being considered. It is anticipated that the new garage on Falmouth Street would be primarily used by residence hall students, so that the impacts of day to day trip generation will be significantly less than the garage located on Bedford Street. The new parking garage will require a Level III Site Plan approval from the City of Portland. The Site Plan Approvals for the garage will be pursued separately from this project.

The University is currently seeking approval from the Board of Trustees (BOT) in March of 2020 to solicit proposals for the design and permitting of the new structured parking. The anticipated schedule for development and construction of the project includes submitting for Site Plan Approval in mid-2020, anticipated approvals by late 2020, and construction of the garage being completed by the summer of 2022, and fully operational by August of 2022, before the new Residence Hall is occupied. A more thorough analysis of the proposed parking garage will be included with the Level III Site Plan application. We expect that a condition of the Certificate of Occupancy for the Residence Hall will be occupancy of the parking structure.

Bike Parking

The project will restore existing bicycle parking in the vicinity of the Woodbury Center and accommodate residents who bring bikes to campus. Exterior bike racks will be provided at the Student Success Center to accommodate student commuters. These racks, accommodating 35-60 bicycles, will be provided on hardscape surfaces and be "lockable" City-approved DERO Bike Hitch model. The residence hall will include an internal bike storage room for storage of resident bikes with direct access from the Bedford Street sidewalk. The bike storage room will be secured and allow for residents to secure their bikes in racks.

[1] A Level III Site Olan application for the expansion of the Wishcamper Parking Lot is currently under review by the City.

7. Snow Storage

   A snow management plan has been prepared through coordination with the USM Office of Facilities Management (OFM). The OFM is responsible for snow removal clearing on campus and this plan reflects campus priorities and resources. Snow storage areas are indicated on the site layout drawing. These snow storage areas are commonly short-term as the campus actively manages the amount of snow received and periodically removes snow from campus areas to retain capacity for future storms When necessary, snow is removed from campus by commercial contractor for lawful disposal.

8. *Transportation Demand Management (TDM)*
   The University of Southern Maine (USM) has recently developed a Transportation Demand Management (TDM) plan that provides a cohesive strategy for establishing and implementing a successful TDM program for the Portland campus. The TDM plan seeks to enhance multimodal accessibility, ensure the use of non-vehicular modes, and discourage the use of driving through parking management, to achieve and build upon the university's parking demand reduction goals for the campus. The TDM Plan presents a suite of strategies and timeframe for when USM intends to implement the various strategies. The strategies aim at promoting walking and bicycling, improving transit service to promote ridership, promoting carpooling, changing time-of-day travel demands to eliminate or reduce vehicle trips, and managing parking demand via changes to USM's pricing and permit policies. The implementation of the TDM will reduce the vehicle trips to the site and reduce delays at area intersections. The draft TDM Plan prepared by VHB is attached.

9.2 Environmental & Landscape Features

1. *Preservation of Significant Natural Features*
   The Site has been previously developed and there are no known areas of significant natural features, including unusual natural areas, rare or endangered botanical features, areas of significant wildlife habitats, or wetland areas. The attached Official Species List identifies the northern long-eared bat, which has been listed as a Federally Threatened Species, in association with the project area (a common designation across the state); however, there are no critical habitat areas located within the project area.

2. *Landscaping & Landscape Preservation*
   This project does not impact any trees greater than ten (10) inches DBH or greater within any required zoning setback area.

3. *Site Landscaping & Street Trees*
   Landscaping for the new CSSC and Residence Hall will be consistent with other campus landscaping improvements including landscape treatments associated with the Wishcamper Building. Landscaping will consist of street trees, accent trees, perennials and shrubs and lawn areas. The main landscape feature of the project will be a large open lawn area in front of the CSSC to create a Campus Quad. Landscaping will be provided to augment campus aesthetics, screen discordant uses (service area and residence hall), manage stormwater and provide recreation areas. The CSSC is intended to be a LEED certified building and as such plant species will be selected to be native or adaptive native plants that require minimal maintenance and be appropriate for the Portland climate.

   Landscaping features and vegetation will be used to improve site aesthetics and accent the new buildings. Planting plans with plant schedules and sizes have been provided consistent with the City's Technical Manual.

There are presently no heritage or feature trees on the project site to preserve. Street trees will be provided along the Bedford frontages in accordance with City requirements. The esplanade along Bedford Street will be constructed to contain sufficient planting soil to provide supportive growth conditions for proposed street trees.

Landscaping Plans are included in the drawings referenced in Section 3 of this Report.

9.3 Environmental & Stormwater

1. *Water Quality, Stormwater Management & Erosion Control*
   The project must comply with the water quality, stormwater management, and erosion control standards identified by the City of Portland in the Land Use Chapter of the Code of Ordinances, as well as the MaineDEP Chapter 500 Stormwater Standards associated with Site Location of Development Act Permit requirements. The Stormwater Management Plan included with this application demonstrates that the proposed development meets the applicable standards.

   The project has been designed to minimize the impact of stormwater leaving the site. The project will not result in the flooding of adjacent lots or City property. Additionally, the project is not located within the watershed of an Urban Impaired Stream and is not anticipated to pose a risk of groundwater contamination during or after construction. Erosion and sediment control measures are described in the attached Stormwater Management Plan and detailed on the drawings. The project has also been designed to provide for the adequate and sanitary disposal of sewage, as further described in Section 14 of this Report.

9.4 Public Infrastructure & Safety

1. *Consistency with City Master Plan*
   The development's consistency with City Master Plan is described in Section 11 of this Report.

2. *Public Safety and Fire Prevention*

   The project has considered public safety and fire prevention measures in its design. The concept of Crime Prevention Through Environmental Design (CPTED) has been incorporated by maximizing visibility, eliminating escape routes, avoiding concealment near pedestrian areas, and associated lighting. Landscaping plant varieties and locations have been selected to maintain visual corridors and view ways.

   Emergency vehicle access to the two new buildings has been provided and existing access to other buildings maintained.

   Compliance with the Portland Fire Department Site Review Checklist is described in Section 16 of this Report.

3. *Availability and Adequate Capacity of Public Utilities*
   The availability and adequate capacity of public utilities is described in Section 15 of this Report.

9.5 Site Design

1. *Massing, ventilation, and wind impact*

The two buildings have been sited consistent with the USM Facilities Master Plan and in accordance with the USM Overlay District and design standards in order to be consistent with existing building massing. The Residence Hall has been sited at the lowest grade on the campus to de-emphasis its 8-story height in addition to massing the 8-story portion of the building away from Bedford Street. The existing Glickman Library with 7 stories is across Bedford Street from the Residence Hall and the two buildings will be complimentary in their size and height. The CSSC was sited to be generally the center of campus and will be a similar height or lower than adjacent buildings such as the Science Building and Masterton Hall. Mechanical units for the Career and Student Success Center will be located primarily in the penthouse with some equipment located on the rear roof. In the Residence Hall, the equipment will be on the roofs of both wings centered in the middle of the bar. There are no residential properties in the vicinity of the new buildings and there are no permanent noise sources proposed on the ground.

2. *Shadows*

A preliminary shadow analysis, identified in the Technical Manual, has been prepared due to the creation of two structures greater than 45 feet in height above grade. The attached preliminary shadow analysis shows the required shadow length calculation based upon the building designs and existing site conditions. The Career and Student Success Center shadow length was calculated to generally be on campus with some extension into the Durham Street right of way. The Residence Hall shadow length is approximately half on campus and half on other parcels northerly of the campus, including portions of the Durham Street, Bedford Street, and Forest Avenue right of ways. This analysis shows that there are no "significant public resource" areas impacted by the proposed project. No further analysis is required.

3. Snow and ice loading

The project has been designed to avoid snow and ice from loading or falling onto adjacent properties or public ways. The two new buildings will have flat roofs and will not shed snow or ice directly to the ground. Building entrances are designed to allow for egress and access safe from falling snow or ice.

4. View corridors

This project is not located within the limits of the Downtown Vision View Corridor Protection Plan, and therefore the massing, location, and height of the development does not substantially obstruct any view corridors identified in said Plan.

5. *Historic Resources*

This project is not located within, or within 100 feet, of any City Historic District. There are no known Historic Resources located within or within 100 feet of the project limits.

6. Exterior Lighting

Site lighting has been designed to support pedestrian ways, accent building entrances and provide security. Cut-off style lighting fixtures will be used to limit light intrusion off site.

The proposed exterior lighting is shown on the drawings. A lighting schedule, cut sheets, and photometric plan are attached.

7. Noise and Vibration

The proposed buildings will have a combination of roof-mounted and interior-located mechanical equipment for heating, ventilation, and air conditioning (HVAC). Two new generators with sound attenuating enclosures will be located in the service area near the existing generator, which is to remain.

Noise levels at present are minimal and are not known to have created an unreasonably adverse impact on the surrounding campus and industrial (Oakhurst) areas. Proposed noise levels are anticipated to be similar. The generators will be exercised weekly and not run continuously unless there is a power outage. Note that the generators are located within the service core and flanked by existing and proposed buildings, providing partial shielding of the sound. Cut sheets for the proposed generators and enclosures are attached

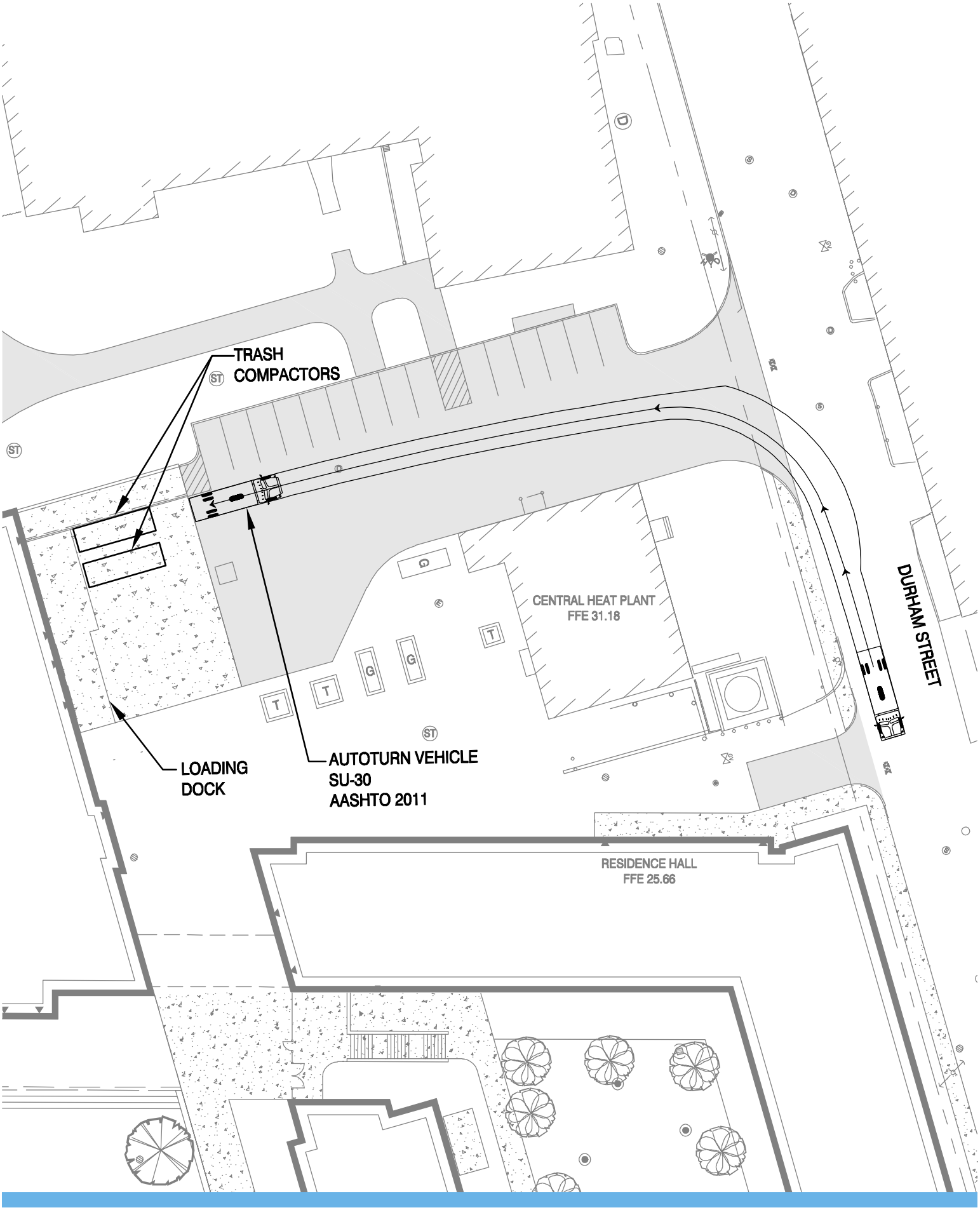
8. *Signage and Wayfinding*

   Campus signage and wayfinding has been provided on the drawings. The new signage will be related to the new buildings. The two new buildings will likely receive the ground or building mounted signs consistent with the campus standard that identifies all campus buildings at the street level.

9. *Zoning Related Design Standards*
   An assessment of the City Zoning requirements is provided in Section 11 of this Report.

9.6 Attachments

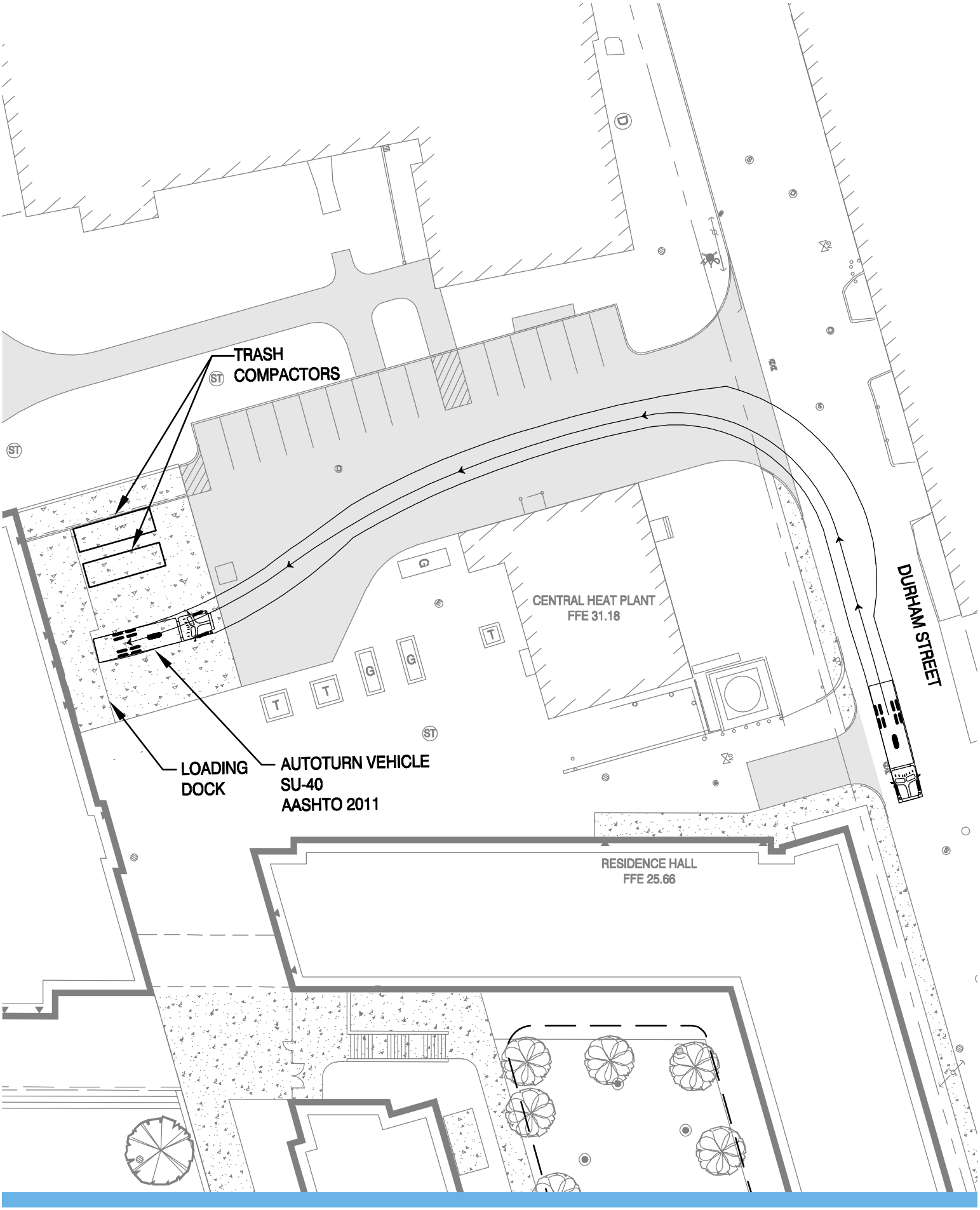
- Traffic Impact Analysis prepared by VHB (uploaded separately in Eplan)
- Truck Turning Movement Diagram
- Parking Analysis prepared by VHB (Uploaded separately to Eplan)
- Parking Feasibility Study by Platz Associates (Uploaded separately to Eplan)
- TDM Plan prepared by VHB (uploaded separately in Eplan)
- Official Species List
- Lighting Schedule, Photometric Plans & Cut Sheets
- Stormwater Management Plan (uploaded separately in Eplan)
- Preliminary Shadow Study
- Generator and Sound Enclosure Cut sheets



Truck Access-30' Box Truck
University of Southern Maine Reisdence Hall
March, 2020

SMRT PROJECT NO. 19206
0 40' 80' 160' 320'

SMRT



Truck Access-40' Trailer/Double Unit

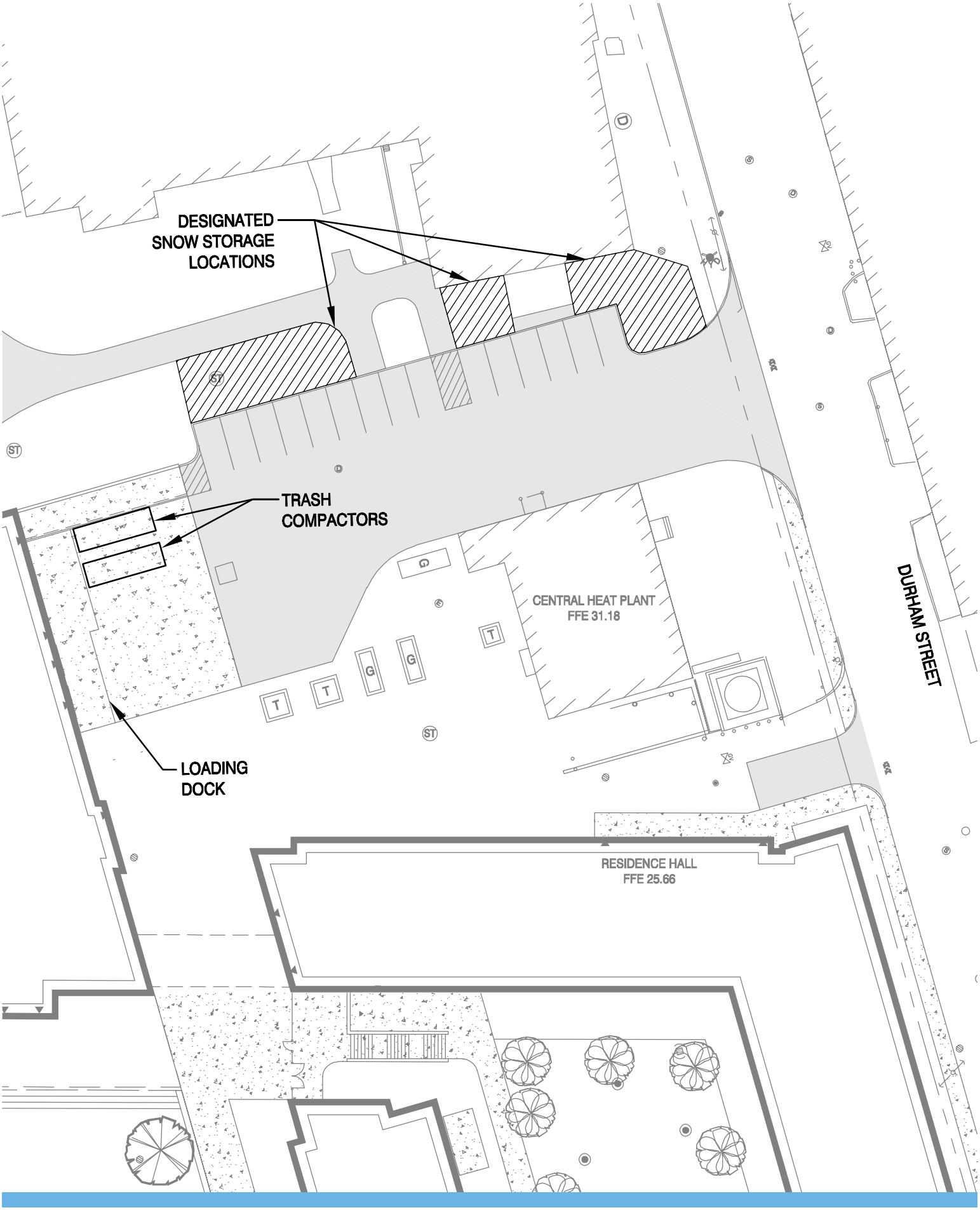
University of Southern Maine Reisdence Hall

March, 2020

SMRT PROJECT NO. 19206

0 40' 80' 160' 320'

SMRT



Snow Storage Sketch

University of Southern Maine Reisdence Hall

March, 2020

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: February 24, 2020
Consultation Code: 05E1ME00-2020-SLI-0740
Event Code: 05E1ME00-2020-E-02458
Project Name: USM Portland Student Housing

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2020-SLI-0740

Event Code: 05E1ME00-2020-E-02458

Project Name: USM Portland Student Housing

Project Type: DEVELOPMENT

Project Description: Proposed development on the USM Portland campus on the corner of Bedford Street and Durham Street in Portland, ME

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.6628773524905N70.27456771513867W



Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

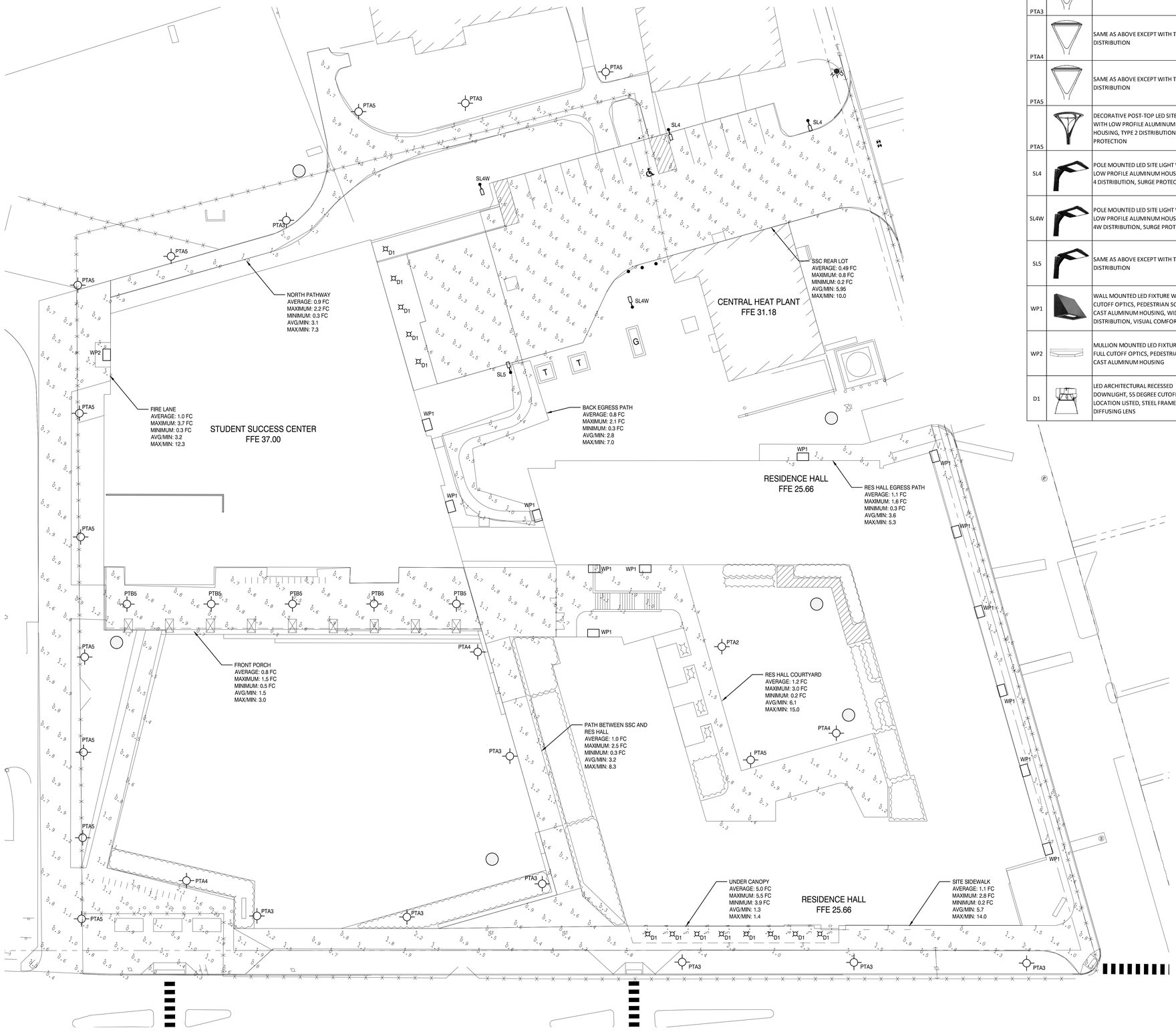
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



SITE & LANDSCAPE LIGHTING SCHEDULE

LABEL	IMAGE	DESCRIPTION	MANUFACTURER & MODEL NUMBER	QUANTITY	BUG RATING	FULL CUTOFF?	WATTAGE	OUTPUT	CONTROL METHOD	MOUNTING	NOTES
PTA2		POST-TOP LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 2 DISTRIBUTION, SURGE PROTECTION	KIM LIGHTING UR20-24L-25-3K7-2-PT-UNV-BLT-SF	1	B1-U0-G1	YES	25 W	3,000 LUMENS	TIME CLOCK	12' TALL ROUND 4" OD ALUMINUM POLE	
PTA3		SAME AS ABOVE EXCEPT WITH TYPE 3 DISTRIBUTION	KIM LIGHTING UR20-24L-25-3K7-3-PT-UNV-BLT-SF	8	B1-U0-G1	YES	25 W	3,000 LUMENS	TIME CLOCK	ROUND 12' X 4" ALUMINUM POLE	
PTA4		SAME AS ABOVE EXCEPT WITH TYPE 4 DISTRIBUTION	KIM LIGHTING UR20-24L-25-3K7-4W-PT-UNV-BLT-SF	3	B1-U0-G2	YES	25 W	3,000 LUMENS	TIME CLOCK	ROUND 12' X 4" ALUMINUM POLE	
PTA5		SAME AS ABOVE EXCEPT WITH TYPE 5 DISTRIBUTION	KIM LIGHTING UR20-24L-25-3K7-5W-PT-UNV-BLT-WSP-40F1-5F	12	B2-U0-G1	YES	25 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 12' X 4" ALUMINUM POLE	
PTA5		DECORATIVE POST-TOP LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 2 DISTRIBUTION, SURGE PROTECTION	EATON LIGHTING ARB B1 LED D1 T5 DP	5	B2-U1-G1	NO	24 W	2,300 LUMENS	TIME CLOCK & MOTION SENSOR	DECORATIVE WOOD POLE	THIS FIXTURE HAS A SMALL UPLIGHT COMPONENT BUT IS MOUNTED UNDER A HIGH CANOPY
SL4		POLE MOUNTED LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 4 DISTRIBUTION, SURGE PROTECTION	KIM LIGHTING ALT1-28L-20-3K7-4-UNV-A34-BLT-NXSP30F-5F	2	B1-U0-G1	YES	20 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE	
SL4W		POLE MOUNTED LED SITE LIGHT WITH LOW PROFILE ALUMINUM HOUSING, TYPE 4W DISTRIBUTION, SURGE PROTECTION	KIM LIGHTING ALT1-28L-20-3K7-4W-UNV-A34-BLT-NXSP30F-5F	2	B1-U0-G1	YES	20 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE	
SL5		SAME AS ABOVE EXCEPT WITH TYPE 5 DISTRIBUTION	KIM LIGHTING ALT1-28L-20-3K7-5R-UNV-A34-BLT-NXSP30F-5F	1	B2-U0-G2	YES	20 W	3,000 LUMENS	TIME CLOCK & MOTION SENSOR	ROUND 20' X 4" ALUMINUM POLE	
WP1		WALL MOUNTED LED FIXTURE WITH FULL CUTOFF OPTICS, PEDESTRIAN SCALE, CAST ALUMINUM HOUSING, WIDE DISTRIBUTION, VISUAL COMFORT LENS	LITHONIA WDGE2-LED-P1-30K-80CRI-VW-MVOLT-PIRH-DBLBXD	14	B0-U0-G0	YES	10 W	1,200 LUMENS	TIME CLOCK & MOTION SENSOR	SURFACE, 12' AFG	
WP2		MULLION MOUNTED LED FIXTURE WITH FULL CUTOFF OPTICS, PEDESTRIAN SCALE, CAST ALUMINUM HOUSING	LUMINAIRE LED BLD 36-15W 3000K BLK OCC	1	B0-U0-G0	YES	15 W	1,500 LUMENS	TIME CLOCK & MOTION SENSOR	SURFACE, 8' AFG	
D1		LED ARCHITECTURAL RECESSED DOWNLIGHT, 55 DEGREE CUTOFF, WET LOCATION LISTED, STEEL FRAME, DIFFUSING LENS	LITHONIA LDN4-30-05-LO4AR-LSS-MVOLT-EZ1	13	NA	YES	6 W	500 LUMENS	TIME CLOCK	RECESSED	

REV	DESCRIPTION	DATE
0	ISSUED FOR SD AND PERMITTING	3-6-20

ISSUED FOR SD AND PERMITTING
3-6-20
CURRENT ISSUE STATUS:

TRUE NORTH:

WILLIAM R. HALL No. 7860 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

SMRT Architects and Engineers
144 Fore Street/P.O. Box 618
Portland, Maine 04104
1.877.700.7678
www.smrtinc.com

SMRT
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PHOTOMETRIC PLAN

SHEET TITLE:

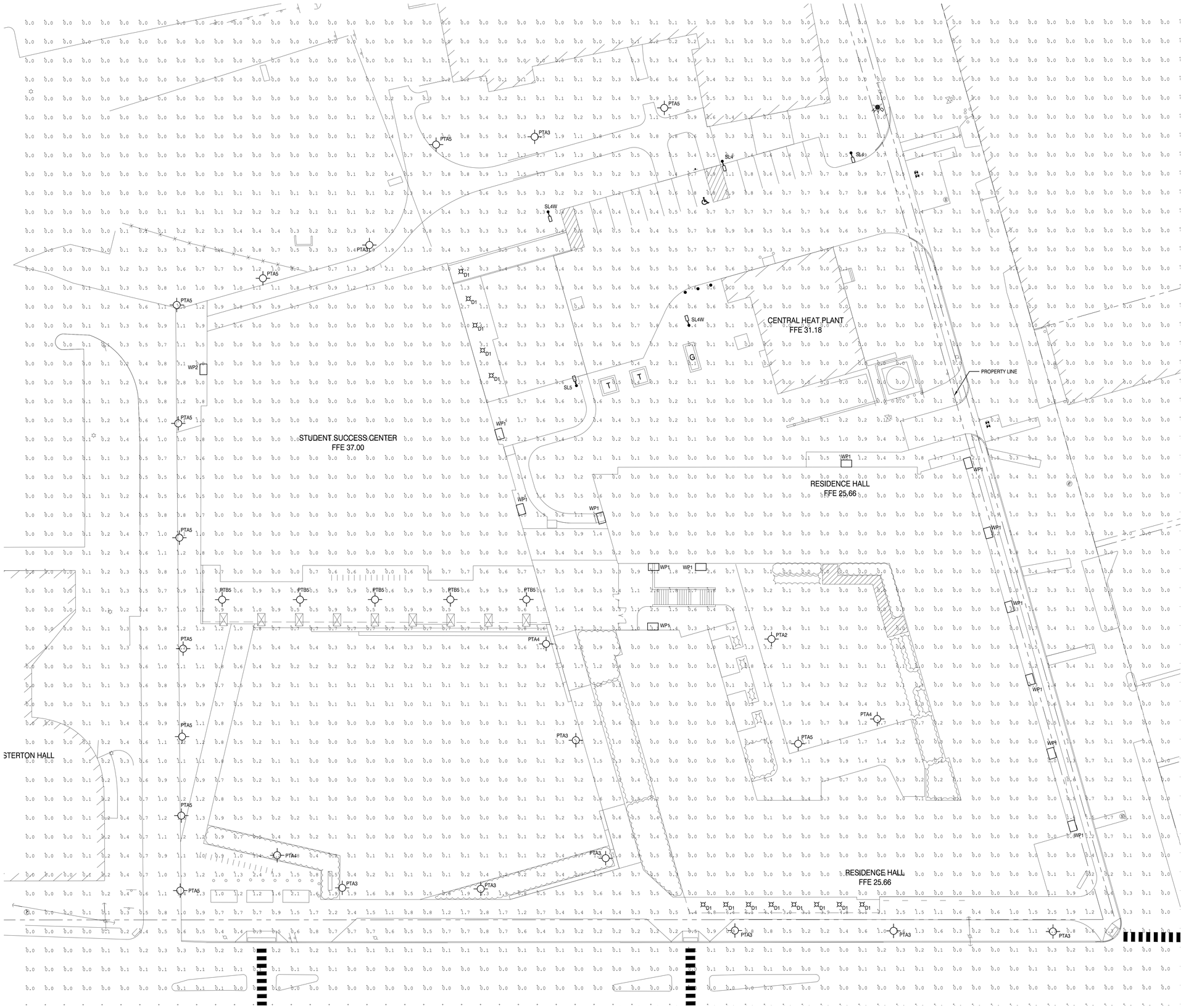
0 10' 20' 40' 30'
SCALE: 1" = 20'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	WRH		
JOB CAPTAIN:	SDL		ES103
DRAWN BY:	RBB		
SMRT FILE:	ES103-19206	SHEET No.	

© COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

30x42



REV	DESCRIPTION	DATE
0	ISSUED FOR SD AND PERMITTING	3-6-20

ISSUED FOR SD AND PERMITTING
3-6-20

CURRENT ISSUE STATUS:

TRUE NORTH:

STATE OF MAINE
WILLIAM R. HAGE JR.
No. 7860
LICENSED PROFESSIONAL ENGINEER

SMRT
Architecture • Engineering • Planning
SMRT Architects and Engineers
144 Fore Street/P.O. Box 618
Portland, Maine 04104
1.877.700.7678
www.smrtinc.com

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PHOTOMETRIC PLAN

SHEET TITLE:

0 10' 20' 40' 30'

SCALE: 1" = 20'

PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	WRH		
JOB CAPTAIN:	SDL	SHEET No.	ES104
DRAWN BY:	RBB		
SMRT FILE:	ES104-19206		

©COPYRIGHT 2020 SMRT INC

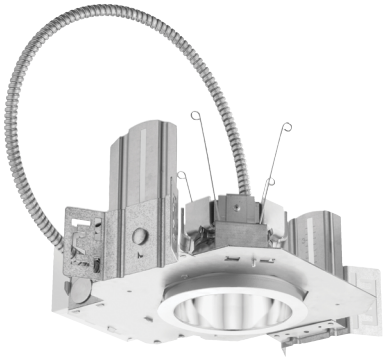
NOT FOR CONSTRUCTION

LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

LDN4

4" OPEN
Non-IC
New Construction Downlight



FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.

CONSTRUCTION — Galvanized steel mounting/plaster frame; galvanized steel junction box with bottom-hinged access covers and spring latches. Reflectors are retained by torsion springs.

Vertically adjustable mounting brackets with commercial bar hangers provide 3-3/4" total adjustment.

Two combination 1/2"-3/4" and four 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out). No. 12 AWG conductors, rated for 90°C.

Accommodates 12"-24" joist spacing.

Passive cooling thermal management for 25°C standard; high ambient (40°C) option available. Light engine and drivers are accessible from above or below ceiling.

Max ceiling thickness 1-1/2".

OPTICS — LEDs are binned to a 3-step SDCM; 80 CRI minimum. 90 CRI optional.

LED light source concealed with diffusing optical lens.

General illumination lighting with 1.0 S/MH and 55° cutoff to source and source image.

Self-flanged anodized reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black painted reflectors.

ELECTRICAL — Multi-volt (120-277V, 50/60Hz) 0-10V dimming drivers mounted to junction box, 10% or 1% minimum dimming level available.

0-10V dimming fixture requires two (2) additional low-voltage wires to be pulled.

70% lumen maintenance at 60,000 hours.

LISTINGS — Certified to US and Canadian safety standards. Wet location standard (covered ceiling). IP55 rated. ENERGY STAR® certified product.

WARRANTY — 5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

battery pack

A+ Capable options indicated by this color background.

ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Example: LDN4 35/15 LO4AR LSS MVOLT EZ1

LDN4													
Series		**Color temperature**		**Lumens**[1]		**Aperture/Trim Color**				**Finish**		**Voltage**	
LDN4	4" round	27/	2700K	05	500 lumens	LO4	Downlight	AR	Clear	LSS	Semi-specular	MVOLT	Multi-volt
		30/	3000K	07	750 lumens	LW4	Wallwash	WR[2]	White	LD	Matte diffuse	120	120V
		35/	3500K	10	1000 lumens			BR[2]	Black	LS	Specular	277	277V
		40/	4000K	15	1500 lumens							347[3]	347V
		50/	5000K	20	2000 lumens								
				25	2500 lumens								
				30	3000 lumens								
				40	4000 lumens								

Driver		**Options**			
GZ10	0-10V driver dims to 10%	SF[4]	Single fuse	N80[8]	nLight™ Lumen Compensation
GZ1	0-10V driver dims to 1%	TRW[6]	White painted flange	NPS80EZ[7,10]	nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1).
EZ10	0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 10%	TRBL[6]	Black painted flange	NPS80EZER[7,10]	nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1). ER controls fixtures on emergency circuit.
EZ1	0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 1%	EL[5]	Emergency battery pack with integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS	HAO[11]	High ambient option (40°C)
		ELR[5]	Emergency battery pack with remote test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS	CP[12]	Chicago Plenum
		ELSD[5]	Emergency battery pack with self-diagnostics, 10W Constant Power, integral test switch. Not Certified in CA Title 20 MAEDBS	RRL__	RELOC®-ready luminaire connectors enable a simple and consistent factory installed option across all ABL luminaire brands. Refer to RRL for complete nomenclature. Available only in RRLA, RRLB, RRLAE, and RRLC12S.
		ELRSD[5]	Emergency battery pack with self-diagnostics, 10W Constant Power, remote test switch. Not Certified in CA Title 20 MAEDBS	NLTAIR2[8,9]	nLight® Air enabled
		E10WCP[5]	Emergency battery pack, 10W Constant Power with integral test switch. Certified in CA Title 20 MAEDBS	NLTAIRER2[9,10]	nLight® AIR Dimming Pack Wireless Controls. Controls fixtures on emergency circuit, not available with battery pack options
		E10WCPR[5]	Emergency battery pack, 10W Constant Power with remote test switch. Certified in CA Title 20 MAEDBS	USPOM	US point of manufacture
		NPP16D[7,10]	nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1).	90CRI	High CRI (90+)
		NPP16DER[7,10]	nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1). ER controls fixtures on emergency circuit.		

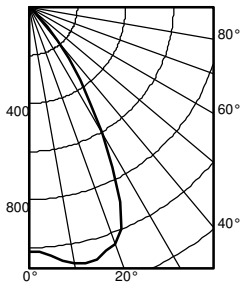
Notes

1 Overall height varies based on lumen package; refer to dimensional chart on page 3.
2 Not available with finishes.
3 Not available with emergency options.
4 Must specify voltage 120V or 277V.
5 12.5" of plenum depth or top access required for battery pack maintenance.
6 Available with clear (AR) reflector only.
7 Specify voltage. ER for use with generator supply EM power. Will require an emergency hot feed and normal hot feed.
8 Fixture begins at 80% light level. Must be specified with NPS80EZ or NPS80EZ ER. Only available with EZ10 and EZ1 drivers.
9 Not available with CP, NPS80EZ, NPS80EZER, NPP16D, NPP16DER or N80 options.
10 NLTAIR2 and NLTAIRER2 not recommended for metal ceiling installations.
11 Fixture height is 5-11/16" for all lumen packages with HAO.
12 Must specify voltage for 3000lm. Not available with emergency battery pack option.

PHOTOMETRY

Distribution Curve	Distribution Data	Output Data	Coefficient of Utilization	Illuminance Data at 30″ Above Floor for a Single Luminaire

LDN4 35/10 LO4AR, input watts: 10.58, delivered lumens: 1085.2, LM/W = 102.57, spacing criterion at 0= 1.04, test no. ISF 30712P229.



	Ave	Lumens
0	1017	
5	1039	101
15	1084	304
25	895	395
35	369	232
45	52	51
55	1	2
65	1	1
75	0	0
85	0	0
90	0	

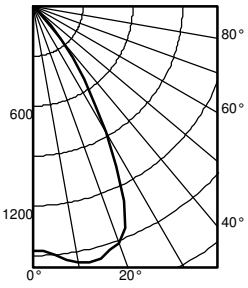
Zone	Lumens	% Lamp
0° - 30°	799.7	73.7
0° - 40°	1031.5	95.1
0° - 60°	1084.7	100.0
0° - 90°	1085.2	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	1085.2	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	33.6	5.8	16.8	8.9	3.4
10.0	18.1	7.9	9.0	12.2	1.8
12.0	11.3	10.0	5.6	15.4	1.1
14.0	7.7	12.1	3.8	18.6	0.8
16.0	5.6	14.2	2.8	21.9	0.6

LDN4 35/15 LO4AR, input watts: 17.5, delivered lumens: 1570.1, LM/W = 89.72, spacing criterion at 0= 1.04, test no. ISF 30712P234.



	Ave	Lumens
0	1472	
5	1503	146
15	1569	440
25	1295	571
35	534	335
45	75	74
55	1	3
65	1	1
75	0	0
85	0	0
90	0	

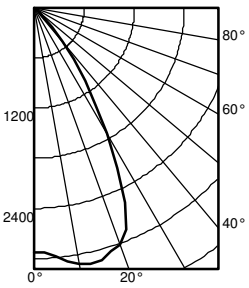
Zone	Lumens	% Lamp
0° - 30°	1157.1	73.7
0° - 40°	1492.5	95.1
0° - 60°	1569.4	100.0
0° - 90°	1570.1	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	1570.1	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	48.7	5.8	24.3	8.9	4.9
10.0	26.2	7.9	13.1	12.2	2.6
12.0	16.3	10.0	8.2	15.4	1.6
14.0	11.1	12.1	5.6	18.6	1.1
16.0	8.1	14.2	4.0	21.9	0.8

LDN4 35/30 LO4AR, input watts: 32.1, delivered lumens: 3122.6, LM/W = 88.52, spacing criterion at 0= 1.04, test no. ISF 30712P249.



	Ave	Lumens
0	2927	
5	2989	290
15	3120	875
25	2575	1136
35	1062	667
45	149	148
55	3	5
65	2	1
75	0	0
85	0	0
90	0	

Zone	Lumens	% Lamp
0° - 30°	2301.2	73.7
0° - 40°	2968.2	95.1
0° - 60°	3121.1	100.0
0° - 90°	3122.6	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	3122.6	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	96.8	5.8	48.4	8.9	9.7
10.0	52.0	7.9	26.0	12.2	5.2
12.0	32.4	10.0	16.2	15.4	3.2
14.0	22.1	12.1	11.1	18.6	2.2
16.0	16.1	14.2	8.0	21.9	1.6

Accessories: *Order as separate catalog numbers (shipped separately).*

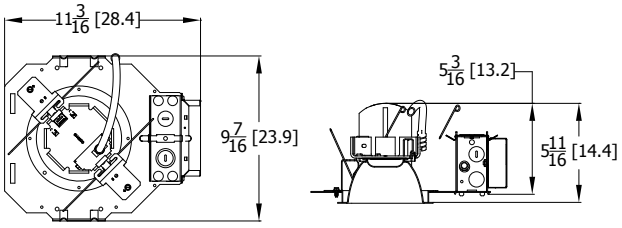
SCA4	Sloped ceiling adapter. Degree of slope must be specified (5D, 10D, 15D, 20D, 25D, 30D). Refer to TECH-190.

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

LDN4

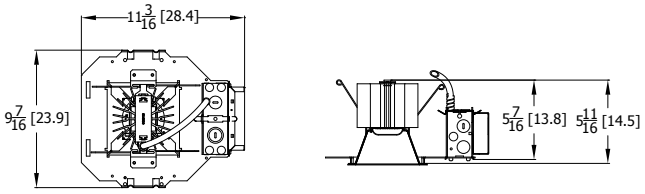
* All dimensions are inches (centimeters) unless otherwise noted.

LDN4 500-1500 LUMEN



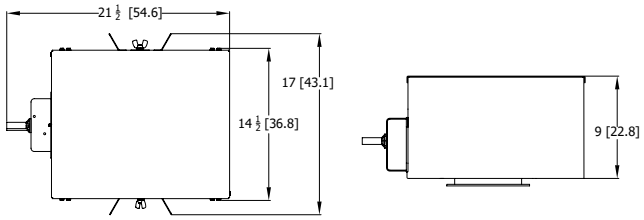
Aperture: 4-5/16 (11)
Ceiling Opening: 5-1/8 (13)
Overlap trim: 5-7/16 (13.8)

LDN4 2000-3000 LUMEN



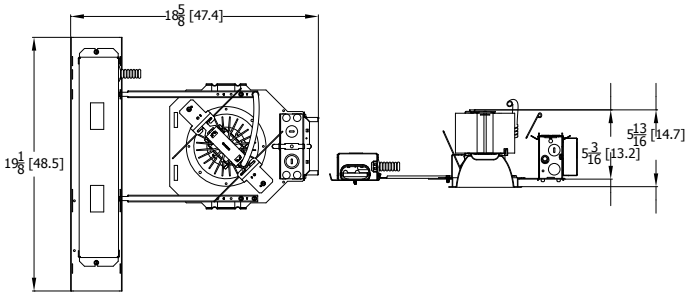
Aperture: 4-5/16 (11) Square
Ceiling Opening: 5-1/8 (13) Square
Overlap trim: 5-7/16 (13.8) Square

LDN4 CP



Aperture: 4-5/16? (11)
Ceiling Opening: 5-1/8? (13)
Overlap trim: 5-7/16? (13.8)

LDN4 EL-ELR



Aperture: 4-5/16 (11)
Ceiling Opening: 5-1/8 (13)
Overlap trim: 5-7/16 (13.8)

LDN4			
Nominal	**Lumens**	**Wattage**	**Lm/W**
500	523.6	5.74	91.2
750	751.1	8.6	87.3
1000	1045	10.58	98.8
1500	1512	17.5	86.4
2000	2006	22.12	90.7
2500	2551	26.1	97.7
3000	3007	32.1	93.7
4000	4212	43	98.0

LUMEN OUTPUT MULTIPLIERS - CCT					
	2700K	**3000K**	**3500K**	**4000K**	**5000K**
80CRI	0.950	0.966	1.000	1.025	1.101

HOW TO ESTIMATE DELIVERED LUMENS IN EMERGENCY MODE

Use the formula below to estimate the delivered lumens in emergency mode

Delivered Lumens = 1.25 x P x LPW

P = Ouput power of emergency driver. P = 10W for PS1055CP

LPW = Lumen per watt rating of the luminaire. This information is available on the ABL luminaire spec sheet.
The LPW rating is also available at Designlight Consortium.

LUMEN OUTPUT MULTIPLIERS - FINISH			
	Clear (AR)	**White (WR)**	**Black (BR)**
Specular (LS)	1.0	N/A	N/A
Semi-specular (LSS)	0.950	N/A	N/A
Matte diffuse (LD)	0.85	N/A	N/A
Painted	N/A	0.87	0.73

Notes

- Tested in accordance with IESNA LM-79-08.
- Tested to current IES and NEMA standards under stabilized laboratory conditions.
- CRI: 80 typical.

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

ADDITIONAL DATA

COMPATIBLE 0-10V WALL-MOUNT DIMMERS		
MANUFACTURER	PART NO.	POWER BOOSTER AVAILABLE
Lutron®	Diva® DVTV	
	Diva® DVSCTV	
	Nova T® NTFTV	
	Nova® NFTV	
Leviton®	AWSMT-7DW	CN100
	AWSMG-7DW	PE300
	AMRMG-7DW	
	Leviton Centura Fluorescent Control System	
	IllumaTech® IP7 Series	
Synergy®	ISD BC	RDMFC
	SLD LPCS	
	Digital Equinox (DEQ BC)	
Douglas Lighting Controls	WPC-5721	
Entertainment Technology	Tap Glide TG600FAM120 (120V)	
	Tap Glide Heatsink TGH1500FAM120 (120V)	
	Oasis 0A2000FAMU	
Honeywell	EL7315A1019	EL7305A1010 (optional)
	EL7315A1009	
HUNT Dimming	Preset slide: PS-010-IV and PS-010-WH	
	Preset slide: PS-010-3W-IV and PS-010-3W-WH	
	Preset slide, controls FD-010: PS-IFC-010-IV and PS-IFC-010-WH-120/277V	
	Preset slide, controls FD-010: PS-IFC-010-3W-IV and PS-IFC-010-3W-WH-120/277V	
	Remote mounted unit: FD-010	
Lehigh Electronic Products	Solitaire	PBX
PDM Electrical Products	WPC-5721	
Starfield Controls	TR61 with DALI interface port	RT03 DALInet Router
WattStopper®	LS-4 used with LCD-101 and LCD-103	

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

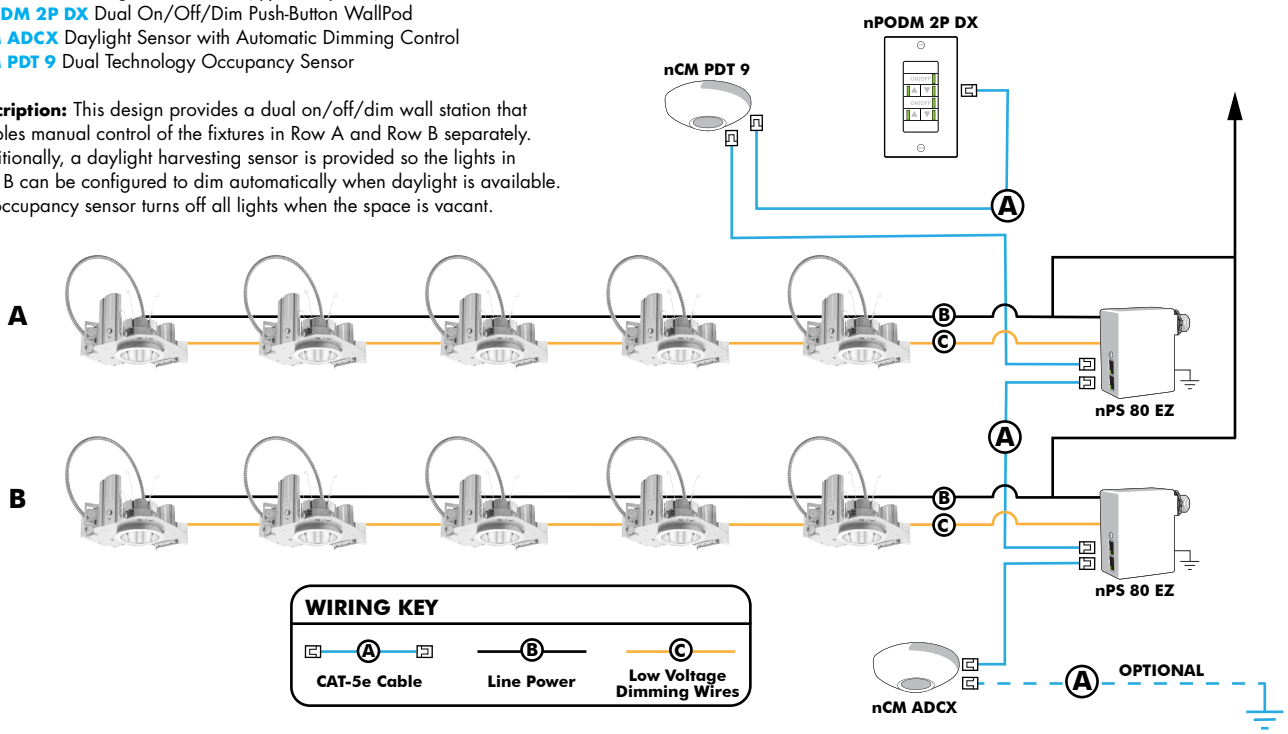
*See ordering tree for details

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

EXAMPLE
Group Fixture Control*
*Appiication diagram applies for fixtures with eldoLED drivers only.

nPS 80 EZ Dimming/Control Pack (qty: 2 required)
nPODM 2P DX Dual On/Off/Dim Push-Button WallPod
nCM ADCX Daylight Sensor with Automatic Dimming Control
nCM PDT 9 Dual Technology Occupancy Sensor

Description: This design provides a dual on/off/dim wall station that enables manual control of the fixtures in Row A and Row B separately. Additionally, a daylight harvesting sensor is provided so the lights in Row B can be configured to dim automatically when daylight is available. An occupancy sensor turns off all lights when the space is vacant.



Choose Wall Controls
nLight offers multiple styles of wall controls - each with varying features and user experience.



Push-Button Wallpod
Traditional tactile buttons and LED user feedback



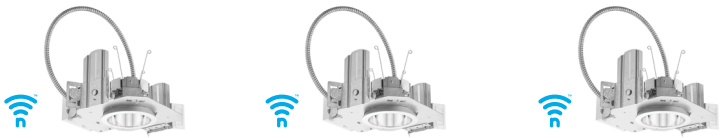
Graphic Wallpod
Full color touch screen provides a sophisticated look and feel

nLight® Wired Controls Accessories:			
Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlight for complete listing of nLight controls.			
WallPod Stations	**Model number**	**Occupancy sensors**	**Model Number**
On/Off	nPODM (Color)	Small motion 360º, ceiling (PIR/dual Tech)	nCM 9 / nCM PDT 9
On/Off & Raise/Lower	nPOD DX (Color)	Large motion 360º, ceiling (PIR/dual tech)	nCM 10 / nCM PDT 10
Graphic Touchscreen	nPOD GFX (Color)	Wide View (PIR/dual tech)	nWV 16 / nWV PDT 16
Photocell controls	**Model Number**	Wall Switch w/ Raise/Lower (PIR/dual tech)	nWSX LV DX / nWSX PDT LV DX
Dimming	nCM ADCX	**Cat-5 cables (plenum rated)**	**Model Number**
		10', CAT5 10FT	CAT5 10FT J1
		15, CAT5 15FT	CAT5 15FT J1

nLight® AIR Control Accessories: *Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlightair.*	
Wall switches	**Model number**
On/Off single pole	rPODB [color]
On/Off two pole	rPODB 2P [color]
On/Off & raise/lower single pole	rPODB DX [color]
On/Off & raise/lower two pole	rPODB 2P DX [color]
On/Off & raise/lower single pole	rPODBZ DX WH[1]

Notes
1 Can only be ordered with the RES7Z zone control sensor version.

nLight AIR
nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication is cost prohibitive. The integrated nLight AIR rPP20 Power Pack is part of each Lithonia LDN Luminaire. These individually addressable controls offer the ultimate in flexibility during initial setup and for space repurposing.



Simple as 1,2,3

1. Install the nLight® AIR fixtures with embedded smart sensor
2. Install the wireless battery-powered wall switch
3. With CLAIRITY app, pair the fixtures with the wall switch and if desired, customize the sensor settings for the desired outcome



© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

JOB _____ TYPE _____

NOTES _____ APPROVALS _____

FEATURES

- 20" size in post top, pole and wall mount
- High performance optics up to 17,000 delivered lumens
- Elegant form factor
- Diffusion lens option
- SiteSync™ wireless control options

CERTIFICATIONS

c UL us LISTED

ida DARK SKY APPROVED 2016

DLC OPEL LISTED

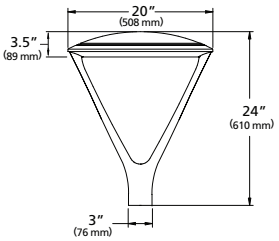
3000K and warmer CCTs only

SPECIFICATIONS



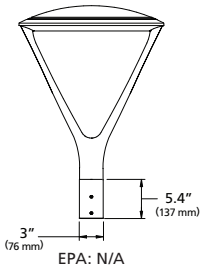
Weight: 35 lbs

FM33



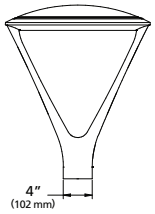
EPA: .512

PT23



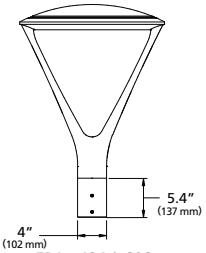
EPA: N/A

FM44



EPA: .534

PT24 / PT34



EPA: .424 / .608

ORDERING CODE

Series
UR20 Ouro

LED Engine
No Lens or Clear Lens
- **24L-25** 3,000 lm
- **24L-65** 7,000 lm
- **56L-75** 10,000 lm
- **56L-110** 15,000 lm
- **56L-140** 17,000 lm

HDL - High Diffusion Lens
- **28L-30** 3,000 lm
- **28L-70** 7,000 lm
- **68L-80** 9,000 lm
- **68L-115** 13,000 lm
- **68L-150** 15,000 lm

CCT
- **AM** Amber
- **3K7** 3000K, 70 CRI
- **3K8** 3000K, 80 CRI
- **3K9** 3000K, 90 CRI
- **4K7** 4000K, 70 CRI
- **4K8** 4000K, 80 CRI
- **5K7** 5000K, 70 CRI

Distribution
No Lens or Clear Lens
- **FR** Type 1/Front Row
- **2** Type II
- **3** Type III
- **4** Type IV
- **4W** Type IV Wide
- **5QM** Type V Square Medium
- **5QN** Type V Square Narrow
- **5R** Type V Rectangular
- **5W** Type V Wide (Round)

HDL - High Diffusion Lens
- **3** Type III/Asymmetric
- **5W** Type V/Symmetric

Rotation
Blank for no rotation
- **L**[1] Optic rotation left
- **R**[1] Optic rotation right

Voltage
- **UNV** 120-277V
- **347** 347V
- **480** 480V
- **DALI** 120-277V†

†Consult factory

Mounting
- **FM33** Flush mt 3.0" OD pole, 3" fixture base
- **FM44** Flush mt 3.6" to 4.0" OD pole, 4" fixture base
- **PT23** 3" Post Top mount for 2 3/8" OD Tenon
- **PT24** 4" Post Top mount for 2 3/8" OD Tenon
- **PT34** 4" Post Top mount for 2 7/8" OD Tenon

Fixture Finish
- **BL** Black
- **DB** Dark Bronze
- **LG** Light Gray
- **GT** Graphite
- **PS** Platinum Silver
- **TT** Titanium
- **WH** White
- **CC** Custom Color†

†Consult factory

Control Options
- **7PR-TL** 7 pin PCR with twist lock photocontrol
- **7PR-SC** 7 pin PCR with short-ing cap
- **7PR** 7 pin PCR, wireless control enabled
- **AD-01**[2] AstroDIM: 50% output at midnight
- **AD-02**[2] AstroDIM: 50% output midnight to 4 AM
- **AD-03**[2] AstroDIM: 50% output 10PM
- **AD-04**[2] AstroDIM: 50% output 10PM to 4AM
- **NXWE** NX Wireless Enabled
- **SWP**[2,3,4] SiteSync Pre commission
- **SWPM-40F**[2,3,4,5] SiteSync with Sensor 9' to 40' MH
- **WSP-40F-1**[2,5] Dimming Occ. Sensor for up to 40' MH, 120/277/347V
- **WSP-40F-2**[2,5] Dimming Occ. Sensor for up to 40' MH, 208/240V
- **WSP-40F-3**[2,5] Dimming Occ. Sensor for up to 40' MH, 480V
- **NXSPW14F**[2,5] NX Wireless, PIR Sensor, 14'
- **NXSPW30F**[2,5] NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'.
- **NXSP14F**[2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'
- **NXSP30F**[2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'

Options
- **BC**[6] Back-light Control
- **SF** Single Fuse
- **DF** Double Fuse
- **TB** Terminal Block
- **CLR**[5] Clear Lens
- **TL** Tamper proof latch

Control Accessories^
- **SW7PR**[2,3] SiteSync with 7 pin PCR
- **SWUSB** SiteSync Software on USB
- **SWTAB** SiteSync Windows® Tablet
- **SWBRG** SiteSync Wireless Bridge Node
- **WIR-RME-L** wiSCAPE External Fixture Module
- **SCL-R** Occ. Sensor for Round Pole (up to 16' MH)
- **SCL -S** Occ. Sensor for Square Pole (up to 16' MH)
- **SCH-R** Occ. Sensor for Round Pole (16' to 30' MH)
- **SCH-S** Occ. Sensor for Square Pole (16' to 30' MH)
- **NXOFM-1R1D-UNV** NX 7-pin Module

^ Please refer to page 8 for ordering details

1 Not available with 5QM, 5QN, and 5W distributions.
2 Not available with other sensor or wireless control options.
3 Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.
4 Not available with 347V and 480V
5 24L & 56L only.
6 Not available with Type V distributions or HDL option.

Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	3,000	25	No Lens	FR	2932	0	0	1	115	3119	0	0	1	123	3098	0	0	1	124
				FR-BC	1994	0	0	0	78	2121	0	0	0	83	2107	0	0	0	83
				2	2943	1	0	1	116	3099	1	0	1	122	3110	1	0	1	124
				2-BC	1724	0	0	1	68	1834	0	0	1	72	1822	0	0	1	72
				3	3007	1	0	1	118	3200	1	0	1	126	3178	1	0	1	127
				3-BC	1830	0	0	1	73	1947	0	0	1	78	1934	0	0	1	77
				4	3056	0	0	1	120	3251	0	0	1	128	3229	0	0	1	129
				4-BC	2235	0	0	1	88	2377	0	0	1	93	2362	0	0	1	93
				4W	3078	1	0	2	121	3276	1	0	2	129	3253	1	0	2	130
				4W-BC	1855	0	0	1	73	1975	0	0	1	78	1961	0	0	1	77
				5QM	2931	2	0	1	115	3119	2	0	1	123	3098	2	0	1	124
				5QN	2694	2	0	1	106	2866	2	0	1	113	2847	2	0	1	114
				5R	3054	2	0	2	120	3250	2	0	2	128	3228	2	0	2	129
				5W	3043	2	0	1	120	3237	2	0	1	127	3216	2	0	1	129
			Clear Lens	FR	2773	0	0	1	109	2951	0	0	1	116	2930	0	0	1	117
				FR-BC	1886	0	0	1	74	2007	0	0	1	79	1993	0	0	1	78
				2	2784	1	0	1	109	2963	1	0	1	116	2942	1	0	1	118
				2-BC	1631	0	0	1	64	1736	0	0	1	68	1723	0	0	1	67
				3	2845	1	0	1	111	3028	1	0	1	119	3007	1	0	1	120
				3BC	1806	0	0	1	72	1922	0	0	1	77	1909	0	0	1	76
				4	2891	0	0	1	113	3076	0	0	1	120	3055	0	0	1	122
				4-BC	2114	0	0	1	83	2250	0	0	1	88	2234	0	0	1	88
				4W	2912	1	0	1	114	3099	1	0	2	121	3077	1	0	2	123
				4W-BC	1755	0	0	1	69	1868	0	0	1	73	1855	0	0	1	5
				5QM	2773	1	0	1	109	2950	2	0	1	116	2931	2	0	1	117
				5QN	2549	1	0	0	100	2712	2	0	1	106	2693	2	0	1	108
				5R	2890	2	0	2	113	3075	2	0	2	120	3054	2	0	2	122
				5W	2879	2	0	1	113	3064	2	0	1	120	3042	2	0	1	122
28L		30	HDL Lens	3	2816	1	0	1	96	2997	1	0	1	102	3020	1	0	1	101
				5W	2917	1	0	1	100	3105	1	0	1	106	3084	1	0	1	103

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	7,000	65	No Lens	FR	6754	1	0	1	104	7187	1	0	1	111	7138	1	0	1	110
				FR-BC	4392	0	0	1	68	4673	0	0	1	72	4641	0	0	1	71
				2	6571	1	0	2	101	6992	1	0	2	108	6944	1	0	2	107
				2-BC	3799	0	0	1	58	4042	0	0	1	62	4014	0	0	1	62
				3	6625	1	0	2	102	7051	1	0	2	108	7002	1	0	2	108
				3BC	4032	0	0	1	62	4291	0	0	1	66	4261	0	0	1	66
				4	6788	1	0	2	104	7223	1	0	2	111	7174	1	0	2	110
				4-BC	4924	0	0	2	76	5239	0	0	2	81	5203	0	0	2	80
				4W	6699	1	0	2	103	7128	1	0	3	110	7079	1	0	3	109
				4W-BC	4088	0	0	2	63	4350	0	0	2	67	4321	0	0	2	66
				5QM	7025	3	0	1	108	7477	3	0	1	115	7425	3	0	1	114
				5QN	6964	3	0	1	107	7410	3	0	1	114	7323	3	0	1	113
				5R	7038	3	0	3	108	7489	3	0	3	115	7437	3	0	3	114
				5W	7011	3	0	2	108	7460	3	0	2	115	7409	3	0	2	114
			Clear Lens	FR	6432	1	0	1	97	6844	1	0	1	104	6798	1	0	1	105
				FR-BC	4182	0	0	1	63	4450	0	0	1	67	4420	0	0	1	67
				2	6258	1	0	1	95	6659	1	0	2	101	6613	1	0	2	102
				2-BC	3617	0	0	1	55	3849	0	0	1	58	3823	0	0	1	58
				3	6310	1	0	2	96	6714	1	0	2	102	6668	1	0	2	103
				3-BC	3599	0	0	1	55	3829	0	0	1	59	3803	0	0	1	59
				4	6465	1	0	2	98	6879	1	0	2	104	6832	1	0	2	105
				4-BC	4688	0	0	2	71	4990	0	0	2	76	4955	0	0	2	75
				4W	6380	1	0	2	97	6789	1	0	2	103	6742	1	0	2	104
				4W-BC	3893	0	0	2	59	4143	0	0	2	63	4115	0	0	2	62
				5QM	6691	3	0	1	101	7119	3	0	1	108	7070	3	0	1	109
				5QN	6632	2	0	1	100	7058	3	0	1	107	7009	3	0	1	108
				5R	6702	3	0	3	102	7131	3	0	3	108	7082	3	0	3	109
				5W	6676	3	0	2	101	7104	3	0	2	108	7055	3	0	2	109
28L		70	HDL Lens	3	6047	2	0	2	92	6047	2	0	2	92	6236	2	0	2	89
				5W	6221	2	0	1	94	6619	2	0	1	100	6525	2	0	1	93

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	10,000	75	No Lens	FR	9315	1	0	1	124	9913	1	0	1	132	9845	1	0	1	131
				FR-BC	6058	0	0	1	81	6445	0	0	1	86	6402	0	0	1	85
				2	9063	2	0	2	120	9644	2	0	2	128	9578	2	0	2	128
				2-BC	5239	0	0	1	70	5575	0	0	1	74	5536	0	0	1	74
				3	9139	2	0	2	125	9725	2	0	2	134	9657	2	0	2	129
				3-BC	5561	0	0	2	74	5877	0	0	2	78	5561	0	0	2	74
				4	9362	1	0	2	124	9362	1	0	2	124	9876	1	0	2	132
				4-BC	6791	0	0	2	90	7226	0	0	2	96	7168	0	0	2	96
				4W	9240	2	0	3	123	9832	2	0	3	131	9765	2	0	3	130
				4W-BC	5639	0	0	2	75	6001	0	0	2	80	5959	0	0	2	79
				5QM	9691	3	0	1	129	10312	3	0	1	137	10240	3	0	1	137
				5QN	9606	3	0	1	128	10222	3	0	1	136	10151	3	0	1	135
				5R	9706	3	0	3	129	10328	3	0	3	137	10258	3	0	3	137
				5W	9669	4	0	2	129	10289	4	0	2	137	10217	4	0	2	136
			Clear Lens	FR	8871	1	0	1	117	9760	1	0	1	129	9374	1	0	1	125
				FR-BC	5769	0	0	1	76	6138	0	0	1	81	6096	0	0	1	81
				2	8631	2	0	2	114	9183	2	0	2	121	9121	2	0	2	122
				2-BC	4989	0	0	1	67	5309	0	0	1	71	5272	0	0	1	62
				3	8703	1	0	2	115	9260	2	0	2	122	9197	2	0	2	123
				3-BC	4964	1	0	1	66	5282	1	0	2	70	5245	1	0	2	69
				4	8916	1	0	2	118	9487	1	0	2	125	9423	1	0	2	126
				4-BC	6467	0	0	2	85	6881	0	0	2	91	6834	0	0	2	90
				4W	8799	2	0	3	116	9363	2	0	3	124	9300	2	0	3	124
				4W-BC	5370	0	0	2	72	5714	1	0	2	76	5675	0	0	2	76
				5QM	9228	3	0	1	122	9820	3	0	1	130	9752	3	0	1	130
				5QN	9147	3	0	1	121	9734	3	0	1	129	9668	3	0	1	129
				5R	9244	3	0	3	122	9836	3	0	3	130	9769	3	0	3	130
				5W	9208	4	0	2	122	9798	4	0	2	130	9732	4	0	2	130
68L		80	HD Lens	3	7853	2	0	2	99	8356	2	0	2	106	8299	2	0	2	104
				5W	8080	2	0	2	102	8684	3	0	2	110	8684	3	0	2	109

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	15,000	110	No Lens	FR	13533	1	0	1	125	14399	1	0	2	133	14301	1	0	2	130
				FR-BC	8799	1	0	1	81	9363	1	0	1	86	9300	1	0	1	85
				2	13165	2	0	2	121	14009	2	0	2	129	13913	2	0	2	126
				2-BC	7611	1	0	2	70	8098	1	0	2	75	8042	1	0	2	74
				3	13275	2	0	3	122	14126	2	0	3	130	14030	2	0	3	128
				3-BC	8079	1	0	2	73	8596	1	0	2	78	8538	1	0	2	78
				4	13601	1	0	3	125	14472	1	0	3	133	14373	1	0	3	131
				4-BC	9865	1	0	2	91	10497	1	0	3	97	10425	1	0	3	96
				4W	13422	2	0	3	124	14283	2	0	3	132	14185	2	0	3	129
				4W-BC	8191	1	0	3	75	8715	1	0	3	80	8656	1	0	3	80
				5QM	14077	4	0	2	130	14979	4	0	2	138	14876	4	0	2	135
				5QN	13953	4	0	1	129	14848	4	0	1	137	14747	4	0	1	134
				5R	14100	4	0	4	130	15004	4	0	4	138	14901	4	0	4	135
				5W	14046	4	0	2	129	14946	4	0	2	138	14844	4	0	3	135
			Clear Lens	FR	12803	1	0	1	118	13624	1	0	1	126	13531	1	0	1	123
				FR-BC	9298	1	0	1	86	8325	1	0	1	77	8798	1	0	1	81
				2	12455	2	0	2	115	13254	2	0	2	123	13164	2	0	2	120
				2-BC	7200	1	0	1	67	7661	1	0	2	71	7610	1	0	2	70
				3	12560	2	0	3	116	13365	2	0	3	124	13273	2	0	3	121
				3-BC	7163	1	0	2	65	7622	1	0	2	69	7570	1	0	2	69
				4	12868	1	0	3	119	13692	1	0	3	127	13599	1	0	3	124
				4-BC	9333	1	0	2	86	9931	1	0	2	92	9864	1	0	2	90
				4W	12699	2	0	3	117	13513	2	0	3	125	13420	2	0	3	122
				4W-BC	7750	1	0	3	72	8246	1	0	3	76	8190	1	0	3	76
				5QM	13318	3	0	2	123	14172	4	0	2	131	14075	4	0	2	128
				5QN	13202	3	0	1	122	14048	4	0	1	130	13951	4	0	1	127
				5R	13341	4	0	4	123	14195	4	0	4	131	14099	4	0	4	128
				5W	13290	4	0	2	123	14141	4	0	2	131	14044	4	0	2	128
68L		115	HD Lens	3	11577	2	0	2	102	12320	2	0	2	109	12236	2	0	2	106
				5W	11912	3	0	2	105	12676	3	0	2	112	12588	3	0	2	109

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	17,000	140	No Lens	FR	15323	2	0	2	111	16306	2	0	2	118	16194	2	0	2	116
				FR-BC	9964	1	0	1	72	10603	1	0	1	77	10530	1	0	1	76
				2	14897	2	0	2	108	15852	2	0	2	115	15743	2	0	2	112
				2-BC	8618	1	0	2	63	9169	1	0	2	67	9107	1	0	2	66
				3	15032	2	0	3	109	15996	2	0	3	116	15886	2	0	3	113
				3-BC	9147	1	0	2	65	9733	1	0	2	70	9667	1	0	2	69
				4	15400	1	0	3	112	16387	1	0	4	119	16275	1	0	4	116
				4-BC	11170	1	0	3	81	11886	1	0	3	86	11804	1	0	3	86
				4W	15198	2	0	4	110	16173	3	0	4	117	16062	3	0	4	115
				4W-BC	9275	1	0	3	67	9869	1	0	3	72	9801	1	0	3	71
				5QM	15939	4	0	2	116	16962	4	0	2	123	16845	4	0	2	120
				5QN	15801	4	0	1	115	16813	4	0	1	122	16698	4	0	1	119
				5R	15966	4	0	4	116	16990	4	0	4	123	16874	4	0	4	121
				5W	15906	4	0	3	115	16925	4	0	3	123	16808	4	0	3	120
			Clear Lens	FR	14541	1	0	2	105	15473	2	0	2	111	15367	2	0	2	110
				FR-BC	9456	1	0	1	68	10061	1	0	1	72	9993	1	0	1	72
				2	14146	2	0	2	102	15053	2	0	2	108	14950	2	0	2	107
				2-BC	8178	1	0	2	59	8702	1	0	2	63	8642	1	0	2	62
				3	14265	2	0	3	103	15179	2	0	3	109	15076	2	0	3	108
				3BC	8136	1	0	2	58	8657	1	0	2	62	8598	1	0	2	61
				4	14614	1	0	3	105	15551	1	0	3	112	15445	1	0	3	110
				4-BC	10600	1	0	3	76	11279	1	0	3	81	11203	1	0	3	81
				4W	14423	2	0	3	104	15347	2	0	4	111	15243	2	0	4	109
				4W-BC	8802	1	0	3	63	9365	1	0	3	67	9302	1	0	3	67
				5QM	15126	4	0	2	109	16095	4	0	2	116	15985	4	0	2	114
				5QN	14994	4	0	1	108	15955	4	0	1	115	15846	4	0	1	113
				5R	15152	4	0	4	109	16122	4	0	4	116	16012	4	0	4	114
				5W	15094	4	0	3	109	16061	4	0	3	116	15951	4	0	3	114
68L		115	HD Lens	3	13240	2	0	2	89	13992	3	0	3	95	13897	3	0	3	93
				5W	13623	3	0	2	92	14396	3	0	2	97	14298	3	0	2	95

Electrical Characteristics												Dimming				
System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out		Absolute voltage	
		VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
25	298mA	120-480	50/60	0.21	0.12	0.10	0.09	0.07	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
30	298mA			0.25	0.14	0.13	0.11	0.09	0.06							
65	800mA			0.54	0.31	0.27	0.23	0.19	0.14							
70	700mA			0.58	0.34	0.29	0.25	0.20	0.15							
75	420mA			0.63	0.36	0.31	0.27	0.22	0.16							
80	350mA			0.67	0.38	0.33	0.29	0.23	0.17							
110	600mA			0.92	0.53	0.46	0.40	0.32	0.23							
115	500mA			0.96	0.55	0.48	0.42	0.33	0.24							
140	750mA			1.17	0.67	0.58	0.51	0.40	0.29							
150	625mA			1.25	0.72	0.63	0.54	0.43	0.31							

TM-21 LIFETIME CALCULATION

Projected Lumen Maintenance (25°C / 77°F)						
HOURS	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	97%	95%	93%	87%	> 60,000 hrs

Kim Lighting reserves the right to change specifications without notice.

SPECIFICATIONS

Housing:

- Low copper aluminum alloy die-casting is designed as one-piece with internal cooling fins.
- Solid, cast aluminum wall creates a thermal barrier between the optical and electrical compartments.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- Housing is designed with integral LED heat sink utilized for thermal transfer and for securing the location of each LED module.
- IK09 rated enclosure protects electrical equipment against external mechanical impacts.

Lens Frame:

- One-piece low copper aluminum alloy die-cast is secured to housing with 6 screws.

Backlight Control

- Optional Backlight Control on each LED module to completely control unwanted backlight.

Lens

One-piece flat glass lens slips secure with clips. Extra silicone gasketing is provided to retain a clear optical compartment.

Optical Module:

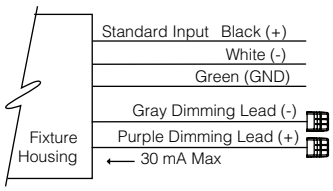
- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB).
- Optical lenses shall be clear injection molded PMMA acrylic.
- Each MCPCB and optic shall be sealed to the diecast housing and sealed with a continuous one piece injection molded silicone rubber gasket.
- Patent Pending design of optical array shall independently shield each LED optic across the length of the aperture.
- Optional fixture finish optical surfaces shall not exceed BUG ratings of the standard white finish and shall be greater than or equal to the delivered lumens of the optional matte black optical surface finish.

Electrical Components

- Standard programmable driver allows for programmable drive current settings.
- Electrical components are stategically located in the driver gear compartment with a molded silicon grommet seal to provide separation from the optical chamber.
- Maximum lightning surge current 20KA with thermally protected varistor technology. Surge suppression is series circuited preventing total fixture failure. ANSI/IEEE C62.41 Category C High.
- Open circuit fault will turn off the luminaire in order to protect the sensitive electronics and acts as a signal for maintenance.
- Programmable Driver is rated for -40°C starting.
- "Thermal Shield", primary side, thermister provides protection for the sustainable life of electronic components.

Dimming:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.



Fusing:

SF for 120, 277, and 347 Line volts

DF for 208, 240, and 480 Line volts

Hight temperature fuse holders factory installed inside the fixture housing.

Fuse is included.

Finish:

Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.

Standard colors include (BLS) Black Gloss Smooth, (BLT) Black Matte Textured, (DBS) Dark Bronze Smooth, (GTT) Graphite Matte Textured, (LGS) Light Gray Smooth, (PSS) Platinum Silver Smooth, (VGS) Verde Green Smooth, (WHS) White Gloss Smooth, and (CC) Custom Color (Include RAL#).

Certifications and Listings:

- IUL 1598 Standard for Luminaires.
- IUL 8750 Standard for Safety for Light
- IEmitting Diode (LED) Equipment for use in Lighting Products.
- ICSA C22.2#250.0 Luminaires.
- ANSI C136.31-2010 Vibration tested and compliant 1.5G and 4G reference page 9
- IRoHS compliant.
- IIP66 rated.
- IIEC 66262 Mechanical Impact Code IK09.
- IDA approved, 3000K and warmer CCTs only.

CAUTION:

Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

WARRANTY:

For full warranty see: http://www.hubbelllighting.com/resources/warranty

Kim Lighting reserves the right to change specifications without notice.

CONTROLS

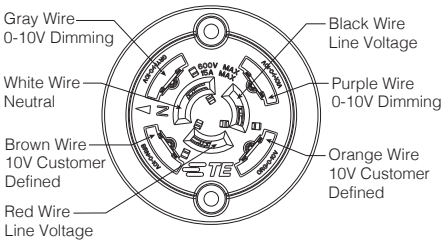
Photocell Receptacle

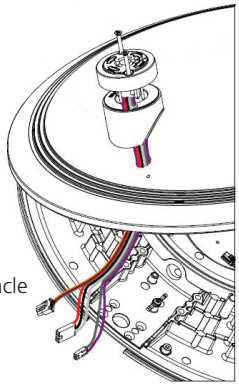
7PR

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.





7-Pin receptacle placement

Wireless Controls

wiSCAPE™

Hubbell Control Solution's wiSCAPE™ wireless control modules allow an individual fixture to managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The wiSCAPE modules provide on/off/dim control, external device input, alerts and metering.

WIR-RME-L

wiSCAPE External Module,120-480V, 1000ft range (LOS), Internal Photocell, 1 Digital Input, Compatible with the A-25-7H option

SiteSync™[1]

SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/products/sitesync for more details.

Dimming WASP Occupancy Sensor

WSP

The Dimming WASP Outdoor Occupancy Sensor is specifically designed to provide 0-10VDC output for the control of dimmable fixtures. Easy to use dipswitches allow the user to adjust sensor time delay and sensitivity as well as set unoccupied and occupied dimming levels. Sensors also feature a daylight sensor for ON/OFF control of fixtures when there is sufficient natural light. Visit https://hubbellcdn.com/installationmanuals/2102B_Dimming_WASP_Install.pdf for more details.

Pole Mounted

Round Pole-Mounted Occupancy Sensor up to 16'. Select voltage and finish color.

SCL-R

Round Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-R44/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor up to 16'. Select voltage and finish color.

SCL-S

Square Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for square pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-L/277[2]/BL[3]

Round Pole-Mounted Occupancy Sensor 16' to 30'. Select voltage and finish color.

SCH-R

Round Pole-Mounted Occupancy Sensor: 16' to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-R4[4]/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor 16' to 30'. Select voltage and finish color.

SCH-S

Square Pole-Mounted Occupancy Sensor: 16 to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-S/277[2]/BL[3]

AstroDIM

AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.

[1]PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

Examples:

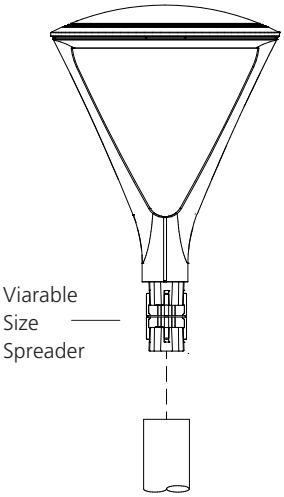
SiteSync only : UR20/56L-75/3K7/UNV/ASQ/BL/SWP

SiteSync with Motion Control: UR20/56L-75/3K7/UNV/ASQ/BL/SWPM-40F

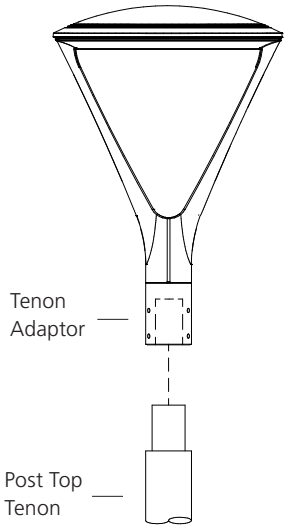
[2]Voltage, [3]Color, [4]Pole Diameter,

Kim Lighting reserves the right to change specifications without notice.

MOUNTING INSTALLATION

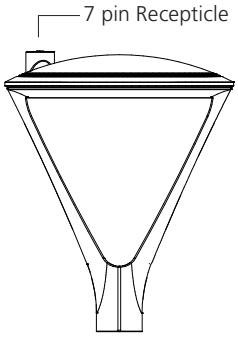


Flush Mount
FM33/44

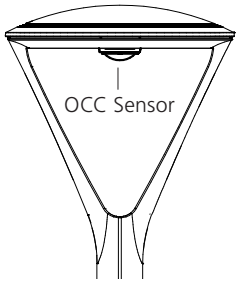


Post Top
PT23/24/34

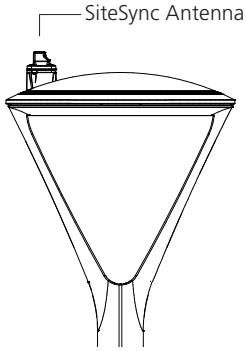
SENSOR PLACEMENT



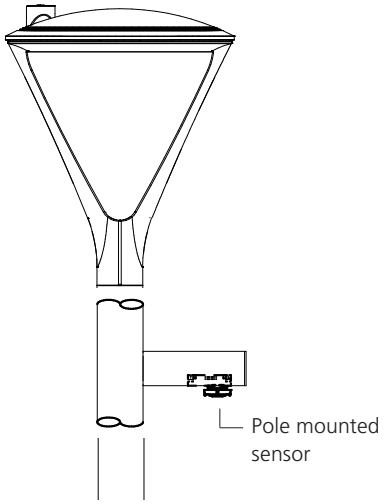
7 pin PCR
7PR



OCC Sensor
NX or WSP



SiteSync
SW7PR



Pole Mounted Sensor
SCL-R, SCL-S, SCH-R,
SCH-S

MOUNTING VIBRATION RATINGS

UR 20 Arm		UR28 Arm		UR 20 Post Top		UR 28 Post Top	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
ASQ	4G	**ASQ**	4G	**FM33**	4G	**FM44**	1.5G
A34	4G	**A34**	4G	**FM44**	1.5G	**FM45**	1.5G
A46	4G	**A46**	4G	**PT23**	4G	**PT24**	1.5G
MAF	4G	**MAF**	4G	**PT24**	4G	**PT34**	1.5G
				PT34	1.5G	**PT25**	1.5G
						PT35	1.5G

For the 4 G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Test Level 1 Normal Applications, Vibration Test Level 2 Bridge/Overpass Applications, and Vibration Test Level 3

For the 1.5G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Level 1 Bridge/Overpass Applications

Kim Lighting reserves the right to change specifications without notice.

DESCRIPTION

The Invue Arbor post top brings architectural style to area/site and pedestrian scale applications. Its dayform appearance brings a desired organic look into the urban environment. WaveStream™ LED Optics provide a uniform pixelation free image, managing glare while providing high levels of visibility.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Two-piece IP66 rated housing is cast from low copper content corrosion resistant aluminum, maintaining strength and precision to sustain long term dayform appearance. ANSI C136.31 testing compliance prevents damage from installation generated vibration. External hardware and casting seams are minimized to enhance appearance.

Optics
Specifically designed for pedestrian applications, WaveStream LED optical waveguide technology produces both symmetric NEMA type V and asymmetric NEMA II, III, IV distributions. The waveguide is manufactured from precision injection molded acrylic resulting in a pixelation free optical image for improved glare control and visual comfort. Luminaire efficacy's measure up to 100 lm/w for 4000K (+/- 275K) CCT at 70 CRI (min), optional 3000K CCT at 80 CRI is also available.

Electrical
LED driver(s) are directly mounted to upper housing thermal pad for optimal thermal performance. Standard 0-10V dimming drivers and Eaton's proprietary surge protection module are designed to withstand 10kV of transient line surge. Drivers operate at 120-277V 50/60Hz with 347V/60Hz or 480V/60Hz operation optional. Suitable for ambient temperature applications as low as -40°C (40°F) to 40°C (104°F). Limited high ambient options allow for 50°C operation.

Controls
The Arbor LED luminaire control options are designed to be simple and cost-effective ASHRAE and California Title 24 compliant solutions. The ANSI C136.41 compliant NEMA 7-PIN receptacle enables wireless dimming when used with compatible photocontrol. An integrated dimming and occupancy sensor is a standalone control option available in on/off (MS) and bi-level dimming (MS/DIM) operation. The optional LumaWatt Pro™ system is best described as a peer-to-peer wireless network of luminaire-integral sensors that operate in accordance with programmable profiles. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. See control options page for more details.

Mounting
Fitter assembly mounts over 2-3/8" O.D. tenon and is secured via six concealed stainless steel set screws. Design of fitter provides seamless transition to 3" O.D. round pole top. Additional mounting accessories include a single fixture arm mount, twin fixture arm mount and wall mount arm. Additional pole mount accessories mount to a 3" x 4" long tenon for 4" - 5" O.D. poles tops. For existing 2-3/8" tenons an adapter is shipped standard.

Finish
Eaton utilizes premium ultra-weatherable TGIC based polyester powder coatings that are specifically formulated to withstand extended outdoor exposure. The powders are formulated exclusively for Eaton to serve functionally as well as decorative. Good film appearance combinded with excellent mechanical an exterior exposure qualities display greater than twice as much gloss retention. RAL and custom color matches available. Finish is compliant with ASTM B117 3000hr salt spray standard.

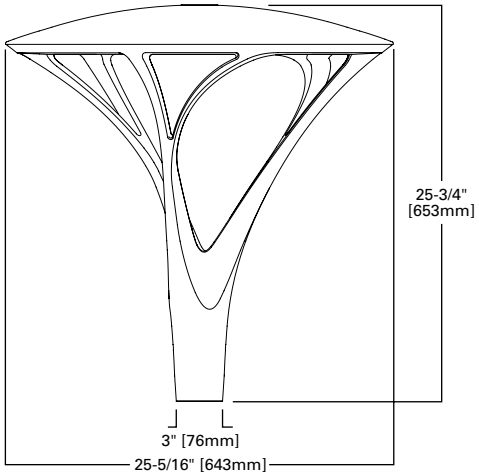
Warranty
Five-year warranty.



ARB ARBOR POSTTOP

DECORATIVE LUMINAIRE

DIMENSIONS



CERTIFICATION DATA

UL/cUL Listed
ANSI C136.31 1.5G Vibration Tested
IEG 60529 IP66 Housing
ASTM B117 SaH Spray Tested
ASTM A3560 Low Cooper Alloy
RoHS
ISO 9001
Dark Sky Approved (3000K CCT and warmer only)

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz, 480V/60Hz
40°C Ambient Temperature Rating
As low as -40°C (-40°F) minimum temperature
*See MINIMUM TEMPERATURE table

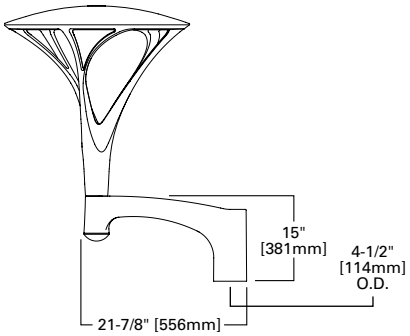
EPA

Effective Projected Area: (Sq. Ft.) 0.9

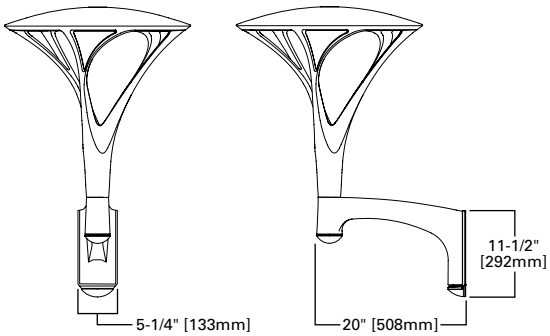
Approximate Net Weight:
37 lbs. [16.8 kgs.]

MOUNTING CONFIGURATIONS (WEIGHT AND EPAS INCLUDES FIXTURE)

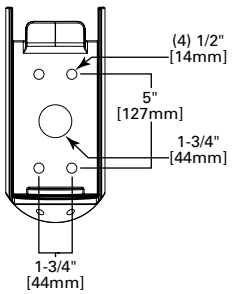
Single Arm Mount (ARSA-XX)
Weight: 56 lbs. [25.45 kgs.]
EPA: 1.7 Sq. Ft.



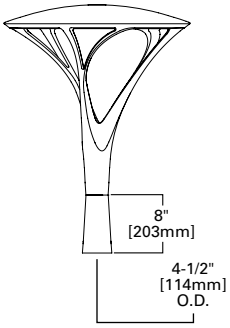
Wall Mount Arm (ARWM-XX)
Weight: 57 lbs. [25.91 kgs.]
EPA: 1.8 Sq. Ft.



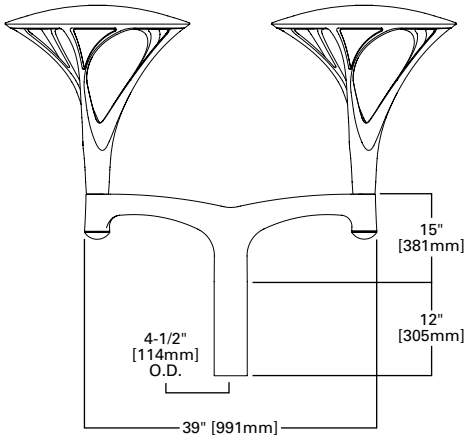
Wall Mount Arm Drill Pattern



Post Top Adapter (ARPA4-XX)
Weight: 41 lbs. [18.63 kgs.]
EPA: 1.2 Sq. Ft.



Twin Arm Mount (ARTA15-XX)
Weight: 114 lbs. [51.81 kgs.]
EPA: 3.45 Sq. Ft.

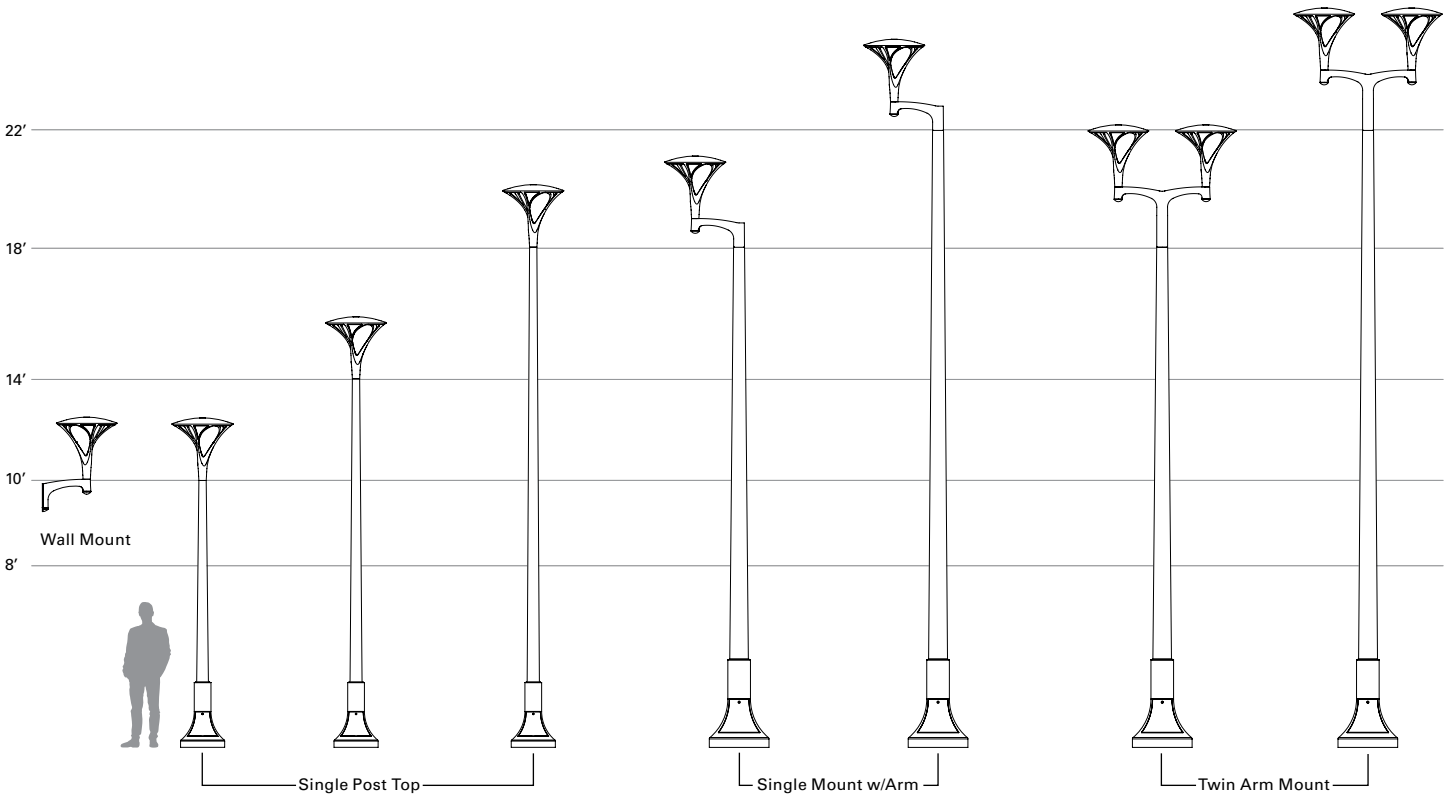


MOUNTING REQUIREMENTS CHART

Tenon O.D. (Inches)	**2-3/8" Tenon**		
Pole Top O.D. (Inches)	**3"**	**4"**	**5"**
Post Top	Standard	Spacer (Provided) & ARPA4-XX (Order Separately)	Spacer (Provided) & ARPA4-XX (Order Separately)
Single Arm Mount	Spacer (Provided)	Spacer (Provided)	Spacer (Provided)

Tenon O.D. (Inches)	**3" Tenon**		
Pole Top O.D. (Inches)		**4"**	**5"**
Post Top		ARPA4-XX (Order Separately)	ARPA4-XX (Order Separately)
Single Arm Mount		Standard	Standard
Twin Mount		Standard	Standard

POLE CONFIGURATIONS (ARP DECORATIVE POLE SHOWN)



Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

Specifications and dimensions subject to change without notice.

CONTROL OPTIONS

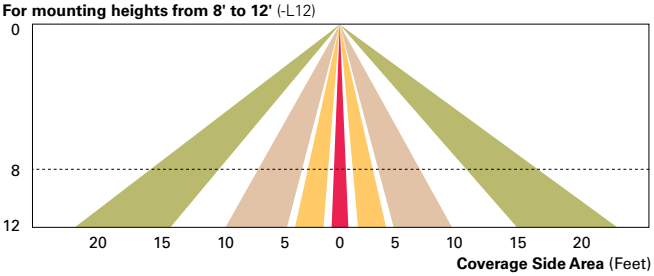
0-10V (D) The dimming option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (PER and PER7) Photocontrol receptacles provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

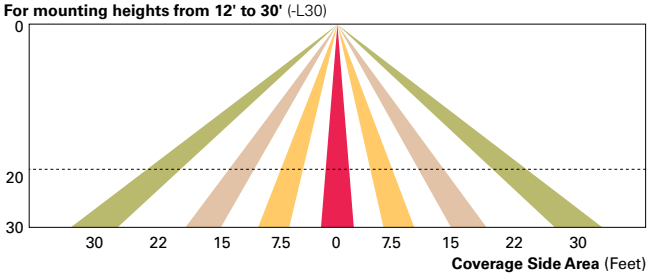
Dimming Occupancy Sensor (MS) These sensors are factory installed in the luminaire housing. When a sensor for dimming operation (/DIM) option is selected, the luminaire will dim down to approximately 50 percent power after five minutes of no activity detected. When activity is detected, the luminaire returns to full light output. When a sensor for ON/OFF operation is selected, the luminaire will turn off after five minutes of no activity.

These occupancy sensors include an integral photocell that can be activated or inactivated with the programming remote / configuration tool for "dusk-to-dawn" control or "daylight harvesting". Note: For MS sensors, the factory preset is OFF (Disabled). The programming remote / tool is a wireless tool that can be utilized to change the dimming level, time delay, sensitivity and other parameters. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 8'-40'.

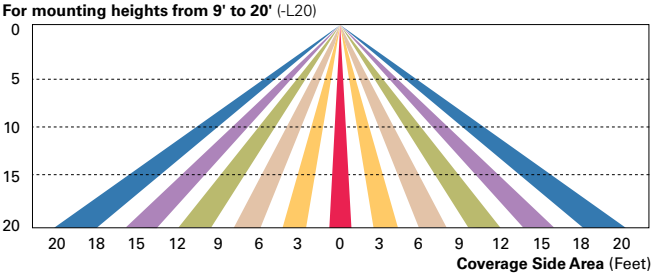
For mounting heights from 8' to 12' (-L12)



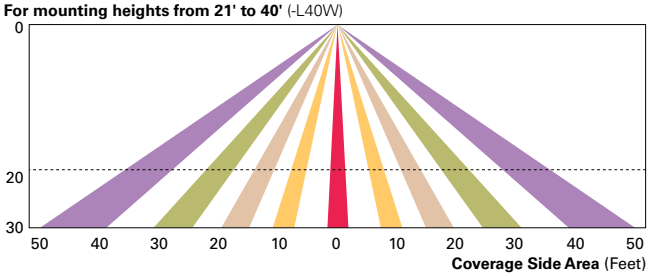
For mounting heights from 12' to 30' (-L30)



For mounting heights from 9' to 20' (-L20)



For mounting heights from 21' to 40' (-L40W)

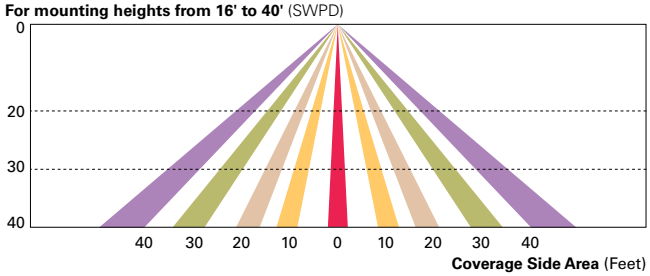


WaveLinx Wireless Control and Monitoring System Available in 7-PIN or 4-PIN configurations, the WaveLinx Outdoor control platform operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. Use the WaveLinx Mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets).

WaveLinx Outdoor Control Module (WOLC-7P-10A) A photocontrol that enables astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

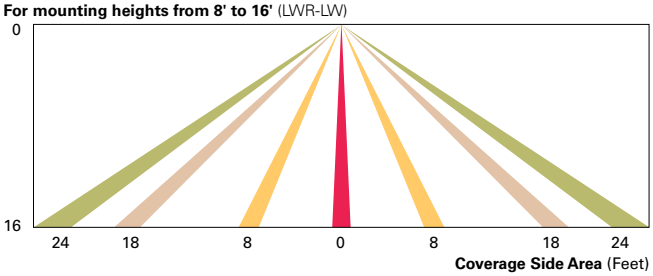
WaveLinx Wireless Sensor (SWPD4 and SWPD5) These outdoor sensors offer passive infrared (PIR) occupancy and a photocell for closed loop daylight sensing. These sensors can be factory installed or field-installed via simple, tool-less integration into luminaires equipped with the Zhaga Book 18 compliant 4-PIN receptacle (ZW). These sensors are factory preset to dim down to approximately 50 percent power after 15 minutes of no activity detected. These occupancy sensors include an integral photocell for "dusk-to-dawn" control or daylight harvesting that is factory-enabled. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 7'-40'.

For mounting heights from 16' to 40' (SWPD)

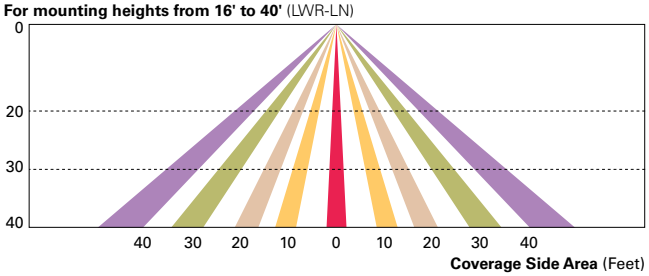


LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN) The Eaton's LumaWatt Pro powered by Enlighted is a connected lighting solution that combines LED luminaires with an integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of other resources beyond lighting.

For mounting heights from 8' to 16' (LWR-LW)



For mounting heights from 16' to 40' (LWR-LN)



POWER AND LUMENS

Lumen Package		B1	B2	B3	B4
Drive Current					
Power Wattage (Watts)		24W	48W	96W	99W
Input Current (mA) @ 120V		200	400	800	830
Input Current (mA) @ 208V		120	240	470	480
Input Current (mA) @ 240V		100	200	400	420
Input Current (mA) @ 277V		90	180	350	360
Power Wattage (Watts)		26W	53W	107W	108W
Input Current (mA) @ 347V		79	161	325	328
Input Current (mA) @ 480V		58	117	235	237
Optics					
Type II	Lumens	2,045	3,994	7,362	--
	BUG Rating	B1-U1-G1	B1-U2-G2	B3-U2-G3	--
Type III	Lumens	2,324	4,534	8,451	--
	BUG Rating	B1-U1-G1	B1-U2-G2	B2-U2-G3	--
Type IV	Lumens	2,408	4,691	8,740	--
	BUG Rating	B1-U1-G1	B1-U2-G2	B2-U2-G3	--
Type V	Lumens	2,311	4,529	8,511	9,464
	BUG Rating	B2-U1-G1	B3-U2-G2	B3-U2-G3	B3-U2-G3

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Calculated L70 (Hours)
25°C	>91%	>230,000
40°C	>88%	>172,000
50°C	>86%	>142,000

NOTE: Maintenance data applies to the highest drive current and represents the worst case at the highest wattage.

COLOR TEMPERATURE

Color Temperature (CCT)	CRI (Nominal)	Multiplier
4000	70	1.00
3000	80	0.91

MINIMUM AMBIENT TEMPERATURE

Lumen Package	Temperature
B1	-40°C
B2	-35°C
B3	-35°C
B4	-40°C
All DALI powered lumen packages	-20°C

ORDERING INFORMATION

Sample Number: ARB-B2-LED-D1-T2-GM

Product Family [1, 2]	Lumens [3]	Lamp Type	Voltage	Distribution	Color
ARB=Arbor Post Top	**B1**=Nominal 2,300 Lumens **B2**=Nominal 4,500 Lumens **B3**=Nominal 8,500 Lumens **B4**=Nominal 9,500 Lumens [4]	**LED**=Solid State Light Emitting Diodes	**D1**=Dimming Driver (120-277V) **347**=347V [5] **480**=480V [5, 6]	**T2**=Type II **T3**=Type III **T4**=Type IV **T5**=Type V	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **CC**=Custom Color [7]

Options (Add as Suffix)

7030=70 CRI / 3000K CCT [8]
8030=80 CRI / 3000K CCT [8]
PC=Button Type Photocontrol
PER=NEMA 3-PIN Twistlock Photocontrol Receptacle
PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle
HA=50°C High Ambient Temperature [9]
MS-L08=Photo/Motion Sensor for ON/OFF Operation, Maximum 8' Mounting Height [10, 11]
MS-L20= Photo/Motion Sensor for ON/OFF Operation, 9' - 20' Mounting Height [10, 11]
MS-L40W=Photo/Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height [10, 11]
MS/DIM-L08=Photo/Motion Sensor for Dimming Operation, Maximum 8' Mounting Height [10, 11]
MS/DIM-L20=Photo/Motion Sensor for Dimming Operation, 9' - 20' Mounting Height [10, 11]
MS/DIM-L40W=Photo/Motion Sensor for Dimming Operation, 21' - 40' Mounting Height [10, 11]
ZW=Wavelinx-enabled 4-PIN Twistlock Receptacle [10, 11, 12, 13]
ZW-SWPD4WH=Wavelinx Wireless Sensor, 7' - 15' Mounting Height, White [10, 11, 12, 13]
ZW-SWPD5WH=Wavelinx Wireless Sensor, 15' - 40' Mounting Height, White [10, 11, 12, 13]
LWR-LW= LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height [10, 14]
LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height [10, 14]
5LTD=Fifth Light Dali Driver [10, 15]
DIM=0-10V External Dimming Leads [10, 16]
VS=Tempered Glass Vandal Shield

Accessories (Order Separately) [17]

ARSA-XX=Single Pole Mount Arm [18]
ARWM-XX=Wall Mount Arm
ARTA15-XX=Twin Mount Bracket [18]
ARPA4-XX=Pole Adapter 4" O.D. Pole
FSIR-100=Wireless Configuration Tool for Occupancy Sensor [19]
SWPD4-WH=Wavelinx Wireless Sensor, 7' - 15' Mounting Height, White [13, 20]
SWPD5-WH=Wavelinx Wireless Sensor, 16' - 40' Mounting Height, White [13, 20]
WOLC-7P-10A=Wavelinx Outdoor Control Module (7-PIN) [10, 21]

NOTES:
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional information.
2. Fixture slipfits over standard 2-3/8" tenon. 3" O.D. tenon when used with a ARPA4-XX 4" O.D. pole adapter.
3. Standard 4000K CCT, nominal 70CRI.
4. B4 only available with Type V distribution.
5. Requires the use of a step down transformer.
6. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
7. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
8. Extended lead times apply. Use dedicated IES files when performing layouts. These files are published on the Arbor luminaire product page on the website.
9. Not available with B3 lumen package in Type II, III, or IV distributions.
10. Controls system is not available with photocontrol (PC), photocontrol receptacle (PER or PER7), or other controls systems (MS, ZW, LWR, 5LTD, or DIM).
11. Not available with HA option.
12. Sensor passive infrared (PIR) may be overly sensitive below -20°C (-4°F).
13. In order for device to be field-configurable, requires WAC Gateway components WAC-POE and WPOE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more WaveLinx application information.
14. LumaWatt Pro wireless sensors are factory installed and require network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See website for LumaWatt Pro application information.
15. Only available in B1 and B2 lumen packages.
16. Low voltage control leads brought 18" outside fixture.
17. Replace XX with paint color.
18. Fits on 3" O.D. x 4" long tenon for nominal 4-1/2" O.D. pole top.
19. This tool enables adjustment to Motion Sensor (MS) parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative for more information.
20. Requires Wavelinx-enabled 4-PIN twistlock receptacle (ZW) option.
21. Requires 7-PIN NEMA twistlock photocontrol receptacle (PER7) option.

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

Altitude®

FEATURES

- Elegant form factor
- High performance optics up to 17,500 delivered lumens
- Diffusion lens for low glare comfort
- NX™ wireless control options



c UL us LISTED

3000K and warmer CCTs only

CONTROL TECHNOLOGY

NX DISTRIBUTED INTELLIGENCE

RELATED PRODUCTS

Ouro Pavilion PGL8

SPECIFICATIONS

CONSTRUCTION

- One piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 with vents and .100" minimum wall thickness
- Separate internal driver compartment rated for IP66 ingress protection
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat
- Standard colors include (BLS) Black Gloss Smooth, (BLT) Black Matte Textured, (DBS) Dark Bronze Gloss Smooth, (GTT) Graphite Matte Textured, (LGS) Light Gray Gloss Smooth, (PSS) Platinum Silver Smooth, (VGS) Verde Green Smooth, (WH) White, and (CC) Custom Color (Include RAL#)
- Lens is impact resistant 1/8" tempered glass with anti-reflective coating
- Lens has a one-piece extruded vulcanized silicone gasket
- Lens frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness
- Lens frame has a one-piece O-ring extruded vulcanized silicone gasket
- Mid-frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness
- Mid-frame secures to Lens Frame and housing by stainless steel recessed Allen-head screws
- Silicone gaskets throughout
- All external fasteners are stainless steel

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB)
- Optical lenses are clear injection molded PMMA acrylic

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories recognized
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories recognized
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C

ELECTRICAL (CONTINUED)

- Dimming range from 10% to 100% through the use of standard 0-10V interface on the programmable driver
- Modular wiring harness in the service area provides user access to the dimming circuitry
- Optional factory programmed dimming profile
- Surge protection: 10,000k in parallel, 20,000k in series
- SF for 120, 277, 347 Line volts
  DF for 208, 240, 480 Line volts
- Wiring: No. 18AWM rated 105°C, wet rating.

CERTIFICATIONS AND LISTINGS

- UL 1598 Standard for Luminaires
- IP66 certified
- RoHS compliant

WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	1,673–18,452
Wattage Range	22–156
Efficacy Range (LPW)	56–137
Reported Life (Hours)	L70/60,000
Weight	21.5 lbs 9.75 kg
EPS Front View / Side View	.37 / .64

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / Website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

ORDERING GUIDE

Example: ALT1-54L-120-3K8-3-UNV-A34-GT-NXSPW30F-CLR

CATALOG #

HOUSING

ALT1

Housing		LED Engine		CCT/CRI		Distribution		Rotation		Voltage	
ALT1	Architectural Area/Site	**28L-20**	20W, 3,000 lm	**AM**	Amber[9]	**FR**	Type I/Front Row		Blank for no rotation	**UNV**	Universal 120–277V
		28L-40	40W, 5,000 lm	**3K7**	3000K, 70 CRI	**2**	Type II	**L**	Optic rotation left[1]	**347**	347V
		28L-60	60W, 7,500 lm	**3K8**	3000K, 80 CRI	**3**	Type III	**R**	Optic rotation right[1]	**480**	480V
		28L-85	85W, 10,000 lm	**3K9**	3000K, 90 CRI	**4**	Type IV				
		54L-95	95W, 12,500 lm	**4K7**	4000K, 70 CRI	**4W**	Type IV Wide				
		54L-120	120W, 15,000 lm	**4K8**	4000K, 80 CRI	**5QM**	Type V Square Medium				
		54L-155	155W, 17,500 lm	**5K7**	5000K, 70 CRI	**5QN**	Type V Square Narrow				
				5K8	5000K, 80 CRI	**5R**	Type V Rectangular				
						5W	Type V Wide (Round)				

Mounting		Fixture Finish		Control Options		Options		Control Accessories	
ASQ	Arm Square pole	**BL**	Black	**7PR**	7 pin PCR, wireless control enabled	**BC**	Backlight Control[6]	**SCPREMOTE**	Remote control for SCP option. Order at least one per project to program and control the occupancy sensor
A34	Arm mt 3.3–4.2" OD pole	**DB**	Dark Bronze	**7PR-TL**	7 pin PCR with twist lock photocontrol	**SF**	Single Fuse	**SW7PR**	SiteSync™ on fixture module via 7PR
A46	Arm mt 4.5–6.0" OD pole	**GT**	Graphite	**7PR-SC**	7 pin PCR with shorting cap	**DF**	Double Fuse	**SWUSB**	SiteSync™ Software on USB
MAF	Horizontal Slipfitter 2.375" OD arm	**LG**	Light Grey	**AD-012**	AstroDIM: 50% output at midnight[10]	**TB**	Terminal Block	**SWTAB**	SiteSync™ Windows Tablet[8]
SVSF	Vertical Slipfitter Mount square for 2" pipe tenon, (2.375" OD)	**PS**	Platinum Silver	**AD-022**	AstroDIM: 50% output midnight to 4 AM[10]	**CLR**	Clear Lens	**SWBRG**	SiteSync™ Wireless Bridge Node
VSF	Vertical Slipfitter Mount for 2" pipe tenon, (2.375" OD)	**TT**	Titanium	**AD-032**	AstroDIM: 50% output 10PM[10]	**HDL**	Diffuse Lens[7]	**SWFC**	SiteSync™ Field Commission Service
WB	Wall Bracket for area wall mount	**WH**	White	**AD-042**	AstroDIM: 50% output 10PM to 4AM[10]			**WIR-RME-L**	wiSCAPE™ External Fixture Module
		CC	Custom Color[2]	**NXSP14F**	Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' [3,4]			**NXOFM-1R1D-UNV**	NX External Contol Node
				NXSP30F	Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30' [3,4]				
				NXSPW14F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' [3,4]				
				NXSPW30F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30' [3,4]				
				NXWE	NX Wireless Enabled				
				SCL-8F	Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights up to 8'				
				SCL-40F	Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights 9' to 40'				
				SCP-8F	Remote control programable line voltage sensor, use with SCPREMOTE				
				SCP-40F	Remote control programable line voltage sensor, use with SCPREMOTE				
				SWP	Site Sync™ Pre Commission Wireless Module[3,4,5]				
				SWPM-40F	Site Sync with Sensor 9' to 40' MH[3,4,5]				

Notes:

1 Not available with 5QM and 5W distributions

2 Consult factory

3 Not available with other sensor or wireless control options

4 Not available in 480V

5 Specify group and zone at time of order, See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node

6 Not available with Type 5 distributions, CLR, or HDL option

7 Only available in Type 3 or Type 5W

8 Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries

9 Wildlife friendly

10 Not available for 28L-20 engine and sensor options

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PRODUCT EXCEPTIONS & DETAILS

Configuration			EPA
	1SA	1 Arm Side Mount	0.98
	2SB	2 Arm Side Mount	1.48
	2SL	2 Arm Side Mount	1.96
	3ST	3 Arm Side Mount	2.20

Configuration			EPA
	3SY*	3 Arm Side Mount	2.46
	4SC	4 Arm Side Mount	2.46
	1W	Single Wall Mount	n/a
	HSF	Horizontal Slipfitter	n/a

DELIVERED LUMENS

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	20	3,000	No Lens	FR	3110	0	0	0	141	3274	0	0	0	149	3318	1	0	0	148
				FR-BC	2036	0	0	0	93	2143	0	0	0	97	2172	0	0	0	97
				2	2903	1	0	1	132	3056	1	0	1	139	3097	1	0	1	138
				2-BC	1771	0	0	0	80	1864	0	0	0	85	1889	0	0	0	84
				3	2945	1	0	1	131	3100	1	0	1	138	3141	1	0	1	140
				3-BC	1779	0	0	1	81	1873	0	0	1	85	1898	0	0	1	85
				4	2943	0	0	1	134	3098	0	0	1	141	3139	0	0	1	141
				4-BC	2189	0	0	1	100	2304	0	0	1	105	2335	0	0	1	104
				4W	2927	1	0	1	133	3081	1	0	1	140	3122	1	0	1	139
				4W-BC	1673	0	0	1	76	1761	0	0	1	80	1785	0	0	1	80
				5R	3025	2	0	2	137	3184	2	0	2	145	3227	2	0	2	144
				5QM	3069	2	0	0	139	3230	2	0	0	147	3273	2	0	0	146
				5QN	3051	2	0	0	139	3211	2	0	0	146	3254	2	0	0	145
				5W	3024	2	0	1	137	3183	2	0	1	145	3226	2	0	1	144
			Clear Lens	FR	2909	0	0	0	132	3062	0	0	0	139	3103	0	0	0	141
				2	2715	1	0	1	123	2858	1	0	1	130	2896	1	0	1	132
				3	2754	1	0	1	125	2899	1	0	1	132	2938	1	0	1	134
				4	2752	0	0	1	125	2897	0	0	1	132	2936	0	0	1	133
				4W	2738	1	0	1	124	2882	1	0	1	131	2920	1	0	1	133
				5R	2829	2	0	2	129	2978	2	0	2	135	3018	2	0	2	137
				5QM	2870	2	0	0	130	3021	2	0	0	137	3062	2	0	0	139
				5QN	2853	2	0	0	130	3003	2	0	0	137	3044	2	0	0	138
				5W	2829	2	0	1	129	2977	2	0	1	135	3017	2	0	1	137
			HDL Lens	3	2341	1	0	1	106	2464	1	0	1	112	2497	1	0	1	114
				5W	2405	1	0	1	109	2531	1	0	1	115	2565	1	0	1	117

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	40	5,000	No Lens	FR	4870	1	0	0	128	5127	1	0	0	135	5195	1	0	0	137
				FR-BC	3189	0	0	0	84	3356	0	0	0	88	3401	0	0	0	90
				2	4546	1	0	1	120	4785	1	0	1	126	4849	1	0	1	128
				2-BC	2773	0	0	1	73	2919	0	0	1	77	2958	0	0	1	78
				3	4611	1	0	2	121	4854	1	0	2	128	4919	1	0	2	129
				3-BC	2786	0	0	1	73	2933	0	0	1	77	2972	0	0	1	78
				4	4608	1	0	2	121	4851	1	0	2	128	4915	1	0	2	129
				4-BC	3428	0	0	1	90	3608	0	0	1	95	3656	0	0	1	96
				4W	4584	1	0	2	121	4825	1	0	2	127	4889	1	0	2	129
				4W-BC	2621	0	0	1	69	2758	0	0	1	73	2795	0	0	1	74
				5R	4737	2	0	2	125	4986	3	0	1	131	5053	3	0	3	133
				5QM	4806	2	0	1	126	5058	2	0	1	133	5126	2	0	1	135
				5QN	4777	2	0	0	126	5028	2	0	0	132	5096	2	0	0	134
				5W	4736	3	0	1	125	4985	2	0	2	131	5052	3	0	1	133
			Clear Lens	FR	4555	1	0	0	120	4795	1	0	0	126	4859	1	0	0	128
				2	4252	1	0	1	112	4476	1	0	1	118	4536	1	0	1	119
				3	4333	1	0	1	114	4561	1	0	1	120	4622	1	0	1	121
				4	4310	0	0	2	113	4537	1	0	2	119	4598	1	0	2	121
				4W	4287	1	0	2	113	4513	1	0	2	119	4573	1	0	2	120
				5R	4431	2	0	2	117	4663	2	0	2	123	4726	2	0	2	124
				5QM	4495	2	0	1	118	4731	2	0	1	125	4794	2	0	1	126
				5QN	4468	2	0	0	118	4703	2	0	0	124	4766	2	0	0	125
				5W	4430	3	0	1	117	4663	3	0	1	123	4725	3	0	1	124
			HDL Lens	3	3741	1	0	1	98	3937	1	0	1	104	3990	1	0	1	105
				5W	3891	2	0	1	102	4095	2	0	1	108	4150	2	0	1	109

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] • Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	60	7,500	No Lens	FR	7347	1	0	1	122	7733	1	0	1	129	7837	1	0	1	131
				FR-BC	4810	0	0	0	80	5063	0	0	0	84	5131	0	0	0	86
				2	6858	1	0	2	114	7218	1	0	2	120	7315	1	0	2	122
				2-BC	4183	0	0	1	70	4403	0	0	1	73	4462	0	0	1	74
				3	6956	1	0	2	116	7322	1	0	2	122	7420	1	0	2	123
				3-BC	4203	0	0	1	70	4424	0	0	1	74	4483	0	0	1	75
				4	6951	1	0	2	116	7317	1	0	2	122	7415	1	0	2	124
				4-BC	5171	0	0	2	86	5443	0	0	2	91	5516	0	0	2	92
				4W	6915	1	0	2	115	7278	1	0	2	121	7376	1	0	2	123
				4W-BC	3953	0	0	2	66	4161	0	0	2	69	4216	0	0	2	70
				5R	7145	3	0	3	119	7521	3	0	3	125	7622	3	0	3	127
				5QM	7249	3	0	1	121	7630	3	0	1	127	7732	3	0	1	129
				5QN	7206	3	0	0	120	7585	3	0	0	126	7687	3	0	0	128
				5W	7144	3	0	2	119	7520	3	0	2	125	7620	3	0	2	127
			Clear Lens	FR	6872	1	0	1	115	7233	1	0	1	121	7330	1	0	1	122
				2	6414	1	0	2	107	6751	1	0	2	113	6842	1	0	2	114
				3	6506	1	0	2	108	6848	1	0	2	114	6940	1	0	2	116
				4	6502	1	0	2	108	6844	1	0	2	114	6935	1	0	2	116
				4W	6468	1	0	2	108	6807	1	0	2	113	6899	1	0	2	115
				5R	6683	3	0	3	111	7035	3	0	3	117	7129	3	0	3	119
				5QM	6780	3	0	1	113	7137	3	0	1	119	7232	3	0	1	121
				5QN	6740	2	0	0	112	7094	3	0	0	118	7189	3	0	0	120
				5W	6682	3	0	2	111	7033	3	0	2	117	7128	3	0	2	119
			HDL Lens	3	5531	2	0	1	92	5821	2	0	1	97	5899	2	0	1	98
				5W	5680	2	0	1	95	5979	2	0	1	100	6059	2	0	1	101

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	85	10,000	No Lens	FR	9699	1	0	1	113	10209	1	0	1	119	10346	1	0	1	120
				FR-BC	6350	0	0	1	74	6684	0	0	1	78	6773	0	0	1	79
				2	9054	1	0	2	105	9530	2	0	2	111	9657	2	0	2	112
				2-BC	5523	0	0	1	64	5813	0	0	1	68	5891	0	0	1	68
				3	9183	1	0	2	107	9666	1	0	2	112	9795	1	0	2	114
				3-BC	5549	0	0	2	65	5841	0	0	2	68	5919	0	0	2	69
				4	9177	1	0	2	107	9660	1	0	2	112	9789	1	0	2	114
				4-BC	6827	0	0	2	79	7186	0	0	2	84	7282	0	0	2	85
				4W	9129	1	0	3	106	9609	1	0	3	112	9737	1	0	3	113
				4W-BC	5219	0	0	2	61	5493	0	0	2	64	5567	0	0	2	65
				5R	9433	3	0	3	110	9929	3	0	3	115	10062	3	0	3	117
				5QM	9570	3	0	1	111	10073	3	0	1	117	10208	3	0	1	119
				5QN	9514	3	0	0	111	10014	3	0	0	116	10148	3	0	0	118
				5W	9432	4	0	2	110	9927	4	0	2	115	10060	4	0	2	117
			Clear Lens	FR	9072	1	0	1	105	9549	1	0	1	111	9677	1	0	1	113
				2	8468	1	0	2	98	8913	1	0	2	104	9033	1	0	2	105
				3	8589	1	0	2	100	9041	1	0	2	105	9162	1	0	2	107
				4	8584	1	0	2	100	9035	1	0	2	105	9156	1	0	2	106
				4W	8538	1	0	2	99	8987	1	0	3	105	9108	1	0	3	106
				5R	8823	3	0	3	103	9287	3	0	3	108	9411	3	0	3	109
				5QM	8951	3	0	1	104	9422	3	0	1	110	9548	3	0	1	111
				5QN	8898	3	0	0	103	9366	3	0	0	109	9491	3	0	0	110
				5W	8822	3	0	2	103	9285	4	0	2	108	9410	4	0	2	109
			HDL Lens	3	7302	2	0	2	85	7685	2	0	2	89	7788	2	0	2	91
				5W	7499	2	0	1	87	7893	2	0	1	92	7999	2	0	1	93

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] • Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	95	12,500	No Lens	FR	11792	1	0	1	125	12412	1	0	1	132	12578	1	0	1	134
				FR-BC	7848	0	0	1	83	8260	0	0	1	88	8371	0	0	1	90
				2	11210	2	0	2	119	11800	2	0	2	126	11958	2	0	2	126
				2-BC	5993	0	0	1	64	6308	0	0	1	67	6392	0	0	1	69
				3	11225	1	0	2	119	11815	2	0	2	126	11974	2	0	2	127
				3-BC	6273	0	0	2	67	6603	0	0	2	70	6691	0	0	2	72
				4	11311	1	0	2	120	11906	1	0	3	127	12065	1	0	3	128
				4-BC	7291	0	0	2	78	7674	0	0	2	82	7777	0	0	2	84
				4W	11203	2	0	3	119	11792	2	0	3	125	11950	2	0	3	127
				4W-BC	5603	0	0	2	60	5898	0	0	2	63	5977	0	0	2	65
				5R	11623	3	0	3	124	12234	3	0	3	130	12398	3	0	3	131
				5QM	11770	3	0	2	125	12389	3	0	2	132	12555	3	0	2	133
				5QN	11799	3	0	0	126	12420	3	0	0	132	12586	3	0	0	133
				5W	11594	4	0	2	123	12204	4	0	2	130	12367	4	0	2	131
			Clear Lens	FR	11029	1	0	1	117	11609	1	0	1	124	11765	1	0	1	125
				2	10485	2	0	2	112	11036	2	0	2	117	11184	2	0	2	119
				3	10555	1	0	2	112	11110	1	0	2	118	11259	1	0	2	120
				4	10579	1	0	2	113	11136	1	0	2	118	11285	1	0	2	120
				4W	10479	1	0	3	111	11029	2	0	3	117	11177	2	0	3	119
				5R	10871	3	0	3	116	11443	3	0	3	122	11596	3	0	3	123
				5QM	11009	3	0	2	117	11588	3	0	2	123	11743	3	0	2	125
				5QN	11036	3	0	0	117	11616	3	0	0	124	11772	3	0	0	125
				5W	10845	4	0	2	115	11415	4	0	2	121	11568	4	0	2	123
			HDL Lens	3	8736	2	0	2	93	9195	2	0	2	98	9318	2	0	2	100
				5W	9152	3	0	1	97	9633	3	0	1	102	9762	3	0	1	104

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	120	15,000	No Lens	FR	14390	1	0	1	118	15146	1	0	1	124	15349	1	0	1	125
				FR-BC	9577	1	0	1	78	10080	1	0	1	83	10215	1	0	1	84
				2	13680	2	0	2	112	14399	2	0	2	118	14592	2	0	2	120
				2-BC	7313	0	0	1	60	7697	0	0	2	63	7800	0	0	2	64
				3	13698	2	0	3	112	14418	2	0	3	118	14611	2	0	3	120
				3-BC	7655	0	0	2	63	8057	0	0	2	66	8165	0	0	2	67
				4	13803	1	0	3	113	14528	1	0	3	119	14723	1	0	3	121
				4-BC	8897	0	0	2	73	9365	0	0	2	77	9490	0	0	2	78
				4W	13671	2	0	3	112	14390	2	0	3	118	14583	2	0	4	120
				4W-BC	6838	1	0	2	56	7197	1	0	2	59	7294	1	0	2	60
				5R	14184	4	0	4	116	14929	4	0	4	122	15129	4	0	4	124
				5QM	14363	3	0	2	118	15118	4	0	2	124	15321	4	0	2	126
				5QN	14399	4	0	4	118	15156	4	0	1	124	15359	4	0	1	126
				5W	14149	4	0	2	116	14893	4	0	2	122	15092	4	0	2	124
			Clear Lens	FR	13459	1	0	1	110	14167	1	0	1	116	14356	1	0	2	118
				2	12795	2	0	2	105	13468	2	0	2	110	13648	2	0	2	112
				3	12812	2	0	2	105	13486	2	0	2	111	13666	2	0	2	112
				4	12910	1	0	3	106	13589	1	0	3	111	13771	1	0	3	113
				4W	12787	2	0	3	105	13459	2	0	3	110	13640	2	0	3	112
				5R	13266	4	0	4	109	13964	4	0	4	114	14151	4	0	4	116
				5QM	13434	3	0	2	110	14140	3	0	2	116	14330	3	0	2	117
				5QN	13467	4	0	0	110	14175	4	0	0	116	14365	4	0	0	118
				5W	13234	4	0	2	108	13929	4	0	2	114	14116	4	0	2	116
			HDL Lens	3	10892	3	0	2	89	11464	3	0	2	94	11618	3	0	2	95
				5W	11250	3	0	1	92	11841	3	0	2	97	12000	3	0	2	98

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

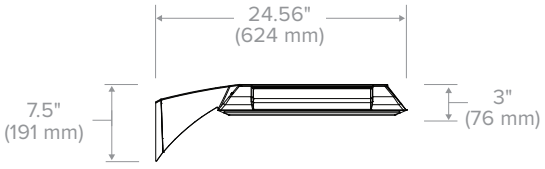
DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	155	17,500	No Lens	FR	17299	2	0	2	111	18208	2	0	2	117	18452	2	0	2	119
				FR-BC	11513	1	0	1	74	12118	1	0	1	78	12280	1	0	1	79
				2	16445	2	0	2	105	17310	2	0	3	111	17542	2	0	3	112
				2-BC	8791	0	0	2	56	9253	0	0	2	59	9377	0	0	2	60
				3	16467	2	0	3	106	17333	2	0	3	111	17565	2	0	3	113
				3-BC	9202	1	0	2	59	9686	1	0	2	62	9816	1	0	2	63
				4	16593	1	0	3	106	17465	1	0	3	112	17699	1	0	4	113
				4-BC	10696	0	0	2	69	11258	1	0	2	72	11409	1	0	2	73
				4W	16435	2	0	4	105	17299	2	0	4	111	17531	2	0	4	112
				4W-BC	8220	1	0	2	53	8652	1	0	2	55	8768	1	0	2	56
				5R	17051	4	0	4	109	17947	4	0	4	115	18188	4	0	4	117
				5QM	17267	4	0	2	111	18174	4	0	2	117	18418	4	0	2	118
				5QN	17309	4	0	1	111	18219	4	0	1	117	18463	4	0	1	118
				5W	17009	4	0	2	109	17903	4	0	2	115	18143	4	0	2	116
			Clear Lens	FR	16180	1	0	2	104	17030	1	0	2	109	17258	1	0	2	111
				2	15382	2	0	2	99	16190	2	0	2	104	16407	2	0	2	105
				3	15402	2	0	3	99	16212	2	0	3	104	16429	2	0	3	105
				4	15520	1	0	3	99	16336	1	0	3	105	16555	1	0	3	106
				4W	15372	2	0	4	99	16180	2	0	4	104	16397	2	0	4	105
				5R	15948	4	0	4	102	16787	4	0	4	108	17011	4	0	4	109
				5QM	16150	4	0	2	104	16999	4	0	2	109	17227	4	0	2	110
				5QN	16190	4	0	1	104	17041	4	0	1	109	17269	4	0	1	111
				5W	15909	4	0	2	102	16745	4	0	2	107	16969	4	0	2	109
			HDL Lens	3	13093	3	0	2	84	13782	3	0	2	88	13966	3	0	2	90
				5W	13524	3	0	2	87	14235	3	0	2	91	14426	3	0	2	92

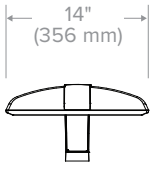
CRI Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

Amber Multiplier	
CCT	Multiplier
5000K	1
AM	0.1727

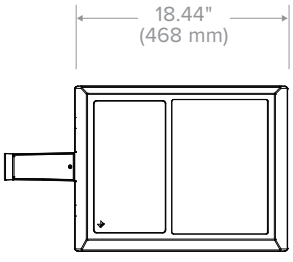
DIMENSIONS



Side View



Front View



Top View

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-FR

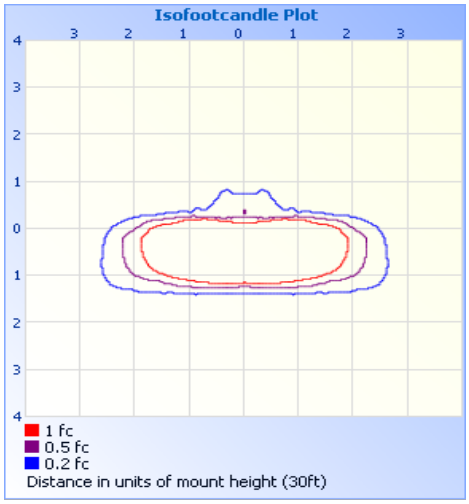
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18208**
Watts	**156**
Efficacy	**116.7**
IES Type	**I**
BUG Rating	**B2-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	16101	88.4%
Downward House Side	2107	11.6%
Downward Total	18208	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18208	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-2

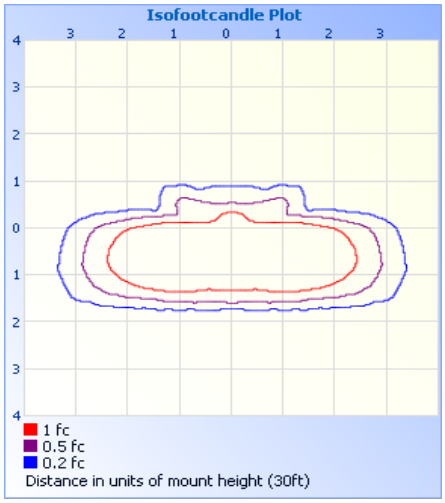
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17309**
Watts	**156**
Efficacy	**111.0**
IES Type	**II**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14323	82.7%
Downward House Side	2986	17.3%
Downward Total	17309	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17309	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-3

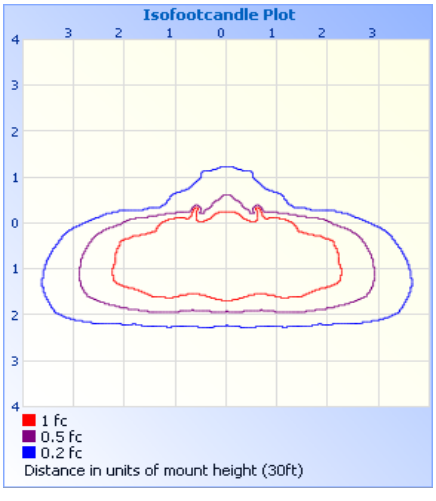
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17332**
Watts	**156**
Efficacy	**111.1**
IES Type	**III**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14911	86.0%
Downward House Side	2421	14.0%
Downward Total	17332	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17332	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-4

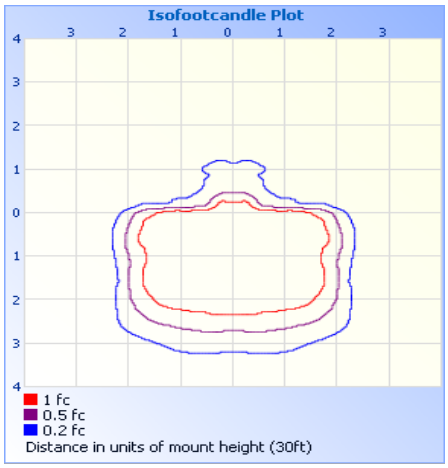
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17465**
Watts	**156**
Efficacy	**112.0**
IES Type	**IV**
BUG Rating	**B1-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15757	90.2%
Downward House Side	1708	9.8%
Downward Total	17465	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17465	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-4W

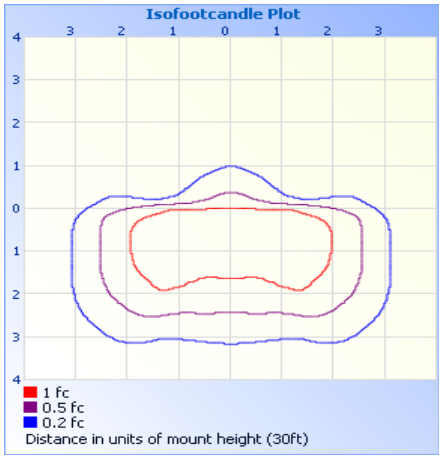
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17299**
Watts	**156**
Efficacy	**110.9**
IES Type	**IV**
BUG Rating	**B2-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15320	88.6%
Downward House Side	1979	11.4%
Downward Total	17299	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17299	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5R

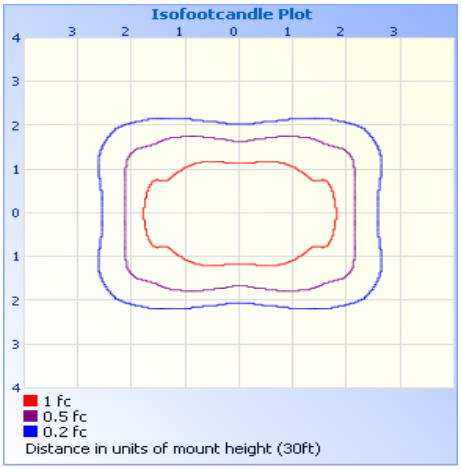
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17947**
Watts	**156**
Efficacy	**115.0**
IES Type	**III**
BUG Rating	**B4-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8974	50.0%
Downward House Side	8974	50.0%
Downward Total	17947	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17947	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-5QM

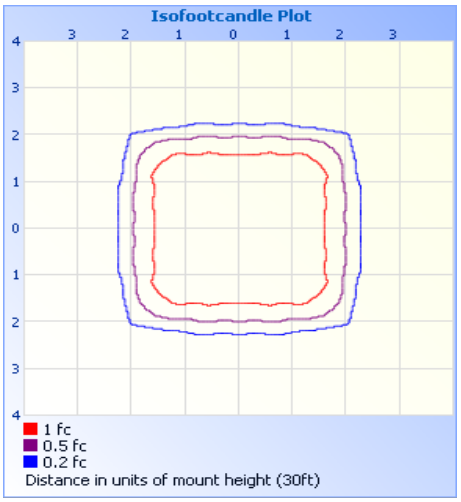
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18173**
Watts	**156**
Efficacy	**116.5**
IES Type	**V**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9087	50.0%
Downward House Side	9087	50.0%
Downward Total	18173	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18173	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5QN

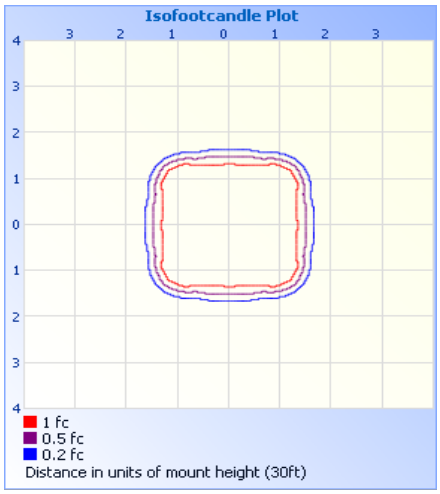
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18219**
Watts	**156**
Efficacy	**116.8**
IES Type	**V**
BUG Rating	**B4-U0-G1**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9110	50.0%
Downward House Side	9110	50.0%
Downward Total	18219	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18219	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5W

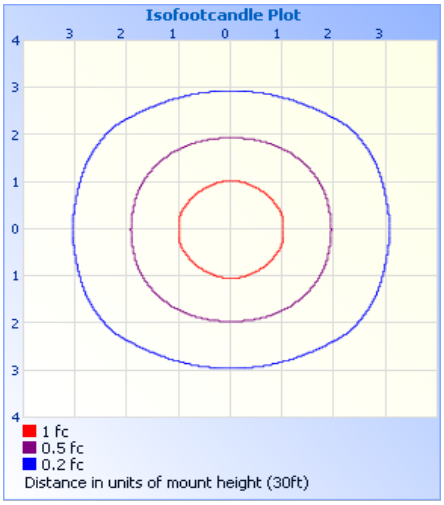
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17904**
Watts	**156**
Efficacy	**114.8**
IES Type	**V**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8952	50.0%
Downward House Side	8952	50.0%
Downward Total	17904	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17904	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

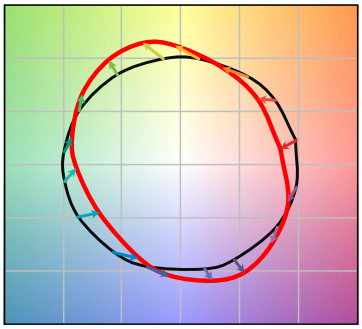
CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

TM-30 DATA

COLOR VECTOR GRAPHIC

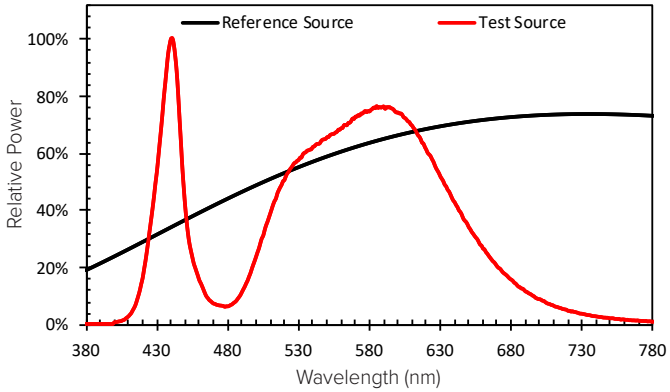


Reference Illuminant — Test Source

TEST SOURCE

R_f	68
R_g	99
CCT(K)	3947
D_{UV}	0.0004
x	0.3831
y	0.3793
CIE R_a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



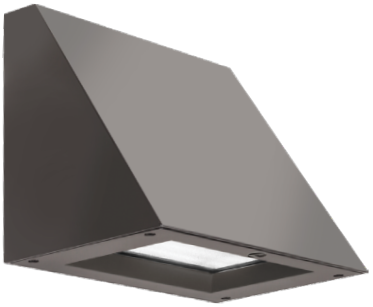
ELECTRICAL DATA

Electrical													Dimming			
# LED	System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
28	22	250 mA	120-480	50/60	0.18	0.11	0.09	0.08	0.06	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
	38	400 mA			0.32	0.18	0.16	0.14	0.11	0.08							
	60	650 mA			0.50	0.29	0.25	0.22	0.17	0.13							
	86	950 mA			0.72	0.41	0.36	0.31	0.25	0.18							
54	94	550 mA			0.78	0.45	0.39	0.34	0.27	0.20							
	122	700 mA			1	0.59	0.51	0.44	0.35	0.25							
	156	900 mA			1.30	0.75	0.65	0.56	0.45	0.33							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)						
Hours	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	96.9%	95.3%	93.3%	86.6%	> 60,000

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting



WDGE2 LED
Architectural Wall Sconce

Catalog Number

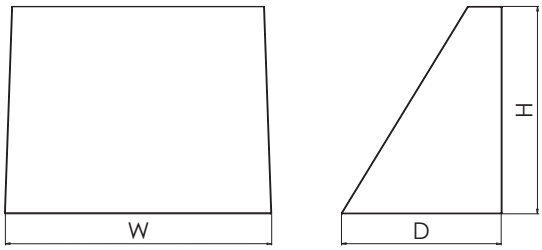
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth: 7″
Height: 9″
Width: 11.5″
Weight: (without options) 13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT DDBXD

Series	Package		Color Temperature		CRI	Distribution		Voltage	Mounting	
WDGE2 LED	P1[1]	P1SW	27K	2700K	80CRI	VF	Visual comfort forward throw	MVOLT	**Shipped included**	**Shipped separately**
	P2[1]	P2SW	30K	3000K	90CRI	VW	Visual comfort wide	347[3]	SRM Surface mounting bracket	AWS 3/8inch Architectural wall spacer
	P3[1]	P3SW	35K	3500K				480[3]		BBW Surface-mounted back box
	P4[1]	Door with small window (SW) is required to accommodate sensors. See page 2 for more details.	40K	4000K						PBBW Premium surface-mounted back box (top, left, right conduit entry)
	P5[1]		50K[2]	5000K						

Options

E4WH	Emergency battery backup, CEC compliant (4W, 0°C min)
E10WH	Emergency battery backup, CEC compliant (10W, 5°C min)
E20WC	Emergency battery backup, CEC compliant (18W, -20°C min)
PE[4]	Photocell, Button Type
DS[5]	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG[6]	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for premium back box (PBBW). Total of 4 entry points.

Standalone Sensors/Controls (only available with P1SW, P2SW & P3SW)

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls (only available with P1SW, P2SW & P3SW)

NLTAIR2 PIR	nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights.
NLTAIR2 PIRH	nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

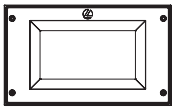
Accessories

Ordered and shipped separately.

WDGEAWS DDBXD U	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2PBBW DDBXD U	WDGE2 Premium surface-mounted back box (specify finish)
WSBBW DDBXD U	Surface - mounted back box (specify finish)

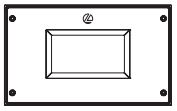
NOTES

1 P1-P5 not available with sensors/controls. Sensors/controls only available with P1SW, P2SW and P3SW.
2 50K not available in 90CRI
3 347V and 480V not available with E4WH, E10WH, E20WC or DS.
4 PE not available in 480V or with sensors/controls
5 DS option not available with E4WH, E10WH, E20WC or sensors/controls.
6 DMG option not available with sensors/controls



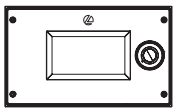
Default configuration with no sensors/controls.

Power Packages: P1, P2, P3, P4, P5



Small Window (SW) configuration

Power Packages: P1SW, P2SW, P3SW



Configuration with sensors/controls

Power Packages: P1SW, P2SW, P3SW

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)		30K (3000K, 80 CRI)		35K (3500K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
P1 / P1SW	10W	VF	1,166	119	1,209	123	1,251	128	1,256	128	1,254	128
		VW	1,197	122	1,241	126	1,284	131	1,289	131	1,286	131
P2 / P2SW	15W	VF	1,878	129	1,947	134	2,015	139	2,023	139	2,019	139
		VW	1,927	133	1,997	137	2,067	142	2,075	143	2,071	143
P3 / P3SW	23W	VF	2,908	129	3,015	134	3,119	138	3,132	139	3,126	139
		VW	2,983	132	3,093	137	3,200	142	3,213	143	3,206	142
P4	35W	VF	4,096	117	4,247	121	4,394	126	4,412	126	4,403	126
		VW	4,202	120	4,357	125	4,508	129	4,526	129	4,517	129
P5	48W	VF	5,567	115	5,772	119	5,972	123	5,996	124	5,984	124
		VW	5,711	118	5,921	122	6,127	126	6,151	127	6,139	127

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1 / P1SW	10W	0.082	0.049	0.043	0.038	--	--
	13W	--	--	--	--	0.046	0.033
P2 / P2SW	15W	0.132	0.081	0.072	0.064	--	--
	18W	--	--	--	--	0.056	0.041
P3 / P3SW	23W	0.195	0.114	0.100	0.088	--	--
	26W	--	--	--	--	0.079	0.058
P4	35W	0.302	0.175	0.152	0.134	--	--
	38W	--	--	--	--	0.115	0.086
P5	48W	0.434	0.241	0.211	0.184	--	--
	52W	--	--	--	--	0.157	0.119

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

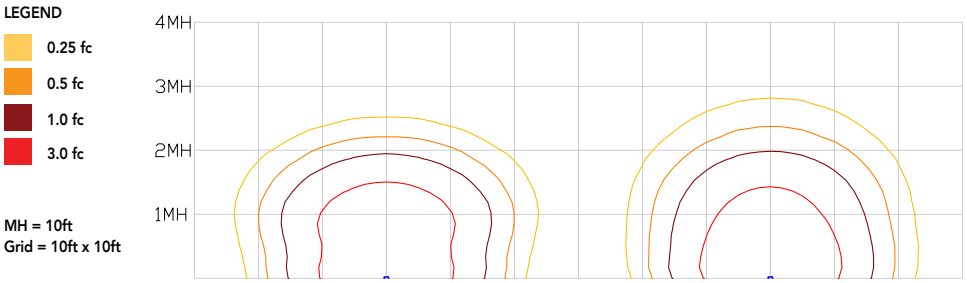
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.



WDGE2 LED P3 40K 80CRI VW

WDGE2 LED P3 40K 80CRI VF

Emergency Egress Options

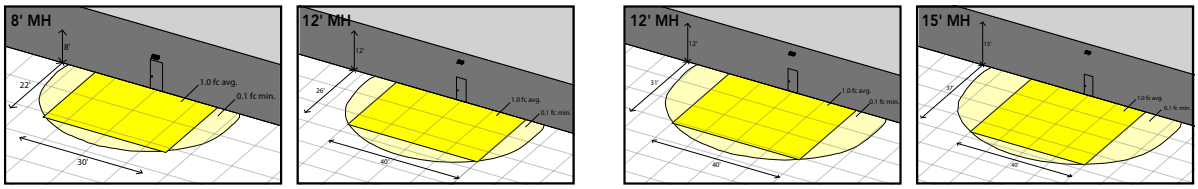
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E10WH or E20WC and VF distribution.

Grid = 10ft x 10ft



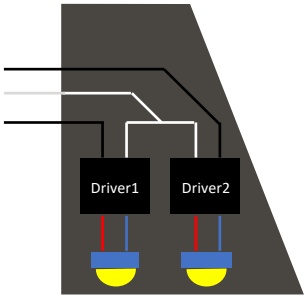
WDGE2 LED xx 40K 80CRI VF MVOLT E10WH

WDGE2 LED xx 40K 80CRI VF MVOLT E20WC

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Control / Sensor Options

Motion/Ambient Sensor (PIR_, PIRH_)

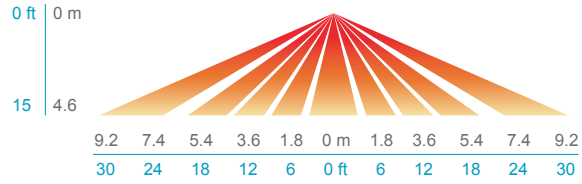
Motion/Ambeint sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

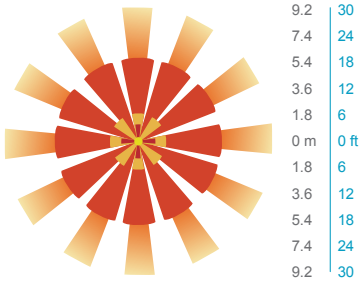
Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

PIR

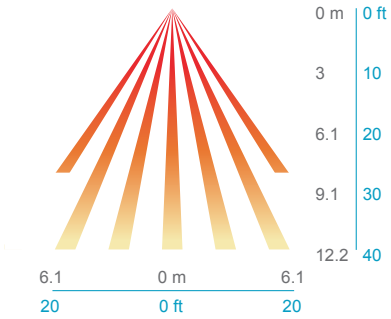
HIGH VIEW



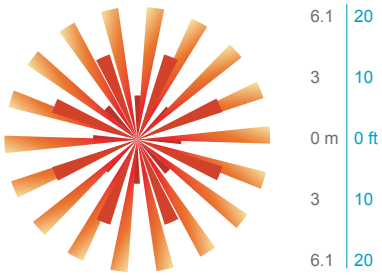


PIRH

SIDE VIEW



TOP VIEW



Option	Dim Level	High Level (when triggered	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Mounting, Options & Accessories



NLTAIR2 PIR – nLight AIR Motion/Ambient Sensor

D = 7″

H = 11″

W = 11.5″

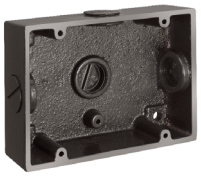


PBBW – Premium Back Box

D = 1.75″

H = 9″

W = 11.5″



BBW – Standard Back Box

D = 1.5″

H = 4″

W = 5.5″



AWS – 3/8inch Architectural Wall Spacer

D = 0.38″

H = 4.4″

W = 7.5″

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2).

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8″ Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient.
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

BLADE

Vandal Resistant

BLD LED



WALL MOUNT /
MULLION MOUNT LED

Fixture Type | Date

Job Name | Approved By

Catalog Number

SPECIFICATIONS

Description The Blade combines a sleek, patent pending design shaped with high performance, full cut off optics to achieve unobtrusive illumination of a space or path of egress. When mounted overa doorway or mullion, the fixture is perceived as an element of the building structure, and, additionally, provides water protection in the form of a drip cap over the entranceway. Multiple lengths are available to match a given door opening and our quick-mount system facilitates installation and maintenance.

Housing Marine grade heat treated extruded aluminum.
Chemically primed and finished with robotically applied polyester powder coat.

Wall Mount Marine grade heat treated extruded aluminum. Chemically primed and finished with robotically applied polyester powder coat. Designed to provide quick mounting to housing and secured with (2) captive stainless steel TORX® head screws.

Lens Frame Marine grade heat treated extruded aluminum.
Secured to fixture (4) captive stainless steel TORX® head screws.

Lens UV stabilized diffused extruded polycarbonate.

End Plate Die-cast marine grade aluminum.
Chemically primed and finished with robotically applied polyester powder coat.

Drivers Constant current drivers at 700mA.

LED Samsung LM561B+ Series @ 2700K, 3000K, 3500K, 4000K, or 5000K and 82 CRI wired in parallel-series. L_{70} projected life of 130,000 hours at 50ºC. Tested in accordance with LM-80. Ten year warranty on LED boards against operational defects.

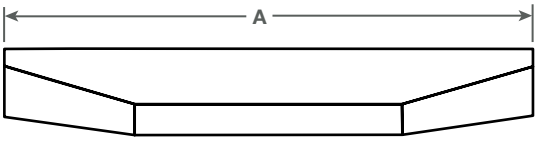
Gaskets Closed cell self-adhesive neoprene to provide watertight seal between fixture and mounting surface.

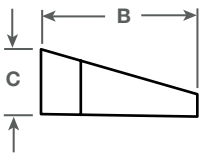
UL Listing U.L., C.UL., Wet standard.

Lifetime Warranty Luminaire LED Incorporated will repair or replace any fixture damaged due to vandalism for the lifetime of the installation.

DIMENSIONAL DATA

	A	B	C
BLD 12	20.0”	5.6”	2.4”
BLD 24	30.8”	5.6”	2.4”
BLD 36	41.6”	5.6”	2.4”
BLD 48	52.4”	5.6”	2.4”
BLD 72	74.0”	5.6”	2.4”





Luminaire Led
a division of the LUMINAIRES GROUP

5 Sutton Place
P.O. Box 2162
Edison, NJ 08818

www.luminaireled.net
P. 732.549.0056

Luminaire LED Incorporated products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA. Content of specification sheets is subject to change; please consult our website for current product information.

Rev: 03/19+

ORDERING INFORMATION

SERIES	LED	CCT	VOLTS	DRIVER	LENS	COLOR	OPTIONS		TX/SD
									TX/SD
BLD 12	5W	2700K	120-277	CC	DP	BLK	DIM	EMB10ST	
	10W	3000K		DIM		BRZ	2B	EMB310	
BLD 24	10W	3500K		PRD		SIL	PC	EMB310ST	
	20W	4000K				WHT	PC BT	EMB20R	
BLD 36	15W	5000K				CUST	GLR	EMB125R	
	30W						OCC	EMB250R	
BLD 48	20W						OCC50	EMBDA	
	35W						KO	ST/SC	
BLD 72	30W								
	55W								
	PRD - Specify Watts or Lumens Above								

CC = Constant Current (Standard)
DIM = 0-10V Dimming, 10% at lowest level
PRD = Programmable driver. Specify Watts or Lumens under "LED" in Ordering Information. N/A with BLD 12.

Luminaire LED Incorporated products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA. Content of specification sheets is subject to change; please consult our website for current product information.
Rev: 03/19+

OPTIONS

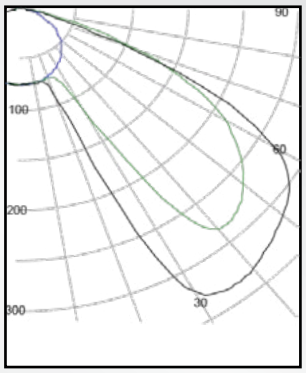
LENS	DP = Diffused Polycarbonate.
COLORS	BLK = Black BRZ = Bronze SIL = Silver WHT = White CUST = Custom Color (Consult Factory)
DIM	0-10V dimming driver. 10% at lowest level. N/A with BLD 12.
PC	Photoelectric switch. N/A with 2B option or any EMB options.
PC BT	Bluetooth connected daylight harvesting photocell mounted in machine hole in lens frame. Optional passive infrared occupancy sensor. N/A with EMB options in BLD 12, BLD24, and BLD36.
2B	(2) LED drivers for independent LED board operation. N/A with BLD 12, N/A with OCC options, N/A with EMB310, N/A with EMB310ST.
GLR	Fuse and fuse holder.
OCC	Passive infrared sensor mounted in machine hole in lens frame for on/off operation. Maximum coverage of 10' radius from 8' height. N/A with BLD 12.
OCC50	Passive infrared sensor mounted in machine hole in lens frame. 50% of LED's constantly on and 50% sensored. N/A with BLD 12 and BLD 24.
KO	1/2" knock out in both end plates.
EMB10ST	1000 lumen self-testing, self-contained, 90 minute emergency battery pack. 0ºC (32ºF) to 55ºC (131ºF). Not available in 347V. Available for BLD24, BLD36, BLD48, and BLD72 lengths only. N/A with 2B option in BLD24. Meets CA Title 20 Standards.
EMB310	1000 lumen self-contained, 90 minute emergency battery pack. 0ºC (32ºF) to 55ºC (131ºF). Available for BLD36, BLD48, and BLD72 lengths only. Meets CA Title 20 standards.
EMB310ST	1000 lumen self-testing, self-contained, 90 minute emergency battery pack. 0ºC (32ºF) to 55ºC (131ºF). Available for BLD36, BLD48, and BLD72 lengths only. Meets CA Title 20 Standards.
EMB20R	Remote mounted micro inverter that will operate a 25W maximum load for 90 minutes. 0ºC (32ºF) to 45ºC (113ºF).
EMB125R	Remote inverter that will operate a 125W maximum load for 90 minutes. 20ºC (68ºF) to 30ºC (86ºF). Not available in 347V.
EMB250R	Remote inverter that will operate a 250W maximum load for 90 minutes. 20ºC(68ºF) to 30ºC (86ºF). Not available in 347V.
EMBDA	Two drivers and two emergency battery packs self-contained within fixture for independent light engine operation. Each battery pack will operate each light engine for a minimum of 90 minutes. Available in the BLD 72 only.
ST/SC	Slotted screws instead of TORX® head.
TX/SD	TORX® head bit.

PHOTOMETRIC DATA

Model	Watts	Input Watts		Delivered Lumens									
				2700K		3000K		3500K		4000K		5000K	
BLD 12	5W	6.5W		447		452		461		476		490	
BLD 12	10W	11.8W		875		885		903		931		958	
BLD 24	10W	10.6W		962		973		993		1024		1055	
BLD 24	20W	21.3W		1885		1907		1946		2006		2066	
BLD 36	15W	14.7W		1444		1461		1491		1537		1583	
BLD 36	30W	29.6W		2828		2860		2919		3009		3099	
BLD 48	20W	19.6W		1926		1948		1987		2049		2111	
BLD 48	35W	36.4W		3770		3812		3890		4011		4132	
BLD 72	30W	29.4W		2969		3003		3064		3159		3254	
BLD 72	55W	57.1W		5789		5855		5974		6184		6345	
BLD xx	PRD			Programmable Driver. Must specify Watts or Lumens in Ordering Information.									

Luminaire LED Incorporated products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA. Content of specification sheets is subject to change; please consult our website for current product information.

MODEL: BLD12-5W-4000K
Delivered Lumens: 476 Lumens

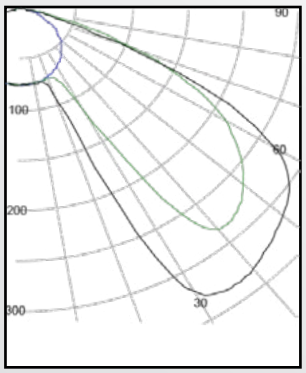


IES FILE: BLD12-5W-4000K
Total Power: 7W

Testing was performed in accordance with IES LM-79-08
Bug Rating: B0U0G1

Zone	Lumens	% Luminaire
0 - 30	69	14.5
0 - 40	149	31.1
0 - 60	359	75.5
60 - 90	117	24.5
0 - 90	476	100.0
90 -180	0	0.0
0 - 180	476	100.0

MODEL: BLD36-15W-4000K
Delivered Lumens: 1537 Lumens

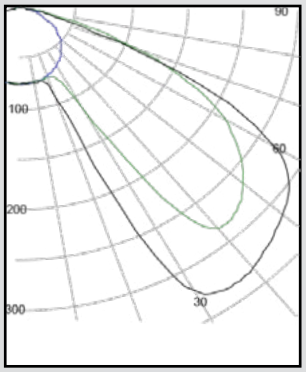


IES FILE: BLD36-15W-4000K
Total Power: 14.7W

Testing was performed in accordance with IES LM-79-08
Bug Rating: B0U0G1

Zone	Lumens	% Luminaire
0 - 30	377	124.5
0 - 40	640	41.6
0 - 60	1219	79.3
60 - 90	317	20.7
0 - 90	1537	100.0
90 -180	0	0.0
0 - 180	1537	100.0

MODEL: BLD36-30W-4000K
Delivered Lumens: 3009 Lumens



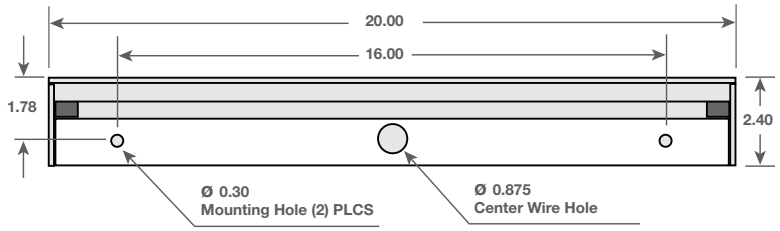
IES FILE: BLD36-30W-4000K
Total Power: 29.6W

Testing was performed in accordance with IES LM-79-08
Bug Rating: B1U0G1

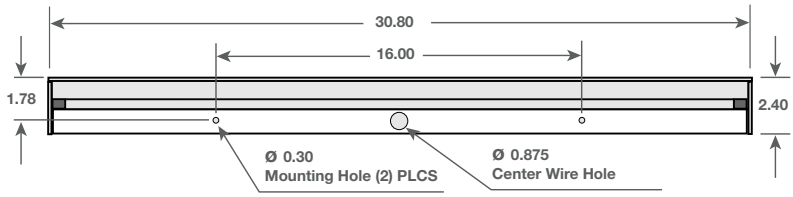
Zone	Lumens	% Luminaire
0 - 30	739	24.6
0 - 40	1253	41.6
0 - 60	2387	79.3
60 - 90	622	20.7
0 - 90	3009	100.0
90 -180	0	0.0
0 - 180	3009	100.0

MOUNTING DETAIL

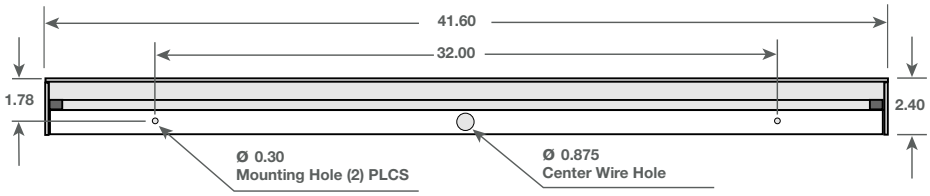
BLD12



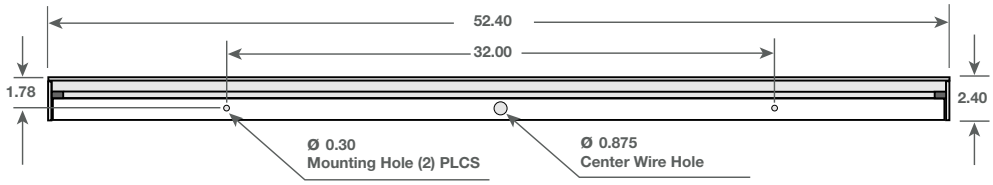
BLD24



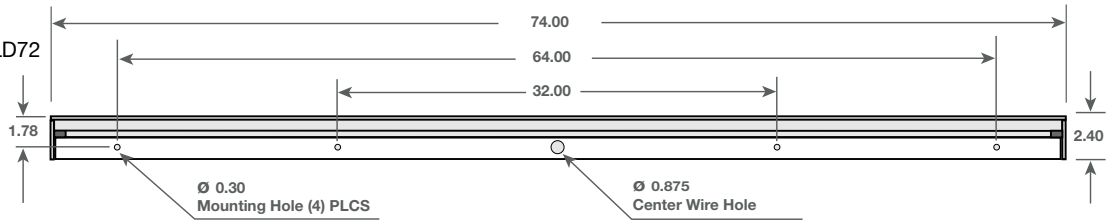
BLD36



BLD48



BLD72

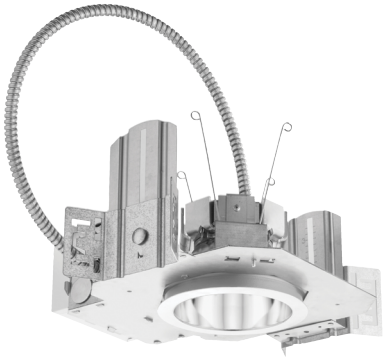


LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

LDN4

4" OPEN
Non-IC
New Construction Downlight



FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.

CONSTRUCTION — Galvanized steel mounting/plaster frame; galvanized steel junction box with bottom-hinged access covers and spring latches. Reflectors are retained by torsion springs.

Vertically adjustable mounting brackets with commercial bar hangers provide 3-3/4" total adjustment.

Two combination 1/2"-3/4" and four 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out). No. 12 AWG conductors, rated for 90°C.

Accommodates 12"-24" joist spacing.

Passive cooling thermal management for 25°C standard; high ambient (40°C) option available. Light engine and drivers are accessible from above or below ceiling.

Max ceiling thickness 1-1/2".

OPTICS — LEDs are binned to a 3-step SDCM; 80 CRI minimum. 90 CRI optional.

LED light source concealed with diffusing optical lens.

General illumination lighting with 1.0 S/MH and 55° cutoff to source and source image.

Self-flanged anodized reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black painted reflectors.

ELECTRICAL — Multi-volt (120-277V, 50/60Hz) 0-10V dimming drivers mounted to junction box, 10% or 1% minimum dimming level available.

0-10V dimming fixture requires two (2) additional low-voltage wires to be pulled.

70% lumen maintenance at 60,000 hours.

LISTINGS — Certified to US and Canadian safety standards. Wet location standard (covered ceiling). IP55 rated. ENERGY STAR® certified product.

WARRANTY — 5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

battery pack

A+ Capable options indicated by this color background.

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: LDN4 35/15 LO4AR LSS MVOLT EZ1

LDN4													
Series		**Color temperature**		**Lumens**[1]		**Aperture/Trim Color**				**Finish**		**Voltage**	
LDN4	4" round	27/	2700K	05	500 lumens	LO4	Downlight	AR	Clear	LSS	Semi-specular	MVOLT	Multi-volt
		30/	3000K	07	750 lumens	LW4	Wallwash	WR[2]	White	LD	Matte diffuse	120	120V
		35/	3500K	10	1000 lumens			BR[2]	Black	LS	Specular	277	277V
		40/	4000K	15	1500 lumens							347[3]	347V
		50/	5000K	20	2000 lumens								
				25	2500 lumens								
				30	3000 lumens								
				40	4000 lumens								

Driver		**Options**			
GZ10	0-10V driver dims to 10%	SF[4]	Single fuse	N80[8]	nLight™ Lumen Compensation
GZ1	0-10V driver dims to 1%	TRW[6]	White painted flange	NPS80EZ[7,10]	nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1).
EZ10	0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 10%	TRBL[6]	Black painted flange	NPS80EZER[7,10]	nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1). ER controls fixtures on emergency circuit.
EZ1	0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 1%	EL[5]	Emergency battery pack with integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS	HAO[11]	High ambient option (40°C)
		ELR[5]	Emergency battery pack with remote test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS	CP[12]	Chicago Plenum
		ELSD[5]	Emergency battery pack with self-diagnostics, 10W Constant Power, integral test switch. Not Certified in CA Title 20 MAEDBS	RRL__	RELOC®-ready luminaire connectors enable a simple and consistent factory installed option across all ABL luminaire brands. Refer to RRL for complete nomenclature. Available only in RRLA, RRLB, RRLAE, and RRLC12S.
		ELRSD[5]	Emergency battery pack with self-diagnostics, 10W Constant Power, remote test switch. Not Certified in CA Title 20 MAEDBS	NLTAIR2[8,9]	nLight® Air enabled
		E10WCP[5]	Emergency battery pack, 10W Constant Power with integral test switch. Certified in CA Title 20 MAEDBS	NLTAIRER2[9,10]	nLight® AIR Dimming Pack Wireless Controls. Controls fixtures on emergency circuit, not available with battery pack options
		E10WCPR[5]	Emergency battery pack, 10W Constant Power with remote test switch. Certified in CA Title 20 MAEDBS	USPOM	US point of manufacture
		NPP16D[7,10]	nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1).	90CRI	High CRI (90+)
		NPP16DER[7,10]	nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1). ER controls fixtures on emergency circuit.		

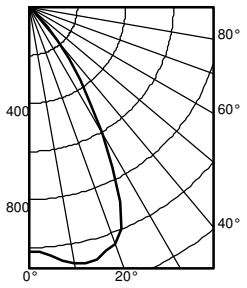
Notes

1 Overall height varies based on lumen package; refer to dimensional chart on page 3.
2 Not available with finishes.
3 Not available with emergency options.
4 Must specify voltage 120V or 277V.
5 12.5" of plenum depth or top access required for battery pack maintenance.
6 Available with clear (AR) reflector only.
7 Specify voltage. ER for use with generator supply EM power. Will require an emergency hot feed and normal hot feed.
8 Fixture begins at 80% light level. Must be specified with NPS80EZ or NPS80EZ ER. Only available with EZ10 and EZ1 drivers.
9 Not available with CP, NPS80EZ, NPS80EZER, NPP16D, NPP16DER or N80 options.
10 NLTAIR2 and NLTAIRER2 not recommended for metal ceiling installations.
11 Fixture height is 5-11/16" for all lumen packages with HAO.
12 Must specify voltage for 3000lm. Not available with emergency battery pack option.

PHOTOMETRY

Distribution Curve	Distribution Data	Output Data	Coefficient of Utilization	Illuminance Data at 30″ Above Floor for a Single Luminaire

LDN4 35/10 LO4AR, input watts: 10.58, delivered lumens: 1085.2, LM/W = 102.57, spacing criterion at 0= 1.04, test no. ISF 30712P229.



	Ave	Lumens
0	1017	
5	1039	101
15	1084	304
25	895	395
35	369	232
45	52	51
55	1	2
65	1	1
75	0	0
85	0	0
90	0	

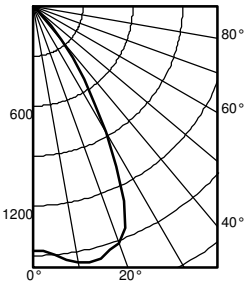
Zone	Lumens	% Lamp
0° - 30°	799.7	73.7
0° - 40°	1031.5	95.1
0° - 60°	1084.7	100.0
0° - 90°	1085.2	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	1085.2	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	33.6	5.8	16.8	8.9	3.4
10.0	18.1	7.9	9.0	12.2	1.8
12.0	11.3	10.0	5.6	15.4	1.1
14.0	7.7	12.1	3.8	18.6	0.8
16.0	5.6	14.2	2.8	21.9	0.6

LDN4 35/15 LO4AR, input watts: 17.5, delivered lumens: 1570.1, LM/W = 89.72, spacing criterion at 0= 1.04, test no. ISF 30712P234.



	Ave	Lumens
0	1472	
5	1503	146
15	1569	440
25	1295	571
35	534	335
45	75	74
55	1	3
65	1	1
75	0	0
85	0	0
90	0	

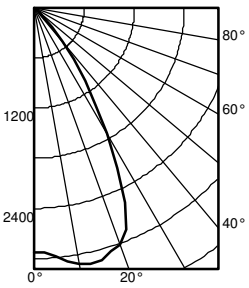
Zone	Lumens	% Lamp
0° - 30°	1157.1	73.7
0° - 40°	1492.5	95.1
0° - 60°	1569.4	100.0
0° - 90°	1570.1	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	1570.1	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	48.7	5.8	24.3	8.9	4.9
10.0	26.2	7.9	13.1	12.2	2.6
12.0	16.3	10.0	8.2	15.4	1.6
14.0	11.1	12.1	5.6	18.6	1.1
16.0	8.1	14.2	4.0	21.9	0.8

LDN4 35/30 LO4AR, input watts: 32.1, delivered lumens: 3122.6, LM/W = 88.52, spacing criterion at 0= 1.04, test no. ISF 30712P249.



	Ave	Lumens
0	2927	
5	2989	290
15	3120	875
25	2575	1136
35	1062	667
45	149	148
55	3	5
65	2	1
75	0	0
85	0	0
90	0	

Zone	Lumens	% Lamp
0° - 30°	2301.2	73.7
0° - 40°	2968.2	95.1
0° - 60°	3121.1	100.0
0° - 90°	3122.6	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	3122.6	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	96.8	5.8	48.4	8.9	9.7
10.0	52.0	7.9	26.0	12.2	5.2
12.0	32.4	10.0	16.2	15.4	3.2
14.0	22.1	12.1	11.1	18.6	2.2
16.0	16.1	14.2	8.0	21.9	1.6

Accessories: *Order as separate catalog numbers (shipped separately).*

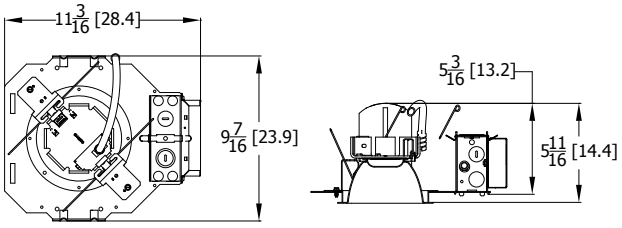
SCA4	Sloped ceiling adapter. Degree of slope must be specified (5D, 10D, 15D, 20D, 25D, 30D). Refer to TECH-190.

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

LDN4

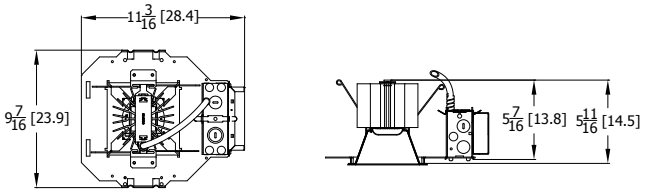
* All dimensions are inches (centimeters) unless otherwise noted.

LDN4 500-1500 LUMEN



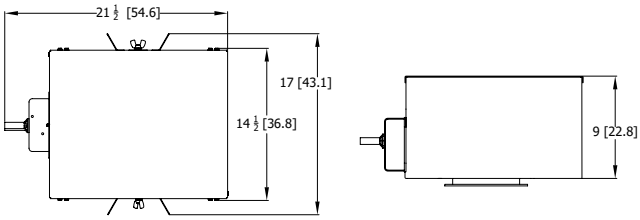
Aperture: 4-5/16 (11)
Ceiling Opening: 5-1/8 (13)
Overlap trim: 5-7/16 (13.8)

LDN4 2000-3000 LUMEN



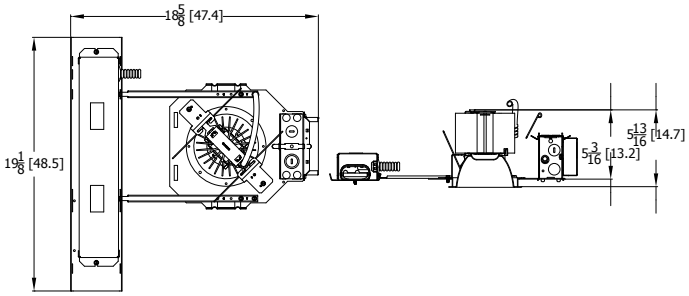
Aperture: 4-5/16 (11) Square
Ceiling Opening: 5-1/8 (13) Square
Overlap trim: 5-7/16 (13.8) Square

LDN4 CP



Aperture: 4-5/16? (11)
Ceiling Opening: 5-1/8? (13)
Overlap trim: 5-7/16? (13.8)

LDN4 EL-ELR



Aperture: 4-5/16 (11)
Ceiling Opening: 5-1/8 (13)
Overlap trim: 5-7/16 (13.8)

LDN4			
Nominal	**Lumens**	**Wattage**	**Lm/W**
500	523.6	5.74	91.2
750	751.1	8.6	87.3
1000	1045	10.58	98.8
1500	1512	17.5	86.4
2000	2006	22.12	90.7
2500	2551	26.1	97.7
3000	3007	32.1	93.7
4000	4212	43	98.0

LUMEN OUTPUT MULTIPLIERS - CCT					
	2700K	**3000K**	**3500K**	**4000K**	**5000K**
80CRI	0.950	0.966	1.000	1.025	1.101

HOW TO ESTIMATE DELIVERED LUMENS IN EMERGENCY MODE

Use the formula below to estimate the delivered lumens in emergency mode

Delivered Lumens = 1.25 x P x LPW

P = Ouput power of emergency driver. P = 10W for PS1055CP

LPW = Lumen per watt rating of the luminaire. This information is available on the ABL luminaire spec sheet.
The LPW rating is also available at Designlight Consortium.

LUMEN OUTPUT MULTIPLIERS - FINISH			
	Clear (AR)	**White (WR)**	**Black (BR)**
Specular (LS)	1.0	N/A	N/A
Semi-specular (LSS)	0.950	N/A	N/A
Matte diffuse (LD)	0.85	N/A	N/A
Painted	N/A	0.87	0.73

Notes

- Tested in accordance with IESNA LM-79-08.
- Tested to current IES and NEMA standards under stabilized laboratory conditions.
- CRI: 80 typical.

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

ADDITIONAL DATA

COMPATIBLE 0-10V WALL-MOUNT DIMMERS		
MANUFACTURER	PART NO.	POWER BOOSTER AVAILABLE
Lutron®	Diva® DVTV	
	Diva® DVSCTV	
	Nova T® NTFTV	
	Nova® NFTV	
Leviton®	AWSMT-7DW	CN100
	AWSMG-7DW	PE300
	AMRMG-7DW	
	Leviton Centura Fluorescent Control System	
	IllumaTech® IP7 Series	
Synergy®	ISD BC	RDMFC
	SLD LPCS	
	Digital Equinox (DEQ BC)	
Douglas Lighting Controls	WPC-5721	
Entertainment Technology	Tap Glide TG600FAM120 (120V)	
	Tap Glide Heatsink TGH1500FAM120 (120V)	
	Oasis 0A2000FAMU	
Honeywell	EL7315A1019	EL7305A1010 (optional)
	EL7315A1009	
HUNT Dimming	Preset slide: PS-010-IV and PS-010-WH	
	Preset slide: PS-010-3W-IV and PS-010-3W-WH	
	Preset slide, controls FD-010: PS-IFC-010-IV and PS-IFC-010-WH-120/277V	
	Preset slide, controls FD-010: PS-IFC-010-3W-IV and PS-IFC-010-3W-WH-120/277V	
	Remote mounted unit: FD-010	
Lehigh Electronic Products	Solitaire	PBX
PDM Electrical Products	WPC-5721	
Starfield Controls	TR61 with DALI interface port	RT03 DALInet Router
WattStopper®	LS-4 used with LCD-101 and LCD-103	

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

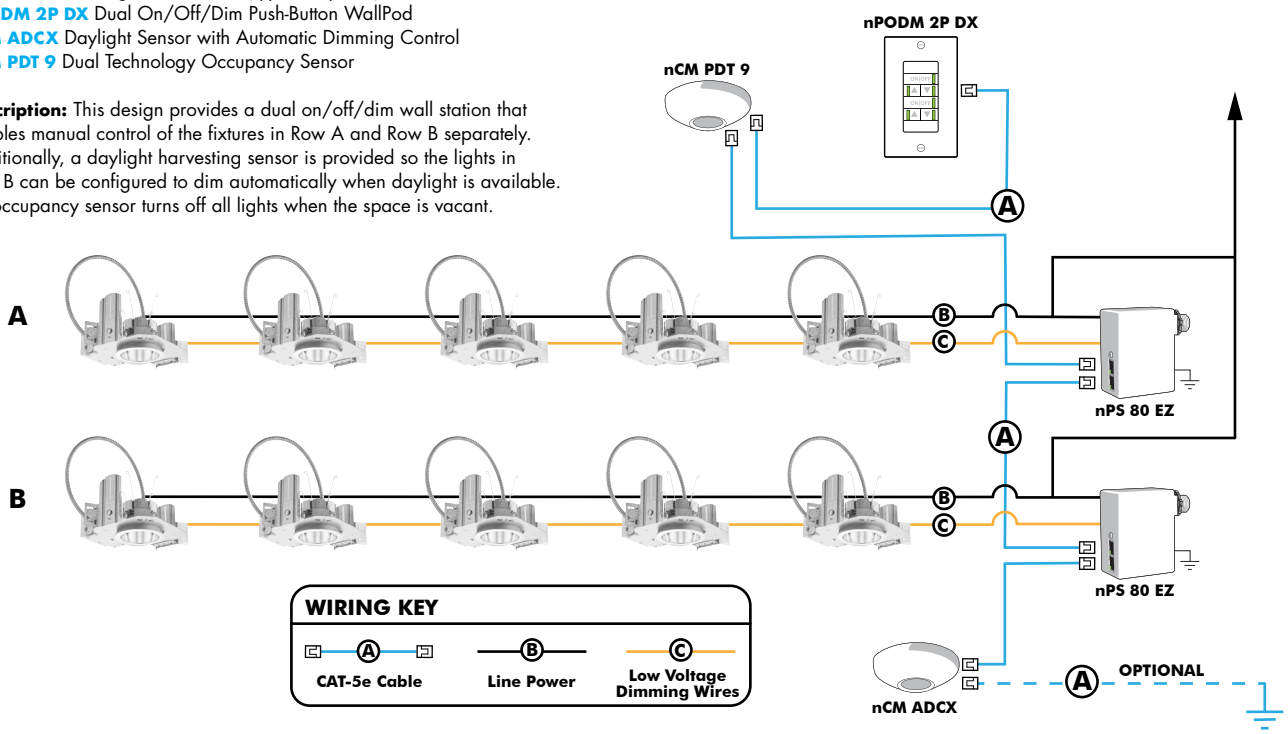
© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

LDN4

EXAMPLE
Group Fixture Control*
*Appiication diagram applies for fixtures with eldoLED drivers only.

nPS 80 EZ Dimming/Control Pack (qty: 2 required)
nPODM 2P DX Dual On/Off/Dim Push-Button WallPod
nCM ADCX Daylight Sensor with Automatic Dimming Control
nCM PDT 9 Dual Technology Occupancy Sensor

Description: This design provides a dual on/off/dim wall station that enables manual control of the fixtures in Row A and Row B separately. Additionally, a daylight harvesting sensor is provided so the lights in Row B can be configured to dim automatically when daylight is available. An occupancy sensor turns off all lights when the space is vacant.



Choose Wall Controls
nLight offers multiple styles of wall controls - each with varying features and user experience.



Push-Button Wallpod
Traditional tactile buttons and LED user feedback



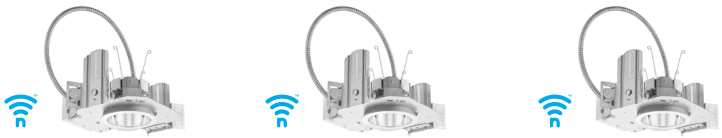
Graphic Wallpod
Full color touch screen provides a sophisticated look and feel

nLight® Wired Controls Accessories:			
Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlight for complete listing of nLight controls.			
WallPod Stations	**Model number**	**Occupancy sensors**	**Model Number**
On/Off	nPODM (Color)	Small motion 360º, ceiling (PIR/dual Tech)	nCM 9 / nCM PDT 9
On/Off & Raise/Lower	nPOD DX (Color)	Large motion 360º, ceiling (PIR/dual tech)	nCM 10 / nCM PDT 10
Graphic Touchscreen	nPOD GFX (Color)	Wide View (PIR/dual tech)	nWV 16 / nWV PDT 16
Photocell controls	**Model Number**	Wall Switch w/ Raise/Lower (PIR/dual tech)	nWSX LV DX / nWSX PDT LV DX
Dimming	nCM ADCX	**Cat-5 cables (plenum rated)**	**Model Number**
		10', CAT5 10FT	CAT5 10FT J1
		15, CAT5 15FT	CAT5 15FT J1

nLight® AIR Control Accessories: *Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlightair.*	
Wall switches	**Model number**
On/Off single pole	rPODB [color]
On/Off two pole	rPODB 2P [color]
On/Off & raise/lower single pole	rPODB DX [color]
On/Off & raise/lower two pole	rPODB 2P DX [color]
On/Off & raise/lower single pole	rPODBZ DX WH[1]

Notes
1 Can only be ordered with the RES7Z zone control sensor version.

nLight AIR
nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication is cost prohibitive. The integrated nLight AIR rPP20 Power Pack is part of each Lithonia LDN Luminaire. These individually addressable controls offer the ultimate in flexibility during initial setup and for space repurposing.



Simple as 1,2,3

1. Install the nLight® AIR fixtures with embedded smart sensor
2. Install the wireless battery-powered wall switch
3. With CLAIRITY app, pair the fixtures with the wall switch and if desired, customize the sensor settings for the desired outcome



© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

JOB _____ TYPE _____

NOTES _____ APPROVALS _____

FEATURES

- 20" size in post top, pole and wall mount
- High performance optics up to 17,000 delivered lumens
- Elegant form factor
- Diffusion lens option
- SiteSync™ wireless control options

CERTIFICATIONS

c UL us LISTED

ida DARK SKY APPROVED 2016

DLC PREMIUM LISTED

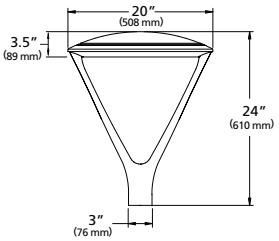
3000K and warmer CCTs only

SPECIFICATIONS



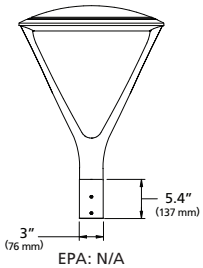
Weight: 35 lbs

FM33



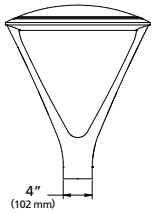
EPA: .512

PT23



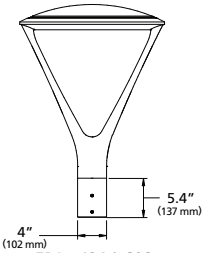
EPA: N/A

FM44



EPA: .534

PT24 / PT34



EPA: .424 / .608

ORDERING CODE

Series	LED Engine	CCT	Distribution	Rotation	Voltage	Mounting
UR20 Ouro	No Lens or Clear Lens	**AM** Amber	No Lens or Clear Lens	Blank for no rotation	**UNV** 120-277V	**FM33** Flush mt 3.0" OD pole, 3" fixture base
	24L-25 3,000 lm	**3K7** 3000K, 70 CRI	**FR** Type 1/Front Row	**L**[1] Optic rotation left	**347** 347V	**FM44** Flush mt 3.6" to 4.0" OD pole, 4" fixture base
	24L-65 7,000 lm	**3K8** 3000K, 80 CRI	**2** Type II	**R**[1] Optic rotation right	**480** 480V	**PT23** 3" Post Top mount for 2 3/8" OD Tenon
	56L-75 10,000 lm	**3K9** 3000K, 90 CRI	**3** Type III		**DALI** 120-277V†	**PT24** 4" Post Top mount for 2 3/8" OD Tenon
	56L-110 15,000 lm	**4K7** 4000K, 70 CRI	**4** Type IV		†Consult factory	**PT34** 4" Post Top mount for 2 7/8" OD Tenon
	56L-140 17,000 lm	**4K8** 4000K, 80 CRI	**4W** Type IV Wide			
	HDL - High Diffusion Lens	**5K7** 5000K, 70 CRI	**5QM** Type V Square Medium			
	28L-30 3,000 lm		**5QN** Type V Square Narrow			
	28L-70 7,000 lm		**5R** Type V Rectangular			
	68L-80 9,000 lm		**5W** Type V Wide (Round)			
	68L-115 13,000 lm		HDL - High Diffusion Lens			
	68L-150 15,000 lm		**3** Type III/Asymmetric			
			5W Type V/Symmetric			

Fixture Finish	Control Options		Options	Control Accessories^
BL Black	**7PR-TL** 7 pin PCR with twist lock photocontrol	**SWPM-40F**[2,3,4,5] SiteSync with Sensor 9' to 40' MH	**BC**[6] Back-light Control	**SW7PR**[2,3] SiteSync with 7 pin PCR
DB Dark Bronze	**7PR-SC** 7 pin PCR with shorting cap	**WSP-40F-1**[2,5] Dimming Occ. Sensor for up to 40' MH, 120/277/347V	**SF** Single Fuse	**SWUSB** SiteSync Software on USB
LG Light Gray	**7PR** 7 pin PCR, wireless control enabled	**WSP-40F-2**[2,5] Dimming Occ. Sensor for up to 40' MH, 208/240V	**DF** Double Fuse	**SWTAB** SiteSync Windows® Tablet
GT Graphite	**AD-01**[2] AstroDIM: 50% output at midnight	**WSP-40F-3**[2,5] Dimming Occ. Sensor for up to 40' MH, 480V	**TB** Terminal Block	**SWBRG** SiteSync Wireless Bridge Node
PS Platinum Silver	**AD-02**[2] AstroDIM: 50% output midnight to 4 AM	**NXSPW14F**[2,5] NX Wireless, PIR Sensor, 14'	**CLR**[5] Clear Lens	**WIR-RME-L** wiSCAPE External Fixture Module
TT Titanium	**AD-03**[2] AstroDIM: 50% output 10PM	**NXSPW30F**[2,5] NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'.	**TL** Tamper proof latch	**SCL-R** Occ. Sensor for Round Pole (up to 16' MH)
WH White	**AD-04**[2] AstroDIM: 50% output 10PM to 4AM	**NXSP14F**[2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'		**SCL -S** Occ. Sensor for Square Pole (up to 16' MH)
CC Custom Color†	**NXWE** NX Wireless Enabled	**NXSP30F**[2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'		**SCH-R** Occ. Sensor for Round Pole (16' to 30' MH)
†Consult factory	**SWP**[2,3,4] SiteSync Pre commission			**SCH-S** Occ. Sensor for Square Pole (16' to 30' MH)
				NXOFM-1R1D-UNV NX 7-pin Module
				^ Please refer to page 8 for ordering details

1 Not available with 5QM, 5QN, and 5W distributions.
2 Not available with other sensor or wireless control options.
3 Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.
4 Not available with 347V and 480V
5 24L & 56L only.
6 Not available with Type V distributions or HDL option.

Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	3,000	25	No Lens	FR	2932	0	0	1	115	3119	0	0	1	123	3098	0	0	1	124
				FR-BC	1994	0	0	0	78	2121	0	0	0	83	2107	0	0	0	83
				2	2943	1	0	1	116	3099	1	0	1	122	3110	1	0	1	124
				2-BC	1724	0	0	1	68	1834	0	0	1	72	1822	0	0	1	72
				3	3007	1	0	1	118	3200	1	0	1	126	3178	1	0	1	127
				3-BC	1830	0	0	1	73	1947	0	0	1	78	1934	0	0	1	77
				4	3056	0	0	1	120	3251	0	0	1	128	3229	0	0	1	129
				4-BC	2235	0	0	1	88	2377	0	0	1	93	2362	0	0	1	93
				4W	3078	1	0	2	121	3276	1	0	2	129	3253	1	0	2	130
				4W-BC	1855	0	0	1	73	1975	0	0	1	78	1961	0	0	1	77
				5QM	2931	2	0	1	115	3119	2	0	1	123	3098	2	0	1	124
				5QN	2694	2	0	1	106	2866	2	0	1	113	2847	2	0	1	114
				5R	3054	2	0	2	120	3250	2	0	2	128	3228	2	0	2	129
				5W	3043	2	0	1	120	3237	2	0	1	127	3216	2	0	1	129
			Clear Lens	FR	2773	0	0	1	109	2951	0	0	1	116	2930	0	0	1	117
				FR-BC	1886	0	0	1	74	2007	0	0	1	79	1993	0	0	1	78
				2	2784	1	0	1	109	2963	1	0	1	116	2942	1	0	1	118
				2-BC	1631	0	0	1	64	1736	0	0	1	68	1723	0	0	1	67
				3	2845	1	0	1	111	3028	1	0	1	119	3007	1	0	1	120
				3BC	1806	0	0	1	72	1922	0	0	1	77	1909	0	0	1	76
				4	2891	0	0	1	113	3076	0	0	1	120	3055	0	0	1	122
				4-BC	2114	0	0	1	83	2250	0	0	1	88	2234	0	0	1	88
				4W	2912	1	0	1	114	3099	1	0	2	121	3077	1	0	2	123
				4W-BC	1755	0	0	1	69	1868	0	0	1	73	1855	0	0	1	5
				5QM	2773	1	0	1	109	2950	2	0	1	116	2931	2	0	1	117
				5QN	2549	1	0	0	100	2712	2	0	1	106	2693	2	0	1	108
				5R	2890	2	0	2	113	3075	2	0	2	120	3054	2	0	2	122
				5W	2879	2	0	1	113	3064	2	0	1	120	3042	2	0	1	122
28L		30	HDL Lens	3	2816	1	0	1	96	2997	1	0	1	102	3020	1	0	1	101
				5W	2917	1	0	1	100	3105	1	0	1	106	3084	1	0	1	103

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	7,000	65	No Lens	FR	6754	1	0	1	104	7187	1	0	1	111	7138	1	0	1	110
				FR-BC	4392	0	0	1	68	4673	0	0	1	72	4641	0	0	1	71
				2	6571	1	0	2	101	6992	1	0	2	108	6944	1	0	2	107
				2-BC	3799	0	0	1	58	4042	0	0	1	62	4014	0	0	1	62
				3	6625	1	0	2	102	7051	1	0	2	108	7002	1	0	2	108
				3BC	4032	0	0	1	62	4291	0	0	1	66	4261	0	0	1	66
				4	6788	1	0	2	104	7223	1	0	2	111	7174	1	0	2	110
				4-BC	4924	0	0	2	76	5239	0	0	2	81	5203	0	0	2	80
				4W	6699	1	0	2	103	7128	1	0	3	110	7079	1	0	3	109
				4W-BC	4088	0	0	2	63	4350	0	0	2	67	4321	0	0	2	66
				5QM	7025	3	0	1	108	7477	3	0	1	115	7425	3	0	1	114
				5QN	6964	3	0	1	107	7410	3	0	1	114	7323	3	0	1	113
				5R	7038	3	0	3	108	7489	3	0	3	115	7437	3	0	3	114
				5W	7011	3	0	2	108	7460	3	0	2	115	7409	3	0	2	114
			Clear Lens	FR	6432	1	0	1	97	6844	1	0	1	104	6798	1	0	1	105
				FR-BC	4182	0	0	1	63	4450	0	0	1	67	4420	0	0	1	67
				2	6258	1	0	1	95	6659	1	0	2	101	6613	1	0	2	102
				2-BC	3617	0	0	1	55	3849	0	0	1	58	3823	0	0	1	58
				3	6310	1	0	2	96	6714	1	0	2	102	6668	1	0	2	103
				3-BC	3599	0	0	1	55	3829	0	0	1	59	3803	0	0	1	59
				4	6465	1	0	2	98	6879	1	0	2	104	6832	1	0	2	105
				4-BC	4688	0	0	2	71	4990	0	0	2	76	4955	0	0	2	75
				4W	6380	1	0	2	97	6789	1	0	2	103	6742	1	0	2	104
				4W-BC	3893	0	0	2	59	4143	0	0	2	63	4115	0	0	2	62
				5QM	6691	3	0	1	101	7119	3	0	1	108	7070	3	0	1	109
				5QN	6632	2	0	1	100	7058	3	0	1	107	7009	3	0	1	108
				5R	6702	3	0	3	102	7131	3	0	3	108	7082	3	0	3	109
				5W	6676	3	0	2	101	7104	3	0	2	108	7055	3	0	2	109
28L		70	HDL Lens	3	6047	2	0	2	92	6047	2	0	2	92	6236	2	0	2	89
				5W	6221	2	0	1	94	6619	2	0	1	100	6525	2	0	1	93

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	10,000	75	No Lens	FR	9315	1	0	1	124	9913	1	0	1	132	9845	1	0	1	131
				FR-BC	6058	0	0	1	81	6445	0	0	1	86	6402	0	0	1	85
				2	9063	2	0	2	120	9644	2	0	2	128	9578	2	0	2	128
				2-BC	5239	0	0	1	70	5575	0	0	1	74	5536	0	0	1	74
				3	9139	2	0	2	125	9725	2	0	2	134	9657	2	0	2	129
				3-BC	5561	0	0	2	74	5877	0	0	2	78	5561	0	0	2	74
				4	9362	1	0	2	124	9362	1	0	2	124	9876	1	0	2	132
				4-BC	6791	0	0	2	90	7226	0	0	2	96	7168	0	0	2	96
				4W	9240	2	0	3	123	9832	2	0	3	131	9765	2	0	3	130
				4W-BC	5639	0	0	2	75	6001	0	0	2	80	5959	0	0	2	79
				5QM	9691	3	0	1	129	10312	3	0	1	137	10240	3	0	1	137
				5QN	9606	3	0	1	128	10222	3	0	1	136	10151	3	0	1	135
				5R	9706	3	0	3	129	10328	3	0	3	137	10258	3	0	3	137
				5W	9669	4	0	2	129	10289	4	0	2	137	10217	4	0	2	136
			Clear Lens	FR	8871	1	0	1	117	9760	1	0	1	129	9374	1	0	1	125
				FR-BC	5769	0	0	1	76	6138	0	0	1	81	6096	0	0	1	81
				2	8631	2	0	2	114	9183	2	0	2	121	9121	2	0	2	122
				2-BC	4989	0	0	1	67	5309	0	0	1	71	5272	0	0	1	62
				3	8703	1	0	2	115	9260	2	0	2	122	9197	2	0	2	123
				3-BC	4964	1	0	1	66	5282	1	0	2	70	5245	1	0	2	69
				4	8916	1	0	2	118	9487	1	0	2	125	9423	1	0	2	126
				4-BC	6467	0	0	2	85	6881	0	0	2	91	6834	0	0	2	90
				4W	8799	2	0	3	116	9363	2	0	3	124	9300	2	0	3	124
				4W-BC	5370	0	0	2	72	5714	1	0	2	76	5675	0	0	2	76
				5QM	9228	3	0	1	122	9820	3	0	1	130	9752	3	0	1	130
				5QN	9147	3	0	1	121	9734	3	0	1	129	9668	3	0	1	129
				5R	9244	3	0	3	122	9836	3	0	3	130	9769	3	0	3	130
				5W	9208	4	0	2	122	9798	4	0	2	130	9732	4	0	2	130
68L		80	HD Lens	3	7853	2	0	2	99	8356	2	0	2	106	8299	2	0	2	104
				5W	8080	2	0	2	102	8684	3	0	2	110	8684	3	0	2	109

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	15,000	110	No Lens	FR	13533	1	0	1	125	14399	1	0	2	133	14301	1	0	2	130
				FR-BC	8799	1	0	1	81	9363	1	0	1	86	9300	1	0	1	85
				2	13165	2	0	2	121	14009	2	0	2	129	13913	2	0	2	126
				2-BC	7611	1	0	2	70	8098	1	0	2	75	8042	1	0	2	74
				3	13275	2	0	3	122	14126	2	0	3	130	14030	2	0	3	128
				3-BC	8079	1	0	2	73	8596	1	0	2	78	8538	1	0	2	78
				4	13601	1	0	3	125	14472	1	0	3	133	14373	1	0	3	131
				4-BC	9865	1	0	2	91	10497	1	0	3	97	10425	1	0	3	96
				4W	13422	2	0	3	124	14283	2	0	3	132	14185	2	0	3	129
				4W-BC	8191	1	0	3	75	8715	1	0	3	80	8656	1	0	3	80
				5QM	14077	4	0	2	130	14979	4	0	2	138	14876	4	0	2	135
				5QN	13953	4	0	1	129	14848	4	0	1	137	14747	4	0	1	134
				5R	14100	4	0	4	130	15004	4	0	4	138	14901	4	0	4	135
				5W	14046	4	0	2	129	14946	4	0	2	138	14844	4	0	3	135
			Clear Lens	FR	12803	1	0	1	118	13624	1	0	1	126	13531	1	0	1	123
				FR-BC	9298	1	0	1	86	8325	1	0	1	77	8798	1	0	1	81
				2	12455	2	0	2	115	13254	2	0	2	123	13164	2	0	2	120
				2-BC	7200	1	0	1	67	7661	1	0	2	71	7610	1	0	2	70
				3	12560	2	0	3	116	13365	2	0	3	124	13273	2	0	3	121
				3-BC	7163	1	0	2	65	7622	1	0	2	69	7570	1	0	2	69
				4	12868	1	0	3	119	13692	1	0	3	127	13599	1	0	3	124
				4-BC	9333	1	0	2	86	9931	1	0	2	92	9864	1	0	2	90
				4W	12699	2	0	3	117	13513	2	0	3	125	13420	2	0	3	122
				4W-BC	7750	1	0	3	72	8246	1	0	3	76	8190	1	0	3	76
				5QM	13318	3	0	2	123	14172	4	0	2	131	14075	4	0	2	128
				5QN	13202	3	0	1	122	14048	4	0	1	130	13951	4	0	1	127
				5R	13341	4	0	4	123	14195	4	0	4	131	14099	4	0	4	128
				5W	13290	4	0	2	123	14141	4	0	2	131	14044	4	0	2	128
68L		115	HD Lens	3	11577	2	0	2	102	12320	2	0	2	109	12236	2	0	2	106
				5W	11912	3	0	2	105	12676	3	0	2	112	12588	3	0	2	109

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	17,000	140	No Lens	FR	15323	2	0	2	111	16306	2	0	2	118	16194	2	0	2	116
				FR-BC	9964	1	0	1	72	10603	1	0	1	77	10530	1	0	1	76
				2	14897	2	0	2	108	15852	2	0	2	115	15743	2	0	2	112
				2-BC	8618	1	0	2	63	9169	1	0	2	67	9107	1	0	2	66
				3	15032	2	0	3	109	15996	2	0	3	116	15886	2	0	3	113
				3-BC	9147	1	0	2	65	9733	1	0	2	70	9667	1	0	2	69
				4	15400	1	0	3	112	16387	1	0	4	119	16275	1	0	4	116
				4-BC	11170	1	0	3	81	11886	1	0	3	86	11804	1	0	3	86
				4W	15198	2	0	4	110	16173	3	0	4	117	16062	3	0	4	115
				4W-BC	9275	1	0	3	67	9869	1	0	3	72	9801	1	0	3	71
				5QM	15939	4	0	2	116	16962	4	0	2	123	16845	4	0	2	120
				5QN	15801	4	0	1	115	16813	4	0	1	122	16698	4	0	1	119
				5R	15966	4	0	4	116	16990	4	0	4	123	16874	4	0	4	121
				5W	15906	4	0	3	115	16925	4	0	3	123	16808	4	0	3	120
			Clear Lens	FR	14541	1	0	2	105	15473	2	0	2	111	15367	2	0	2	110
				FR-BC	9456	1	0	1	68	10061	1	0	1	72	9993	1	0	1	72
				2	14146	2	0	2	102	15053	2	0	2	108	14950	2	0	2	107
				2-BC	8178	1	0	2	59	8702	1	0	2	63	8642	1	0	2	62
				3	14265	2	0	3	103	15179	2	0	3	109	15076	2	0	3	108
				3BC	8136	1	0	2	58	8657	1	0	2	62	8598	1	0	2	61
				4	14614	1	0	3	105	15551	1	0	3	112	15445	1	0	3	110
				4-BC	10600	1	0	3	76	11279	1	0	3	81	11203	1	0	3	81
				4W	14423	2	0	3	104	15347	2	0	4	111	15243	2	0	4	109
				4W-BC	8802	1	0	3	63	9365	1	0	3	67	9302	1	0	3	67
				5QM	15126	4	0	2	109	16095	4	0	2	116	15985	4	0	2	114
				5QN	14994	4	0	1	108	15955	4	0	1	115	15846	4	0	1	113
				5R	15152	4	0	4	109	16122	4	0	4	116	16012	4	0	4	114
				5W	15094	4	0	3	109	16061	4	0	3	116	15951	4	0	3	114
68L		115	HD Lens	3	13240	2	0	2	89	13992	3	0	3	95	13897	3	0	3	93
				5W	13623	3	0	2	92	14396	3	0	2	97	14298	3	0	2	95

Electrical Characteristics												Dimming				
System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out		Absolute voltage	
		VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
25	298mA	120-480	50/60	0.21	0.12	0.10	0.09	0.07	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
30	298mA			0.25	0.14	0.13	0.11	0.09	0.06							
65	800mA			0.54	0.31	0.27	0.23	0.19	0.14							
70	700mA			0.58	0.34	0.29	0.25	0.20	0.15							
75	420mA			0.63	0.36	0.31	0.27	0.22	0.16							
80	350mA			0.67	0.38	0.33	0.29	0.23	0.17							
110	600mA			0.92	0.53	0.46	0.40	0.32	0.23							
115	500mA			0.96	0.55	0.48	0.42	0.33	0.24							
140	750mA			1.17	0.67	0.58	0.51	0.40	0.29							
150	625mA			1.25	0.72	0.63	0.54	0.43	0.31							

TM-21 LIFETIME CALCULATION

Projected Lumen Maintenance (25°C / 77°F)						
HOURS	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	97%	95%	93%	87%	> 60,000 hrs

Kim Lighting reserves the right to change specifications without notice.

SPECIFICATIONS

Housing:

- Low copper aluminum alloy die-casting is designed as one-piece with internal cooling fins.
- Solid, cast aluminum wall creates a thermal barrier between the optical and electrical compartments.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- Housing is designed with integral LED heat sink utilized for thermal transfer and for securing the location of each LED module.
- IK09 rated enclosure protects electrical equipment against external mechanical impacts.

Lens Frame:

- One-piece low copper aluminum alloy die-cast is secured to housing with 6 screws.

Backlight Control

- Optional Backlight Control on each LED module to completely control unwanted backlight.

Lens

One-piece flat glass lens slips secure with clips. Extra silicone gasketing is provided to retain a clear optical compartment.

Optical Module:

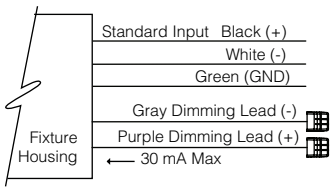
- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB).
- Optical lenses shall be clear injection molded PMMA acrylic.
- Each MCPCB and optic shall be sealed to the diecast housing and sealed with a continuous one piece injection molded silicone rubber gasket.
- Patent Pending design of optical array shall independently shield each LED optic across the length of the aperture.
- Optional fixture finish optical surfaces shall not exceed BUG ratings of the standard white finish and shall be greater than or equal to the delivered lumens of the optional matte black optical surface finish.

Electrical Components

- Standard programmable driver allows for programmable drive current settings.
- Electrical components are stategically located in the driver gear compartment with a molded silicon grommet seal to provide separation from the optical chamber.
- Maximum lightning surge current 20KA with thermally protected varistor technology. Surge suppression is series circuited preventing total fixture failure. ANSI/IEEE C62.41 Category C High.
- Open circuit fault will turn off the luminaire in order to protect the sensitive electronics and acts as a signal for maintenance.
- Programmable Driver is rated for -40°C starting.
- "Thermal Shield", primary side, thermister provides protection for the sustainable life of electronic components.

Dimming:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.



Fusing:

SF for 120, 277, and 347 Line volts

DF for 208, 240, and 480 Line volts

Hight temperature fuse holders factory installed inside the fixture housing.

Fuse is included.

Finish:

Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.

Standard colors include (BLS) Black Gloss Smooth, (BLT) Black Matte Textured, (DBS) Dark Bronze Smooth, (GTT) Graphite Matte Textured, (LGS) Light Gray Smooth, (PSS) Platinum Silver Smooth, (VGS) Verde Green Smooth, (WHS) White Gloss Smooth, and (CC) Custom Color (Include RAL#).

Certifications and Listings:

- IUL 1598 Standard for Luminaires.
- IUL 8750 Standard for Safety for Light
- IEmitting Diode (LED) Equipment for use in Lighting Products.
- ICSA C22.2#250.0 Luminaires.
- ANSI C136.31-2010 Vibration tested and compliant 1.5G and 4G reference page 9
- IRoHS compliant.
- IIP66 rated.
- IIEC 66262 Mechanical Impact Code IK09.
- IDA approved, 3000K and warmer CCTs only.

CAUTION:

Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

WARRANTY:

For full warranty see: http://www.hubbelllighting.com/resources/warranty

Kim Lighting reserves the right to change specifications without notice.

CONTROLS

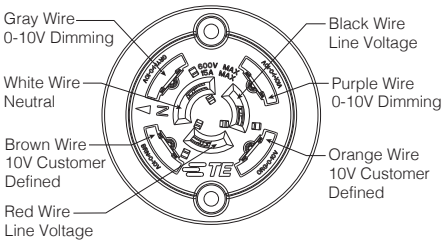
Photocell Receptacle

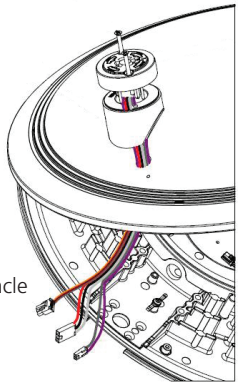
7PR

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.





7-Pin receptacle placement

Wireless Controls

wiSCAPE™

Hubbell Control Solution's wiSCAPE™ wireless control modules allow an individual fixture to managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The wiSCAPE modules provide on/off/dim control, external device input, alerts and metering.

WIR-RME-L

wiSCAPE External Module,120-480V, 1000ft range (LOS), Internal Photocell, 1 Digital Input, Compatible with the A-25-7H option

SiteSync™[1]

SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/products/sitesync for more details.

Dimming WASP Occupancy Sensor

WSP

The Dimming WASP Outdoor Occupancy Sensor is specifically designed to provide 0-10VDC output for the control of dimmable fixtures. Easy to use dipswitches allow the user to adjust sensor time delay and sensitivity as well as set unoccupied and occupied dimming levels. Sensors also feature a daylight sensor for ON/OFF control of fixtures when there is sufficient natural light. Visit https://hubbellcdn.com/installationmanuals/2102B_Dimming_WASP_Install.pdf for more details.

Pole Mounted

Round Pole-Mounted Occupancy Sensor up to 16'. Select voltage and finish color.

SCL-R

Round Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-R44/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor up to 16'. Select voltage and finish color.

SCL-S

Square Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for square pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-L/277[2]/BL[3]

Round Pole-Mounted Occupancy Sensor 16' to 30'. Select voltage and finish color.

SCH-R

Round Pole-Mounted Occupancy Sensor: 16' to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-R4[4]/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor 16' to 30'. Select voltage and finish color.

SCH-S

Square Pole-Mounted Occupancy Sensor: 16 to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-S/277[2]/BL[3]

AstroDIM

AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.

[1]PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

Examples:

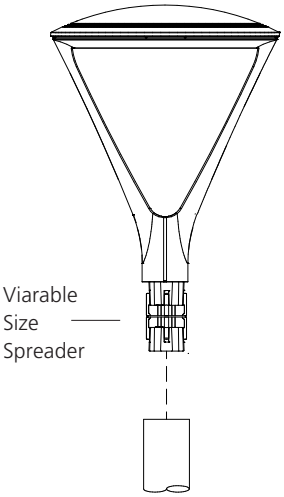
SiteSync only : UR20/56L-75/3K7/UNV/ASQ/BL/SWP

SiteSync with Motion Control: UR20/56L-75/3K7/UNV/ASQ/BL/SWPM-40F

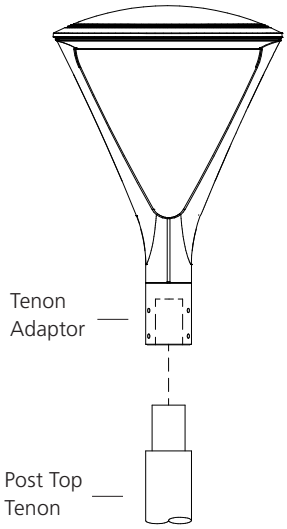
[2]Voltage, [3]Color, [4]Pole Diameter,

Kim Lighting reserves the right to change specifications without notice.

MOUNTING INSTALLATION

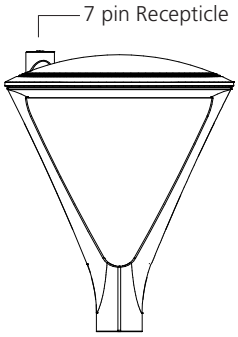


Flush Mount
FM33/44

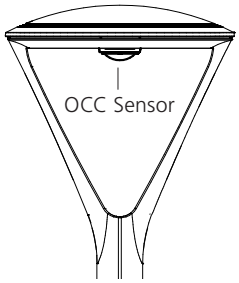


Post Top
PT23/24/34

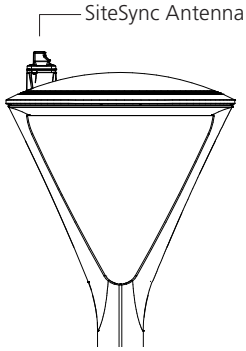
SENSOR PLACEMENT



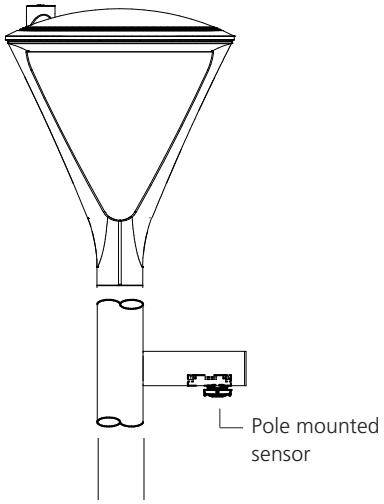
7 pin PCR
7PR



OCC Sensor
NX or WSP



SiteSync
SW7PR



Pole Mounted Sensor
SCL-R, SCL-S, SCH-R,
SCH-S

MOUNTING VIBRATION RATINGS

UR 20 Arm		UR28 Arm		UR 20 Post Top		UR 28 Post Top	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
ASQ	4G	**ASQ**	4G	**FM33**	4G	**FM44**	1.5G
A34	4G	**A34**	4G	**FM44**	1.5G	**FM45**	1.5G
A46	4G	**A46**	4G	**PT23**	4G	**PT24**	1.5G
MAF	4G	**MAF**	4G	**PT24**	4G	**PT34**	1.5G
				PT34	1.5G	**PT25**	1.5G
						PT35	1.5G

For the 4 G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Test Level 1 Normal Applications, Vibration Test Level 2 Bridge/Overpass Applications, and Vibration Test Level 3

For the 1.5G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Level 1 Bridge/Overpass Applications

Kim Lighting reserves the right to change specifications without notice.

DESCRIPTION

The Invue Arbor post top brings architectural style to area/site and pedestrian scale applications. Its dayform appearance brings a desired organic look into the urban environment. WaveStream™ LED Optics provide a uniform pixelation free image, managing glare while providing high levels of visibility.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Two-piece IP66 rated housing is cast from low copper content corrosion resistant aluminum, maintaining strength and precision to sustain long term dayform appearance. ANSI C136.31 testing compliance prevents damage from installation generated vibration. External hardware and casting seams are minimized to enhance appearance.

Optics
Specifically designed for pedestrian applications, WaveStream LED optical waveguide technology produces both symmetric NEMA type V and asymmetric NEMA II, III, IV distributions. The waveguide is manufactured from precision injection molded acrylic resulting in a pixelation free optical image for improved glare control and visual comfort. Luminaire efficacy's measure up to 100 lm/w for 4000K (+/- 275K) CCT at 70 CRI (min), optional 3000K CCT at 80 CRI is also available.

Electrical
LED driver(s) are directly mounted to upper housing thermal pad for optimal thermal performance. Standard 0-10V dimming drivers and Eaton's proprietary surge protection module are designed to withstand 10kV of transient line surge. Drivers operate at 120-277V 50/60Hz with 347V/60Hz or 480V/60Hz operation optional. Suitable for ambient temperature applications as low as -40°C (40°F) to 40°C (104°F). Limited high ambient options allow for 50°C operation.

Controls
The Arbor LED luminaire control options are designed to be simple and cost-effective ASHRAE and California Title 24 compliant solutions. The ANSI C136.41 compliant NEMA 7-PIN receptacle enables wireless dimming when used with compatible photocontrol. An integrated dimming and occupancy sensor is a standalone control option available in on/off (MS) and bi-level dimming (MS/DIM) operation. The optional LumaWatt Pro™ system is best described as a peer-to-peer wireless network of luminaire-integral sensors that operate in accordance with programmable profiles. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. See control options page for more details.

Mounting
Fitter assembly mounts over 2-3/8" O.D. tenon and is secured via six concealed stainless steel set screws. Design of fitter provides seamless transition to 3" O.D. round pole top. Additional mounting accessories include a single fixture arm mount, twin fixture arm mount and wall mount arm. Additional pole mount accessories mount to a 3" x 4" long tenon for 4" - 5" O.D. poles tops. For existing 2-3/8" tenons an adapter is shipped standard.

Finish
Eaton utilizes premium ultra-weatherable TGIC based polyester powder coatings that are specifically formulated to withstand extended outdoor exposure. The powders are formulated exclusively for Eaton to serve functionally as well as decorative. Good film appearance combinded with excellent mechanical an exterior exposure qualities display greater than twice as much gloss retention. RAL and custom color matches available. Finish is compliant with ASTM B117 3000hr salt spray standard.

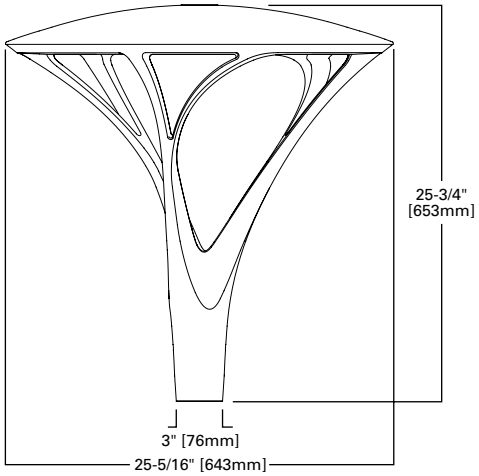
Warranty
Five-year warranty.



ARB ARBOR POSTTOP

DECORATIVE LUMINAIRE

DIMENSIONS



CERTIFICATION DATA

UL/cUL Listed
ANSI C136.31 1.5G Vibration Tested
IEG 60529 IP66 Housing
ASTM B117 SaH Spray Tested
ASTM A3560 Low Cooper Alloy
RoHS
ISO 9001
Dark Sky Approved (3000K CCT and warmer only)

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz, 480V/60Hz
40°C Ambient Temperature Rating
As low as -40°C (-40°F) minimum temperature
*See MINIMUM TEMPERATURE table

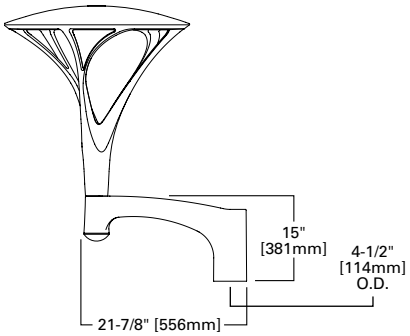
EPA

Effective Projected Area: (Sq. Ft.) 0.9

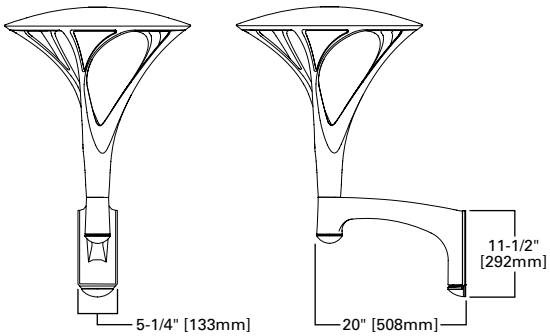
Approximate Net Weight:
37 lbs. [16.8 kgs.]

MOUNTING CONFIGURATIONS (WEIGHT AND EPAS INCLUDES FIXTURE)

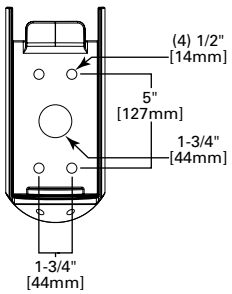
Single Arm Mount (ARSA-XX)
Weight: 56 lbs. [25.45 kgs.]
EPA: 1.7 Sq. Ft.



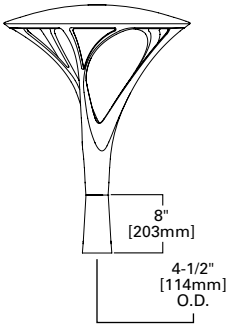
Wall Mount Arm (ARWM-XX)
Weight: 57 lbs. [25.91 kgs.]
EPA: 1.8 Sq. Ft.



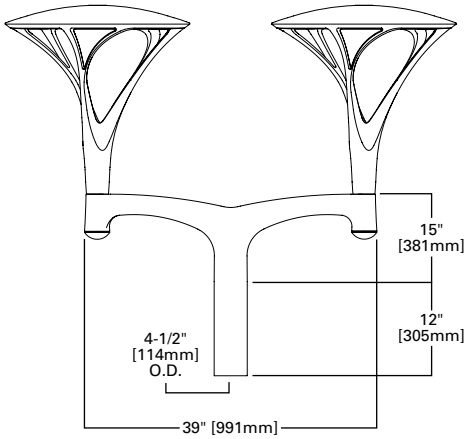
Wall Mount Arm Drill Pattern



Post Top Adapter (ARPA4-XX)
Weight: 41 lbs. [18.63 kgs.]
EPA: 1.2 Sq. Ft.



Twin Arm Mount (ARTA15-XX)
Weight: 114 lbs. [51.81 kgs.]
EPA: 3.45 Sq. Ft.

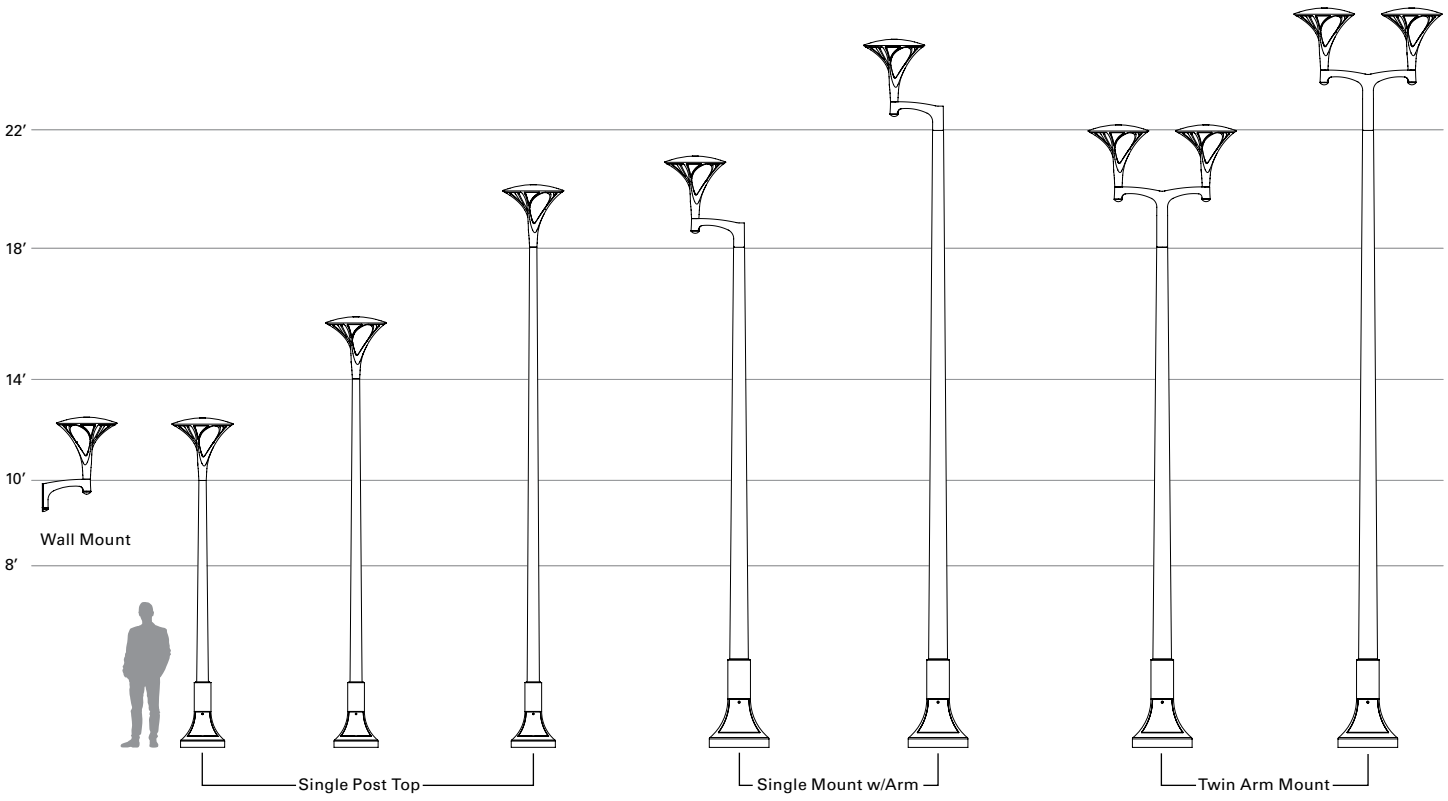


MOUNTING REQUIREMENTS CHART

Tenon O.D. (Inches)	**2-3/8" Tenon**		
Pole Top O.D. (Inches)	**3"**	**4"**	**5"**
Post Top	Standard	Spacer (Provided) & ARPA4-XX (Order Separately)	Spacer (Provided) & ARPA4-XX (Order Separately)
Single Arm Mount	Spacer (Provided)	Spacer (Provided)	Spacer (Provided)

Tenon O.D. (Inches)	**3" Tenon**		
Pole Top O.D. (Inches)		**4"**	**5"**
Post Top		ARPA4-XX (Order Separately)	ARPA4-XX (Order Separately)
Single Arm Mount		Standard	Standard
Twin Mount		Standard	Standard

POLE CONFIGURATIONS (ARP DECORATIVE POLE SHOWN)



CONTROL OPTIONS

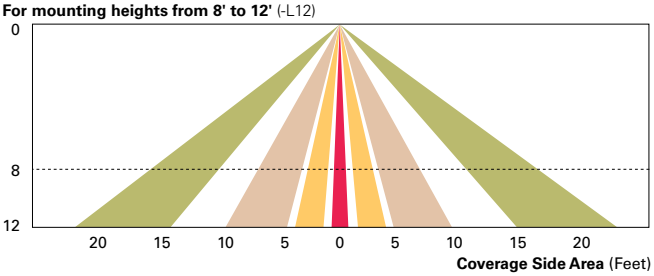
0-10V (D) The dimming option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (PER and PER7) Photocontrol receptacles provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

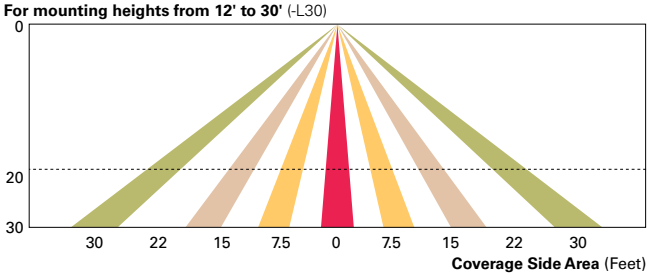
Dimming Occupancy Sensor (MS) These sensors are factory installed in the luminaire housing. When a sensor for dimming operation (/DIM) option is selected, the luminaire will dim down to approximately 50 percent power after five minutes of no activity detected. When activity is detected, the luminaire returns to full light output. When a sensor for ON/OFF operation is selected, the luminaire will turn off after five minutes of no activity.

These occupancy sensors include an integral photocell that can be activated or inactivated with the programming remote / configuration tool for "dusk-to-dawn" control or "daylight harvesting". Note: For MS sensors, the factory preset is OFF (Disabled). The programming remote / tool is a wireless tool that can be utilized to change the dimming level, time delay, sensitivity and other parameters. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 8'-40'.

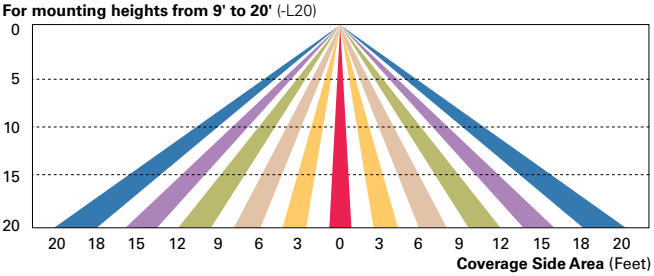
For mounting heights from 8' to 12' (-L12)



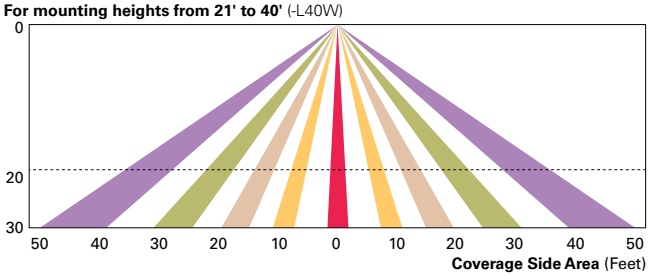
For mounting heights from 12' to 30' (-L30)



For mounting heights from 9' to 20' (-L20)



For mounting heights from 21' to 40' (-L40W)

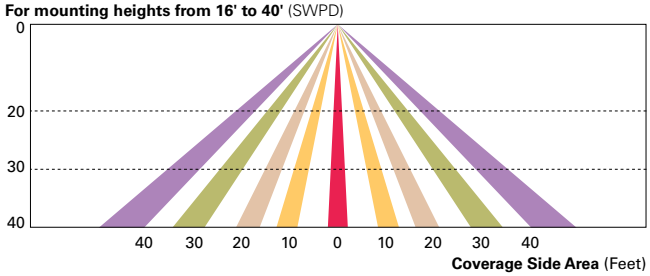


WaveLinx Wireless Control and Monitoring System Available in 7-PIN or 4-PIN configurations, the WaveLinx Outdoor control platform operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. Use the WaveLinx Mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets).

WaveLinx Outdoor Control Module (WOLC-7P-10A) A photocontrol that enables astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

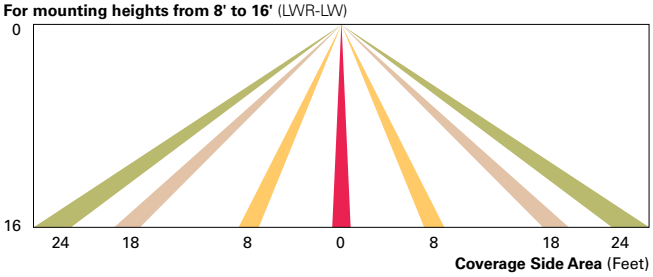
WaveLinx Wireless Sensor (SWPD4 and SWPD5) These outdoor sensors offer passive infrared (PIR) occupancy and a photocell for closed loop daylight sensing. These sensors can be factory installed or field-installed via simple, tool-less integration into luminaires equipped with the Zhaga Book 18 compliant 4-PIN receptacle (ZW). These sensors are factory preset to dim down to approximately 50 percent power after 15 minutes of no activity detected. These occupancy sensors include an integral photocell for "dusk-to-dawn" control or daylight harvesting that is factory-enabled. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 7'-40'.

For mounting heights from 16' to 40' (SWPD)

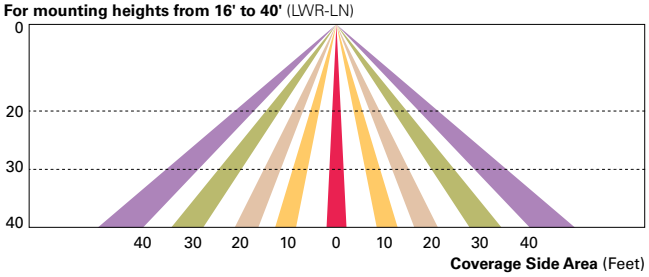


LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN) The Eaton's LumaWatt Pro powered by Enlighted is a connected lighting solution that combines LED luminaires with an integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of other resources beyond lighting.

For mounting heights from 8' to 16' (LWR-LW)



For mounting heights from 16' to 40' (LWR-LN)



POWER AND LUMENS

Lumen Package		B1	B2	B3	B4
Drive Current					
Power Wattage (Watts)		24W	48W	96W	99W
Input Current (mA) @ 120V		200	400	800	830
Input Current (mA) @ 208V		120	240	470	480
Input Current (mA) @ 240V		100	200	400	420
Input Current (mA) @ 277V		90	180	350	360
Power Wattage (Watts)		26W	53W	107W	108W
Input Current (mA) @ 347V		79	161	325	328
Input Current (mA) @ 480V		58	117	235	237
Optics					
Type II	Lumens	2,045	3,994	7,362	--
	BUG Rating	B1-U1-G1	B1-U2-G2	B3-U2-G3	--
Type III	Lumens	2,324	4,534	8,451	--
	BUG Rating	B1-U1-G1	B1-U2-G2	B2-U2-G3	--
Type IV	Lumens	2,408	4,691	8,740	--
	BUG Rating	B1-U1-G1	B1-U2-G2	B2-U2-G3	--
Type V	Lumens	2,311	4,529	8,511	9,464
	BUG Rating	B2-U1-G1	B3-U2-G2	B3-U2-G3	B3-U2-G3

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Calculated L70 (Hours)
25°C	>91%	>230,000
40°C	>88%	>172,000
50°C	>86%	>142,000

NOTE: Maintenance data applies to the highest drive current and represents the worst case at the highest wattage.

COLOR TEMPERATURE

Color Temperature (CCT)	CRI (Nominal)	Multiplier
4000	70	1.00
3000	80	0.91

MINIMUM AMBIENT TEMPERATURE

Lumen Package	Temperature
B1	-40°C
B2	-35°C
B3	-35°C
B4	-40°C
All DALI powered lumen packages	-20°C

ORDERING INFORMATION

Sample Number: ARB-B2-LED-D1-T2-GM

Product Family [1, 2]	Lumens [3]	Lamp Type	Voltage	Distribution	Color
ARB=Arbor Post Top	**B1**=Nominal 2,300 Lumens **B2**=Nominal 4,500 Lumens **B3**=Nominal 8,500 Lumens **B4**=Nominal 9,500 Lumens [4]	**LED**=Solid State Light Emitting Diodes	**D1**=Dimming Driver (120-277V) **347**=347V [5] **480**=480V [5, 6]	**T2**=Type II **T3**=Type III **T4**=Type IV **T5**=Type V	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **CC**=Custom Color [7]

Options (Add as Suffix)

7030=70 CRI / 3000K CCT [8]
8030=80 CRI / 3000K CCT [8]
PC=Button Type Photocontrol
PER=NEMA 3-PIN Twistlock Photocontrol Receptacle
PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle
HA=50°C High Ambient Temperature [9]
MS-L08=Photo/Motion Sensor for ON/OFF Operation, Maximum 8' Mounting Height [10, 11]
MS-L20= Photo/Motion Sensor for ON/OFF Operation, 9' - 20' Mounting Height [10, 11]
MS-L40W=Photo/Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height [10, 11]
MS/DIM-L08=Photo/Motion Sensor for Dimming Operation, Maximum 8' Mounting Height [10, 11]
MS/DIM-L20=Photo/Motion Sensor for Dimming Operation, 9' - 20' Mounting Height [10, 11]
MS/DIM-L40W=Photo/Motion Sensor for Dimming Operation, 21' - 40' Mounting Height [10, 11]
ZW=Wavelinx-enabled 4-PIN Twistlock Receptacle [10, 11, 12, 13]
ZW-SWPD4WH=Wavelinx Wireless Sensor, 7' - 15' Mounting Height, White [10, 11, 12, 13]
ZW-SWPD5WH=Wavelinx Wireless Sensor, 15' - 40' Mounting Height, White [10, 11, 12, 13]
LWR-LW= LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height [10, 14]
LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height [10, 14]
5LTD=Fifth Light Dali Driver [10, 15]
DIM=0-10V External Dimming Leads [10, 16]
VS=Tempered Glass Vandal Shield

Accessories (Order Separately) [17]

ARSA-XX=Single Pole Mount Arm [18]
ARWM-XX=Wall Mount Arm
ARTA15-XX=Twin Mount Bracket [18]
ARPA4-XX=Pole Adapter 4" O.D. Pole
FSIR-100=Wireless Configuration Tool for Occupancy Sensor [19]
SWPD4-WH=Wavelinx Wireless Sensor, 7' - 15' Mounting Height, White [13, 20]
SWPD5-WH=Wavelinx Wireless Sensor, 16' - 40' Mounting Height, White [13, 20]
WOLC-7P-10A=Wavelinx Outdoor Control Module (7-PIN) [10, 21]

NOTES:
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional information.
2. Fixture slipfits over standard 2-3/8" tenon. 3" O.D. tenon when used with a ARPA4-XX 4" O.D. pole adapter.
3. Standard 4000K CCT, nominal 70CRI.
4. B4 only available with Type V distribution.
5. Requires the use of a step down transformer.
6. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
7. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
8. Extended lead times apply. Use dedicated IES files when performing layouts. These files are published on the Arbor luminaire product page on the website.
9. Not available with B3 lumen package in Type II, III, or IV distributions.
10. Controls system is not available with photocontrol (PC), photocontrol receptacle (PER or PER7), or other controls systems (MS, ZW, LWR, 5LTD, or DIM).
11. Not available with HA option.
12. Sensor passive infrared (PIR) may be overly sensitive below -20°C (-4°F).
13. In order for device to be field-configurable, requires WAC Gateway components WAC-POE and WPOE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more WaveLinx application information.
14. LumaWatt Pro wireless sensors are factory installed and require network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See website for LumaWatt Pro application information.
15. Only available in B1 and B2 lumen packages.
16. Low voltage control leads brought 18" outside fixture.
17. Replace XX with paint color.
18. Fits on 3" O.D. x 4" long tenon for nominal 4-1/2" O.D. pole top.
19. This tool enables adjustment to Motion Sensor (MS) parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative for more information.
20. Requires Wavelinx-enabled 4-PIN twistlock receptacle (ZW) option.
21. Requires 7-PIN NEMA twistlock photocontrol receptacle (PER7) option.

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

Altitude®

FEATURES

- Elegant form factor
- High performance optics up to 17,500 delivered lumens
- Diffusion lens for low glare comfort
- NX™ wireless control options



Altitude

c UL us LISTED

3000K and warmer CCTs only

CONTROL TECHNOLOGY

NX DISTRIBUTED INTELLIGENCE

RELATED PRODUCTS

Ouro Pavilion PGL8

SPECIFICATIONS

CONSTRUCTION

- One piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 with vents and .100" minimum wall thickness
- Separate internal driver compartment rated for IP66 ingress protection
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat
- Standard colors include (BLS) Black Gloss Smooth, (BLT) Black Matte Textured, (DBS) Dark Bronze Gloss Smooth, (GTT) Graphite Matte Textured, (LGS) Light Gray Gloss Smooth, (PSS) Platinum Silver Smooth, (VGS) Verde Green Smooth, (WH) White, and (CC) Custom Color (Include RAL#)
- Lens is impact resistant 1/8" tempered glass with anti-reflective coating
- Lens has a one-piece extruded vulcanized silicone gasket
- Lens frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness
- Lens frame has a one-piece O-ring extruded vulcanized silicone gasket
- Mid-frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness
- Mid-frame secures to Lens Frame and housing by stainless steel recessed Allen-head screws
- Silicone gaskets throughout
- All external fasteners are stainless steel

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB)
- Optical lenses are clear injection molded PMMA acrylic

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories recognized
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories recognized
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C

ELECTRICAL (CONTINUED)

- Dimming range from 10% to 100% through the use of standard 0-10V interface on the programmable driver
- Modular wiring harness in the service area provides user access to the dimming circuitry
- Optional factory programmed dimming profile
- Surge protection: 10,000k in parallel, 20,000k in series
- SF for 120, 277, 347 Line volts
  DF for 208, 240, 480 Line volts
- Wiring: No. 18AWM rated 105°C, wet rating.

CERTIFICATIONS AND LISTINGS

- UL 1598 Standard for Luminaires
- IP66 certified
- RoHS compliant

WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	1,673–18,452
Wattage Range	22–156
Efficacy Range (LPW)	56–137
Reported Life (Hours)	L70/60,000
Weight	21.5 lbs 9.75 kg
EPS Front View / Side View	.37 / .64

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

ORDERING GUIDE

Example: ALT1-54L-120-3K8-3-UNV-A34-GT-NXSPW30F-CLR

CATALOG #

HOUSING

ALT1

Housing		LED Engine		CCT/CRI		Distribution		Rotation		Voltage	
ALT1	Architectural Area/Site	**28L-20**	20W, 3,000 lm	**AM**	Amber[9]	**FR**	Type I/Front Row		Blank for no rotation	**UNV**	Universal 120–277V
		28L-40	40W, 5,000 lm	**3K7**	3000K, 70 CRI	**2**	Type II	**L**	Optic rotation left[1]	**347**	347V
		28L-60	60W, 7,500 lm	**3K8**	3000K, 80 CRI	**3**	Type III	**R**	Optic rotation right[1]	**480**	480V
		28L-85	85W, 10,000 lm	**3K9**	3000K, 90 CRI	**4**	Type IV				
		54L-95	95W, 12,500 lm	**4K7**	4000K, 70 CRI	**4W**	Type IV Wide				
		54L-120	120W, 15,000 lm	**4K8**	4000K, 80 CRI	**5QM**	Type V Square Medium				
		54L-155	155W, 17,500 lm	**5K7**	5000K, 70 CRI	**5QN**	Type V Square Narrow				
				5K8	5000K, 80 CRI	**5R**	Type V Rectangular				
						5W	Type V Wide (Round)				

Mounting		Fixture Finish		Control Options		Options		Control Accessories	
ASQ	Arm Square pole	**BL**	Black	**7PR**	7 pin PCR, wireless control enabled	**BC**	Backlight Control[6]	**SCPREMOTE**	Remote control for SCP option. Order at least one per project to program and control the occupancy sensor
A34	Arm mt 3.3–4.2" OD pole	**DB**	Dark Bronze	**7PR-TL**	7 pin PCR with twist lock photocontrol	**SF**	Single Fuse	**SW7PR**	SiteSync™ on fixture module via 7PR
A46	Arm mt 4.5–6.0" OD pole	**GT**	Graphite	**7PR-SC**	7 pin PCR with shorting cap	**DF**	Double Fuse	**SWUSB**	SiteSync™ Software on USB
MAF	Horizontal Slipfitter 2.375" OD arm	**LG**	Light Grey	**AD-012**	AstroDIM: 50% output at midnight[10]	**TB**	Terminal Block	**SWTAB**	SiteSync™ Windows Tablet[8]
SVSF	Vertical Slipfitter Mount square for 2" pipe tenon, (2.375" OD)	**PS**	Platinum Silver	**AD-022**	AstroDIM: 50% output midnight to 4 AM[10]	**CLR**	Clear Lens	**SWBRG**	SiteSync™ Wireless Bridge Node
VSF	Vertical Slipfitter Mount for 2" pipe tenon, (2.375" OD)	**TT**	Titanium	**AD-032**	AstroDIM: 50% output 10PM[10]	**HDL**	Diffuse Lens[7]	**SWFC**	SiteSync™ Field Commission Service
WB	Wall Bracket for area wall mount	**WH**	White	**AD-042**	AstroDIM: 50% output 10PM to 4AM[10]			**WIR-RME-L**	wiSCAPE™ External Fixture Module
		CC	Custom Color[2]	**NXSP14F**	Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' [3,4]			**NXOFM-1R1D-UNV**	NX External Contol Node
				NXSP30F	Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30' [3,4]				
				NXSPW14F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' [3,4]				
				NXSPW30F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30' [3,4]				
				NXWE	NX Wireless Enabled				
				SCL-8F	Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights up to 8'				
				SCL-40F	Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights 9' to 40'				
				SCP-8F	Remote control programable line voltage sensor, use with SCPREMOTE				
				SCP-40F	Remote control programable line voltage sensor, use with SCPREMOTE				
				SWP	Site Sync™ Pre Commission Wireless Module[3,4,5]				
				SWPM-40F	Site Sync with Sensor 9' to 40' MH[3,4,5]				

Notes:

1 Not available with 5QM and 5W distributions

2 Consult factory

3 Not available with other sensor or wireless control options

4 Not available in 480V

5 Specify group and zone at time of order, See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node

6 Not available with Type 5 distributions, CLR, or HDL option

7 Only available in Type 3 or Type 5W

8 Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries

9 Wildlife friendly

10 Not available for 28L-20 engine and sensor options

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PRODUCT EXCEPTIONS & DETAILS

Configuration			EPA
	1SA	1 Arm Side Mount	0.98
	2SB	2 Arm Side Mount	1.48
	2SL	2 Arm Side Mount	1.96
	3ST	3 Arm Side Mount	2.20

Configuration			EPA
	3SY*	3 Arm Side Mount	2.46
	4SC	4 Arm Side Mount	2.46
	1W	Single Wall Mount	n/a
	HSF	Horizontal Slipfitter	n/a

DELIVERED LUMENS

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	20	3,000	No Lens	FR	3110	0	0	0	141	3274	0	0	0	149	3318	1	0	0	148
				FR-BC	2036	0	0	0	93	2143	0	0	0	97	2172	0	0	0	97
				2	2903	1	0	1	132	3056	1	0	1	139	3097	1	0	1	138
				2-BC	1771	0	0	0	80	1864	0	0	0	85	1889	0	0	0	84
				3	2945	1	0	1	131	3100	1	0	1	138	3141	1	0	1	140
				3-BC	1779	0	0	1	81	1873	0	0	1	85	1898	0	0	1	85
				4	2943	0	0	1	134	3098	0	0	1	141	3139	0	0	1	141
				4-BC	2189	0	0	1	100	2304	0	0	1	105	2335	0	0	1	104
				4W	2927	1	0	1	133	3081	1	0	1	140	3122	1	0	1	139
				4W-BC	1673	0	0	1	76	1761	0	0	1	80	1785	0	0	1	80
				5R	3025	2	0	2	137	3184	2	0	2	145	3227	2	0	2	144
				5QM	3069	2	0	0	139	3230	2	0	0	147	3273	2	0	0	146
				5QN	3051	2	0	0	139	3211	2	0	0	146	3254	2	0	0	145
				5W	3024	2	0	1	137	3183	2	0	1	145	3226	2	0	1	144
			Clear Lens	FR	2909	0	0	0	132	3062	0	0	0	139	3103	0	0	0	141
				2	2715	1	0	1	123	2858	1	0	1	130	2896	1	0	1	132
				3	2754	1	0	1	125	2899	1	0	1	132	2938	1	0	1	134
				4	2752	0	0	1	125	2897	0	0	1	132	2936	0	0	1	133
				4W	2738	1	0	1	124	2882	1	0	1	131	2920	1	0	1	133
				5R	2829	2	0	2	129	2978	2	0	2	135	3018	2	0	2	137
				5QM	2870	2	0	0	130	3021	2	0	0	137	3062	2	0	0	139
				5QN	2853	2	0	0	130	3003	2	0	0	137	3044	2	0	0	138
				5W	2829	2	0	1	129	2977	2	0	1	135	3017	2	0	1	137
			HDL Lens	3	2341	1	0	1	106	2464	1	0	1	112	2497	1	0	1	114
				5W	2405	1	0	1	109	2531	1	0	1	115	2565	1	0	1	117

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	40	5,000	No Lens	FR	4870	1	0	0	128	5127	1	0	0	135	5195	1	0	0	137
				FR-BC	3189	0	0	0	84	3356	0	0	0	88	3401	0	0	0	90
				2	4546	1	0	1	120	4785	1	0	1	126	4849	1	0	1	128
				2-BC	2773	0	0	1	73	2919	0	0	1	77	2958	0	0	1	78
				3	4611	1	0	2	121	4854	1	0	2	128	4919	1	0	2	129
				3-BC	2786	0	0	1	73	2933	0	0	1	77	2972	0	0	1	78
				4	4608	1	0	2	121	4851	1	0	2	128	4915	1	0	2	129
				4-BC	3428	0	0	1	90	3608	0	0	1	95	3656	0	0	1	96
				4W	4584	1	0	2	121	4825	1	0	2	127	4889	1	0	2	129
				4W-BC	2621	0	0	1	69	2758	0	0	1	73	2795	0	0	1	74
				5R	4737	2	0	2	125	4986	3	0	1	131	5053	3	0	3	133
				5QM	4806	2	0	1	126	5058	2	0	1	133	5126	2	0	1	135
				5QN	4777	2	0	0	126	5028	2	0	0	132	5096	2	0	0	134
				5W	4736	3	0	1	125	4985	2	0	2	131	5052	3	0	1	133
			Clear Lens	FR	4555	1	0	0	120	4795	1	0	0	126	4859	1	0	0	128
				2	4252	1	0	1	112	4476	1	0	1	118	4536	1	0	1	119
				3	4333	1	0	1	114	4561	1	0	1	120	4622	1	0	1	121
				4	4310	0	0	2	113	4537	1	0	2	119	4598	1	0	2	121
				4W	4287	1	0	2	113	4513	1	0	2	119	4573	1	0	2	120
				5R	4431	2	0	2	117	4663	2	0	2	123	4726	2	0	2	124
				5QM	4495	2	0	1	118	4731	2	0	1	125	4794	2	0	1	126
				5QN	4468	2	0	0	118	4703	2	0	0	124	4766	2	0	0	125
				5W	4430	3	0	1	117	4663	3	0	1	123	4725	3	0	1	124
			HDL Lens	3	3741	1	0	1	98	3937	1	0	1	104	3990	1	0	1	105
				5W	3891	2	0	1	102	4095	2	0	1	108	4150	2	0	1	109

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	60	7,500	No Lens	FR	7347	1	0	1	122	7733	1	0	1	129	7837	1	0	1	131
				FR-BC	4810	0	0	0	80	5063	0	0	0	84	5131	0	0	0	86
				2	6858	1	0	2	114	7218	1	0	2	120	7315	1	0	2	122
				2-BC	4183	0	0	1	70	4403	0	0	1	73	4462	0	0	1	74
				3	6956	1	0	2	116	7322	1	0	2	122	7420	1	0	2	123
				3-BC	4203	0	0	1	70	4424	0	0	1	74	4483	0	0	1	75
				4	6951	1	0	2	116	7317	1	0	2	122	7415	1	0	2	124
				4-BC	5171	0	0	2	86	5443	0	0	2	91	5516	0	0	2	92
				4W	6915	1	0	2	115	7278	1	0	2	121	7376	1	0	2	123
				4W-BC	3953	0	0	2	66	4161	0	0	2	69	4216	0	0	2	70
				5R	7145	3	0	3	119	7521	3	0	3	125	7622	3	0	3	127
				5QM	7249	3	0	1	121	7630	3	0	1	127	7732	3	0	1	129
				5QN	7206	3	0	0	120	7585	3	0	0	126	7687	3	0	0	128
				5W	7144	3	0	2	119	7520	3	0	2	125	7620	3	0	2	127
			Clear Lens	FR	6872	1	0	1	115	7233	1	0	1	121	7330	1	0	1	122
				2	6414	1	0	2	107	6751	1	0	2	113	6842	1	0	2	114
				3	6506	1	0	2	108	6848	1	0	2	114	6940	1	0	2	116
				4	6502	1	0	2	108	6844	1	0	2	114	6935	1	0	2	116
				4W	6468	1	0	2	108	6807	1	0	2	113	6899	1	0	2	115
				5R	6683	3	0	3	111	7035	3	0	3	117	7129	3	0	3	119
				5QM	6780	3	0	1	113	7137	3	0	1	119	7232	3	0	1	121
				5QN	6740	2	0	0	112	7094	3	0	0	118	7189	3	0	0	120
				5W	6682	3	0	2	111	7033	3	0	2	117	7128	3	0	2	119
			HDL Lens	3	5531	2	0	1	92	5821	2	0	1	97	5899	2	0	1	98
				5W	5680	2	0	1	95	5979	2	0	1	100	6059	2	0	1	101

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	85	10,000	No Lens	FR	9699	1	0	1	113	10209	1	0	1	119	10346	1	0	1	120
				FR-BC	6350	0	0	1	74	6684	0	0	1	78	6773	0	0	1	79
				2	9054	1	0	2	105	9530	2	0	2	111	9657	2	0	2	112
				2-BC	5523	0	0	1	64	5813	0	0	1	68	5891	0	0	1	68
				3	9183	1	0	2	107	9666	1	0	2	112	9795	1	0	2	114
				3-BC	5549	0	0	2	65	5841	0	0	2	68	5919	0	0	2	69
				4	9177	1	0	2	107	9660	1	0	2	112	9789	1	0	2	114
				4-BC	6827	0	0	2	79	7186	0	0	2	84	7282	0	0	2	85
				4W	9129	1	0	3	106	9609	1	0	3	112	9737	1	0	3	113
				4W-BC	5219	0	0	2	61	5493	0	0	2	64	5567	0	0	2	65
				5R	9433	3	0	3	110	9929	3	0	3	115	10062	3	0	3	117
				5QM	9570	3	0	1	111	10073	3	0	1	117	10208	3	0	1	119
				5QN	9514	3	0	0	111	10014	3	0	0	116	10148	3	0	0	118
				5W	9432	4	0	2	110	9927	4	0	2	115	10060	4	0	2	117
			Clear Lens	FR	9072	1	0	1	105	9549	1	0	1	111	9677	1	0	1	113
				2	8468	1	0	2	98	8913	1	0	2	104	9033	1	0	2	105
				3	8589	1	0	2	100	9041	1	0	2	105	9162	1	0	2	107
				4	8584	1	0	2	100	9035	1	0	2	105	9156	1	0	2	106
				4W	8538	1	0	2	99	8987	1	0	3	105	9108	1	0	3	106
				5R	8823	3	0	3	103	9287	3	0	3	108	9411	3	0	3	109
				5QM	8951	3	0	1	104	9422	3	0	1	110	9548	3	0	1	111
				5QN	8898	3	0	0	103	9366	3	0	0	109	9491	3	0	0	110
				5W	8822	3	0	2	103	9285	4	0	2	108	9410	4	0	2	109
			HDL Lens	3	7302	2	0	2	85	7685	2	0	2	89	7788	2	0	2	91
				5W	7499	2	0	1	87	7893	2	0	1	92	7999	2	0	1	93

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	95	12,500	No Lens	FR	11792	1	0	1	125	12412	1	0	1	132	12578	1	0	1	134
				FR-BC	7848	0	0	1	83	8260	0	0	1	88	8371	0	0	1	90
				2	11210	2	0	2	119	11800	2	0	2	126	11958	2	0	2	126
				2-BC	5993	0	0	1	64	6308	0	0	1	67	6392	0	0	1	69
				3	11225	1	0	2	119	11815	2	0	2	126	11974	2	0	2	127
				3-BC	6273	0	0	2	67	6603	0	0	2	70	6691	0	0	2	72
				4	11311	1	0	2	120	11906	1	0	3	127	12065	1	0	3	128
				4-BC	7291	0	0	2	78	7674	0	0	2	82	7777	0	0	2	84
				4W	11203	2	0	3	119	11792	2	0	3	125	11950	2	0	3	127
				4W-BC	5603	0	0	2	60	5898	0	0	2	63	5977	0	0	2	65
				5R	11623	3	0	3	124	12234	3	0	3	130	12398	3	0	3	131
				5QM	11770	3	0	2	125	12389	3	0	2	132	12555	3	0	2	133
				5QN	11799	3	0	0	126	12420	3	0	0	132	12586	3	0	0	133
				5W	11594	4	0	2	123	12204	4	0	2	130	12367	4	0	2	131
			Clear Lens	FR	11029	1	0	1	117	11609	1	0	1	124	11765	1	0	1	125
				2	10485	2	0	2	112	11036	2	0	2	117	11184	2	0	2	119
				3	10555	1	0	2	112	11110	1	0	2	118	11259	1	0	2	120
				4	10579	1	0	2	113	11136	1	0	2	118	11285	1	0	2	120
				4W	10479	1	0	3	111	11029	2	0	3	117	11177	2	0	3	119
				5R	10871	3	0	3	116	11443	3	0	3	122	11596	3	0	3	123
				5QM	11009	3	0	2	117	11588	3	0	2	123	11743	3	0	2	125
				5QN	11036	3	0	0	117	11616	3	0	0	124	11772	3	0	0	125
				5W	10845	4	0	2	115	11415	4	0	2	121	11568	4	0	2	123
			HDL Lens	3	8736	2	0	2	93	9195	2	0	2	98	9318	2	0	2	100
				5W	9152	3	0	1	97	9633	3	0	1	102	9762	3	0	1	104

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	120	15,000	No Lens	FR	14390	1	0	1	118	15146	1	0	1	124	15349	1	0	1	125
				FR-BC	9577	1	0	1	78	10080	1	0	1	83	10215	1	0	1	84
				2	13680	2	0	2	112	14399	2	0	2	118	14592	2	0	2	120
				2-BC	7313	0	0	1	60	7697	0	0	2	63	7800	0	0	2	64
				3	13698	2	0	3	112	14418	2	0	3	118	14611	2	0	3	120
				3-BC	7655	0	0	2	63	8057	0	0	2	66	8165	0	0	2	67
				4	13803	1	0	3	113	14528	1	0	3	119	14723	1	0	3	121
				4-BC	8897	0	0	2	73	9365	0	0	2	77	9490	0	0	2	78
				4W	13671	2	0	3	112	14390	2	0	3	118	14583	2	0	4	120
				4W-BC	6838	1	0	2	56	7197	1	0	2	59	7294	1	0	2	60
				5R	14184	4	0	4	116	14929	4	0	4	122	15129	4	0	4	124
				5QM	14363	3	0	2	118	15118	4	0	2	124	15321	4	0	2	126
				5QN	14399	4	0	4	118	15156	4	0	1	124	15359	4	0	1	126
				5W	14149	4	0	2	116	14893	4	0	2	122	15092	4	0	2	124
			Clear Lens	FR	13459	1	0	1	110	14167	1	0	1	116	14356	1	0	2	118
				2	12795	2	0	2	105	13468	2	0	2	110	13648	2	0	2	112
				3	12812	2	0	2	105	13486	2	0	2	111	13666	2	0	2	112
				4	12910	1	0	3	106	13589	1	0	3	111	13771	1	0	3	113
				4W	12787	2	0	3	105	13459	2	0	3	110	13640	2	0	3	112
				5R	13266	4	0	4	109	13964	4	0	4	114	14151	4	0	4	116
				5QM	13434	3	0	2	110	14140	3	0	2	116	14330	3	0	2	117
				5QN	13467	4	0	0	110	14175	4	0	0	116	14365	4	0	0	118
				5W	13234	4	0	2	108	13929	4	0	2	114	14116	4	0	2	116
			HDL Lens	3	10892	3	0	2	89	11464	3	0	2	94	11618	3	0	2	95
				5W	11250	3	0	1	92	11841	3	0	2	97	12000	3	0	2	98

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

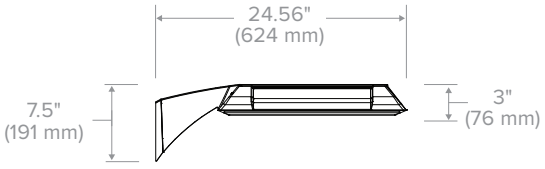
DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	155	17,500	No Lens	FR	17299	2	0	2	111	18208	2	0	2	117	18452	2	0	2	119
				FR-BC	11513	1	0	1	74	12118	1	0	1	78	12280	1	0	1	79
				2	16445	2	0	2	105	17310	2	0	3	111	17542	2	0	3	112
				2-BC	8791	0	0	2	56	9253	0	0	2	59	9377	0	0	2	60
				3	16467	2	0	3	106	17333	2	0	3	111	17565	2	0	3	113
				3-BC	9202	1	0	2	59	9686	1	0	2	62	9816	1	0	2	63
				4	16593	1	0	3	106	17465	1	0	3	112	17699	1	0	4	113
				4-BC	10696	0	0	2	69	11258	1	0	2	72	11409	1	0	2	73
				4W	16435	2	0	4	105	17299	2	0	4	111	17531	2	0	4	112
				4W-BC	8220	1	0	2	53	8652	1	0	2	55	8768	1	0	2	56
				5R	17051	4	0	4	109	17947	4	0	4	115	18188	4	0	4	117
				5QM	17267	4	0	2	111	18174	4	0	2	117	18418	4	0	2	118
				5QN	17309	4	0	1	111	18219	4	0	1	117	18463	4	0	1	118
				5W	17009	4	0	2	109	17903	4	0	2	115	18143	4	0	2	116
			Clear Lens	FR	16180	1	0	2	104	17030	1	0	2	109	17258	1	0	2	111
				2	15382	2	0	2	99	16190	2	0	2	104	16407	2	0	2	105
				3	15402	2	0	3	99	16212	2	0	3	104	16429	2	0	3	105
				4	15520	1	0	3	99	16336	1	0	3	105	16555	1	0	3	106
				4W	15372	2	0	4	99	16180	2	0	4	104	16397	2	0	4	105
				5R	15948	4	0	4	102	16787	4	0	4	108	17011	4	0	4	109
				5QM	16150	4	0	2	104	16999	4	0	2	109	17227	4	0	2	110
				5QN	16190	4	0	1	104	17041	4	0	1	109	17269	4	0	1	111
				5W	15909	4	0	2	102	16745	4	0	2	107	16969	4	0	2	109
			HDL Lens	3	13093	3	0	2	84	13782	3	0	2	88	13966	3	0	2	90
				5W	13524	3	0	2	87	14235	3	0	2	91	14426	3	0	2	92

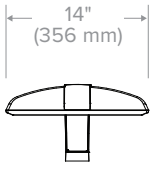
CRI Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

Amber Multiplier	
CCT	Multiplier
5000K	1
AM	0.1727

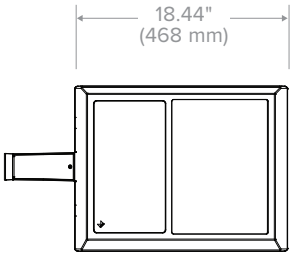
DIMENSIONS



Side View



Front View



Top View

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-FR

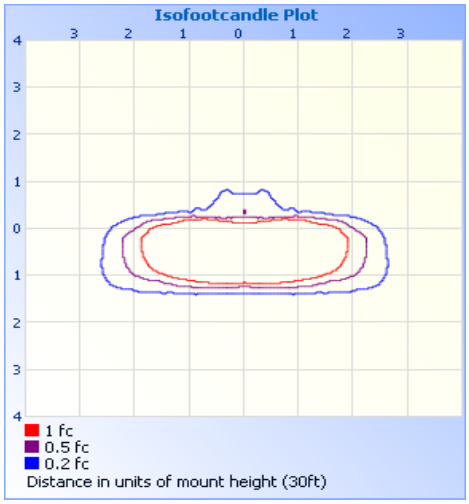
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18208**
Watts	**156**
Efficacy	**116.7**
IES Type	**I**
BUG Rating	**B2-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	16101	88.4%
Downward House Side	2107	11.6%
Downward Total	18208	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18208	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-2

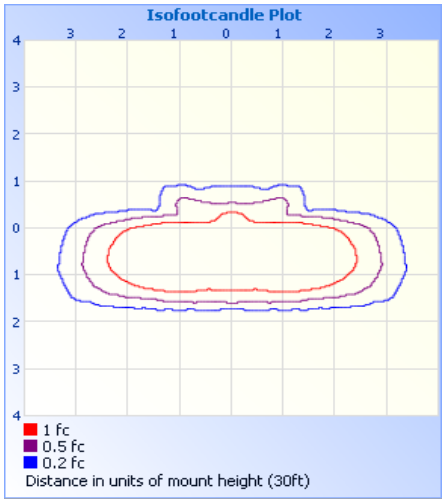
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17309**
Watts	**156**
Efficacy	**111.0**
IES Type	**II**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14323	82.7%
Downward House Side	2986	17.3%
Downward Total	17309	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17309	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-3

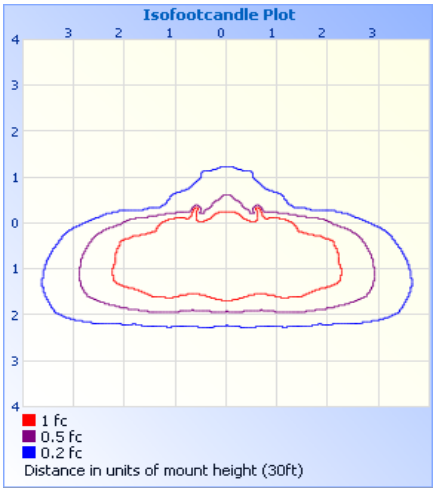
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17332**
Watts	**156**
Efficacy	**111.1**
IES Type	**III**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14911	86.0%
Downward House Side	2421	14.0%
Downward Total	17332	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17332	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-4

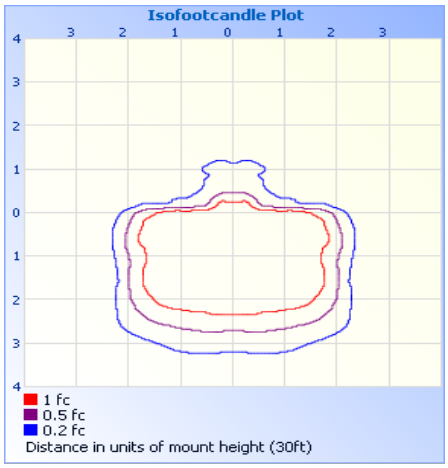
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17465**
Watts	**156**
Efficacy	**112.0**
IES Type	**IV**
BUG Rating	**B1-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15757	90.2%
Downward House Side	1708	9.8%
Downward Total	17465	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17465	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-4W

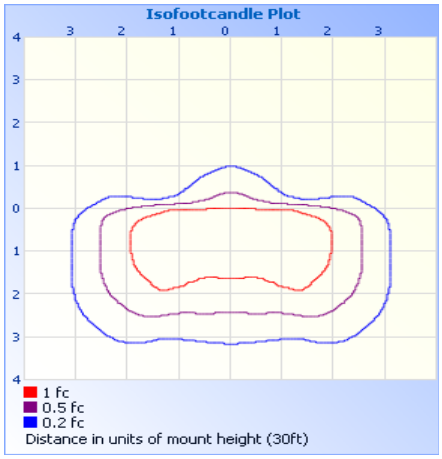
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17299**
Watts	**156**
Efficacy	**110.9**
IES Type	**IV**
BUG Rating	**B2-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15320	88.6%
Downward House Side	1979	11.4%
Downward Total	17299	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17299	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5R

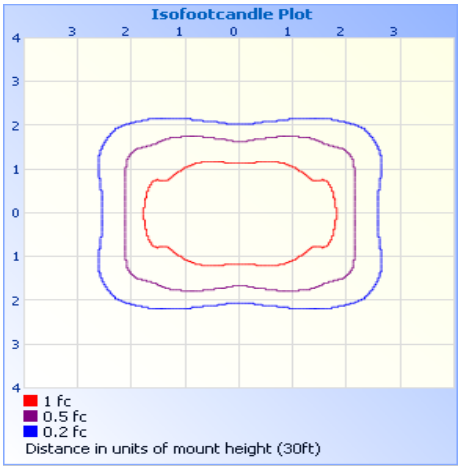
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17947**
Watts	**156**
Efficacy	**115.0**
IES Type	**III**
BUG Rating	**B4-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8974	50.0%
Downward House Side	8974	50.0%
Downward Total	17947	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17947	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-5QM

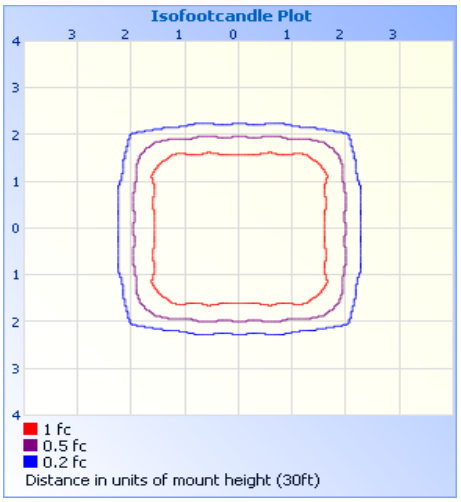
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18173**
Watts	**156**
Efficacy	**116.5**
IES Type	**V**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9087	50.0%
Downward House Side	9087	50.0%
Downward Total	18173	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18173	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5QN

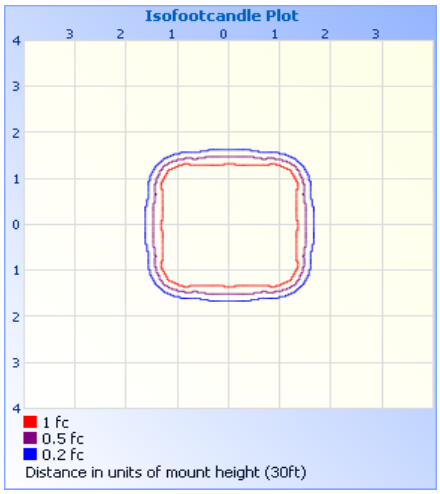
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18219**
Watts	**156**
Efficacy	**116.8**
IES Type	**V**
BUG Rating	**B4-U0-G1**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9110	50.0%
Downward House Side	9110	50.0%
Downward Total	18219	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18219	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5W

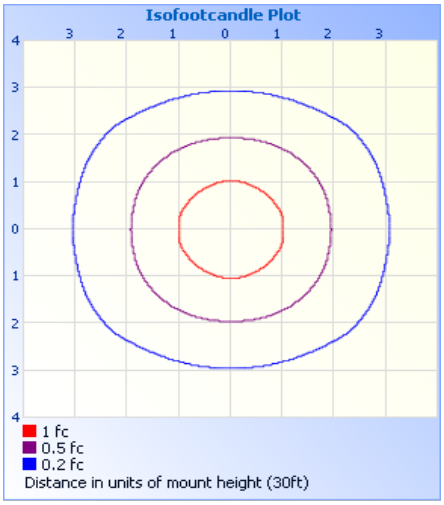
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17904**
Watts	**156**
Efficacy	**114.8**
IES Type	**V**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8952	50.0%
Downward House Side	8952	50.0%
Downward Total	17904	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17904	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

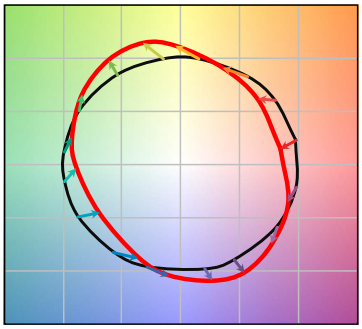
CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

TM-30 DATA

COLOR VECTOR GRAPHIC

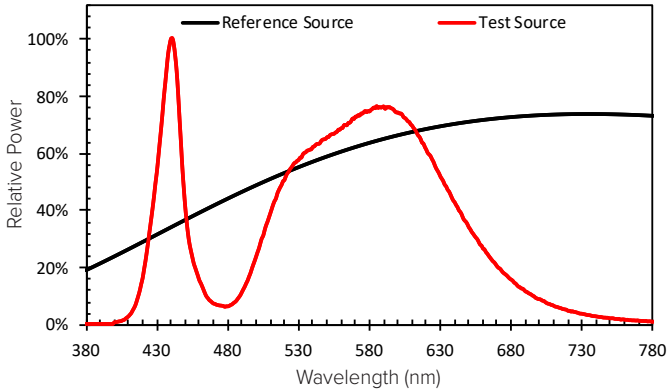


Reference Illuminant — Test Source

TEST SOURCE

R_f	68
R_g	99
CCT(K)	3947
D_{UV}	0.0004
x	0.3831
y	0.3793
CIE R_a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



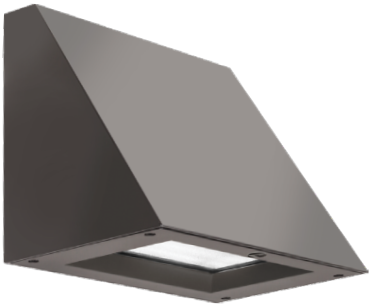
ELECTRICAL DATA

Electrical													Dimming			
# LED	System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
28	22	250 mA	120-480	50/60	0.18	0.11	0.09	0.08	0.06	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
	38	400 mA			0.32	0.18	0.16	0.14	0.11	0.08							
	60	650 mA			0.50	0.29	0.25	0.22	0.17	0.13							
	86	950 mA			0.72	0.41	0.36	0.31	0.25	0.18							
54	94	550 mA			0.78	0.45	0.39	0.34	0.27	0.20							
	122	700 mA			1	0.59	0.51	0.44	0.35	0.25							
	156	900 mA			1.30	0.75	0.65	0.56	0.45	0.33							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)						
Hours	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	96.9%	95.3%	93.3%	86.6%	> 60,000

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting



WDGE2 LED
Architectural Wall Sconce

Catalog Number

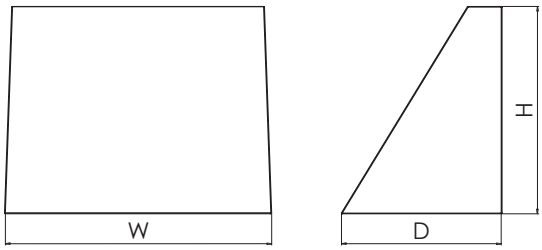
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth: 7″
Height: 9″
Width: 11.5″
Weight: (without options) 13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT DDBXD

Series	Package		Color Temperature		CRI	Distribution		Voltage	Mounting	
WDGE2 LED	P1[1]	P1SW	27K	2700K	80CRI	VF	Visual comfort forward throw	MVOLT	**Shipped included**	**Shipped separately**
	P2[1]	P2SW	30K	3000K	90CRI	VW	Visual comfort wide	347[3]	SRM Surface mounting bracket	AWS 3/8inch Architectural wall spacer
	P3[1]	P3SW	35K	3500K				480[3]		BBW Surface-mounted back box
	P4[1]	Door with small window (SW) is required to accommodate sensors. See page 2 for more details.	40K	4000K						PBBW Premium surface-mounted back box (top, left, right conduit entry)
	P5[1]		50K[2]	5000K						

Options

E4WH	Emergency battery backup, CEC compliant (4W, 0°C min)
E10WH	Emergency battery backup, CEC compliant (10W, 5°C min)
E20WC	Emergency battery backup, CEC compliant (18W, -20°C min)
PE[4]	Photocell, Button Type
DS[5]	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG[6]	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for premium back box (PBBW). Total of 4 entry points.

Standalone Sensors/Controls (only available with P1SW, P2SW & P3SW)

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls (only available with P1SW, P2SW & P3SW)

NLTAIR2 PIR	nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights.
NLTAIR2 PIRH	nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

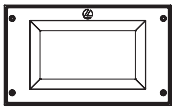
Accessories

Ordered and shipped separately.

WDGEAWS DDBXD U	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2PBBW DDBXD U	WDGE2 Premium surface-mounted back box (specify finish)
WSBBW DDBXD U	Surface - mounted back box (specify finish)

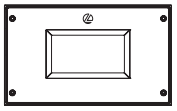
NOTES

1 P1-P5 not available with sensors/controls. Sensors/controls only available with P1SW, P2SW and P3SW.
2 50K not available in 90CRI
3 347V and 480V not available with E4WH, E10WH, E20WC or DS.
4 PE not available in 480V or with sensors/controls
5 DS option not available with E4WH, E10WH, E20WC or sensors/controls.
6 DMG option not available with sensors/controls



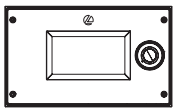
Default configuration with no sensors/controls.

Power Packages: P1, P2, P3, P4, P5



Small Window (SW) configuration

Power Packages: P1SW, P2SW, P3SW



Configuration with sensors/controls

Power Packages: P1SW, P2SW, P3SW

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)		30K (3000K, 80 CRI)		35K (3500K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
P1 / P1SW	10W	VF	1,166	119	1,209	123	1,251	128	1,256	128	1,254	128
		VW	1,197	122	1,241	126	1,284	131	1,289	131	1,286	131
P2 / P2SW	15W	VF	1,878	129	1,947	134	2,015	139	2,023	139	2,019	139
		VW	1,927	133	1,997	137	2,067	142	2,075	143	2,071	143
P3 / P3SW	23W	VF	2,908	129	3,015	134	3,119	138	3,132	139	3,126	139
		VW	2,983	132	3,093	137	3,200	142	3,213	143	3,206	142
P4	35W	VF	4,096	117	4,247	121	4,394	126	4,412	126	4,403	126
		VW	4,202	120	4,357	125	4,508	129	4,526	129	4,517	129
P5	48W	VF	5,567	115	5,772	119	5,972	123	5,996	124	5,984	124
		VW	5,711	118	5,921	122	6,127	126	6,151	127	6,139	127

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1 / P1SW	10W	0.082	0.049	0.043	0.038	--	--
	13W	--	--	--	--	0.046	0.033
P2 / P2SW	15W	0.132	0.081	0.072	0.064	--	--
	18W	--	--	--	--	0.056	0.041
P3 / P3SW	23W	0.195	0.114	0.100	0.088	--	--
	26W	--	--	--	--	0.079	0.058
P4	35W	0.302	0.175	0.152	0.134	--	--
	38W	--	--	--	--	0.115	0.086
P5	48W	0.434	0.241	0.211	0.184	--	--
	52W	--	--	--	--	0.157	0.119

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

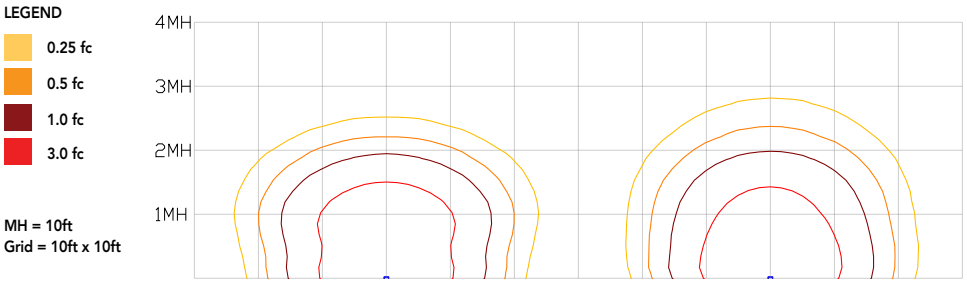
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.



WDGE2 LED P3 40K 80CRI VW

WDGE2 LED P3 40K 80CRI VF

Emergency Egress Options

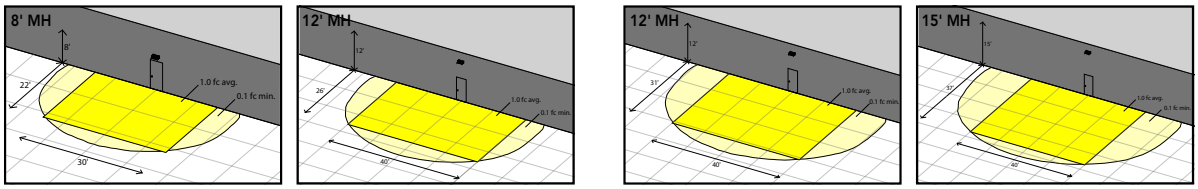
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E10WH or E20WC and VF distribution.

Grid = 10ft x 10ft



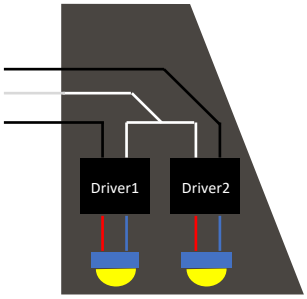
WDGE2 LED xx 40K 80CRI VF MVOLT E10WH

WDGE2 LED xx 40K 80CRI VF MVOLT E20WC

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Control / Sensor Options

Motion/Ambient Sensor (PIR_, PIRH_)

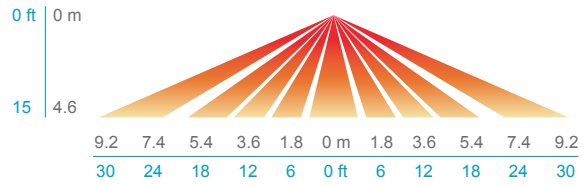
Motion/Ambeint sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

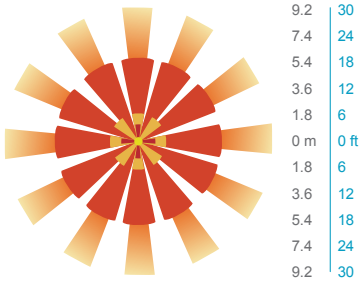
Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

PIR

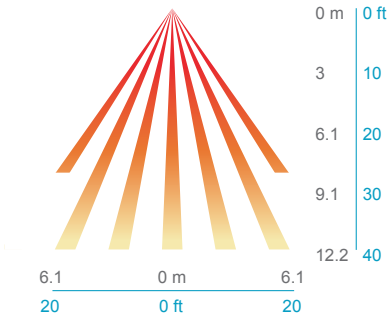
HIGH VIEW



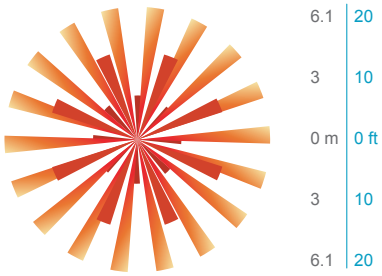


PIRH

SIDE VIEW



TOP VIEW



Option	Dim Level	High Level (when triggered	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Mounting, Options & Accessories



NLTAIR2 PIR – nLight AIR Motion/Ambient Sensor

D = 7″

H = 11″

W = 11.5″

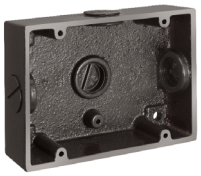


PBBW – Premium Back Box

D = 1.75″

H = 9″

W = 11.5″



BBW – Standard Back Box

D = 1.5″

H = 4″

W = 5.5″



AWS – 3/8inch Architectural Wall Spacer

D = 0.38″

H = 4.4″

W = 7.5″

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2).

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8″ Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient.
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

BLADE

Vandal Resistant

BLD LED



WALL MOUNT /
MULLION MOUNT LED

Fixture Type

Date

Job Name

Approved By

Catalog Number

SPECIFICATIONS

Description The Blade combines a sleek, patent pending design shaped with high performance, full cut off optics to achieve unobtrusive illumination of a space or path of egress. When mounted overa doorway or mullion, the fixture is perceived as an element of the building structure, and, additionally, provides water protection in the form of a drip cap over the entranceway. Multiple lengths are available to match a given door opening and our quick-mount system facilitates installation and maintenance.

Housing Marine grade heat treated extruded aluminum.
Chemically primed and finished with robotically applied polyester powder coat.

Wall Mount Marine grade heat treated extruded aluminum. Chemically primed and finished with robotically applied polyester powder coat. Designed to provide quick mounting to housing and secured with (2) captive stainless steel TORX® head screws.

Lens Frame Marine grade heat treated extruded aluminum.
Secured to fixture (4) captive stainless steel TORX® head screws.

Lens UV stabilized diffused extruded polycarbonate.

End Plate Die-cast marine grade aluminum.
Chemically primed and finished with robotically applied polyester powder coat.

Drivers Constant current drivers at 700mA.

LED Samsung LM561B+ Series @ 2700K, 3000K, 3500K, 4000K, or 5000K and 82 CRI wired in parallel-series. L_{70} projected life of 130,000 hours at 50ºC. Tested in accordance with LM-80. Ten year warranty on LED boards against operational defects.

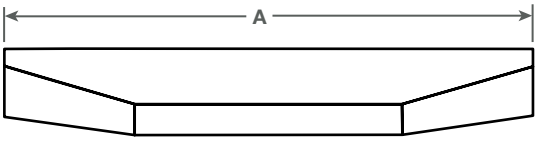
Gaskets Closed cell self-adhesive neoprene to provide watertight seal between fixture and mounting surface.

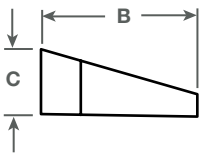
UL Listing U.L., C.UL., Wet standard.

Lifetime Warranty Luminaire LED Incorporated will repair or replace any fixture damaged due to vandalism for the lifetime of the installation.

DIMENSIONAL DATA

	A	B	C
BLD 12	20.0”	5.6”	2.4”
BLD 24	30.8”	5.6”	2.4”
BLD 36	41.6”	5.6”	2.4”
BLD 48	52.4”	5.6”	2.4”
BLD 72	74.0”	5.6”	2.4”





Luminaire Led
a division of the LUMINAIRES GROUP

5 Sutton Place
P.O. Box 2162
Edison, NJ 08818

www.luminaireled.net
P. 732.549.0056

Luminaire LED Incorporated products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA. Content of specification sheets is subject to change; please consult our website for current product information.

Rev: 03/19+

ORDERING INFORMATION

SERIES	LED	CCT	VOLTS	DRIVER	LENS	COLOR	OPTIONS		TX/SD
									TX/SD
BLD 12	5W	2700K	120-277	CC	DP	BLK	DIM	EMB10ST	
	10W	3000K		DIM		BRZ	2B	EMB310	
BLD 24	10W	3500K		PRD		SIL	PC	EMB310ST	
	20W	4000K				WHT	PC BT	EMB20R	
BLD 36	15W	5000K				CUST	GLR	EMB125R	
	30W						OCC	EMB250R	
BLD 48	20W						OCC50	EMBDA	
	35W						KO	ST/SC	
BLD 72	30W								
	55W								
	PRD - Specify Watts or Lumens Above								

CC = Constant Current (Standard)
DIM = 0-10V Dimming, 10% at lowest level
PRD = Programmable driver. Specify Watts or Lumens under “LED” in Ordering Information. N/A with BLD 12.

Luminaire LED Incorporated products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA. Content of specification sheets is subject to change; please consult our website for current product information.

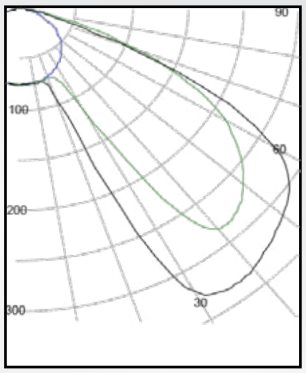
OPTIONS

LENS	DP = Diffused Polycarbonate.
COLORS	BLK = Black BRZ = Bronze SIL = Silver WHT = White CUST = Custom Color (Consult Factory)
DIM	0-10V dimming driver. 10% at lowest level. N/A with BLD 12.
PC	Photoelectric switch. N/A with 2B option or any EMB options.
PC BT	Bluetooth connected daylight harvesting photocell mounted in machine hole in lens frame. Optional passive infrared occupancy sensor. N/A with EMB options in BLD 12, BLD24, and BLD36.
2B	(2) LED drivers for independent LED board operation. N/A with BLD 12, N/A with OCC options, N/A with EMB310, N/A with EMB310ST.
GLR	Fuse and fuse holder.
OCC	Passive infrared sensor mounted in machine hole in lens frame for on/off operation. Maximum coverage of 10' radius from 8' height. N/A with BLD 12.
OCC50	Passive infrared sensor mounted in machine hole in lens frame. 50% of LED's constantly on and 50% sensored. N/A with BLD 12 and BLD 24.
KO	1/2" knock out in both end plates.
EMB10ST	1000 lumen self-testing, self-contained, 90 minute emergency battery pack. 0ºC (32ºF) to 55ºC (131ºF). Not available in 347V. Available for BLD24, BLD36, BLD48, and BLD72 lengths only. N/A with 2B option in BLD24. Meets CA Title 20 Standards.
EMB310	1000 lumen self-contained, 90 minute emergency battery pack. 0ºC (32ºF) to 55ºC (131ºF). Available for BLD36, BLD48, and BLD72 lengths only. Meets CA Title 20 standards.
EMB310ST	1000 lumen self-testing, self-contained, 90 minute emergency battery pack. 0ºC (32ºF) to 55ºC (131ºF). Available for BLD36, BLD48, and BLD72 lengths only. Meets CA Title 20 Standards.
EMB20R	Remote mounted micro inverter that will operate a 25W maximum load for 90 minutes. 0ºC (32ºF) to 45ºC (113ºF).
EMB125R	Remote inverter that will operate a 125W maximum load for 90 minutes. 20ºC (68ºF) to 30ºC (86ºF). Not available in 347V.
EMB250R	Remote inverter that will operate a 250W maximum load for 90 minutes. 20ºC(68ºF) to 30ºC (86ºF). Not available in 347V.
EMBDA	Two drivers and two emergency battery packs self-contained within fixture for independent light engine operation. Each battery pack will operate each light engine for a minimum of 90 minutes. Available in the BLD 72 only.
ST/SC	Slotted screws instead of TORX® head.
TX/SD	TORX® head bit.

PHOTOMETRIC DATA

Model	Watts	Input Watts		Delivered Lumens									
				2700K		3000K		3500K		4000K		5000K	
BLD 12	5W	6.5W		447		452		461		476		490	
BLD 12	10W	11.8W		875		885		903		931		958	
BLD 24	10W	10.6W		962		973		993		1024		1055	
BLD 24	20W	21.3W		1885		1907		1946		2006		2066	
BLD 36	15W	14.7W		1444		1461		1491		1537		1583	
BLD 36	30W	29.6W		2828		2860		2919		3009		3099	
BLD 48	20W	19.6W		1926		1948		1987		2049		2111	
BLD 48	35W	36.4W		3770		3812		3890		4011		4132	
BLD 72	30W	29.4W		2969		3003		3064		3159		3254	
BLD 72	55W	57.1W		5789		5855		5974		6184		6345	
BLD xx	PRD			Programmable Driver. Must specify Watts or Lumens in Ordering Information.									

MODEL: BLD12-5W-4000K
Delivered Lumens: 476 Lumens

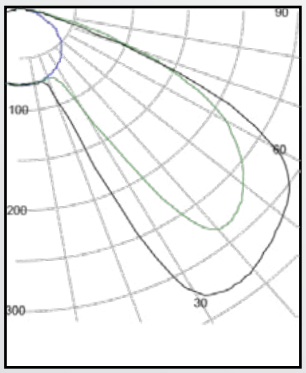


IES FILE: BLD12-5W-4000K
Total Power: 7W

Testing was performed in accordance with IES LM-79-08
Bug Rating: B0U0G1

Zone	Lumens	% Luminaire
0 - 30	69	14.5
0 - 40	149	31.1
0 - 60	359	75.5
60 - 90	117	24.5
0 - 90	476	100.0
90 -180	0	0.0
0 - 180	476	100.0

MODEL: BLD36-15W-4000K
Delivered Lumens: 1537 Lumens

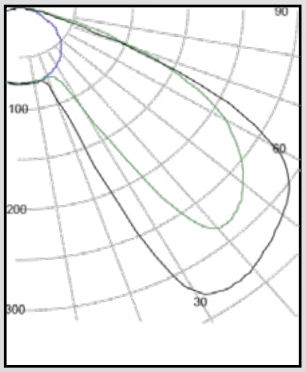


IES FILE: BLD36-15W-4000K
Total Power: 14.7W

Testing was performed in accordance with IES LM-79-08
Bug Rating: B0U0G1

Zone	Lumens	% Luminaire
0 - 30	377	124.5
0 - 40	640	41.6
0 - 60	1219	79.3
60 - 90	317	20.7
0 - 90	1537	100.0
90 -180	0	0.0
0 - 180	1537	100.0

MODEL: BLD36-30W-4000K
Delivered Lumens: 3009 Lumens



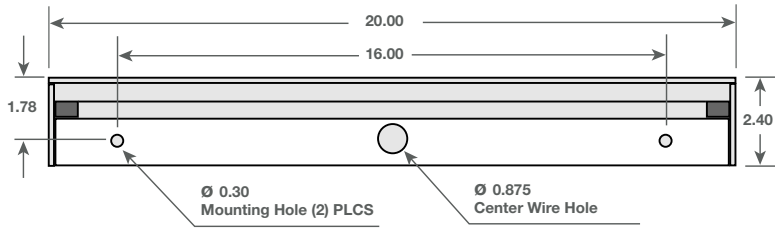
IES FILE: BLD36-30W-4000K
Total Power: 29.6W

Testing was performed in accordance with IES LM-79-08
Bug Rating: B1U0G1

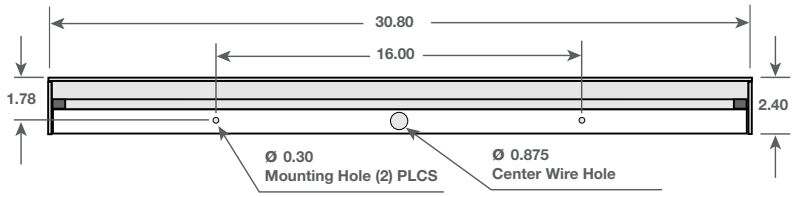
Zone	Lumens	% Luminaire
0 - 30	739	24.6
0 - 40	1253	41.6
0 - 60	2387	79.3
60 - 90	622	20.7
0 - 90	3009	100.0
90 -180	0	0.0
0 - 180	3009	100.0

MOUNTING DETAIL

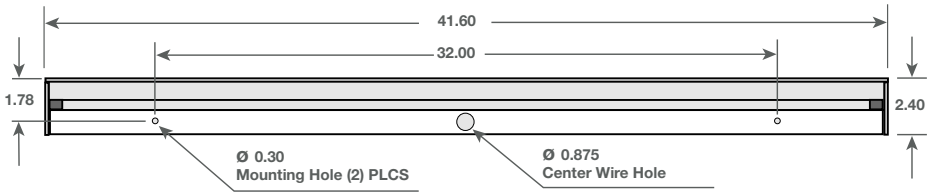
BLD12



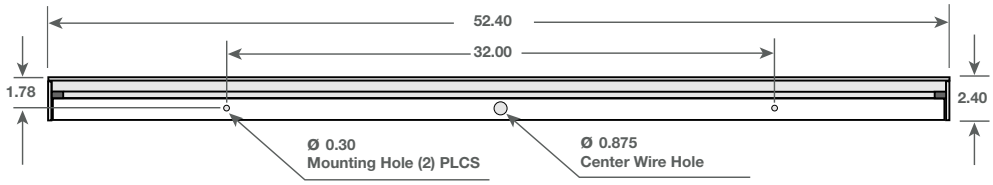
BLD24



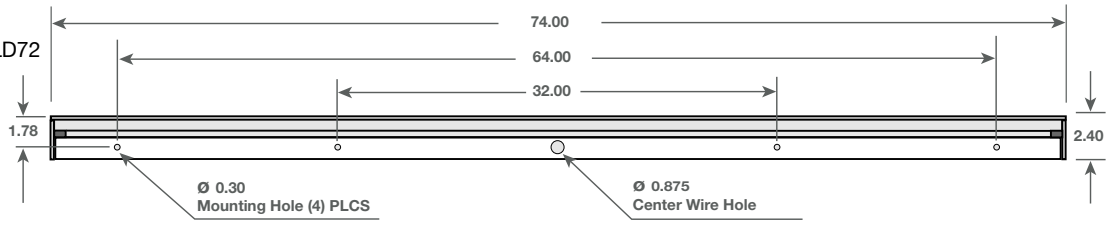
BLD36



BLD48



BLD72



Luminaire LED Incorporated products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA. Content of specification sheets is subject to change; please consult our website for current product information.

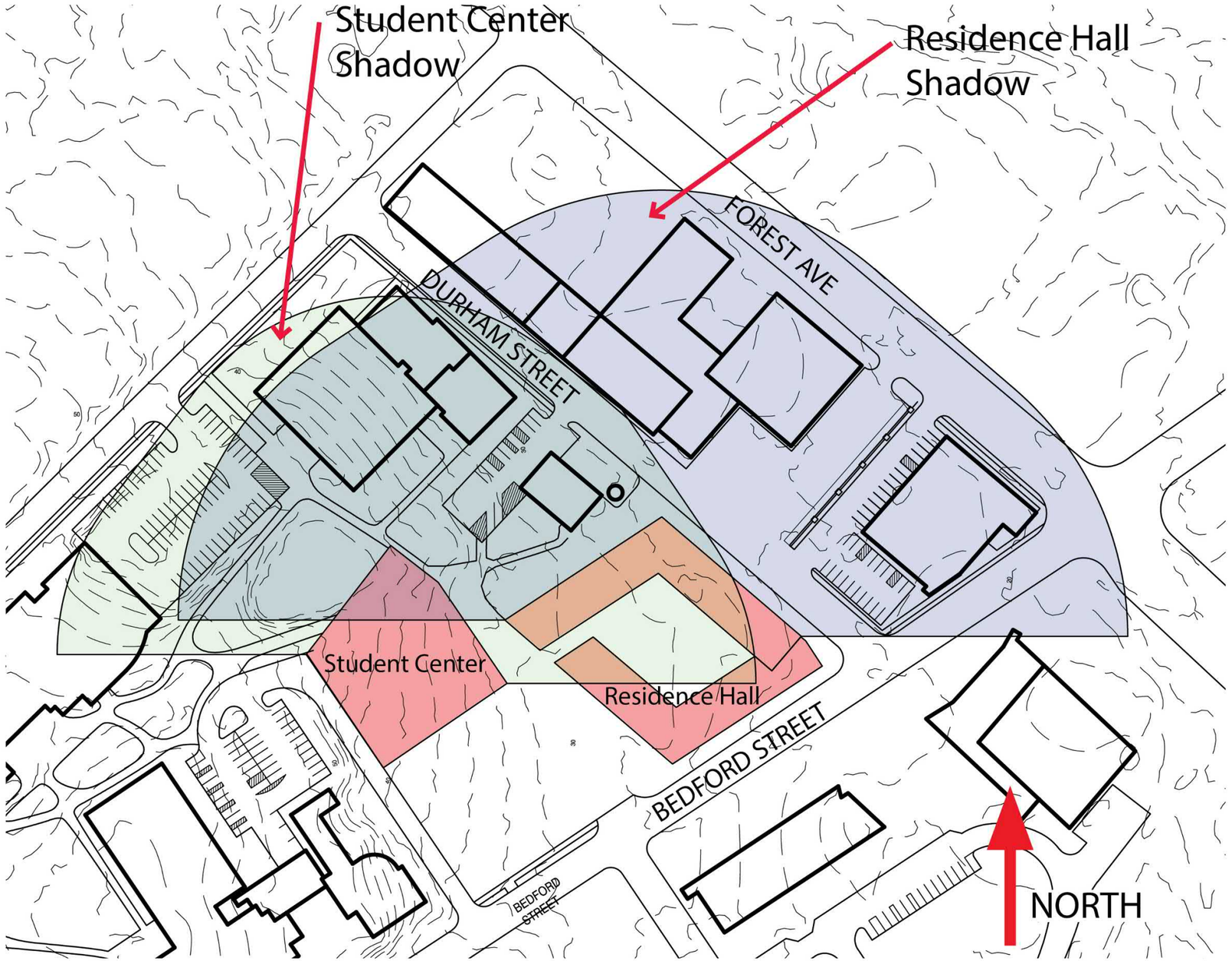
Preliminary Shadow Analysis: A preliminary shadow analysis shall be require for all Level II or Level III Developments or additions to structures greater than 45 ft tall, in order to determine if additional shadow analysis is required.

a) Shadow Length: The longest shadow that any structure will cast in Portland, Maine during the year (except within an hour of sunrise or sunset) is 4.26 times its height. To conduct a preliminary analysis multiply this factor by height of each proposed structure.

85' @ Residence Hall (tallest allowed)
85x 4.26 = 362.1'

65' @ Student Center (as designed)
65x4.26 = 276.9'

Shadows shown reflect solid masses at heights indicated. Actual design will be stepped and reduce shadow impacts.



PRELIMINARY SHADOW STUDY

USM RESIDENCE HALL &
STUDENT CENTER

PORTLAND, MAINE

01/27/2020

UNIVERSITY OF SOUTHERN MAINE · CAPSTONE DEVELOPMENT PARTNERS LLC · WOODARD &CURRAN · ELKUS | MANFREDI ARCHITECTS · SMRT



Image shown may not reflect actual configuration

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

Specifications

Generator Set Specifications	
Rating	80 ekW (100 kVA)
Voltage	480 Volts
Frequency	60 Hz
Speed	1800 rpm

Generator Set Configurations	
Emissions/Fuel Strategy	U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)

Engine Specifications		
Engine Model	C4.4 Vertical In-line 4, 4-cycle diesel	
Bore	105.0 mm	4.13 in
Displacement	4.4 L	268.5 in³
Stroke	127.0 mm	5.0 in
Compression Ratio	16.7:1	
Aspiration	Turbocharged Air-to-Air-Aftercooled	
Governor Type	Electronic	
Fuel System	Common Rail	

Package Dimensions*		
Length	2362 mm	93 in
Width	1110 mm	44 in
Height	1304 mm	51 in
Weight†	1130 kg	2491 lb

*Note: For reference only – do not use for installation design. Please contact your local dealer for exact weight and dimensions.

†Weight includes: Oversize generator, skid base, circuit breaker, oil, and coolant.

Benefits & Features

Cat® Diesel Engine

- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

Generator

- Matched to the performance and output characteristics of Cat engines
- Industry-leading mechanical and electrical design
- Industry-leading motor starting capabilities
- High efficiency

Cat EMCP Control Panel

The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 systems can be further customized to meet your needs through programming and expansion modules.

Seismic Certification

- Seismic certification available.
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.
- IBC certification requires that the anchoring system used is reviewed and approved by a professional engineer.
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007, CBC 2010.

Design Criteria

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.
- Cooling system designed to operate in 50˚C/122˚F ambient temperatures with an air flow restriction of 0.5 in. water.

UL 2200/CSA – Optional

- UL 2200 Listed
- CSA Certified

Certain restrictions may apply. Consult with your Cat dealer.

Single-Source Supplier

Fully prototype tested with certified torsional vibration analysis.

Worldwide Product Support

Cat dealers provide extensive post-sale support including maintenance and repair agreements. Cat dealers have over 1,800 dealer branch stores operating in 200 countries. The Cat S•O•S℠ program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

Standard Equipment

Air Inlet

- Single element Air filter

Cooling

- Radiator and cooling fan complete with protective guards
- Standard ambient temperatures up to 50°C (122°F)

Exhaust

- Exhaust flange outlet

Fuel

- Primary and secondary fuel filters
- Fuel priming pump
- Flexible fuel lines

Generator

- Matched to the performance and output characteristics of Cat engines
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- IP23 protection
- Integrated Voltage Regulation

Governor

- Electronic governor – ADEM™ A4

Control Panels

- EMCP 4.2 Series generator set controller

Mounting

- Rubber vibration isolators

Starting/Charging

- 12 volt starting motor
- Battery with rack and cables

General

- Paint – Caterpillar Yellow except rails and radiators gloss black

Optional Equipment

Exhaust

- Industrial, residential, critical mufflers

Generator

- Excitation: [ ] Permanent Magnet Excited (PM) [ ] Internally Excited (IE)
- Anti-condensation heater
- Oversize and premium generators

Starting/Charging

- Battery charger – UL 10 amp
- Battery disconnect switch
- Jacket water heater

General

- UL 2200
- CSA Certification
- Enclosures: sound attenuated, weather protective
- Sub-base dual wall UL Listed fuel tanks
- Automatic transfer switches (ATS)

C4.4
80 ekW/ 100 kVA/ 60 Hz/ 1800 rpm/ 480V/ 0.8 Power Factor

Rating Type: STANDBY

Emissions: U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)



Image shown may not reflect actual configuration

D80-8
80 ekW/ 100 kVA
60Hz/ 1800 rpm/ 480V

Package Performance	
Generator Set Power Rating with Fan @ 0.8 Power Factor	80 ekW
Generator Set Power Rating	100 kVA

Fuel Consumption		
100% Load With Fan	23.7 L/hr	6.3 gal/hr
75% Load With Fan	19.0 L/hr	5.0 gal/hr
50% Load With Fan	13.9 L/hr	3.7 gal/hr

Cooling System[1]		
Engine Coolant Capacity	7.0 L	1.8 gal
Radiator Coolant Capacity	10.0 L	2.6 gal
Engine Coolant Capacity with Radiator/Exp Tank	17.0 L	4.5 gal
Air Flow Restriction (System)	0.12 kPa	0.48 in. water

Inlet Air		
Combustion Air Inlet Flow Rate	7.8 m^3/min	275 cfm

Exhaust System		
Exhaust Stack Gas Temperature	630°C	1166°F
Exhaust Gas Flow Rate	17.6 m^3/min	620 cfm
Exhaust System Backpressure (maximum allowable)	15.0 kPa	60.2 in. water
Exhaust Flange Size (internal diameter)	64 mm	2.5 in

C4.4
80 ekW/ 100 kVA/ 60 Hz/ 1800 rpm/ 480V/ 0.8 Power Factor

Rating Type: STANDBY **Emissions: U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)**

Heat Rejection		
Heat Rejection to Coolant (total)	47.9 kW	2724 Btu/min
Heat Rejection to Exhaust (total)	77.7 kW	4419 Btu/min
Heat Rejection to Atmosphere from Engine	13.5 kW	768 Btu/min
Heat Rejection to Atmosphere from Generator	7.1 kW	404 Btu/min

Alternator[2]		
Motor Starting Capability @ 30% Voltage Dip	215 skVA	
Frame	LC3114D	
Temperature Rise	105°C	189°F
Excitation	Self Excited	

Lube System		
Sump Refill with Filter	8.4 L	2.2 gal

Emissions (Nominal)[3]	
NOx + HC	3.6 g/kW-hr
CO	0.9 g/kW-hr
PM	0.12 g/kW-hr

[1] For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to the existing restriction from the factory.

[2] Generator temperature rise is based on a 40°C (104°F) ambient per NEMA MG1-32.

[3] The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% Prime load. This information should not be used for permitting purposes and is subject to change without notice. Contact your Cat dealer for further details.

Rating Type: STANDBY **Emissions: U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards)**

DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:
AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC,IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 72/23/EEC, 98/37/EC, 2004/108/EC.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Averagepower output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel Rates are based on fuel oil to specification EPA 2D 89.330-96 with a density of 0.845 – 0.850 kg/L (7.052 – 7.094 lbs/U.S. gal.) @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

Additional ratings may be available for specific customer requirements, contact your Cat representative for details.

Performance No.: P4510A
Feature Code: NAC222P
Generator Arrangement: 4518416
Date: 03/24/2016
Source Country: U.S.

www.Cat-ElectricPower.com
©2016 Caterpillar
All rights reserved.

Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.

CAT, CATERPILLAR, their respective logos, ADEM, S•O•S, “Caterpillar Yellow”, the “Power Edge” trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.



Picture shown may not reflect actual configuration

Weather Protective and Sound Attenuated Enclosures

D40 to D60
D80 to D100
D125 to D200

Features

Highly Corrosion Resistant construction

- Stainless steel flush fitting latches and hinges tested and proven to withstand extreme conditions of corrosion
- Zinc plated or stainless steel fastener

Excellent Access

- Single side access for service and controls
- All non-service sides have removable doors and/or panels
- Radiator fill access
- Lube oil and coolant drains piped to the exterior of the enclosure base
- Large cable entry area for installation ease
- Double doors on both sides
- Vertically hinged doors with solid bar door stays to hold doors in place when open

Security and Safety

- Lockable access doors which give full access to control panel and breaker
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill, and battery can only be reached via lockable access
- Stub-up area is rodent proof

Transportability

- These enclosures are of extremely rugged construction to withstand outdoor exposure and rough handling common on many construction sites. The sound deadening material is of a self-extinguishing design
- This range of enclosures are designed on modular principles with many interchangeable components permitting on site repair

Options

- Weather Protective - constructed with 16 gauge steel; industrial silencer mounted within the main enclosure body
- Sound Attenuated Level 1 - constructed with 16 gauge steel; weather protective with critical silencer - silencer mounted in separate upward discharging radiator hood
- Sound Attenuated Level 2 - constructed with 16 gauge steel; weather protective with critical silencer and 100% lined with sound deadening material – silencer mounted in separate upward discharging radiator hood
- Sound Attenuated Aluminum constructed with 14 gauge Aluminum 5052 grade. Weather protective with critical silencer and 100% lined with sound deadening material – silencer mounted in separate upward discharging radiator hood
- Caterpillar Yellow* or white paint
- UL Listed sub base tanks
- Externally mounted emergency stop button
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010
- IBC certification for 180 mph wind loading

*Not available with Aluminium enclosures

Enclosure Sound Pressure Levels (SPL) at 100%

Weather Protective Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D40 (2/4)	40	1.7	3602	85
D50 (2/4)	50	1.7	3602	86
D60 (2/4)	60	1.9	4026	88
D80-8	80	3.2	6696	79
D100-8	100	3.6	7564	81
D125-8	125	4.6	9676	78
D150-10	150	4.6	9676	79
D175-4	175	5.9	12431	84
D200-2	200	5.9	12431	89

SA Level 1 Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D40 (2/4)	40	1.7	3602	66
D50 (2/4)	50	1.7	3602	66
D60 (2/4)	60	1.8	3899	71
D80-8	80	3.2	6696	78
D100-8	100	3.2	6696	79
D125-8	125	4.2	8899	74
D150-10	150	4.2	8899	74
D175-4	175	5.6	11830	78
D200-2	200	5.5	11654	81

SA Level 2 Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D80-8	80	3.2	6696	75
D100-8	100	3.2	6696	76
D125-8	125	4.2	8899	74
D150-10	150	4.2	8899	74
D175-4	175	5.2	11018	74
D200-2	200	5.1	10806	75

SA Aluminum Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	Standby eKW	m^3/s	cfm	dBA
D80-2	80	3.2	6696	73
D100-8	100	3.2	6696	74
D125-8	125	4.2	8899	74
D150-10	150	4.2	8899	75
D175-4	175	5.2	11018	75
D200-2	200	5.1	10806	75

The sound pressure level data shown above is quoted as free field and is forguidance only.
Actual levels produced may vary according to site conditions.

Enclosure Dimensions and Weights

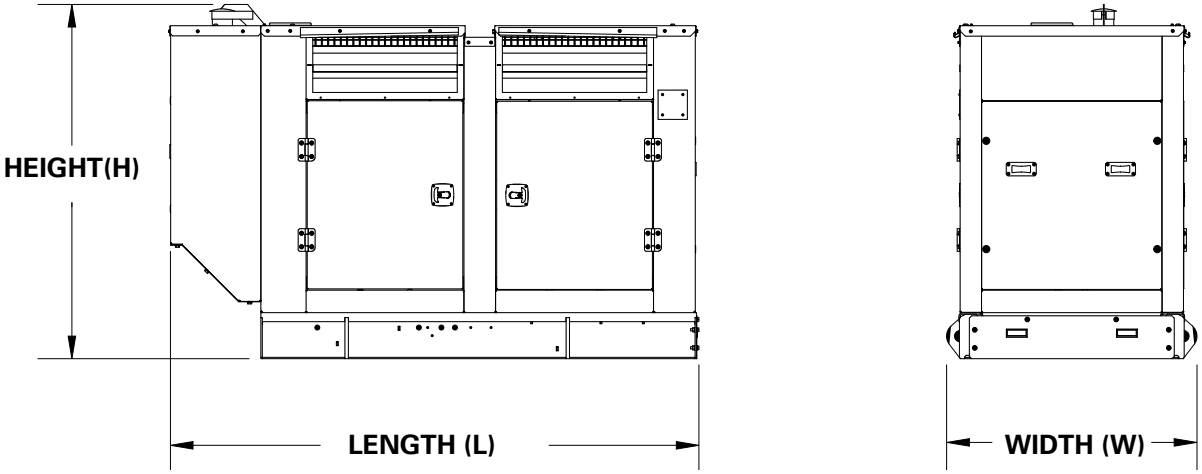


Image represents SA Level 1, SA Level 2 and SA Aluminum enclosures on skid base only

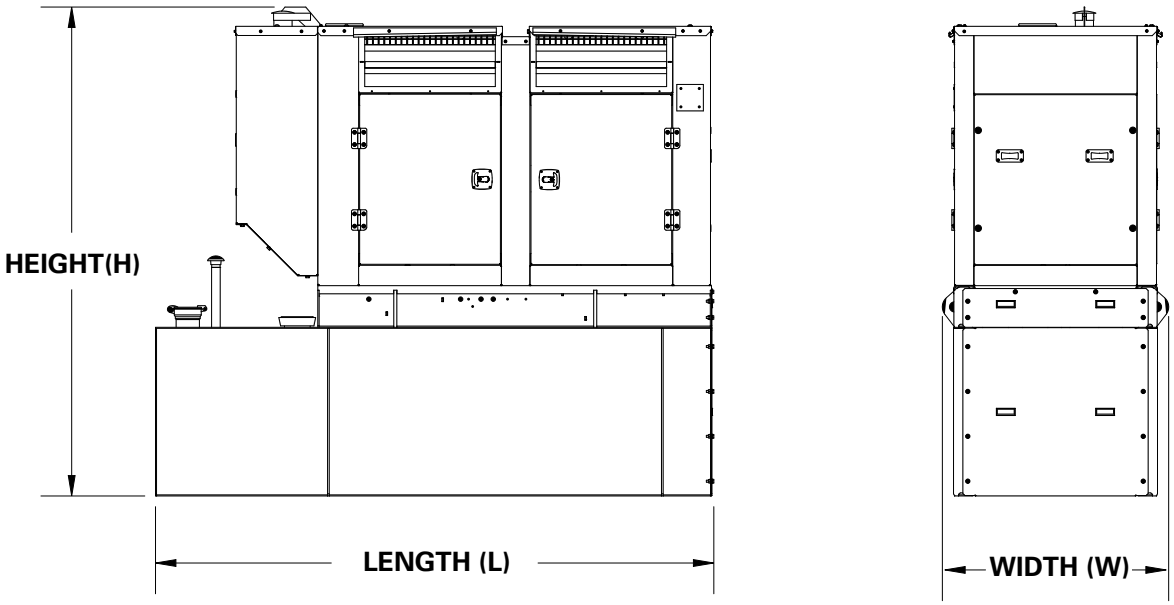


Image represents SA Level 1, SA Level 2 and SA Aluminum enclosures mounted on optional UL listed sub base tank

Model	Standby eKW	WP Industrial		SA Level 1		SA Level 2		SA Aluminum	
		kg	lb	kg	lb	kg	lb	kg	lb
D40-2	40	121	267	137	302	NA	NA	NA	NA
D50-2	50								
D60-2	60								
D80-8	80	263	580	313	690	321	708	142	312
D100-8	100								
D125-8	125	348	768	393	867	406	896	176	387
D150-10	150								
D175-4	175								
D200-2	200								

Enclosure weights (includes muffler)

Enclosure Dimensions Skid Bases

Engine Model	Generator Set Rating ekW	Enclosure	Width 'W'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in
C4.4	40	WP	1075	42.3	1972	77.6	1378	54.3
	50							
	60							
	40	SA Level 1, SA Level 2 and SA Aluminum	1075	42.3	1972	77.6	1378	54.3
	50							
	60							
C4.4	80	WP	1110	43.7	2523	99.3	1773	69.8
	100							
	80	SA Level 1, SA Level 2 and SA Aluminum	1110	43.7	2891	113.8	1852	72.9
	100							
C7.1	125	WP	1110	43.7	3204	126.1	1773	69.8
	150							
	175							
	200							
	125	SA Level 1, SA Level 2 and SA Aluminum	1110	43.7	3659	144.1	1852	72.9
	150							
	175							
	200							

Enclosure Dimensions on UL Listed Sub Base Tanks

Engine Model	Generator Set Rating ekW	Enclosure	137 Gallon Sub Base Tank				255 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C4.4	40	WP	2503	98.5	1912	75.3	2503	98.5	2241	88.2
	50									
	60									
	40	SA Level 1, SA Level 2 and SA Aluminum	2503	98.5	1912	75.3	2503	98.5	2241	88.2
	50									
	60									

Engine Model	Generator Set Rating ekW	Enclosure	209 Gallon Sub Base Tank				394 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C4.4	80	WP	3447	135.7	2258	88.9	3447	135.7	2608	102.7
	100									
	80	SA Level 1, SA Level 2 and SA Aluminum	3447	135.7	2337	92.0	3447	135.7	2687	105.8
	100									

Engine Model	Generator Set Rating ekW	Enclosure	402 Gallon Sub Base Tank				777 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C7.1	125	WP	4035	158.9	2420	95.3	5035	198.2	2706	106.5
	150									
	175									
	200									
	125	SA Level 1, SA Level 2 and SA Aluminum	4035	158.9	2499	98.4	5035	198.2	2785	106.5
	150									
	175									
	200									

Note: Weight includes oil and coolant but not fuel

Ref: WPIA, WPIB, WPIC, SATCBA, SATCBB, SAT, CBC, SATFBA, SATFBB, SATFBC, ENCAL02, ENCAL03, ENCAL04.

©201□ Caterpillar
All rights reserved.

Materials and specifications are subject to change without notice.
CAT, CATERPILLAR, their respective logos, “Caterpillar Yellow”, the “Power Edge” trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

10. CONSISTENCY WITH USM DESIGN PRINCIPLES AND STANDARDS

The *University of Southern Maine Campus and Design Principles and Standards* were created in recognition of the need of the university to grow in a vibrant, aesthetic, and sustainable manner that provides a strong sense of place and conveys an identity as a high-quality institution of learning.

All new buildings shall be designed to create a visual connection with existing campus buildings with a goal of achieving a cohesive campus appearance. New development shall be characterized by excellence in architectural design, craftsmanship, materials, streetscape and landscape improvements, signage and lighting appropriate for a university in an urban setting in the Northeast.

These principles and standards were intended to regulate the future build out of the institution while ensuring that new development is sensitive to adjacent residential neighborhoods and commercial areas and is successfully integrated with the City as a whole.

10.1 Applicability

The principles and standards apply to all development on the University of Southern Maine Portland campus. The following summarizes how the proposed project addresses each of the principles and standards found in the USM Campus and Design Principles and Standards.

10.2 Principles and Standards

Principle A Campus Design

Standard A-1: Campus Edges.

The Residence Hall is designed to coordinate with the existing buildings on campus and context by utilizing a 5-story portion along Bedford Street and an 8-story portion on Durham Street. The 5-story portion relates to the Osher Map Library, Muskie School, and Masterson Hall in Scale and Proportion. The 8-story portion, which returns into USM's Campus half way up Durham Street, creates a transition point for the campus to scale down towards the residential structures on Falmouth street while at the same time acknowledging the development of Forest Avenue and allowed building heights of future development. Career and Student Success Center is located in the heart of the campus and only defines internal campus edges.

Standard A-2: Building Orientation

The Career and Student Success Center and Residence Hall are designed to create a new Campus Quad along Bedford street as well as a courtyard within the Residence Hall. The five-story portion of the building along Bedford street allows for natural light from the south to enter the courtyard of the Residence Hall. This also allows the quad to feel more open and bright at all times of day.

Standard A-3: Pedestrian Environment

The Residence Hall's primary entrance is located on Bedford Street and will have a high level of transparency into the inner courtyard. We have brought the sidewalk up to the edge of the building to allow for more plantings and trees between the street and pedestrian sidewalk. The sidewalk transitions into the pedestrian pathways along the periphery of the quad and feeds into the campus. The Student Center faces the new quad with a formal covered portico that runs the entire length of the building, facing south. The portico stitches together pre-established campus circulation patterns from the west through Masterton Hall and terminates in the courtyard of the new Residence Hall to the east. Additional circulation patterns at the east

and west edges of the new residential quad will provide an appealing approach to the Student Center. In addition to providing protection from the weather the portico shields the large glass wall of the southern façade from solar heat gain. Framed with a mass timber and cross laminated timber structural system, the portico and large interior spaces are visually warm and inviting. Driven by ambitious sustainability goals, the aesthetic of the building - board formed concrete, large steel-framed walls of glass, corrugated metal and fiber cement siding - is rooted in the material palette of the campus and the nature of Maine in the broader context.

Standard A-4: Gateways

The Residence Hall is at the corner of Bedford and Durham Street and is designed to enhance the gateway into the campus. This is achieved through relating to the context buildings across the street and the use of different materials on the facade to create a more distinct "Gateway".

Standard A-5: Views and Landmarks

The five-story portion of the Residence Hall along Bedford Street utilizes the same size and scale of the existing buildings which will help maintain the views and feel of the street. The replacement of the surface parking lot with green space highlights views in and out of campus by creating a space that allows engagement with the surrounding context. The Career and Student Success Center is establishing itself as a new landmark in the heart of campus.

Principle B Access and Circulation

Standard B-1: Connectivity

The CSSC, Residence Hall, and new Campus Quad enhance and add to the existing connectivity within the campus and relates to the goals of the USM Facilities Masterplan.

Standard B-2: Circulation

The entrances and exits of both buildings highlight existing access points within the USM circulation system as well as define new spaces with a higher level of clarity and safety than the previous surface parking lot did.

Standard B-3: Multi-modality

The circulation plan is pedestrian oriented at all levels and measures have been taken to eliminate pedestrian and vehicular crossings within the campus. The existing bus stop will remain and is integrated into the new Quad with accessible routes accessing the new buildings.

New bike storage areas for both buildings will be provided to enhance biking to and around campus.

Standard B-4: Traffic Calming

The pedestrian environment is the focus of this design and measures have been taken to enhance this and create a higher level of safety for pedestrians by limiting pedestrian and vehicular interaction.

Standard B-5: Sidewalks

New sidewalks will be installed along Bedford Street and are greater than 8' in width. Durham Street is not as heavily travelled and will utilize a 6' sidewalk.

Standard B-6: Street Lights

Streetlights will be in line with what has been recently installed on Bedford Street.

Principle C Parking, Loading and Service Areas

Standard C-1,C-2,C-3: Parking Structures

There are no parking structures included with this application. A separate Level III Site Plan application will be submitted for a parking structure on campus.

Standard C-4: Surface Lots

The existing Surface Lot off of Durham street will be repaved and expanded for the new service area.

Standard C-5: Loading and Service Areas

All loading and service areas are consolidated behind the CSSC and Residence Hall and accessed via Durham Street. The goal of centrally locating these facilities was to create clear and distinct separation from the pedestrian circulation within campus and concealed from public view.

Standard C-6: Utility Services

All utilities are located adjacent to the loading and service areas out of public view and access.

Principle D Architectural Design

Standard D1: Height

The Residence Hall building is broken down into two distinct wings, a five-story portion along Bedford Street and an eight-story portion along Durham Street with both wings returning into the campus. The eight-story portion of the building will be in accordance to the USM Overlay Map of 85' in height or less. The CSSC is located in the heart of the campus and will be three stories tall and under the allowed height per USM Overlay map.

Standard D-2: Setbacks

The Residence Hall is set back 10' from the Property Line on Bedford Street and 4' from Durham Street.

Standard D-3: Stepbacks

We understand that this is not applicable to these projects based on initial conversations with the City.

Standard D-4: Massing

Facades along Bedford and Durham Street of the Residence Hall utilize a Masonry and glass base. The Bedford portion transitions to a primarily masonry/brick façade with portions of cementitious panel inlays to gang windows together. This breaks down the scale of the facade and relates to the vertical fenestration of the Osher Map Library and Muski School Across the street. The eight-story portion along Durham Street Transitions to a metal and cementitious panel cladding system that runs primarily in a horizontal pattern to help mitigate the height of the building. The horizontal bands gang windows and units to help reduce the perception of the horizontal length of the building. The CSSC helps transition the eight-story massing of the Residence Hall to the existing Buildings on campus.

The programming along the ground floors allow for no more than 20 consecutive linear feet of blank walls along public ways.

Standard D-5: Entrances

The Residence Hall's primary entrance is located off of Bedford Street with limited entrances other than for emergency egress for security purposes along the perimeter. The primary entrance for the CSSC faces Bedford street and overlooks the Quad. This entrance is connected to the new and existing pedestrian circulation paths. There is another entrance to the CSSC located on the north west corner that connects with the central pedestrian path within the campus.

Standard D-6: Windows

Unit Windows within the residence Hall will likely meet Passive House Standards with a U-value of .14-.11, surpassing most high-performance window systems. The storefront systems will be upgraded to triple pane to meet Passive House standards as well. We have utilized transparency along Bedford street, but less on Durham since these are residential units. We are coordinating the percentage of window opening with our Passive House consultant since this directly impacts the sustainability goals of the project.

The windows for the Career and Student Success Center will perform to LEED Silver requirements. There is significantly more glass in this building due to the program that open out to the new Quad.

Standard D-7: Materials

One of the goals of the project is to create a new vision for USM while keeping ties to the existing campus materials.

The Residence Hall is one building with two distinct wings: the five-story Bedford Wing and the eight-story Durham Wing. Both wings have a two-story masonry base which relates to several of the existing buildings on campus. The Bedford Wing will have more glazing to allow light into the common spaces and to activate the streetscape. The upper, streetside face of the Bedford wing is also masonry with metal infill panels between the windows. The courtyard side of the Bedford Wing will be a combination of cementitious and metal panels. The top six floors of the Durham Wing elevations will be cementitious and metal panels; both the streetside and the courtyard elevations.

We have reviewed the cementitious panel option with the city previously since cementitious panels have improved significantly since the design manual was written and are utilized in many LEED projects and the durability has improved significantly.

The Career and Student Success Center will utilize a similar palette with the addition of exposed heavy timber structure.

Standard D-8: Signage

Signage is still under review

Standard D-9: Historic Structures

Not applicable

Standard D-10 Original Residential Structures

Not applicable

11. ZONING ASSESSMENT

The project is located within two underlying City Zones. Most of the project is in the R-5 Residential Zone, with a small portion on the eastern side in B-2 Community Business Zone. The entirety of the project is in the USM Overlay Zone. The purpose of the USM Overlay zone is to allow the University to continue and reasonably expand within defined boundaries, and to recognize the unique qualities of a university campus while at the same time protecting the value and integrity of established neighborhoods. University buildings and structures are subject to the requirements of the underlying zoning districts, except as modified by the USM Overlay Zone. The Overlay Zone provides for an 85-foot building height in the portion of the campus where the new Career and Student Success Center and Residence Hall will be located, and yard setbacks of 10 feet from Bedford Street; 0 feet from Durham Street; and 20 feet from Falmouth Street.

The uses proposed for this project, generally classified as "University Uses", are permitted within the USM Overlay zone. The allowed uses include: Classrooms; Student Unions; Dining Halls; Bookstores; Auditoriums; Outdoor Use areas, such as quads and greens; student housing, Administrative and Faculty offices, and other buildings, structures and uses customarily incidental to a university.

The attached Zoning Assessment Table shows the project complies with dimensional requirements specified in the City's Land Use Ordinance.

11.1 Attachments

- City of Portland Zoning Assessment Table

ZONING ANALYSIS Relevant Zone(s) B2, R5, USM Overlay Zone

All Projects:

	Required	Proposed
Lot Size	N/A	N/A
Area Per Dwelling Unit	N/A	N/A
Minimum Street Frontage	N/A	N/A
Front Yard Minimum	Bedford St -10'	10'
Front Yard Maximum	N/A	N/A
Rear Yard	N/A	N/A
Yard Right	Durham St - 0'	0'
Yard Left	N/A	N/A
Side Street Setback	N/A	N/A
Step Back	N/A	N/A
Maximum Lot Coverage	40% (Campus)	~29% (Campus)
Minimum Lot Coverage	N/A	N/A
Maximum Height	Zone C, 85 feet	82 feet
Open Space	N/A	N/A
Maximum Impervious Area	66% (Campus)	~53% (Campus)
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	See Campus Plan	See Campus Plan
Loading Bays	determined by PB	3
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements (Not applicable)

	Required	Proposed
Minimum Lot Size		
Minimum Lot Area per Dwelling		
Maximum # Units per Building		
Maximum Building Length		
Maximum Accessory Building Length		
Minimum Setbacks		
Minimum Building Separation		
Minimum Open Space		

Affordable Housing Density Bonuses (if applicable) (Not applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

12. CONSISTENCY WITH CITY COMPREHENSIVE PLAN

The City's current Comprehensive Plan (Portland's Plan 2030) completed in 2017 articulates a vision of Portland's values and provides a framework for decision making revolving around the values, goals, and strategies of the City over the next decade. The proposed project is consistent with with Portland's Plan 2030.

12.1 Comprehensive Plan Vision Statement

Portland's Plan 2030 is guided by a vision statement for the City that includes six interconnected themes, which provide the foundation for focusing City policies and priorities identified for gauging success. The goals and implementation strategies in the Plan support the vision statement.



Figure 12-1: *Six Interconnected Themes Identified During Portland's Comprehensive Planning Process*

The Career and Student Success Center and Residence Hall projects align with all six themes of the vision statement, with focus on many of the specific points (listed below in italics) highlighted within those themes.

Equitable – *We (City) will remain an open and inclusive city, celebrating diversity and providing a welcoming and safe place for residents and visitors alike.*

The Career and Student Success Center and Residence Hall project provides connectivity to neighboring uses, welcoming residents of surrounding neighborhood. The proposed site features a Campus Quad, plaza areas, and pedestrian connections that create permeability, are welcoming to pedestrians, and provide important public access.

Sustainable – *Portland has been built and rebuilt to endure; we will balance our historic fabric, sound infrastructure, and the best of new technology and design for the future.*

Portland will grow in order to sustain our community, infrastructure, and economy.

Growth should respect and seek to preserve our spectacular natural resources.

Sustainability at the University of Southern Maine means environmental responsibility and sensitivity as well as a focus on wellbeing. Across three campuses the University strives to implement sustainable solutions that serve not only the planet locally and globally, but also the diverse university community. From careful and innovative waste management practices to energy and water conservation, from engaging students, staff, and the outside community with creative programming to integrating sustainability into the curriculum, and from responsible procurement to careful planning and execution of projects and initiatives, USM strives to lighten its carbon footprint while simultaneously enriching the learning experience for all of our students in all majors.

The University has a Strategic Sustainability Plan, developed in 2017 that was endorsed by Student Senate and the Master Planning Committee.

USM also recognizes its role in advancing regional and state economics. Through its research, academic programs, and training, the University responds to the workforce and economic prosperity imperatives of Maine's business, nonprofit organizations, and government agencies.

Dynamic – *We will embrace innovation in order for our community to thrive.*

We will welcome new residents into our community because they enrich and sustain our city

We will support healthy schools as essential to maintaining a dynamic community.

Portland will plan for a built environment that encourages an active citizenry.

Located less than one mile from the heart of downtown Portland, the Portland campus provides excellent access to social, cultural and internship opportunities. The USM Facilities Master Plan outlines the following vision for the Portland Campus: “To building a sustainable, iconic academic campus in the heart of Portland enhancing the commuter experience while creating a welcoming residential community”. USM embraces academic freedom for students, faculty, and staff, and advocates diversity in all aspects of its campus life and academic work.

Secure – *We will be committed to accessible housing and healthy food for all our residents.*

We will strive to create a resilient economy through innovation, investment, and commitment to diversity.

While Portland is a desirable place to live, competitive market conditions have created a barrier to entry for many students. USM envisions expanding its on-campus housing portfolio on the Portland campus to support students’ academic and career aspirations as well as ensure a robust student life experience. It is strategically focused on providing this student housing for upper-division (third- and fourth-year) undergraduate, graduate,

and law students. The new Career and Student Success Center and Residence Hall are instrumental in achieving this goal.

The University is committed to building a campus community where all students can fully participate and feel valued, in an educational environment that is inclusive and safe. It encourages its students to engage in the rich education and growth found through active exchange across cultures and identities. Research is a vital way for faculty and students to bridge academic scholarship and learning with helping communities create real world solutions. Through a broad range of USM research initiatives, faculty, staff, and students aim to produce results that will be usable, practical, and sustainable in the community.

Authentic – *We (City) will celebrate our city's incredible history.*

The uniqueness and integrity of our neighborhoods will be maintained and enhanced.

We will invest in and support our local economy.

We will maintain our character through preservation, innovation, and excellence in design for the built environment.

The proposed development realizes a substantial investment in the Portland campus, that will create new housing opportunities for students as well as create new welcoming space that will enhance the campus and neighborhood experience. The Career and Student Success Center, Residence Hall, and new Quad enhance and add to the existing connectivity within the campus and incorporates the goals of the USM Facilities Masterplan. The new CSSC will be a LEED certified building and the Residence Hall will be pursuing Passive House Certification. The University campus is a valuable asset to the local economy - as an employer; as a destination for students; and as a gathering place for professionals and community events.

Connected – *Our success will be tied to our connections to each other, our state, and our region.*

Diverse forums for community engagement will remain essential to a strong civil society.

We will foster accessible linkages between where we live, work, shop, and play.

This project will remain physically connected to the rest of the City and surrounding areas through street connections and pedestrian connections. The projects will enhance the campus experience, while also remaining connected to the adjacent neighborhood. The new CSSC will include opportunities for dining, events, Career placement, Veterans Affairs, Intercultural and Student Affairs, and a radio station.

12.2 Comprehensive Plan Policy Guides

The City of Portland Comprehensive Plan includes eight specific policy guides focused on the topics of environment, historic resources, waterfront, economy, housing, recreation and open space, facilities and services and transportation. The discussion below emphasizes how the proposed development is consistent with the following applicable policies of environment; economy; housing; recreation and open space; facilities and services; and transportation.

Environment Policy Guide

- Within the Environment Policy Guide, one of the local goals is to develop climate resilience through specific carbon reduction goals, comprehensive climate adaptation strategies, and protections for the City's most vulnerable infrastructure. The design team has specifically considered resiliency as part of the proposed development through building design and site layout.

- Develop climate resilience through specific carbon reduction goals, comprehensive climate adaptation strategies, and protections for the city's most vulnerable infrastructure. The University has a number of

sustainability initiatives, including Alternative Transportation; Sustainable Landscapes; Water, Stormwater, and Pollution; and Dining Services. The University signed the President's Carbon Commitment in 2007 which commits the University to achieving carbon neutrality by year 2040.

- The Policy Guide also has a local goal to adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation. The proposed project continues to emphasize the Facilities Master Plan's ideas of connectivity and walkability. The project will prioritize pedestrian movements through the site, and to throughout the campus.

- The University has a Strategic Sustainability Plan, developed in 2017 that was endorsed by Student Senate and the Master Planning Committee. The Plan has the goal of carbon neutrality by 2040 as its overarching focus. And, there are three pillars in the plan: Energy, Material Resources, and Education & Outreach. Collectively, the three pillars encompass over 120 specific initiatives. Progress on the plan is reported every two years, and the University just published its progress report

- One future strategy is improving water quality. As described by the Stormwater Management Plan attached to this application, stormwater best management practices will be incorporated into the Site to provide water quality treatment. The project also incorporates several Low Impact Development (LID) water quality facilities.

The Career and Student Success Center and Residence Hall project aligns with the many of the goals of the City's environmental policy.

Economy Policy Guide

The proposed development directly supports the goals and future strategies within the Economy Policy Guide including:

- Support sustainable growth in our educational, medical and cultural institutions

- Invest, attract and retain human capital to support a growing economy.

- Support job creation and business growth through public initiatives and private, institutional and regional partnerships.

- Prepare our current and future residents to compete in an increasingly knowledge-based economy

- Invest in educational institutions and training as a means of attracting, developing, and retaining an educated workforce.

- Promote the orderly expansion of institutional uses, such as educational, cultural, and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies.

- Ensure that the growth of Portland's educational, medical, and cultural institutions is integrated into Portland's urban fabric through the use of high-quality design, management of impacts, community partnerships, and innovative planning.

- Sustain and strengthen relationships between local organizations and our anchor institutions to capitalize on their unique value to the well-being and future success of Portland and the region.

Established in 1968, the University of Maine System is the state's largest educational enterprise. It has an annual enrollment of nearly 30,000 students and positively impacts the lives of hundreds of thousands of Mainers each year through its educational and cultural offerings as well as outreach and public service to individuals, businesses,

organizations and policymakers. The System has an estimated $1.5 billion total statewide economy impact each year, a return of $7.50 for every dollar of State appropriation. Two-thirds of its alumni—approximately 120,000 people—live in Maine.

The University of Southern Maine, northern New England's outstanding public, regional, comprehensive university, is dedicated to providing students with a high-quality, accessible, affordable education. Through its undergraduate, graduate, and professional programs, USM faculty members educate future leaders in the liberal arts and sciences, engineering and technology, health and social services, education, business, law, and public service. Distinguished for their teaching, research, scholarly publication, and creative activity, the faculty are committed to fostering a spirit of critical inquiry and civic participation. USM embraces academic freedom for students, faculty, and staff, and advocates diversity in all aspects of its campus life and academic work. It supports sustainable development, environmental stewardship, and community involvement. As a center for discovery, scholarship, and creativity, USM provides resources for the state, the nation, and the world.

Housing Policy Guide

The proposed project includes student housing and supports the goals of the City's Housing Policy Guide, including:

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.

- Encourage quality, sustainable design in new housing development.

The University is committed to creating a safe, high quality and affordable student life environment that supports the overall well-being of its diverse community. It seeks to create a residential community for upper-division (third- and fourth-year) undergraduate, graduate, and law students that is proximate to academic resources and support. It is important to the University that the housing development maintains housing affordability for students while assuring financial and environmental sustainability.

Recreation and Open Space Policy Guide

The proposed project will create new open spaces on the campus, which align with several of the goals of the City Recreation and Open Space Policy Guide, including:

- Sustain and build our system of parks, trails, and open spaces to enhance our quality of life, protect our environment, and promote the economic well-being of our remarkable city by the sea.

- Provide high-quality, well-designed, well-maintained, safe, and integrated parks, trails, public open spaces, and recreational opportunities accessible to all residents.

The transformation of the Woodbury Campus Center parking lot into the proposed Campus Quad will create new outdoor space to accommodate a variety of programs, from special events like graduation, to a place to congregate, relax, or study between classes.

Facilities and Services Policy Guide

While the Portland Facilities and Services Policy Guide focuses on City provided infrastructure and public school, this project echoes several of the goals and future strategies in the Guide:

- Maintain and support a quality educational system that is responsive to the educational needs of our community.

- Make strategic investments in school facilities to modernize and update buildings and grounds, ensure student safety, and preserve and enhance neighborhood connections.
- Leverage State, local, and private funding to allow a comprehensive approach to sustain excellence in the school system.
- Continue to provide continuing education and job training for adults and new residents.
- Pursue public/private partnerships to fund needed projects and services.

Transportation Policy Guide

The proposed project will build on the University's commitment to efficient use of public facilities and services to accommodate anticipated growth and development. It aligns with the following Goals and Future Strategies contained in the Transportation Policy Guide:

- Promote multi-modal accessibility, enabling residents and visitors of all ages and abilities to participate fully in the social and economic life of the community.
- Support livability by improving the quality of life in neighborhoods and improving the public health of residents.
- Support sustainability by reducing energy consumption, greenhouse gas emissions, and stormwater impacts.
- Identify, plan, and zone for parking needs, particularly downtown, on the waterfront, and in conjunction with large institutions.
- Develop robust, integrated parking management strategies to reduce parking demand.
- Invest in a walkable city through sidewalk maintenance, accessibility improvements, trail and path connections, snow clearance, lighting, landscaping, traffic calming, enhanced street crossings, strong urban design, artistic elements, and wayfinding.
- Expand Transportation Demand Management (TDM) initiatives for large development sites and institutions, building upon the recent implementation of TDM plans for individual employers and sites.

The project supports pedestrian, bicycle, shuttle bus, and the metro public transit systems, that looks beyond the private vehicle parking needs of the campus community. The University has developed a draft TDM, which is attached.

14. BOUNDARY SURVEY

A boundary and topographic survey of the Site was completed by SurveyWorks, Inc. Professional Land Surveyors. The survey was completed in February of 2020. The survey is included with the project drawings.

14.1 Attachments

- Boundary & Topographic Survey, prepared by SurveyWorks, Inc. (uploaded to Drawings folder in Eplan)

15. AVAILABILITY & ADEQUACY OF PUBLIC UTILITIES

The proposed project will be serviced by public water, sewer, gas, and electric utilities. The proposed locations of the utility services are shown on the Utility Plan included in the Design Drawings attached to Section 3. The proposed development will also generate waste as a result of construction and post-construction operations.

15.1 Water

The water services for the proposed development will be provided as shown on the drawings via connections to the public water main on Durham Street. Separate domestic and fire protection services will be provided to both the CSSC and Residence Hall. Existing services to the demolished buildings identified as #25 and #35 Bedford Street will be abandoned. Preliminary calculations indicate that available flow and pressure is adequate for fire service such that a separate fire pump is not necessary. SMRT has been working directly with the Portland Water District (PWD) to determine the appropriate design for this work. Based on the results of these meetings, we are in the process of designing the water system services, and we will be scheduling a meeting with PWD to review our system design. An ability to serve determination will be provided upon receipt.

15.2 Sewer

The proposed development will be provided with sanitary sewer services as shown on the drawings. The services from the proposed buildings will be gravity sewer that will discharge to the public sanitary sewer on Durham Street. Existing services to the demolished buildings identified as #25 and #35 Bedford Street will be abandoned. The CSSC includes dining and commercial kitchen uses and an external grease trap will be provided as shown on the drawings. The attached letter is provided to request confirmation of ability to serve the proposed development; the Wastewater Capacity Application was submitted with this letter. A copy of the City's determination will be provided upon receipt.

15.3 Gas

The proposed development will utilize natural gas service provided by Unitil. New services for both buildings will be brought from an existing gas main in Durham Street as shown on the Utility Plan. The location and size of the gas service is being coordinated with Unitil. We have met with Unitil to review the project needs. With final meter locations selected, the utility plan will be provided to Unitil for their review. An ability to serve determination will be provided upon receipt.

15.4 Electric

The proposed development will utilize underground electric service through connection to the existing campus infrastructure. Proposed electric services will extend from the existing transformer near the Central Heating building to two adjacent transformers. Proposed infrastructure is shown on the Utility Plan. The design of the electric service is being coordinated with Central Maine Power (CMP). We met with CMP to review the proposed work. We also met with CMP and the City of Portland Department of Public Works to discuss possible opportunities to collaborate with the City on utility infrastructure. Final electric layouts will be provided to CMP for their review and an ability to serve determination will be provided upon receipt.

15.5 Solid Waste

Adequate provisions for recycling and solid waste disposal have been made. The campus presently collects solid waste at two compactors adjacent to #25 Durham Street where dumpsters are managed by a commercial waste hauler. This management will continue with the compactors being relocated to the CSSC loading dock. All solid waste materials and recyclables generated by the proposed project will be transported and disposed of or recycled in accordance with applicable laws and regulations. Solid waste will be managed in full accordance with all applicable laws and regulations.

In addition, the University will maintain their composting program related to the dining facilities, to be relocated to the CSSC, which is managed through a third-party contractor.

During Construction of this project, the recycling and solid waste dumpsters currently located behind the facilities building will be temporarily located to the north of the Sullivan Gym. The temporary location will be accessed from Durham Street as shown on the logistics plan included in Section 13. The area will be prepared with a gravel or paved surface, and privacy fence. Upon completion of the project and location of the permanent solid waste area to the north of the new CSSC, the temporary location at the corner of Durham and Falmouth Streets will be returned to its current landscaped condition.

15.6 Construction & Demolition Debris

The proposed development will generate construction waste and demolition debris (CDD). The Contractor will be responsible for properly disposing of the CDD. The Contractor will be responsible for handling, managing, and disposing of all waste generated by construction in accordance with the Maine Solid Waste Management Regulations and all other applicable local, state, and federal regulations.

15.7 Special & Hazardous Waste

The proposed development is not anticipated to produce any hazardous waste. Environmental assessments of the Site and existing buildings are in the process of being conducted and the University, the Developer, and the Contractor will adhere to all Federal, State, and Local regulations concerning the handling and disposal of special or hazardous wastes.

15.8 Attachments

- Portland Department of Public Works Request for Ability to Serve Letter and Wastewater Capacity Application
- Portland Water District Ability to Serve Letter

March 5, 2020
Job No.: 19206

Brad Roland, Senior Engineer
City of Portland Public Works – Water Resources Group
212 Canco Road Suite B
Portland, ME 04103

RE: Request for Ability to Serve
Proposed Career and Student Success Center & Residence Hall, University of Southern Maine

Dear Mr. Roland,

On behalf of Capstone Development, SMRT Architects & Engineers is submitting this request for Ability to Serve letter for a new project on the campus of the Univesrity of Southern Maine in Portland. The Ability to Serve letter is intended for Level III Site Plan application to the City of Portland.

Project Location

The University of Southern Maine (USM) is proposing to construct two new capital buildings on approximately 3.6 acres of the Portland campus of the University of Southern Maine. The project is known as the Career and Student Success Center (CSSC) & Residence Hall project. The project area is bounded by the easterly corner of the block defined by Falmouth, Durham, and Bedford Streets. This area presently includes a large public parking lot, the Woodbury Student Center (approx. 21,701 sf), the Facilities Management building (8,950 sf), and associated service areas, parking, and infrastructure. This project will remove all features in the project area and essential services, infrastructure, and offices will be relocated on campus prior to commencing demolition. Please see attached CD101, Existing Conditions and Demolition Plan for project location details.

Project Scope

The project consists of the construction of two primary buildings to replace two existing buildings on the campus. The Woodbury Center (#35 Bedford) and the Facilities Management building (#25 Bedford) will be demolished and the existing water services associated with these structures will be abandoned. A new residence hall will be constructed at the corner of Bedford Street and Durham Street including with five to eight stories and a footprint of approximately 31,200 s.f.footprint with a total gross floor space of approximately 220,000 sf. This building represents the first residence hall on the Portland campus and will house approximatey 580 students in units varying in occupancy from 1 to 3 residents. The second building will replace the funciton of the Woodbury Center and is titled the Career and Student Success Center (CSSC). This building will be located between Masterton and Sullivan Halls and adjacent to the westerly edge of the new residence hall. The CSSC will be a three story building with a footprint of approximately 30,000 s.f. with a total gross footprint of approximately 60,000 sf. The CSSC uses will include mass gathering spaces, the campus bookstore, a dining facility, and other student uses. Both buildings will have full sprinkler systems per code.

Existing Sewer Infrastructure

The site is bounded on two sides by Durham Street and Bedford Street. There is an existing 8" sewer main in Durham Street and an existing sewer main in Bedford Street that ranges up to 24" diameter. See CD101, Existing Conditions and Demolition Plan.

Proposed Services

It is proposed to establish new services for both buildings and preliminary design identifies that service from the existing 8" main in Durham Street is most feasible. The enclosed Utility Plan (CU101) shows a proposed service for the residence hall extending to a new sanitary manhole near the intersection of Bedford and Durham Streets. A proposed service for the CSSC will extend thru the service area to a new sanitary manhole near its entrance onto Durham Street. It is anticipated that there are no easements necessary for these services and this development will fully build-out this portion of campus.

Proposed Flows

The anticipated domestic water demand for the CSSC is estimated at 22,500 gpd based upon the mixture of uses. A peak flow of 120 gpm is estimated based on the number of fixtures. An external grease interceptor will be provided for the flows from the dining facility and the volume for this structure is estimated at 3,400 gallons. Please see attached Peak Flow Based On Fixture Count spreadsheet. (PWD)

The anticipated domestic water demand for the Residence Hall is estimated at 3590 gpd based upon approximately 580 student residents. A peak flow of 380 gpm is estimated based on the number of fixtures. Please see attached Peak Flow Based On Fixture Count spreadsheet. (PWD)

Preliminary Drawings

Please find attached the following Preliminary Drawings, dated March 6, 2020:

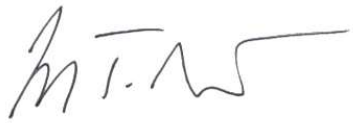
- CD101, Existing Conditions and Demolition Plan
- CU101, Site Utility Plan
- CU501, Utility Details

City of Portland Permitting

It is intented that this project was submitted to the City of Portland on March 6, 2020 under a Level III Site Plan application and Site Location of Development Act delegated review.

Please call with any questions or if you need additional information. Thank you for your assistance with this matter.

Sincerely,



Jeffrey T. Aceto, P.E.
Senior Civil Engineer

SMRT Architects and Engineers | 144 Fore Street | Portland, ME 04101
p 207.321.3829 | c 207.650.5674 | email: jaceto@smrtinc.com

CC:

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	USM SSC
Street Address	
City	Portland Maine

Fixture		**Fixture Value 60 psi**		**No. of Fixtures**		**Fixture Value**
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	3	=	1.5
Kitchen Sink		1.5	x	1	=	1.5
Bathroom Sink		1	x	12	=	12
Showerhead (Shower Only)		2	x	0	=	0
Service Sink		3	x	3	=	9
Toilet -Flushometer(high pressure)		5	x	24	=	120
-Tank Type		2.5	x	0	=	0
Urinal -Flushometer Valve		5	x	6	=	30
-Tank Type		2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Commercial Kitchen with Dishwasher		37	x	1	=	37
Washing Machine		4	x	0	=	0
Hose (outdoor spigot)	<3/4 in.	2.5	x	4	=	10
Combined Fixture Value Total						221

Customer Peak Demand From Fig. 4-2 or 4-3	
Pressure Factor From Table 4-1	

Fire Sprinkler System(Yes/No)?	Yes
Irrigation(Yes/No)?	Yes
If yes, gpm required by irrigation designer:	

Total Fixed Demand (Peak Flow) **0**

Customer only needs to complete the cells highlighted in blue

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	University of Southern Maine
Street Address	Corner of Bedford St and Durham St Portland, ME
City	Portland ME

Fixture		**Fixture Value 60 psi**		**No. of Fixtures**		**Fixture Value**
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	0	=	0
Kitchen Sink		1.5	x	162	=	243
Bathroom Sink		1	x	432	=	432
Showerhead (Shower Only)		2	x	432	=	864
Service Sink		3	x	8	=	24
Toilet -Flushometer(high pressure)		5	x	0	=	0
-Tank Type		2.5	x	432	=	1080
Urinal -Flushometer Valve		5	x	0	=	0
-Tank Type		2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Dishwasher		1.5	x	162	=	243
Washing Machine		4	x	176	=	704
Hose (outdoor spigot)	<3/4 in.	2.5	x	0	=	0
Combined Fixture Value Total						3590

Customer Peak Demand From Fig. 4-2 or 4-3	
Pressure Factor From Table 4-1	

Fire Sprinkler System(Yes/No)?	Yes
Irrigation(Yes/No)?	No
If yes, gpm required by irrigation designer:	-

Total Fixed Demand (Peak Flow) **380**

Customer only needs to complete the cells highlighted in blue

March 5, 2020
Job No.: 19206

Heather Smith
MEANS Group
Main Extensions and New Services
Portland Water District
225 Douglass Street
Portland, ME 04104-3553

RE: Request for Ability to Serve
Proposed Career and Student Success Center & Residence Hall, University of Southern Maine

Dear Ms. Smith,

On behalf of Capstone Development, SMRT Architects & Engineers is submitting this request for Ability to Serve letter for a new project on the campus of the Univesrity of Southern Maine in Portland. The Ability to Serve letter is intended for Level III Site Plan application to the City of Portland.

Project Location

The University of Southern Maine (USM) is proposing to construct two new capital buildings on approximately 3.6 acres of the Portland campus of the University of Southern Maine. The project is known as the Career and Student Success Center (CSSC) & Residence Hall project. The project area is bounded by the easterly corner of the block defined by Falmouth, Durham, and Bedford Streets. This area presently includes a large public parking lot, the Woodbury Student Center (approx. 21,701 sf), the Facilities Management building (8,950 sf), and associated service areas, parking, and infrastructure. This project will remove all features in the project area and essential services, infrastructure, and offices will be relocated on campus prior to commencing demolition. Please see attached CD101, Existing Conditions and Demolition Plan for project location details.

Project Scope

The project consists of the construction of two primary buildings to replace two existing buildings on the campus. The Woodbury Center (#35 Bedford) and the Facilities Management building (#25 Bedford) will be demolished and the existing water services associated with these structures will be abandoned. A new residence hall will be constructed at the corner of Bedford Street and Durham Street including with five to eight stories and a footprint of approximately 31,200 s.f.footprint with a total gross floor space of approximately 220,000 sf. This building represents the first residence hall on the Portland campus and will house approximatey 580 students in units varying in occupancy from 1 to 3 residents. The second building will replace the funciton of the Woodbury Center and is titled the Career and Student Success Center (CSSC). This building will be located between Masterton and Sullivan Halls and adjacent to the westerly edge of the new residence hall. The CSSC will be a three story building with a footprint of approximately 30,000 s.f. with a total gross footprint of approximately 60,000 sf. The CSSC uses will

include mass gathering spaces, the campus bookstore, a dining facility, and other student uses. Both buildings will have full sprinkler systems per code.

Existing Water Infrastructure

The site is bounded on two sides by Durham Street and Bedford Street. There is an existing 8" main in Durham Street including an existing hydrant between Sullivan Hall and the Central Heating building. See CD101, Existing Conditions and Demolition Plan. There is an existing 16" main in Bedford Street including an existing hydrant near the Glickman Family Library and another adjacent to the Wishcamper Center. There are also three hydrants along Falmouth Street in the vicinity of the campus parcel.

Proposed Services

It is proposed to establish new services for both buildings and preliminary design identifies that service from the existing 8" main in Durham Street is most feasible. The enclosed Utility Plan (CU101) shows proposed separate fire and domestic services for the residence hall extending from the main to a mechanical room along the northerly façade. It also shows proposed fire and domestic services for the CSSC extending from Durham Street in the loading dock area. Isolation valves will be installed at the property line for all services. The existing hydrant on Durham will remain and is apparently well-located to serve the two new buildings. It is anticipated that there are no easements necessary for these services and this development will fully build-out this portion of campus.

Proposed Flows

The anticipated domestic water demand for the CSSC is estimated at 22,500 gpd based upon the mixture of uses. A peak flow of 120 gpm is estimated based on the number of fixtures. An external grease interceptor will be provided for the flows from the dining facility and the volume for this structure is estimated at 3,400 gallons. Please see attached Peak Flow Based On Fixture Count spreadsheet. (PWD)

The anticipated domestic water demand for the Residence Hall is estimated at 3590 gpd based upon approximately 580 student residents. A peak flow of 380 gpm is estimated based on the number of fixtures. Please see attached Peak Flow Based On Fixture Count spreadsheet. (PWD)

Preliminary Drawings

Please find attached the following Preliminary Drawings, dated March 6, 2020:

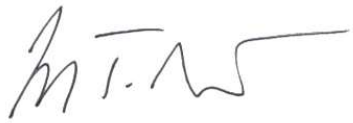
- CD101, Existing Conditions and Demolition Plan
- CU101, Site Utility Plan
- CU501, Utility Details

City of Portland Permitting

It is intented that this project was submitted to the City of Portland on March 6, 2020 under a Level III Site Plan application and Site Location of Development Act delegated review.

Please call with any questions or if you need additional information. Thank you for your assistance with this matter.

Sincerely,



Jeffrey T. Aceto, P.E.
Senior Civil Engineer

SMRT Architects and Engineers | 144 Fore Street | Portland, ME 04101
p 207.321.3829 | c 207.650.5674 | email: jaceto@smrtinc.com

CC:

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	University of Southern Maine
Street Address	Corner of Bedford St and Durham St Portland, ME
City	Portland ME

Fixture		**Fixture Value 60 psi**		**No. of Fixtures**		**Fixture Value**
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	0	=	0
Kitchen Sink		1.5	x	162	=	243
Bathroom Sink		1	x	432	=	432
Showerhead (Shower Only)		2	x	432	=	864
Service Sink		3	x	8	=	24
Toilet -Flushometer(high pressure)		5	x	0	=	0
-Tank Type		2.5	x	432	=	1080
Urinal -Flushometer Valve		5	x	0	=	0
-Tank Type		2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Dishwasher		1.5	x	162	=	243
Washing Machine		4	x	176	=	704
Hose (outdoor spigot)	<3/4 in.	2.5	x	0	=	0
Combined Fixture Value Total						3590

Customer Peak Demand From Fig. 4-2 or 4-3	
Pressure Factor From Table 4-1	

Fire Sprinkler System(Yes/No)?	Yes
Irrigation(Yes/No)?	No
If yes, gpm required by irrigation designer:	-

Total Fixed Demand (Peak Flow) **380**

Customer only needs to complete the cells highlighted in blue

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	USM SSC
Street Address	
City	Portland Maine

Fixture		Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	3	=	1.5
Kitchen Sink		1.5	x	1	=	1.5
Bathroom Sink		1	x	12	=	12
Showerhead (Shower Only)		2	x	0	=	0
Service Sink		3	x	3	=	9
Toilet	-Flushometer(high pressure)	5	x	24	=	120
	-Tank Type	2.5	x	0	=	0
Urinal	-Flushometer Valve	5	x	6	=	30
	-Tank Type	2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Commercial Kitchen with Dishwasher		37	x	1	=	37
Washing Machine		4	x	0	=	0
Hose (outdoor spigot)	<3/4 in.	2.5	x	4	=	10

Combined Fixture Value Total: 221

Customer Peak Demand From Fig. 4-2 or 4-3:

Pressure Factor From Table 4-1:

Fire Sprinkler System(Yes/No)? Yes

Irrigation(Yes/No)? Yes

If yes, gpm required by irrigation designer:

Total Fixed Demand (Peak Flow) **0**

Customer only needs to complete the cells highlighted in blue

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	USM SSC
Street Address	
City	Portland Maine

Fixture		**Fixture Value 60 psi**		**No. of Fixtures**		**Fixture Value**
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	3	=	1.5
Kitchen Sink		1.5	x	1	=	1.5
Bathroom Sink		1	x	12	=	12
Showerhead (Shower Only)		2	x	0	=	0
Service Sink		3	x	3	=	9
Toilet -Flushometer(high pressure)		5	x	24	=	120
-Tank Type		2.5	x	0	=	0
Urinal -Flushometer Valve		5	x	6	=	30
-Tank Type		2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Commercial Kitchen with Dishwasher		37	x	1	=	37
Washing Machine		4	x	0	=	0
Hose (outdoor spigot)	<3/4 in.	2.5	x	4	=	10
Combined Fixture Value Total						221

Customer Peak Demand From Fig. 4-2 or 4-3	
Pressure Factor From Table 4-1	

Fire Sprinkler System(Yes/No)?	Yes
Irrigation(Yes/No)?	Yes
If yes, gpm required by irrigation designer:	

Total Fixed Demand (Peak Flow) **0**

Customer only needs to complete the cells highlighted in blue

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	University of Southern Maine
Street Address	Corner of Bedford St and Durham St Portland, ME
City	Portland ME

Fixture		**Fixture Value 60 psi**		**No. of Fixtures**		**Fixture Value**
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	0	=	0
Kitchen Sink		1.5	x	162	=	243
Bathroom Sink		1	x	432	=	432
Showerhead (Shower Only)		2	x	432	=	864
Service Sink		3	x	8	=	24
Toilet -Flushometer(high pressure)		5	x	0	=	0
-Tank Type		2.5	x	432	=	1080
Urinal -Flushometer Valve		5	x	0	=	0
-Tank Type		2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Dishwasher		1.5	x	162	=	243
Washing Machine		4	x	176	=	704
Hose (outdoor spigot)	<3/4 in.	2.5	x	0	=	0
Combined Fixture Value Total						3590

Customer Peak Demand From Fig. 4-2 or 4-3	
Pressure Factor From Table 4-1	

Fire Sprinkler System(Yes/No)?	Yes
Irrigation(Yes/No)?	No
If yes, gpm required by irrigation designer:	-

Total Fixed Demand (Peak Flow) **380**

Customer only needs to complete the cells highlighted in blue

16. PORTLAND FIRE DEPARTMENT SITE REVIEW CHECKLIST

The items in the Portland Fire Department Site Review Checklist are addressed as follows:

- Name, address, telephone number of applicant:
    - University of Southern Maine, c/o John Souther
    - 25 Bedford Street, Portland, ME 04104
    - (207) 780-4585
- Name, address, telephone number of architects:
    - SMRT, c/o Kristen Damuth, AIA, NCARB
        - 144 Fore Street, PO Box 618 Portland, ME 04104
        - 207.321.3847
- Proposed uses of any structures [NFPA and IBC classification]:
    - The structures are mixed-use and residential. Use classifications are provided on the code summaries attached.
- Square footage of all structures [total and per story]:
    - The square footage of all structures is provided on the architectural plans.
- Elevations of all structures:
    - The elevations of all structures are provided on the architectural plans.
- Proposed fire protection of all structures:
    - All structures will be sprinkled.
- Hydrant locations:
    - Hydrant locations are shown on the Utility Plan.
- Water main size and location:
    - Watermain locations and sizes are shown on the Utility Plan.
- Access to all structures [min. 2 sides]:
    - Access will be provided to a minimum of two sides of all structures.
- A code summary shall be included referencing NFPA 1 and all fire department technical standards:
    - The buildings will be compliant with requirements of NFPA 101: Uniform Fire Code. Automatic sprinkler systems and fire alarms will be provided as required by Use and Occupancy types. Code summaries are provided on the attached Code Reviews.

16.1 Attachments

- USM Career and Student Success Center Code Review
- USM Residence Hall Code Review

USM Residence Hall

Code CheckList - Things you can know on Day One

References Based on IBC State Code 2015, unless noted otherwise.

Item	Code Reference	Calculation, or input	Notes		
Building Codes					
MUBEC	Current				
IBC - per MUBEC	2015	except chap 29 and appendices a-m, plus 7 pages of amendments			
IECC	2009	chap 6 updates			
NFPA 101	2018				
NFPA 1	2018				
ADA	2010				
NEC	2017				
IMC	2015				
ASHRAE 90.1	2013				
UPC	2015				
ZONING					
Check Zoning Requirements	Varies				
OCCUPANCY		calcs			
Occupancy classification	(302.1)	**R-2**			
Occupancy Description		*Residential Dormitory*			
Proposed Construction type	(602.1)	**TYPE IB**			
Sprinkler req'd	(903.2)	yes NFPA 13	not 13R it's too big.		
Stories Permited	(504.4)	12	R2-S		
Story Increase	(504.4)	n/a			
Max. Stories Permited		**12**			
Actual max. stories					
Max. height in Ft.		**180**	Building is NOT a high rise. Since highest occupiable floor is <75' from lowest level of fire apparatus		
Max. allowable area (SF)	Table 506.2	**UL**	R2-SM		
Sprinkler increase	(506.2)	n/a			
Frontage increase	(506.3)	n/a			
Total Allowable Area		**UL**			
Actual Overall Area		**215,000**			
Actual floor area 1-5		**31,797**	level 2		
Actual floor area 6-8		**18,722**	level 8		
# of Occupants		**4300**	50		GSF
Fire Apparatus Access	(F503.1) Fire Code				
Accessibility	(1101) and ANSI A117.1	yes			
Area of Refuge	(1009.3, & 1009.6)	not required	1009.3(5) exception for sprinklers		
CONSTRUCTION TYPE					
Proposed Construction type	Table 601	**TYPE IB**			
Bldg Element	-	Fire rating (hrs)'			
Structural frame, incl. columns, girders, trusses.	-	2a			a: fire rating of primary structural frame and bearing walls allowed to be reduced to 1 hour if supporting roof only
Bearing walls (exterior)	-	2			
Bearing walls (interior)	-	2a			
Non-bearing walls	-				
Exterior	-	See Table 602			
interior	-	0			
Floor construction, incl. supporting beams & joists	-	2			
Roof construction, incl. supporting beams & joists	-	1b,c			b: does not apply

Exterior Wall - fire separation distance		1 hr if < 30'			
Shafts	(713.4)	2 hour			
Firewalls (if req'd)	(706.4)	3			
Fire partitions	(420, 708)	1 hour	separation between sleeping rooms		
		30 min	at corridors		
Occupancy Separation (if req'd)	Table 508.4	1 hour	R2 to A or B		
Incidental Separation (if req'd)	Table 509				
EGRESS					NFPA 101
Stair Width	1005.3.1, & 1009.3	63"	.3"/pp		31,797 / 50 = 636 people. 636/ 3 stairs = 212 people/stair. 212 *.3= 63"
# of exits req'd	Table 1006.3.1	2 on 6-8, 3 on 1-5			
Common Path of Travel	Table (1006.2.1)	125'			
Accessible means of Egress	(1009.1)	yes	elevator per 1009.2.1 unless we add a horiz exit		
Area of Refuge		no	1009.3.5 & 8 not in R-2 or stairs when building sprinkled		
Max. travel distance	Table 1017.2	250'			
Corridor rating	Table (1020.1)	30 min			
Corridor width		44 min.	.2"/pp		
Dead End	(1020.4)	50'			
Exit Enclosure rating	Table 1023.2				
Ambulance Elevator Cab	3002.4	yes			
Fire extinguishers	F906.1 Fire Code				

USM Student Success Center (SSC)

Code Checklist - Things you can know on Day One

References Based on IBC State Code 2015, unless noted otherwise.

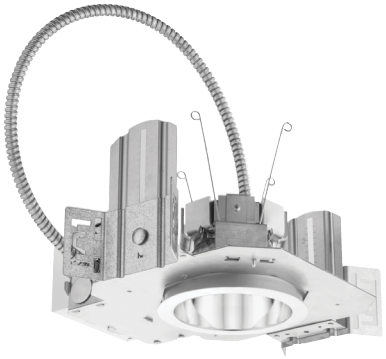
Item	Code Reference	Calculation, or input	Calculation, or input	Calculation, or input	Notes
Building Codes					
MUBEC	Current				
IBC - per MUBEC	2015	except chap 29 and appendices a-m, plus 7 pages of amendments	except chap 29 and appendices a-m, plus 7 pages of amendments	except chap 29 and appendices a-m, plus 7 pages of amendments	
IECC	2009	chap 6 updates	chap 6 updates	chap 6 updates	
NFPA 101	2018				
NFPA 1	2018				
ADA	2010				
NEC	2017				
IMC	2015				
ASHRAE 90.1	2013				
UPC	2015				
ZONING					
Check Zoning Requirements	Varies				
OCCUPANCY		calcs	calcs	calcs	
Occupancy classification	(302.1)	**B**	**A-2**	**A-3**	
Occupancy Description		*Business*	*Food related assembly*	*Misc Assembly*	
		level 2 & 3	*kitchen, servery dining*	*Multipurpose room*	
			level 1	*corner of level 2*	
Proposed Construction type	(602.1)	**TYPE IV-HT**	**TYPE IV-HT**	**TYPE IV-HT**	
Sprinkler req'd	(903.2)	no but provided	yes	yes not on level of exit discharge	
Stories Permited	(504.4)	6	4	4	
Story Increase	(504.4)	not needed	not needed	not needed	
Max. Stories Permited					
Actual max. stories					
Stories provided		**3 plus a penthouse**	**3 plus a penthouse**	**3 plus a penthouse**	penthouse must be less than 1/3 area of floor below and <18' high
Max. height in Ft.		**85'**	**85'**	**75'**	
Provided height in Ft.		**50' + 12' PH**	**50' + 12' PH**	**50' + 12' PH**	
Max. allowable area (SF)	Table 506.2	**108,000**	**45,000**	**28,500**	SM (sprinkled)
Sprinkler increase	(506.2)	n/a	n/a	n/a	
Frontage increase	(506.3)	n/a	n/a	n/a	
Total Allowable Area		**108,000**	**45,000**	**28,500**	
Actual FLOOR Area		**23518, 19209, 12798**	**22,468**	**4,000**	
# of Occupants		**192 level 2**	**1498 level 1 (15 sf pp)**	**266 (15 sf pp)**	200 gsf
Fire Apparatus Access	(F503.1) Fire Code				
Accessibility	(1101) and ANSI A117.1	yes	yes	yes	
Area of Refuge	(1009.3, & 1009.6)	not required	not required	not required	1009.3(5) exception for sprinklers
CONSTRUCTION TYPE					
Proposed Construction type	Table 601	**TYPE IV-HT**	**TYPE IV-HT**	**TYPE IV-HT**	
Bldg Element	-	Fire rating (hrs)'	Fire rating (hrs)'	Fire rating (hrs)'	
Structural frame, incl. columns, girders, trusses.	-	**0**	**0**	**0**	
Bearing walls (exterior)	-	**0**	**0**	**0**	
Bearing walls (interior)	-	**0**	**0**	**0**	
Non-bearing walls	-				
Exterior	-	**See Table 602**	**See Table 602**	**See Table 602**	
interior	-	**0**	**0**	**0**	
Floor construction, incl. supporting beams & joists	-	**0**	**0**	**0**	
Roof construction, incl. supporting beams & joists	-	**0c**	**0c**	**0c**	
Exterior Wall - fire separation distance		**0 if between 10'-30'**	**0 if between 10'-30'**	**0 if between 10'-30'**	
Shafts	(713.4)	**1 hour**	**1 hour**	**1 hour**	if connecting less than 4 stories
Firewalls (if req'd)	(706.4)	**2**	**2**	**2**	
Fire partitions	(708)	**n/a**	**n/a**	**n/a**	
Occupancy Separation (if req'd)	Table 508.4	**1 hour**	**1 hour**	**1 hour**	Assembly to Business
Incidental Separation (if req'd)	Table 509	**n/a**	**n/a**	**n/a**	
EGRESS					
Stair Width	1005.3.1, & 1009.3	**57"**	**n/a**		.3"/pp
# of exits req'd	Table 1006.3.1	**2**	**4**	**4 (if standing only)**	
Common Path of Travel	Table (1006.2.1)	**100**	**75'**	**75'**	
Accessible means of Egress	(1009.1)				
Max. travel distance	Table 1017.2	**300'**	**250'**	**250'**	
Corridor rating	Table (1020.1)	**0**	**0**	**0**	
Corridor width		**44" min**	**44" min**	**44" min**	
Dead End	(1020.4)	**50'**	**20'**	**20'**	
Exit Enclosure rating	Table 1023.2				
Ambulance Elevator Cab	3002.4	no	no	no	
Fire extinguishers	F906.1 Fire Code				

LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

LDN4

4" OPEN
Non-IC
New Construction Downlight



FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.

CONSTRUCTION — Galvanized steel mounting/plaster frame; galvanized steel junction box with bottom-hinged access covers and spring latches. Reflectors are retained by torsion springs.

Vertically adjustable mounting brackets with commercial bar hangers provide 3-3/4" total adjustment.

Two combination 1/2"-3/4" and four 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out). No. 12 AWG conductors, rated for 90°C.

Accommodates 12"-24" joist spacing.

Passive cooling thermal management for 25°C standard; high ambient (40°C) option available. Light engine and drivers are accessible from above or below ceiling.

Max ceiling thickness 1-1/2".

OPTICS — LEDs are binned to a 3-step SDCM; 80 CRI minimum. 90 CRI optional.

LED light source concealed with diffusing optical lens.

General illumination lighting with 1.0 S/MH and 55° cutoff to source and source image.

Self-flanged anodized reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black painted reflectors.

ELECTRICAL — Multi-volt (120-277V, 50/60Hz) 0-10V dimming drivers mounted to junction box, 10% or 1% minimum dimming level available.

0-10V dimming fixture requires two (2) additional low-voltage wires to be pulled.

70% lumen maintenance at 60,000 hours.

LISTINGS — Certified to US and Canadian safety standards. Wet location standard (covered ceiling). IP55 rated. ENERGY STAR® certified product.

WARRANTY — 5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

battery pack

A+ Capable options indicated by this color background.

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: LDN4 35/15 LO4AR LSS MVOLT EZ1

LDN4													
Series		**Color temperature**		**Lumens**[1]		**Aperture/Trim Color**				**Finish**		**Voltage**	
LDN4	4" round	27/	2700K	05	500 lumens	LO4	Downlight	AR	Clear	LSS	Semi-specular	MVOLT	Multi-volt
		30/	3000K	07	750 lumens	LW4	Wallwash	WR[2]	White	LD	Matte diffuse	120	120V
		35/	3500K	10	1000 lumens			BR[2]	Black	LS	Specular	277	277V
		40/	4000K	15	1500 lumens							347[3]	347V
		50/	5000K	20	2000 lumens								
				25	2500 lumens								
				30	3000 lumens								
				40	4000 lumens								

Driver		**Options**			
GZ10	0-10V driver dims to 10%	SF[4]	Single fuse	N80[8]	nLight™ Lumen Compensation
GZ1	0-10V driver dims to 1%	TRW[6]	White painted flange	NPS80EZ[7,10]	nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1).
EZ10	0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 10%	TRBL[6]	Black painted flange	NPS80EZER[7,10]	nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1). ER controls fixtures on emergency circuit.
EZ1	0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 1%	EL[5]	Emergency battery pack with integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS	HAO[11]	High ambient option (40°C)
		ELR[5]	Emergency battery pack with remote test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS	CP[12]	Chicago Plenum
		ELSD[5]	Emergency battery pack with self-diagnostics, 10W Constant Power, integral test switch. Not Certified in CA Title 20 MAEDBS	RRL__	RELOC®-ready luminaire connectors enable a simple and consistent factory installed option across all ABL luminaire brands. Refer to RRL for complete nomenclature. Available only in RRLA, RRLB, RRLAE, and RRLC12S.
		ELRSD[5]	Emergency battery pack with self-diagnostics, 10W Constant Power, remote test switch. Not Certified in CA Title 20 MAEDBS	NLTAIR2[8,9]	nLight® Air enabled
		E10WCP[5]	Emergency battery pack, 10W Constant Power with integral test switch. Certified in CA Title 20 MAEDBS	NLTAIRER2[9,10]	nLight® AIR Dimming Pack Wireless Controls. Controls fixtures on emergency circuit, not available with battery pack options
		E10WCPR[5]	Emergency battery pack, 10W Constant Power with remote test switch. Certified in CA Title 20 MAEDBS	USPOM	US point of manufacture
		NPP16D[7,10]	nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1).	90CRI	High CRI (90+)
		NPP16DER[7,10]	nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1). ER controls fixtures on emergency circuit.		

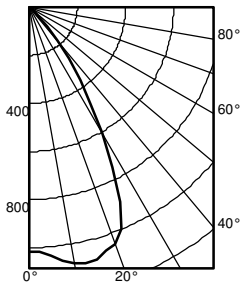
Notes

1 Overall height varies based on lumen package; refer to dimensional chart on page 3.
2 Not available with finishes.
3 Not available with emergency options.
4 Must specify voltage 120V or 277V.
5 12.5" of plenum depth or top access required for battery pack maintenance.
6 Available with clear (AR) reflector only.
7 Specify voltage. ER for use with generator supply EM power. Will require an emergency hot feed and normal hot feed.
8 Fixture begins at 80% light level. Must be specified with NPS80EZ or NPS80EZ ER. Only available with EZ10 and EZ1 drivers.
9 Not available with CP, NPS80EZ, NPS80EZER, NPP16D, NPP16DER or N80 options.
10 NLTAIR2 and NLTAIRER2 not recommended for metal ceiling installations.
11 Fixture height is 5-11/16" for all lumen packages with HAO.
12 Must specify voltage for 3000lm. Not available with emergency battery pack option.

PHOTOMETRY

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30" Above Floor for a Single Luminaire**

LDN4 35/10 LO4AR, input watts: 10.58, delivered lumens: 1085.2, LM/W = 102.57, spacing criterion at 0= 1.04, test no. ISF 30712P229.



	Ave	Lumens
0	1017	
5	1039	101
15	1084	304
25	895	395
35	369	232
45	52	51
55	1	2
65	1	1
75	0	0
85	0	0
90	0	

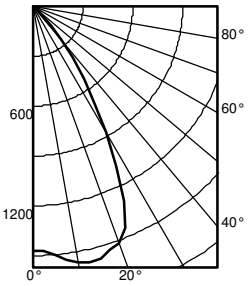
Zone	Lumens	% Lamp
0° - 30°	799.7	73.7
0° - 40°	1031.5	95.1
0° - 60°	1084.7	100.0
0° - 90°	1085.2	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	1085.2	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	33.6	5.8	16.8	8.9	3.4
10.0	18.1	7.9	9.0	12.2	1.8
12.0	11.3	10.0	5.6	15.4	1.1
14.0	7.7	12.1	3.8	18.6	0.8
16.0	5.6	14.2	2.8	21.9	0.6

LDN4 35/15 LO4AR, input watts: 17.5, delivered lumens: 1570.1, LM/W = 89.72, spacing criterion at 0= 1.04, test no. ISF 30712P234.



	Ave	Lumens
0	1472	
5	1503	146
15	1569	440
25	1295	571
35	534	335
45	75	74
55	1	3
65	1	1
75	0	0
85	0	0
90	0	

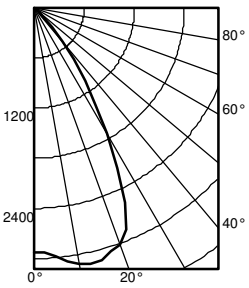
Zone	Lumens	% Lamp
0° - 30°	1157.1	73.7
0° - 40°	1492.5	95.1
0° - 60°	1569.4	100.0
0° - 90°	1570.1	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	1570.1	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	48.7	5.8	24.3	8.9	4.9
10.0	26.2	7.9	13.1	12.2	2.6
12.0	16.3	10.0	8.2	15.4	1.6
14.0	11.1	12.1	5.6	18.6	1.1
16.0	8.1	14.2	4.0	21.9	0.8

LDN4 35/30 LO4AR, input watts: 32.1, delivered lumens: 3122.6, LM/W = 88.52, spacing criterion at 0= 1.04, test no. ISF 30712P249.



	Ave	Lumens
0	2927	
5	2989	290
15	3120	875
25	2575	1136
35	1062	667
45	149	148
55	3	5
65	2	1
75	0	0
85	0	0
90	0	

Zone	Lumens	% Lamp
0° - 30°	2301.2	73.7
0° - 40°	2968.2	95.1
0° - 60°	3121.1	100.0
0° - 90°	3122.6	100.0
90° - 120°	0.0	0.0
90° - 130°	0.0	0.0
90° - 150°	0.0	0.0
90° - 180°	0.0	0.0
0° - 180°	3122.6	*100.0

*Efficiency

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	111	108	106	109	107	105	105	103	101
2	103	99	96	102	98	95	98	95	93
3	96	92	88	95	91	87	92	89	86
4	90	85	81	89	84	80	87	83	79
5	85	79	75	84	78	74	82	77	74
6	79	73	69	79	73	69	77	72	68
7	75	69	64	74	68	64	73	68	64
8	70	64	60	70	64	60	69	63	60
9	66	60	56	66	60	56	65	60	56
10	63	57	53	62	57	53	61	56	53

		50% beam - 55.6°		10% beam - 78.0°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	96.8	5.8	48.4	8.9	9.7
10.0	52.0	7.9	26.0	12.2	5.2
12.0	32.4	10.0	16.2	15.4	3.2
14.0	22.1	12.1	11.1	18.6	2.2
16.0	16.1	14.2	8.0	21.9	1.6

Accessories: *Order as separate catalog numbers (shipped separately).*

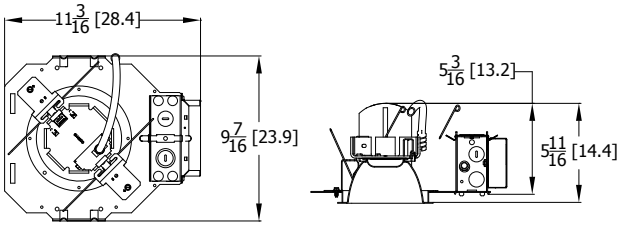
SCA4	Sloped ceiling adapter. Degree of slope must be specified (5D, 10D, 15D, 20D, 25D, 30D). Refer to TECH-190.

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

LDN4

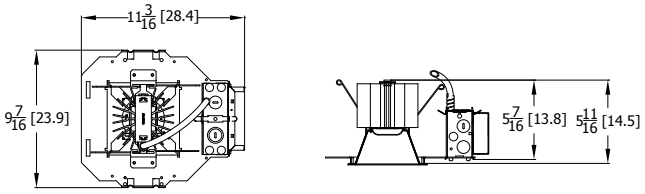
* All dimensions are inches (centimeters) unless otherwise noted.

LDN4 500-1500 LUMEN



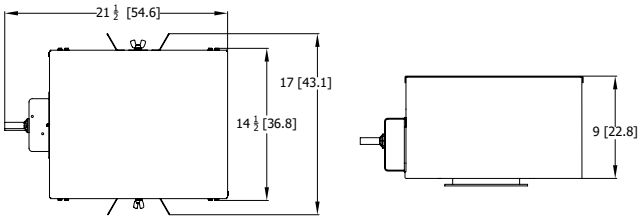
Aperture: 4-5/16 (11)
Ceiling Opening: 5-1/8 (13)
Overlap trim: 5-7/16 (13.8)

LDN4 2000-3000 LUMEN



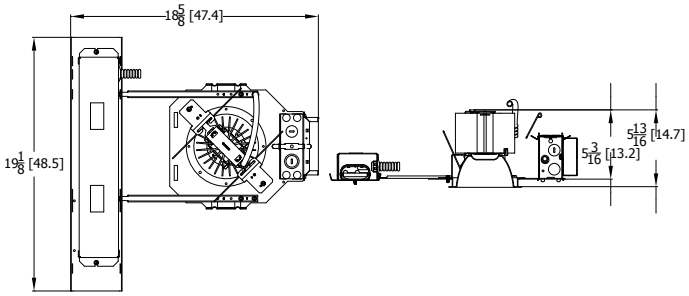
Aperture: 4-5/16 (11) Square
Ceiling Opening: 5-1/8 (13) Square
Overlap trim: 5-7/16 (13.8) Square

LDN4 CP



Aperture: 4-5/16? (11)
Ceiling Opening: 5-1/8? (13)
Overlap trim: 5-7/16? (13.8)

LDN4 EL-ELR



Aperture: 4-5/16 (11)
Ceiling Opening: 5-1/8 (13)
Overlap trim: 5-7/16 (13.8)

LDN4			
Nominal	**Lumens**	**Wattage**	**Lm/W**
500	523.6	5.74	91.2
750	751.1	8.6	87.3
1000	1045	10.58	98.8
1500	1512	17.5	86.4
2000	2006	22.12	90.7
2500	2551	26.1	97.7
3000	3007	32.1	93.7
4000	4212	43	98.0

LUMEN OUTPUT MULTIPLIERS - CCT					
	2700K	**3000K**	**3500K**	**4000K**	**5000K**
80CRI	0.950	0.966	1.000	1.025	1.101

HOW TO ESTIMATE DELIVERED LUMENS IN EMERGENCY MODE

Use the formula below to estimate the delivered lumens in emergency mode

Delivered Lumens = 1.25 x P x LPW

P = Ouput power of emergency driver. P = 10W for PS1055CP

LPW = Lumen per watt rating of the luminaire. This information is available on the ABL luminaire spec sheet.
The LPW rating is also available at Designlight Consortium.

LUMEN OUTPUT MULTIPLIERS - FINISH			
	Clear (AR)	**White (WR)**	**Black (BR)**
Specular (LS)	1.0	N/A	N/A
Semi-specular (LSS)	0.950	N/A	N/A
Matte diffuse (LD)	0.85	N/A	N/A
Painted	N/A	0.87	0.73

Notes

- Tested in accordance with IESNA LM-79-08.
- Tested to current IES and NEMA standards under stabilized laboratory conditions.
- CRI: 80 typical.

© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

ADDITIONAL DATA

COMPATIBLE 0-10V WALL-MOUNT DIMMERS		
MANUFACTURER	PART NO.	POWER BOOSTER AVAILABLE
Lutron®	Diva® DVTV	
	Diva® DVSCTV	
	Nova T® NTFTV	
	Nova® NFTV	
Leviton®	AWSMT-7DW	CN100
	AWSMG-7DW	PE300
	AMRMG-7DW	
	Leviton Centura Fluorescent Control System	
	IllumaTech® IP7 Series	
Synergy®	ISD BC	RDMFC
	SLD LPCS	
	Digital Equinox (DEQ BC)	
Douglas Lighting Controls	WPC-5721	
Entertainment Technology	Tap Glide TG600FAM120 (120V)	
	Tap Glide Heatsink TGH1500FAM120 (120V)	
	Oasis 0A2000FAMU	
Honeywell	EL7315A1019	EL7305A1010 (optional)
	EL7315A1009	
HUNT Dimming	Preset slide: PS-010-IV and PS-010-WH	
	Preset slide: PS-010-3W-IV and PS-010-3W-WH	
	Preset slide, controls FD-010: PS-IFC-010-IV and PS-IFC-010-WH-120/277V	
	Preset slide, controls FD-010: PS-IFC-010-3W-IV and PS-IFC-010-3W-WH-120/277V	
	Remote mounted unit: FD-010	
Lehigh Electronic Products	Solitaire	PBX
PDM Electrical Products	WPC-5721	
Starfield Controls	TR61 with DALI interface port	RT03 DALInet Router
WattStopper®	LS-4 used with LCD-101 and LCD-103	

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

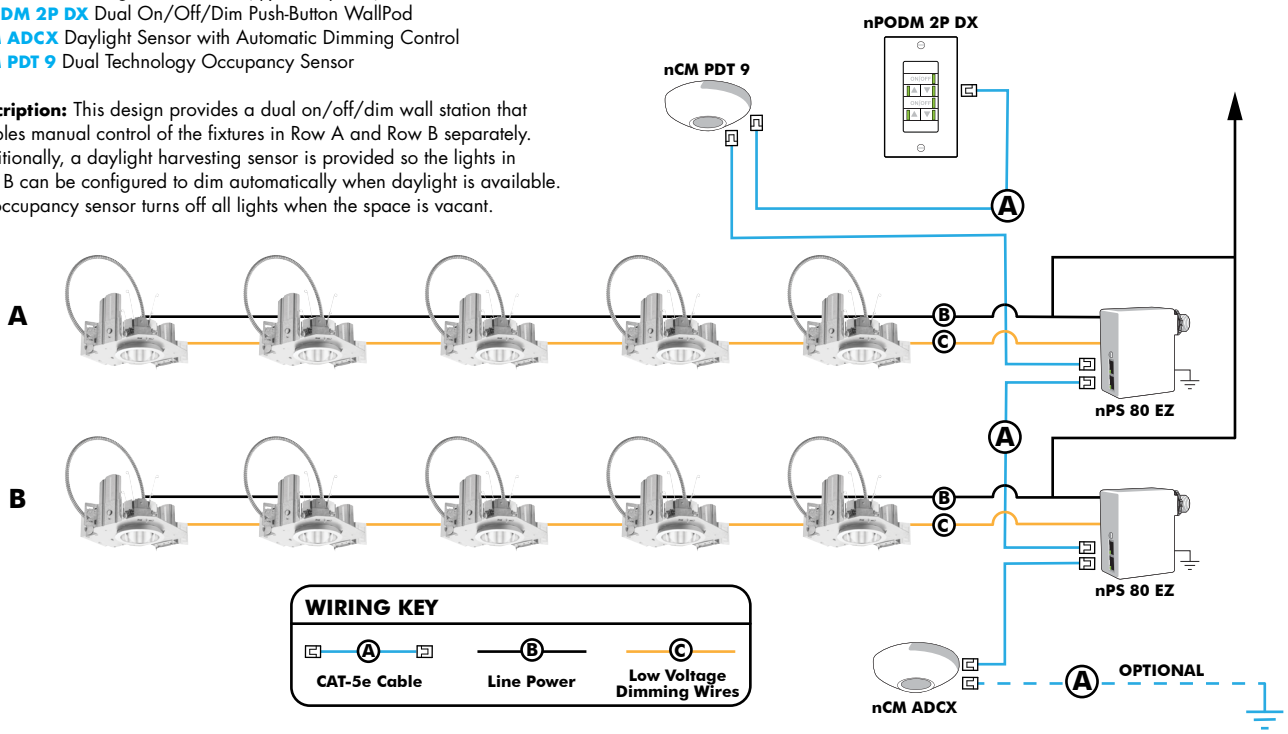
© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

LDN4

EXAMPLE
Group Fixture Control*
*Appiication diagram applies for fixtures with eldoLED drivers only.

nPS 80 EZ Dimming/Control Pack (qty: 2 required)
nPODM 2P DX Dual On/Off/Dim Push-Button WallPod
nCM ADCX Daylight Sensor with Automatic Dimming Control
nCM PDT 9 Dual Technology Occupancy Sensor

Description: This design provides a dual on/off/dim wall station that enables manual control of the fixtures in Row A and Row B separately. Additionally, a daylight harvesting sensor is provided so the lights in Row B can be configured to dim automatically when daylight is available. An occupancy sensor turns off all lights when the space is vacant.



Choose Wall Controls
nLight offers multiple styles of wall controls - each with varying features and user experience.



Push-Button Wallpod
Traditional tactile buttons and LED user feedback



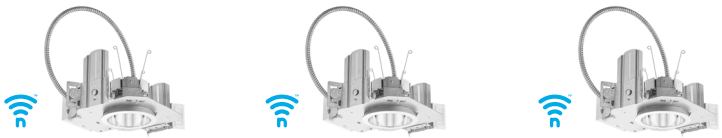
Graphic Wallpod
Full color touch screen provides a sophisticated look and feel

nLight® Wired Controls Accessories:			
Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlight for complete listing of nLight controls.			
WallPod Stations	**Model number**	**Occupancy sensors**	**Model Number**
On/Off	nPODM (Color)	Small motion 360º, ceiling (PIR/dual Tech)	nCM 9 / nCM PDT 9
On/Off & Raise/Lower	nPOD DX (Color)	Large motion 360º, ceiling (PIR/dual tech)	nCM 10 / nCM PDT 10
Graphic Touchscreen	nPOD GFX (Color)	Wide View (PIR/dual tech)	nWV 16 / nWV PDT 16
Photocell controls	**Model Number**	Wall Switch w/ Raise/Lower (PIR/dual tech)	nWSX LV DX / nWSX PDT LV DX
Dimming	nCM ADCX	**Cat-5 cables (plenum rated)**	**Model Number**
		10', CAT5 10FT	CAT5 10FT J1
		15, CAT5 15FT	CAT5 15FT J1

nLight® AIR Control Accessories: *Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlightair.*	
Wall switches	**Model number**
On/Off single pole	rPODB [color]
On/Off two pole	rPODB 2P [color]
On/Off & raise/lower single pole	rPODB DX [color]
On/Off & raise/lower two pole	rPODB 2P DX [color]
On/Off & raise/lower single pole	rPODBZ DX WH[1]

Notes
1 Can only be ordered with the RES7Z zone control sensor version.

nLight AIR
nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication is cost prohibitive. The integrated nLight AIR rPP20 Power Pack is part of each Lithonia LDN Luminaire. These individually addressable controls offer the ultimate in flexibility during initial setup and for space repurposing.



Simple as 1,2,3

1. Install the nLight® AIR fixtures with embedded smart sensor
2. Install the wireless battery-powered wall switch
3. With CLAIRITY app, pair the fixtures with the wall switch and if desired, customize the sensor settings for the desired outcome



© 2015-2019 Acuity Brands Lighting, Inc. All rights reserved.

JOB _____ TYPE _____

NOTES _____ APPROVALS _____

FEATURES

- 20" size in post top, pole and wall mount
- High performance optics up to 17,000 delivered lumens
- Elegant form factor
- Diffusion lens option
- SiteSync™ wireless control options

CERTIFICATIONS

c UL us LISTED

ida DARK SKY APPROVED 2016

DLC OPEL LISTED

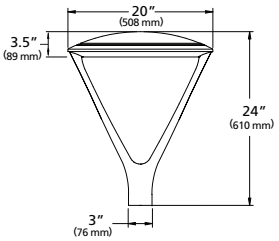
3000K and warmer CCTs only

SPECIFICATIONS



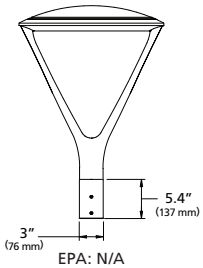
Weight: 35 lbs

FM33



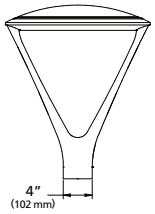
EPA: .512

PT23



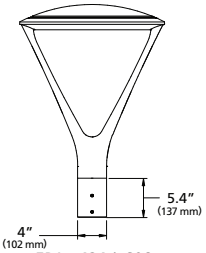
EPA: N/A

FM44



EPA: .534

PT24 / PT34



EPA: .424 / .608

ORDERING CODE

Series
UR20 Ouro

LED Engine
No Lens or Clear Lens
- **24L-25** 3,000 lm
- **24L-65** 7,000 lm
- **56L-75** 10,000 lm
- **56L-110** 15,000 lm
- **56L-140** 17,000 lm

HDL - High Diffusion Lens
- **28L-30** 3,000 lm
- **28L-70** 7,000 lm
- **68L-80** 9,000 lm
- **68L-115** 13,000 lm
- **68L-150** 15,000 lm

CCT
- **AM** Amber
- **3K7** 3000K, 70 CRI
- **3K8** 3000K, 80 CRI
- **3K9** 3000K, 90 CRI
- **4K7** 4000K, 70 CRI
- **4K8** 4000K, 80 CRI
- **5K7** 5000K, 70 CRI

Distribution
No Lens or Clear Lens
- **FR** Type 1/Front Row
- **2** Type II
- **3** Type III
- **4** Type IV
- **4W** Type IV Wide
- **5QM** Type V Square Medium
- **5QN** Type V Square Narrow
- **5R** Type V Rectangular
- **5W** Type V Wide (Round)

HDL - High Diffusion Lens
- **3** Type III/Asymmetric
- **5W** Type V/Symmetric

Rotation
Blank for no rotation
- **L**[1] Optic rotation left
- **R**[1] Optic rotation right

Voltage
- **UNV** 120-277V
- **347** 347V
- **480** 480V
- **DALI** 120-277V†

†Consult factory

Mounting
- **FM33** Flush mt 3.0" OD pole, 3" fixture base
- **FM44** Flush mt 3.6" to 4.0" OD pole, 4" fixture base
- **PT23** 3" Post Top mount for 2 3/8" OD Tenon
- **PT24** 4" Post Top mount for 2 3/8" OD Tenon
- **PT34** 4" Post Top mount for 2 7/8" OD Tenon

Fixture Finish
- **BL** Black
- **DB** Dark Bronze
- **LG** Light Gray
- **GT** Graphite
- **PS** Platinum Silver
- **TT** Titanium
- **WH** White
- **CC** Custom Color†

†Consult factory

Control Options
- **7PR-TL** 7 pin PCR with twist lock photocontrol
- **7PR-SC** 7 pin PCR with shorting cap
- **7PR** 7 pin PCR, wireless control enabled
- **AD-01**[2] AstroDIM: 50% output at midnight
- **AD-02**[2] AstroDIM: 50% output midnight to 4 AM
- **AD-03**[2] AstroDIM: 50% output 10PM
- **AD-04**[2] AstroDIM: 50% output 10PM to 4AM
- **NXWE** NX Wireless Enabled
- **SWP**[2,3,4] SiteSync Pre commission
- **SWPM-40F**[2,3,4,5] SiteSync with Sensor 9' to 40' MH
- **WSP-40F-1**[2,5] Dimming Occ. Sensor for up to 40' MH, 120/277/347V
- **WSP-40F-2**[2,5] Dimming Occ. Sensor for up to 40' MH, 208/240V
- **WSP-40F-3**[2,5] Dimming Occ. Sensor for up to 40' MH, 480V
- **NXSPW14F**[2,5] NX Wireless, PIR Sensor, 14'
- **NXSPW30F**[2,5] NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'.
- **NXSP14F**[2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'
- **NXSP30F**[2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'

Options
- **BC**[6] Back-light Control
- **SF** Single Fuse
- **DF** Double Fuse
- **TB** Terminal Block
- **CLR**[5] Clear Lens
- **TL** Tamper proof latch

Control Accessories^
- **SW7PR**[2,3] SiteSync with 7 pin PCR
- **SWUSB** SiteSync Software on USB
- **SWTAB** SiteSync Windows® Tablet
- **SWBRG** SiteSync Wireless Bridge Node
- **WIR-RME-L** wiSCAPE External Fixture Module
- **SCL-R** Occ. Sensor for Round Pole (up to 16' MH)
- **SCL -S** Occ. Sensor for Square Pole (up to 16' MH)
- **SCH-R** Occ. Sensor for Round Pole (16' to 30' MH)
- **SCH-S** Occ. Sensor for Square Pole (16' to 30' MH)
- **NXOFM-1R1D-UNV** NX 7-pin Module

^ Please refer to page 8 for ordering details

1 Not available with 5QM, 5QN, and 5W distributions.
2 Not available with other sensor or wireless control options.
3 Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.
4 Not available with 347V and 480V
5 24L & 56L only.
6 Not available with Type V distributions or HDL option.

Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	3,000	25	No Lens	FR	2932	0	0	1	115	3119	0	0	1	123	3098	0	0	1	124
				FR-BC	1994	0	0	0	78	2121	0	0	0	83	2107	0	0	0	83
				2	2943	1	0	1	116	3099	1	0	1	122	3110	1	0	1	124
				2-BC	1724	0	0	1	68	1834	0	0	1	72	1822	0	0	1	72
				3	3007	1	0	1	118	3200	1	0	1	126	3178	1	0	1	127
				3-BC	1830	0	0	1	73	1947	0	0	1	78	1934	0	0	1	77
				4	3056	0	0	1	120	3251	0	0	1	128	3229	0	0	1	129
				4-BC	2235	0	0	1	88	2377	0	0	1	93	2362	0	0	1	93
				4W	3078	1	0	2	121	3276	1	0	2	129	3253	1	0	2	130
				4W-BC	1855	0	0	1	73	1975	0	0	1	78	1961	0	0	1	77
				5QM	2931	2	0	1	115	3119	2	0	1	123	3098	2	0	1	124
				5QN	2694	2	0	1	106	2866	2	0	1	113	2847	2	0	1	114
				5R	3054	2	0	2	120	3250	2	0	2	128	3228	2	0	2	129
				5W	3043	2	0	1	120	3237	2	0	1	127	3216	2	0	1	129
			Clear Lens	FR	2773	0	0	1	109	2951	0	0	1	116	2930	0	0	1	117
				FR-BC	1886	0	0	1	74	2007	0	0	1	79	1993	0	0	1	78
				2	2784	1	0	1	109	2963	1	0	1	116	2942	1	0	1	118
				2-BC	1631	0	0	1	64	1736	0	0	1	68	1723	0	0	1	67
				3	2845	1	0	1	111	3028	1	0	1	119	3007	1	0	1	120
				3BC	1806	0	0	1	72	1922	0	0	1	77	1909	0	0	1	76
				4	2891	0	0	1	113	3076	0	0	1	120	3055	0	0	1	122
				4-BC	2114	0	0	1	83	2250	0	0	1	88	2234	0	0	1	88
				4W	2912	1	0	1	114	3099	1	0	2	121	3077	1	0	2	123
				4W-BC	1755	0	0	1	69	1868	0	0	1	73	1855	0	0	1	5
				5QM	2773	1	0	1	109	2950	2	0	1	116	2931	2	0	1	117
				5QN	2549	1	0	0	100	2712	2	0	1	106	2693	2	0	1	108
				5R	2890	2	0	2	113	3075	2	0	2	120	3054	2	0	2	122
				5W	2879	2	0	1	113	3064	2	0	1	120	3042	2	0	1	122
28L		30	HDL Lens	3	2816	1	0	1	96	2997	1	0	1	102	3020	1	0	1	101
				5W	2917	1	0	1	100	3105	1	0	1	106	3084	1	0	1	103

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	7,000	65	No Lens	FR	6754	1	0	1	104	7187	1	0	1	111	7138	1	0	1	110
				FR-BC	4392	0	0	1	68	4673	0	0	1	72	4641	0	0	1	71
				2	6571	1	0	2	101	6992	1	0	2	108	6944	1	0	2	107
				2-BC	3799	0	0	1	58	4042	0	0	1	62	4014	0	0	1	62
				3	6625	1	0	2	102	7051	1	0	2	108	7002	1	0	2	108
				3BC	4032	0	0	1	62	4291	0	0	1	66	4261	0	0	1	66
				4	6788	1	0	2	104	7223	1	0	2	111	7174	1	0	2	110
				4-BC	4924	0	0	2	76	5239	0	0	2	81	5203	0	0	2	80
				4W	6699	1	0	2	103	7128	1	0	3	110	7079	1	0	3	109
				4W-BC	4088	0	0	2	63	4350	0	0	2	67	4321	0	0	2	66
				5QM	7025	3	0	1	108	7477	3	0	1	115	7425	3	0	1	114
				5QN	6964	3	0	1	107	7410	3	0	1	114	7323	3	0	1	113
				5R	7038	3	0	3	108	7489	3	0	3	115	7437	3	0	3	114
				5W	7011	3	0	2	108	7460	3	0	2	115	7409	3	0	2	114
			Clear Lens	FR	6432	1	0	1	97	6844	1	0	1	104	6798	1	0	1	105
				FR-BC	4182	0	0	1	63	4450	0	0	1	67	4420	0	0	1	67
				2	6258	1	0	1	95	6659	1	0	2	101	6613	1	0	2	102
				2-BC	3617	0	0	1	55	3849	0	0	1	58	3823	0	0	1	58
				3	6310	1	0	2	96	6714	1	0	2	102	6668	1	0	2	103
				3-BC	3599	0	0	1	55	3829	0	0	1	59	3803	0	0	1	59
				4	6465	1	0	2	98	6879	1	0	2	104	6832	1	0	2	105
				4-BC	4688	0	0	2	71	4990	0	0	2	76	4955	0	0	2	75
				4W	6380	1	0	2	97	6789	1	0	2	103	6742	1	0	2	104
				4W-BC	3893	0	0	2	59	4143	0	0	2	63	4115	0	0	2	62
				5QM	6691	3	0	1	101	7119	3	0	1	108	7070	3	0	1	109
				5QN	6632	2	0	1	100	7058	3	0	1	107	7009	3	0	1	108
				5R	6702	3	0	3	102	7131	3	0	3	108	7082	3	0	3	109
				5W	6676	3	0	2	101	7104	3	0	2	108	7055	3	0	2	109
28L		70	HDL Lens	3	6047	2	0	2	92	6047	2	0	2	92	6236	2	0	2	89
				5W	6221	2	0	1	94	6619	2	0	1	100	6525	2	0	1	93

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	10,000	75	No Lens	FR	9315	1	0	1	124	9913	1	0	1	132	9845	1	0	1	131
				FR-BC	6058	0	0	1	81	6445	0	0	1	86	6402	0	0	1	85
				2	9063	2	0	2	120	9644	2	0	2	128	9578	2	0	2	128
				2-BC	5239	0	0	1	70	5575	0	0	1	74	5536	0	0	1	74
				3	9139	2	0	2	125	9725	2	0	2	134	9657	2	0	2	129
				3-BC	5561	0	0	2	74	5877	0	0	2	78	5561	0	0	2	74
				4	9362	1	0	2	124	9362	1	0	2	124	9876	1	0	2	132
				4-BC	6791	0	0	2	90	7226	0	0	2	96	7168	0	0	2	96
				4W	9240	2	0	3	123	9832	2	0	3	131	9765	2	0	3	130
				4W-BC	5639	0	0	2	75	6001	0	0	2	80	5959	0	0	2	79
				5QM	9691	3	0	1	129	10312	3	0	1	137	10240	3	0	1	137
				5QN	9606	3	0	1	128	10222	3	0	1	136	10151	3	0	1	135
				5R	9706	3	0	3	129	10328	3	0	3	137	10258	3	0	3	137
				5W	9669	4	0	2	129	10289	4	0	2	137	10217	4	0	2	136
			Clear Lens	FR	8871	1	0	1	117	9760	1	0	1	129	9374	1	0	1	125
				FR-BC	5769	0	0	1	76	6138	0	0	1	81	6096	0	0	1	81
				2	8631	2	0	2	114	9183	2	0	2	121	9121	2	0	2	122
				2-BC	4989	0	0	1	67	5309	0	0	1	71	5272	0	0	1	62
				3	8703	1	0	2	115	9260	2	0	2	122	9197	2	0	2	123
				3-BC	4964	1	0	1	66	5282	1	0	2	70	5245	1	0	2	69
				4	8916	1	0	2	118	9487	1	0	2	125	9423	1	0	2	126
				4-BC	6467	0	0	2	85	6881	0	0	2	91	6834	0	0	2	90
				4W	8799	2	0	3	116	9363	2	0	3	124	9300	2	0	3	124
				4W-BC	5370	0	0	2	72	5714	1	0	2	76	5675	0	0	2	76
				5QM	9228	3	0	1	122	9820	3	0	1	130	9752	3	0	1	130
				5QN	9147	3	0	1	121	9734	3	0	1	129	9668	3	0	1	129
				5R	9244	3	0	3	122	9836	3	0	3	130	9769	3	0	3	130
				5W	9208	4	0	2	122	9798	4	0	2	130	9732	4	0	2	130
68L		80	HD Lens	3	7853	2	0	2	99	8356	2	0	2	106	8299	2	0	2	104
				5W	8080	2	0	2	102	8684	3	0	2	110	8684	3	0	2	109

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	15,000	110	No Lens	FR	13533	1	0	1	125	14399	1	0	2	133	14301	1	0	2	130
				FR-BC	8799	1	0	1	81	9363	1	0	1	86	9300	1	0	1	85
				2	13165	2	0	2	121	14009	2	0	2	129	13913	2	0	2	126
				2-BC	7611	1	0	2	70	8098	1	0	2	75	8042	1	0	2	74
				3	13275	2	0	3	122	14126	2	0	3	130	14030	2	0	3	128
				3-BC	8079	1	0	2	73	8596	1	0	2	78	8538	1	0	2	78
				4	13601	1	0	3	125	14472	1	0	3	133	14373	1	0	3	131
				4-BC	9865	1	0	2	91	10497	1	0	3	97	10425	1	0	3	96
				4W	13422	2	0	3	124	14283	2	0	3	132	14185	2	0	3	129
				4W-BC	8191	1	0	3	75	8715	1	0	3	80	8656	1	0	3	80
				5QM	14077	4	0	2	130	14979	4	0	2	138	14876	4	0	2	135
				5QN	13953	4	0	1	129	14848	4	0	1	137	14747	4	0	1	134
				5R	14100	4	0	4	130	15004	4	0	4	138	14901	4	0	4	135
				5W	14046	4	0	2	129	14946	4	0	2	138	14844	4	0	3	135
			Clear Lens	FR	12803	1	0	1	118	13624	1	0	1	126	13531	1	0	1	123
				FR-BC	9298	1	0	1	86	8325	1	0	1	77	8798	1	0	1	81
				2	12455	2	0	2	115	13254	2	0	2	123	13164	2	0	2	120
				2-BC	7200	1	0	1	67	7661	1	0	2	71	7610	1	0	2	70
				3	12560	2	0	3	116	13365	2	0	3	124	13273	2	0	3	121
				3-BC	7163	1	0	2	65	7622	1	0	2	69	7570	1	0	2	69
				4	12868	1	0	3	119	13692	1	0	3	127	13599	1	0	3	124
				4-BC	9333	1	0	2	86	9931	1	0	2	92	9864	1	0	2	90
				4W	12699	2	0	3	117	13513	2	0	3	125	13420	2	0	3	122
				4W-BC	7750	1	0	3	72	8246	1	0	3	76	8190	1	0	3	76
				5QM	13318	3	0	2	123	14172	4	0	2	131	14075	4	0	2	128
				5QN	13202	3	0	1	122	14048	4	0	1	130	13951	4	0	1	127
				5R	13341	4	0	4	123	14195	4	0	4	131	14099	4	0	4	128
				5W	13290	4	0	2	123	14141	4	0	2	131	14044	4	0	2	128
68L		115	HD Lens	3	11577	2	0	2	102	12320	2	0	2	109	12236	2	0	2	106
				5W	11912	3	0	2	105	12676	3	0	2	112	12588	3	0	2	109

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Published Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
56L	17,000	140	No Lens	FR	15323	2	0	2	111	16306	2	0	2	118	16194	2	0	2	116
				FR-BC	9964	1	0	1	72	10603	1	0	1	77	10530	1	0	1	76
				2	14897	2	0	2	108	15852	2	0	2	115	15743	2	0	2	112
				2-BC	8618	1	0	2	63	9169	1	0	2	67	9107	1	0	2	66
				3	15032	2	0	3	109	15996	2	0	3	116	15886	2	0	3	113
				3-BC	9147	1	0	2	65	9733	1	0	2	70	9667	1	0	2	69
				4	15400	1	0	3	112	16387	1	0	4	119	16275	1	0	4	116
				4-BC	11170	1	0	3	81	11886	1	0	3	86	11804	1	0	3	86
				4W	15198	2	0	4	110	16173	3	0	4	117	16062	3	0	4	115
				4W-BC	9275	1	0	3	67	9869	1	0	3	72	9801	1	0	3	71
				5QM	15939	4	0	2	116	16962	4	0	2	123	16845	4	0	2	120
				5QN	15801	4	0	1	115	16813	4	0	1	122	16698	4	0	1	119
				5R	15966	4	0	4	116	16990	4	0	4	123	16874	4	0	4	121
				5W	15906	4	0	3	115	16925	4	0	3	123	16808	4	0	3	120
			Clear Lens	FR	14541	1	0	2	105	15473	2	0	2	111	15367	2	0	2	110
				FR-BC	9456	1	0	1	68	10061	1	0	1	72	9993	1	0	1	72
				2	14146	2	0	2	102	15053	2	0	2	108	14950	2	0	2	107
				2-BC	8178	1	0	2	59	8702	1	0	2	63	8642	1	0	2	62
				3	14265	2	0	3	103	15179	2	0	3	109	15076	2	0	3	108
				3BC	8136	1	0	2	58	8657	1	0	2	62	8598	1	0	2	61
				4	14614	1	0	3	105	15551	1	0	3	112	15445	1	0	3	110
				4-BC	10600	1	0	3	76	11279	1	0	3	81	11203	1	0	3	81
				4W	14423	2	0	3	104	15347	2	0	4	111	15243	2	0	4	109
				4W-BC	8802	1	0	3	63	9365	1	0	3	67	9302	1	0	3	67
				5QM	15126	4	0	2	109	16095	4	0	2	116	15985	4	0	2	114
				5QN	14994	4	0	1	108	15955	4	0	1	115	15846	4	0	1	113
				5R	15152	4	0	4	109	16122	4	0	4	116	16012	4	0	4	114
				5W	15094	4	0	3	109	16061	4	0	3	116	15951	4	0	3	114
68L		115	HD Lens	3	13240	2	0	2	89	13992	3	0	3	95	13897	3	0	3	93
				5W	13623	3	0	2	92	14396	3	0	2	97	14298	3	0	2	95

Electrical Characteristics												Dimming				
System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out		Absolute voltage	
		VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
25	298mA	120-480	50/60	0.21	0.12	0.10	0.09	0.07	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
30	298mA			0.25	0.14	0.13	0.11	0.09	0.06							
65	800mA			0.54	0.31	0.27	0.23	0.19	0.14							
70	700mA			0.58	0.34	0.29	0.25	0.20	0.15							
75	420mA			0.63	0.36	0.31	0.27	0.22	0.16							
80	350mA			0.67	0.38	0.33	0.29	0.23	0.17							
110	600mA			0.92	0.53	0.46	0.40	0.32	0.23							
115	500mA			0.96	0.55	0.48	0.42	0.33	0.24							
140	750mA			1.17	0.67	0.58	0.51	0.40	0.29							
150	625mA			1.25	0.72	0.63	0.54	0.43	0.31							

TM-21 LIFETIME CALCULATION

Projected Lumen Maintenance (25°C / 77°F)						
HOURS	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	97%	95%	93%	87%	> 60,000 hrs

Kim Lighting reserves the right to change specifications without notice.

SPECIFICATIONS

Housing:

- Low copper aluminum alloy die-casting is designed as one-piece with internal cooling fins.
- Solid, cast aluminum wall creates a thermal barrier between the optical and electrical compartments.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- Housing is designed with integral LED heat sink utilized for thermal transfer and for securing the location of each LED module.
- IK09 rated enclosure protects electrical equipment against external mechanical impacts.

Lens Frame:

- One-piece low copper aluminum alloy die-cast is secured to housing with 6 screws.

Backlight Control

- Optional Backlight Control on each LED module to completely control unwanted backlight.

Lens

One-piece flat glass lens slips secure with clips. Extra silicone gasketing is provided to retain a clear optical compartment.

Optical Module:

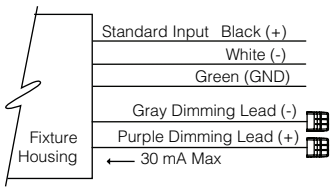
- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB).
- Optical lenses shall be clear injection molded PMMA acrylic.
- Each MCPCB and optic shall be sealed to the diecast housing and sealed with a continuous one piece injection molded silicone rubber gasket.
- Patent Pending design of optical array shall independently shield each LED optic across the length of the aperture.
- Optional fixture finish optical surfaces shall not exceed BUG ratings of the standard white finish and shall be greater than or equal to the delivered lumens of the optional matte black optical surface finish.

Electrical Components

- Standard programmable driver allows for programmable drive current settings.
- Electrical components are stategically located in the driver gear compartment with a molded silicon grommet seal to provide separation from the optical chamber.
- Maximum lightning surge current 20KA with thermally protected varistor technology. Surge suppression is series circuited preventing total fixture failure. ANSI/IEEE C62.41 Category C High.
- Open circuit fault will turn off the luminaire in order to protect the sensitive electronics and acts as a signal for maintenance.
- Programmable Driver is rated for -40°C starting.
- "Thermal Shield", primary side, thermister provides protection for the sustainable life of electronic components.

Dimming:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.



Fusing:

SF for 120, 277, and 347 Line volts

DF for 208, 240, and 480 Line volts

Hight temperature fuse holders factory installed inside the fixture housing.

Fuse is included.

Finish:

Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.

Standard colors include (BLS) Black Gloss Smooth, (BLT) Black Matte Textured, (DBS) Dark Bronze Smooth, (GTT) Graphite Matte Textured, (LGS) Light Gray Smooth, (PSS) Platinum Silver Smooth, (VGS) Verde Green Smooth, (WHS) White Gloss Smooth, and (CC) Custom Color (Include RAL#).

Certifications and Listings:

- IUL 1598 Standard for Luminaires.
- IUL 8750 Standard for Safety for Light
- IEmitting Diode (LED) Equipment for use in Lighting Products.
- ICSA C22.2#250.0 Luminaires.
- ANSI C136.31-2010 Vibration tested and compliant 1.5G and 4G reference page 9
- IRoHS compliant.
- IIP66 rated.
- IIEC 66262 Mechanical Impact Code IK09.
- IDA approved, 3000K and warmer CCTs only.

CAUTION:

Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

WARRANTY:

For full warranty see: http://www.hubbelllighting.com/resources/warranty

Kim Lighting reserves the right to change specifications without notice.

CONTROLS

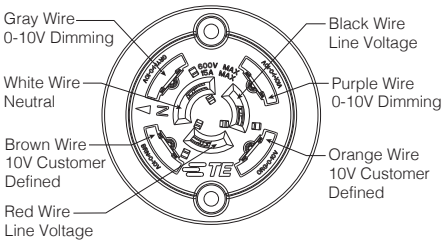
Photocell Receptacle

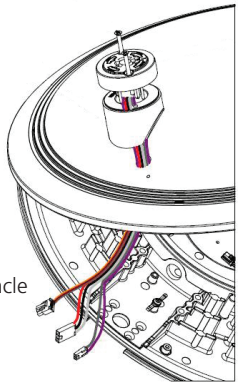
7PR

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.





7-Pin receptacle placement

Wireless Controls

wiSCAPE™

Hubbell Control Solution's wiSCAPE™ wireless control modules allow an individual fixture to managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The wiSCAPE modules provide on/off/dim control, external device input, alerts and metering.

WIR-RME-L

wiSCAPE External Module,120-480V, 1000ft range (LOS), Internal Photocell, 1 Digital Input, Compatible with the A-25-7H option

SiteSync™[1]

SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/products/sitesync for more details.

Dimming WASP Occupancy Sensor

WSP

The Dimming WASP Outdoor Occupancy Sensor is specifically designed to provide 0-10VDC output for the control of dimmable fixtures. Easy to use dipswitches allow the user to adjust sensor time delay and sensitivity as well as set unoccupied and occupied dimming levels. Sensors also feature a daylight sensor for ON/OFF control of fixtures when there is sufficient natural light. Visit https://hubbellcdn.com/installationmanuals/2102B_Dimming_WASP_Install.pdf for more details.

Pole Mounted

Round Pole-Mounted Occupancy Sensor up to 16'. Select voltage and finish color.

SCL-R

Round Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-R44/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor up to 16'. Select voltage and finish color.

SCL-S

Square Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for square pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCL-L/277[2]/BL[3]

Round Pole-Mounted Occupancy Sensor 16' to 30'. Select voltage and finish color.

SCH-R

Round Pole-Mounted Occupancy Sensor: 16' to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-R4[4]/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor 16' to 30'. Select voltage and finish color.

SCH-S

Square Pole-Mounted Occupancy Sensor: 16 to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-S/277[2]/BL[3]

AstroDIM

AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.

[1]PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

Examples:

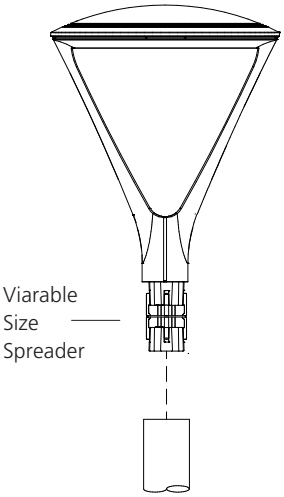
SiteSync only : UR20/56L-75/3K7/UNV/ASQ/BL/SWP

SiteSync with Motion Control: UR20/56L-75/3K7/UNV/ASQ/BL/SWPM-40F

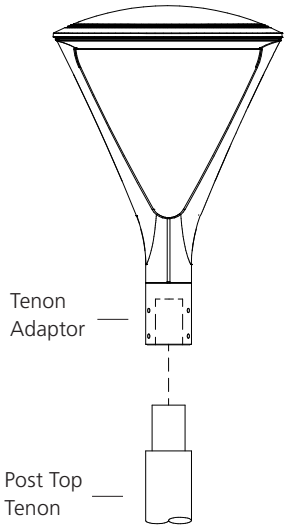
[2]Voltage, [3]Color, [4]Pole Diameter,

Kim Lighting reserves the right to change specifications without notice.

MOUNTING INSTALLATION

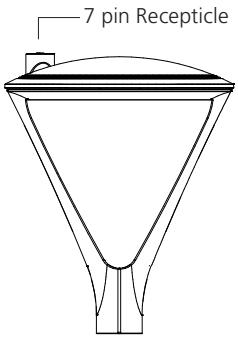


Flush Mount
FM33/44

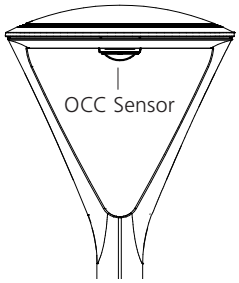


Post Top
PT23/24/34

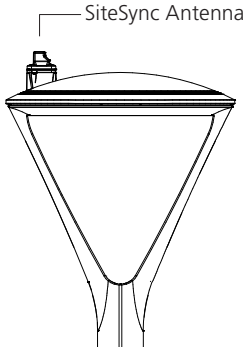
SENSOR PLACEMENT



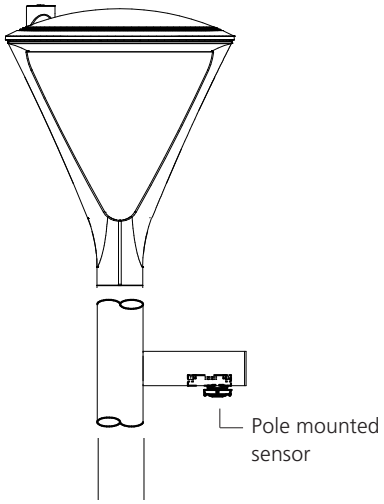
7 pin PCR
7PR



OCC Sensor
NX or WSP



SiteSync
SW7PR



Pole Mounted Sensor
SCL-R, SCL-S, SCH-R,
SCH-S

MOUNTING VIBRATION RATINGS

UR 20 Arm		UR28 Arm		UR 20 Post Top		UR 28 Post Top	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
ASQ	4G	**ASQ**	4G	**FM33**	4G	**FM44**	1.5G
A34	4G	**A34**	4G	**FM44**	1.5G	**FM45**	1.5G
A46	4G	**A46**	4G	**PT23**	4G	**PT24**	1.5G
MAF	4G	**MAF**	4G	**PT24**	4G	**PT34**	1.5G
				PT34	1.5G	**PT25**	1.5G
						PT35	1.5G

For the 4 G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Test Level 1 Normal Applications, Vibration Test Level 2 Bridge/Overpass Applications, and Vibration Test Level 3

For the 1.5G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Level 1 Bridge/Overpass Applications

Kim Lighting reserves the right to change specifications without notice.

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

UR20

ARCHITECTURAL AREA/SITE

Ouro™

FEATURES

- 20" size in post top, pole and wall mount
- High performance optics up to 17,000 delivered lumens
- Elegant form factor
- Diffusion lens option
- SiteSync™ wireless control options
- UL/cUL listed for wet locations, IP65 and 3G vibration rated

c UL us LISTED

ida DARK SKY APPROVED 2016

3000K and warmer CCTs only

DLC DLC PLUS LISTED

IK10 IP66



Ouro Arm Mount

CONTROL TECHNOLOGY

Bluetooth® DMX

RELATED PRODUCTS

- Ouro Small Post Top
- Ouro Large Post Top
- Ouro Large Arm Mount

SPECIFICATIONS

CONSTRUCTION

- Low copper aluminum alloy die-casting is designed as one-piece with internal cooling fins.
- Solid, cast aluminum wall creates a thermal barrier between the optical and electrical compartments.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- Housing is designed with integral LED heat sink utilized for thermal transfer and for securing the location of each LED module.
- IK09 rated enclosure protects electrical equipment against external mechanical impacts.
- All external fasteners are stainless steel.
- One-piece low copper aluminum alloy die-cast lens frame is secured to housing with 6 screws.

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB).
- Optical lenses are clear injection molded PMMA acrylic.
- Optional Backlight Control on each LED module to completely control unwanted backlight.

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed.
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories listed.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments.
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Surge protection: 10,000k in parallel, 20,000k in series
- Wiring: No. 18AWM rated 105°C, wet rating.

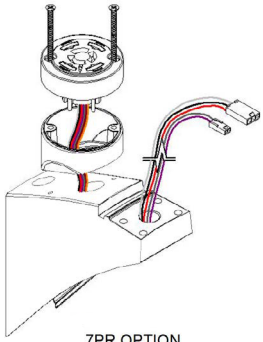
CONTROLS

7PR

- Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

- Traditional on/off photoelectric control.
- 5-pin wireless photoelectric control for added dimming feature.
- 7-pin wireless photoelectric control for for dimming and additional I/O connections for customer use.



7PR OPTION

(Specifications continued on page 3)

KEY DATA	
Lumen Range	2888 - 17080
Wattage Range	25 - 150
Efficacy Range (LPW)	100 -136
Reported Life (Hours)	L70/>60,000
Weight	32 lbs - 14.5 Kg
EPA	0.372

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.6000 / Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

KIM LIGHTING

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

UR20

ARCHITECTURAL AREA/SITE

ORDERING GUIDE

Example: UR20-24L-25-3K8-3-L-UNV-ASQ-BLT-7PR-BC-SWTAB

CATALOG #

HOUSING

UR20

Model	LED Engine	CCT	Distribution	Rotation	Voltage
UR20 Ouro	**No Lens or Clear Lens** **24L-25** 3,000 lm **24L-65** 7,000 lm **56L-75** 10,000 lm **56L-110** 15,000 lm **56L-140** 17,000 lm **HDL - High Diffusion Lens** **28L-30** 3,000 lm **28L-70** 7,000 lm **68L-80** 9,000 lm **68L-115** 13,000 lm **68L-150** 15,000 lm	**AM** Amber, 590nm peak **3K7** 3000K, 70 CRI **3K8** 3000K, 80 CRI **3K9** 3000K, 90 CRI **4K7** 4000K, 70 CRI **4K8** 4000K, 80 CRI **5K7** 5000K, 70 CRI	**No Lens or Clear Lens** **FR** Type 1/Front Row **2** Type II **3** Type III **4** Type IV **4W** Type IV Wide **5QM** Type V Square Medium **5QN** Type V Square Narrow **5R** Type V Rectangular **5W** Type V Wide (Round) **HDL - High Diffusion Lens** **3** Type III/Asymmetric **5W** Type V/Symmetric	Blank for no rotation **L** [1] Optic rotation left **R** [1] Optic rotation right	**UNV** 120-277V **347** 347V **480** 480V **DALI** 120-277V† †Consult factory

Mounting	Fixture Finish	Control Options	Options	Control Accessories
ASQ Arm Square pole **A34** Arm mt 3.3-4.2" OD pole **A46** Arm mt 4.5-6.0" OD pole **MAF** Horizontal Slip Fitter 2 3/8" OD arm **SVSF** Square Vertical Slipfitter for 2"Tenon (2-3/8"OD) **VSF** Round Vertical Slipfitter for 2"Tenon (2-3/8"OD) **WB** Wall Bracket	**BLS** Black Smooth **BLT** Black Textured **DBS** Dark Bronze Smooth **GTT** Graphite Textured **LGS** Light Gray Smooth **PSS** Platinum Silver Smooth **VGS** Verde Green Smooth **WHS** White Smooth **CC** Custom Color* *Consult factory	**7PR-TL** 7 pin PCR with twist lock photocontrol **7PR-SC** 7 pin PCR with shorting cap **7PR** 7 pin PCR, wireless control enabled **AD-01** [2] AstroDIM: 50% output at midnight **AD-02** [2] AstroDIM: 50% output midnight to 4 AM **AD-03** [2] AstroDIM: 50% output 10PM **AD-04** [2] AstroDIM: 50% output 10PM to 4AM **NXWE** NX Wireless Enabled **SWP** [2,3,4] SiteSync Pre commission **SWPM-40F** [2,3,4,5] SiteSync with Sensor 9' to 40' MH **WSP-40F-1** [2,5] Dimming Occ. Sensor for up to 40' MH, 120/277/347V **WSP-40F-2** [2,5] Dimming Occ. Sensor for up to 40' MH, 208/240V **WSP-40F-3** [2,5] Dimming Occ. Sensor for up to 40' MH, 480V **NXSPW14F** [2,5] NX Wireless, PIR Sensor, 14' **NXSPW30F** [2,5] NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'. **NXSP14F** [2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' **NXSP30F** [2,5] NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'	**BC** [6] Back-light Control **SF** Single Fuse **DF** Double Fuse **TB** Terminal Block **CLR** [6] Clear Lens **TL** Tamper proof latch	**SW7PR** [2,3] SiteSync with 7 pin PCR **SWUSB** SiteSync Software on USB **SWTAB** SiteSync Windows® Tablet **SWBRG** SiteSync Wireless Bridge Node **WIR-RME-L** wiSCAPE External Fixture Module **SCH-R** Occ. Sensor for Round Pole **SCH-S** Occ. Sensor for Square Pole **NXOFM-1R1D-UNV** NX 7-pin Module

Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

1 Not available with 5QM, 5QN, and 5W distributions.
2 Not available with other sensor or wireless control options.
3 Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.
4 Not available with 347V and 480V
5 24L & 56L only.
6 Not available with Type V distributions or HDL option.

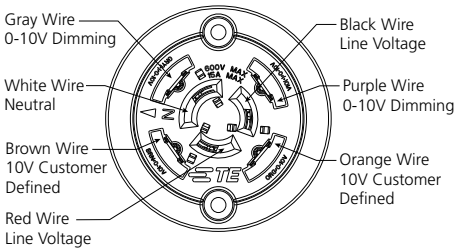
© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.2600 / Website www.kimlighting.com

HUBBELL Lighting

SPECIFICATIONS (CONTINUED)

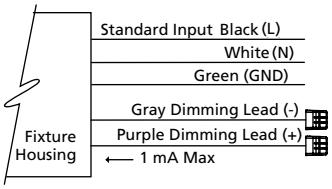
CONTROLS (CONTINUED)

Photocell receptacle wiring diagram



DIMMING:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.



WIRELESS CONTROLS
WISCAPE™

- Hubbell Control Solution's wiSCAPE™ wireless control modules allow an individual fixture to managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The wiSCAPE modules provide on/off/dim control, external device input, alerts and metering.

WIR-RME-L

- wiSCAPE External Module,120-480V, 1000ft range (LOS), Internal Photocell, 1 Digital Input, Compatible with the A-25-7H option

SITESYNC™[1]

- SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/products/sitesync for more details.

NX DISTRIBUTED INTELIGENCE™

- Hubbell Control Solutions' NX Distributed Intelligence™ lighting control platform utilizes a Distributed Network Architecture (DNA) that connects intelligent devices including luminaires, controllers, panels, occupancy sensors, photocells, wall switches and dimmers, creating a system with an unmatched level of reliability, scalability and simplicity

POLE MOUNTED

Round Pole-Mounted Occupancy
Sensor up to 16'. Select voltage and finish color.

SCL-R

- Round Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.
- Ordering Example: SCL-R44/277[2]/BL[3]

SQUARE POLE-MOUNTED OCCUPANCY

Sensor up to 16'. Select voltage and finish color.

SCL-S

- Square Pole-Mounted Occupancy Sensor up to 16' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for square pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.
- Ordering Example: SCL-L/277[2]/BL[3]

ROUND POLE-MOUNTED OCCUPANCY

Sensor 16' to 30'. Select voltage and finish color.

SCH-R

Round Pole-Mounted Occupancy Sensor: 16' to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

- Ordering Example: SCH-R4[4]/277[2]/BL[3]

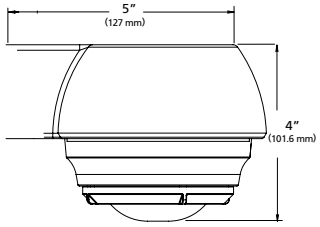
SQUARE POLE-MOUNTED OCCUPANCY

Sensor 16' to 30'. Select voltage and finish color.

SCH-S

Square Pole-Mounted Occupancy Sensor: 16 to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

- Ordering Example: SCH-S/277[2]/BL[3]



ASTRODIM

- AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.

OPTIONAL FUSING:

- SF for 120, 277, and 347 Line volts
- DF for 208, 240, and 480 Line volts

(Specifications continued on page 4)

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 888.546.5414 / Website www.kimlighting.com

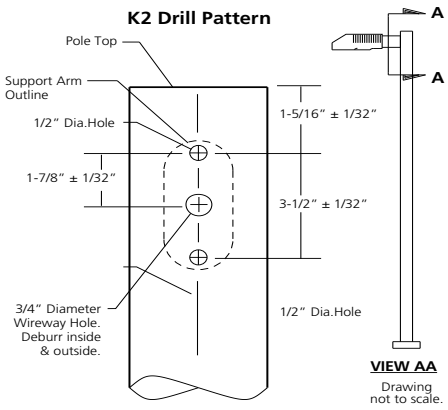
SPECIFICATIONS (CONTINUED)

MOUNTING
- Hight temperature fuse holders factory installed inside the fixture housing.
- Fuse is included.

SUPPORT ARM:
- Die-cast, low copper aluminum alloy, with splice access cover.
- Die-cast pole adaptor and an internal reinforcing plate are provided with a wire strain relief.
- The arm adapter is square or circular cut for specified pole size and shape.
- For field wire connections, a terminal block is mounted in the arm cavity and accessible behind the splice access cover. The block accepts #14 to #8 wire sizes and is factory prewired to the electrical module's quick-disconnect plug inside the electrical compartment.

OPTIONAL SLIP-FITTER:
- Internally accessible slip-fitter attaches to a 1-1/4" to 2-3/8" tenon and allows hands-free wiring and maintenance.

OPTIONAL WALL MOUNT:
- Optional, cast aluminum mounting plate attaches to a wall over a junction box and the speed mount is bolted to the cover plate. To complete the wiring, the luminaire assembly slides over the mounting plate.



CAUTION
- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

CERTIFICATIONS AND LISTINGS
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40˚C ambient temperatures
- ANSI C136.31-2010 Vibration tested and compliant 1.5G and 4G reference page 5
- IEC 66262 Mechanical Impact Code IK10
- IDA approved, 3000K and warmer CCTs only.
- IP66 certified
- RoHS compliant

WARRANTY
- 5 year warranty
- See HLI Standard Warranty for additional information

†PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928

Examples:
PA7R/FT/NU3/12L-020-3K7/42A/TT/SWP/UNV/LR

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.6000 / Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

KIM LIGHTING

DATE: LOCATION:

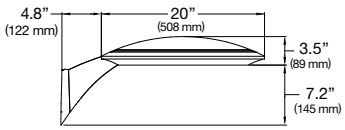
TYPE: PROJECT:

CATALOG #:

UR20

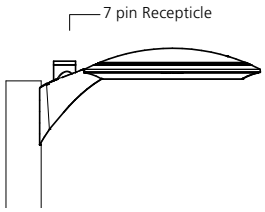
ARCHITECTURAL AREA/SITE

DIMENSIONS

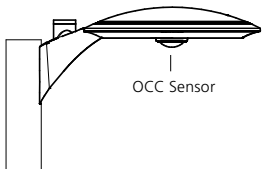


Weight: 32 lbs EPA: .372

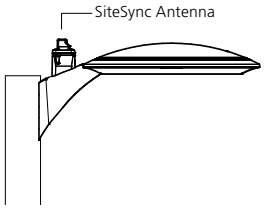
SENSOR PLACEMENT



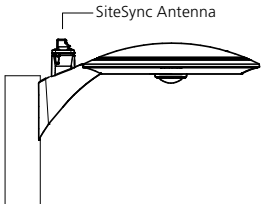
7 pin PCR
7PR



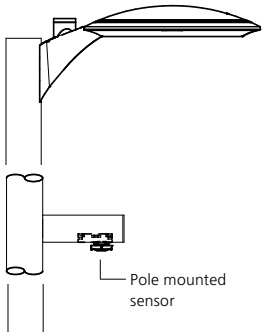
OCC Sensor
NX or WSP



SiteSync
SWP



SiteSync with sensor
SWPM-40F



Pole Mounted Sensor
SCL-R, SCL-S, SCH-R, SCH-S

MOUNTING VIBRATION RATINGS

UR 20 Arm		UR28 Arm		UR 20 Post Top		UR 28 Post Top	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
ASQ	4G	ASQ	4G	FM33	4G	FM44	1.5G
A34	4G	A34	4G	FM44	1.5G	FM45	1.5G
A46	4G	A46	4G	PT23	4G	PT24	1.5G
MAF	4G	MAF	4G	PT24	4G	PT34	1.5G
				PT34	1.5G	PT25	1.5G
						PT35	1.5G

For the 4 G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Test Level 1 Normal Applications, Vibration Test Level 2 Bridge/Overpass Applications, and Vibration Test Level 3

For the 1.5G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Level 1 Bridge/Overpass Applications

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.6000 / Website www.kimlighting.com

HUBBELL Lighting

DELIVERED LUMENS

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
24L	3,000	298mA	25	No lens	FR	3258	0	0	0	128	3467	0	0	0	136	3443	0	0	0	135
					FR-BC	2141	0	0	0	84	2278	0	0	0	89	2263	0	0	0	89
					2	3107	1	0	1	122	3306	1	0	1	130	3284	1	0	1	129
					2-BC	1849	0	0	0	73	1967	0	0	0	77	1954	0	0	0	77
					3	3128	2	0	1	123	3329	2	0	1	131	3306	2	0	1	130
					3-BC	1870	0	0	1	73	1990	0	0	1	78	1977	0	0	1	78
					4	3118	0	0	1	122	3318	0	0	1	130	3295	0	0	1	129
					4-BC	2330	0	0	1	92	2479	0	0	1	97	2462	0	0	1	97
					4W	3242	1	0	1	127	3449	1	0	1	135	3426	1	0	1	135
					4W-BC	2011	0	0	1	79	2140	0	0	1	84	2125	0	0	1	83
					5QM	2999	2	0	0	118	3191	2	0	0	125	3169	2	0	0	124
					5QN	2888	2	0	0	113	3073	2	0	0	121	3052	2	0	0	120
					5R	3092	2	0	2	121	3291	2	0	2	129	3268	2	0	2	128
					5W	3059	2	0	1	120	3255	2	0	1	128	3233	2	0	1	127
				clear lens	FR	3083	0	0	0	121	3280	0	0	0	128	3258	0	0	0	128
					FR-BC	2026	0	0	0	79	2155	0	0	0	84	2141	0	0	0	84
					2	2940	1	0	1	115	3128	1	0	1	123	3107	1	0	1	122
					2-BC	1749	0	0	0	68	1861	0	0	0	73	1848	0	0	0	72
					3	2959	1	0	1	116	3149	1	0	1	123	3127	1	0	1	122
					3-BC	1732	0	0	1	68	1843	0	0	1	72	1830	0	0	1	72
					4	2950	0	0	1	116	3139	0	0	1	123	3117	0	0	1	122
					4-BC	1847	0	0	1	72	1966	0	0	1	77	1952	0	0	0	76
					4W	3067	1	0	1	120	3263	1	0	1	128	3241	1	0	1	127
					4W-BC	1903	0	0	1	75	2025	0	0	1	79	2011	0	0	1	79
					5QM	2837	2	0	0	111	3019	2	0	0	118	2998	2	0	0	117
					5QN	2732	2	0	0	107	2907	2	0	0	114	2887	2	0	0	113
					5R	2926	2	0	2	115	3113	2	0	2	122	3092	2	0	2	121
					5W	2894	2	0	1	113	3079	2	0	1	121	3058	2	0	1	120
28L		298mA	30	HDL lens	3	2880	1	0	1	99	3065	1	0	1	105	2971	1	0	1	102
					5W	2946	1	0	1	101	3134	1	0	1	107	3113	1	0	1	106

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible]00 / Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
24L	7,000	800mA	65	No lens	FR	7507	1	0	1	115	7988	1	0	1	123	7933	1	0	1	122
					FR-BC	4717	0	0	0	73	5019	0	0	0	77	4985	0	0	0	77
					2	6938	1	0	2	107	7382	1	0	2	114	7332	1	0	2	113
					2-BC	4072	0	0	1	63	4334	0	0	1	67	4304	0	0	1	66
					3	6892	1	0	2	106	7333	1	0	2	113	7283	1	0	2	112
					3-BC	4121	0	0	1	63	4385	0	0	1	67	4355	0	0	1	67
					4	6927	1	0	2	107	7371	1	0	2	113	7320	1	0	2	113
					4-BC	5133	0	0	2	79	5461	0	0	2	84	5424	0	0	2	83
					4W	7055	1	0	2	109	7507	1	0	2	115	7456	1	0	2	115
					4W-BC	4431	0	0	2	68	4715	0	0	2	73	4682	0	0	2	72
					5QM	7188	3	0	1	111	7649	3	0	1	118	7597	3	0	1	117
					5QN	7465	3	0	0	115	7944	3	0	0	122	7889	3	0	0	121
					5R	7125	3	0	3	110	7582	3	0	3	117	7530	3	0	3	116
					5W	7048	3	0	2	108	7499	3	0	2	115	7448	3	0	2	115
				clear lens	FR	7149	1	0	1	108	7607	1	0	1	115	7555	1	0	1	114
					FR-BC	4492	0	0	0	68	4780	0	0	0	72	4747	0	0	0	72
					2	6607	1	0	2	100	7030	1	0	2	107	6982	1	0	2	106
					2-BC	3878	0	0	1	59	4127	0	0	1	63	4099	0	0	1	62
					3	6563	1	0	2	99	6984	1	0	2	106	6936	1	0	2	105
					3-BC	3841	0	0	1	59	4087	0	0	1	63	4059	0	0	1	62
					4	6597	1	0	2	100	7019	1	0	2	106	6971	1	0	2	106
					4-BC	4888	0	0	2	74	5201	0	0	2	79	5165	0	0	2	78
					4W	6719	1	0	2	102	7149	1	0	2	108	7100	1	0	2	108
					4W-BC	4219	0	0	2	64	4490	0	0	2	68	4459	0	0	2	68
					5QM	6846	3	0	1	104	7284	3	0	1	110	7235	3	0	1	110
					5QN	7109	3	0	0	108	7565	3	0	0	115	7513	3	0	0	114
					5R	6785	3	0	3	103	7220	3	0	3	109	7171	3	0	3	109
					5W	6711	3	0	1	102	7142	3	0	1	108	7093	3	0	1	107
28L		700mA	70	HDL lens	3	6481	2	0	2	98	6897	2	0	2	104	6685	2	0	2	96
					5W	6628	2	0	1	100	7053	2	0	1	107	6952	2	0	1	100

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 888.546.5414 / Website www.kimlighting.com

HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
56L	10,000	420mA	75	No lens	FR	10354	1	0	1	138	11018	1	0	1	146	10942	1	0	1	145
					FR-BC	6506	0	0	1	87	6923	0	0	1	92	6875	0	0	1	92
					2	9569	2	0	2	127	10182	2	0	2	135	10112	2	0	2	134
					2-BC	5617	0	0	1	75	5977	0	0	1	80	5936	0	0	1	79
					3	9505	1	0	2	125	10114	1	0	2	134	10045	1	0	2	133
					3-BC	5683	0	0	2	76	6047	0	0	2	81	6006	0	0	2	79
					4	9554	1	0	2	127	10166	1	0	2	135	10078	1	0	2	134
					4-BC	7079	0	0	2	94	7533	0	0	2	100	7481	0	0	2	99
					4W	9731	1	0	2	129	10355	2	0	3	138	10284	2	0	3	137
					4W-BC	6111	0	0	2	81	6503	0	0	2	87	6458	0	0	2	86
					5QM	9915	3	0	1	132	10550	3	0	2	140	10478	3	0	2	139
					5QN	10296	3	0	1	137	10956	3	0	1	146	10881	3	0	1	145
					5R	9827	3	0	3	131	10457	3	0	3	139	10385	3	0	3	138
					5W	9720	4	0	2	129	10343	4	0	2	137	10272	4	0	2	137
				clear lens	FR	9860	1	0	1	130	10492	1	0	1	139	10420	1	0	1	138
					FR-BC	6196	0	0	0	83	6593	0	0	1	88	6547	0	0	1	87
					2	9112	1	0	2	120	9696	2	0	2	128	9630	2	0	2	127
					2-BC	5349	0	0	1	71	5692	0	0	1	76	5653	0	0	1	75
					3	9052	1	0	2	120	9632	1	0	2	127	9566	1	0	2	126
					3-BC	5297	0	0	2	71	5637	0	0	2	75	5598	0	0	2	74
					4	9098	1	0	2	120	9681	1	0	2	128	9615	1	0	2	127
					4-BC	6741	0	0	2	90	7174	0	0	2	96	7124	0	0	2	95
					4W	9267	1	0	2	122	9861	1	0	2	130	9793	1	0	2	129
					4W-BC	5820	0	0	2	78	6193	0	0	2	83	6150	0	0	2	82
					5QM	9442	3	0	1	125	10047	3	0	1	133	9978	3	0	1	132
					5QN	9805	3	0	1	130	10434	3	0	1	138	10362	3	0	1	137
					5R	9358	3	0	3	124	9958	3	0	3	132	9890	3	0	3	131
					5W	9257	4	0	2	122	9850	4	0	2	130	9782	4	0	2	129
68L		350mA	80	HDL lens	3	8418	2	0	2	107	8958	2	0	2	113	8896	2	0	2	113
					5W	8609	3	0	1	109	9160	3	0	1	116	9252	3	0	1	117

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible]00 / Website www.kimlighting.com

HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
56L	15,000	600mA	110	No lens	FR	15041	1	0	2	139	16005	1	0	2	147	15895	1	0	2	146
					FR-BC	9451	0	0	1	87	10056	0	0	1	93	9987	0	0	1	92
					2	13900	2	0	2	128	14791	2	0	2	136	14689	2	0	2	135
					2-BC	8159	0	0	2	75	8682	0	0	2	80	8623	0	0	2	79
					3	13808	2	0	3	127	14692	2	0	3	135	14592	2	0	3	134
					3-BC	8256	1	0	2	75	8785	1	0	2	80	8725	1	0	2	79
					4	13878	1	0	3	128	14768	1	0	3	136	14667	1	0	3	135
					4-BC	10283	1	0	2	95	10942	1	0	3	101	10867	1	0	3	100
					4W	14135	2	0	3	130	15041	2	0	4	139	14938	2	0	3	138
					4W-BC	8877	0	0	2	82	9446	0	0	2	87	9381	0	0	2	86
					5QM	14402	4	0	2	133	15325	4	0	2	141	15220	4	0	2	140
					5QN	14957	4	0	1	138	15915	4	0	1	147	15806	4	0	1	146
					5R	14275	4	0	4	132	15190	4	0	4	140	15086	4	0	4	139
					5W	14120	4	0	2	130	15025	4	0	2	138	14922	4	0	2	138
				clear lens	FR	14230	1	0	1	132	15142	1	0	2	140	15038	1	0	2	139
					FR-BC	8941	0	0	1	83	9514	0	0	1	88	9449	0	0	1	87
					2	13151	2	0	2	122	13994	2	0	2	129	13898	2	0	2	129
					2-BC	7720	0	0	2	71	8215	0	0	2	76	8158	0	0	2	75
					3	13064	2	0	2	121	13901	2	0	2	129	13806	2	0	2	128
					3-BC	7645	1	0	2	69	8135	1	0	2	74	8079	1	0	2	73
					4	13131	1	0	3	121	13972	1	0	3	129	13876	1	0	3	128
					4-BC	9729	1	0	2	90	10353	1	0	2	94	10282	1	0	2	95
					4W	13374	2	0	3	124	14231	2	0	3	132	14134	2	0	3	131
					4W-BC	8399	0	0	2	78	8937	0	0	2	83	8876	0	0	2	82
					5QM	13626	3	0	2	126	14500	4	0	2	134	14400	4	0	2	133
					5QN	14151	4	0	1	131	15058	4	0	1	139	14955	4	0	1	138
					5R	13506	4	0	4	125	14372	4	0	4	133	14273	4	0	4	132
					5W	13359	4	0	2	124	14215	4	0	2	132	14118	4	0	2	131
68L		500mA	115	HDL lens	3	12410	3	0	2	109	13206	3	0	3	116	13115	3	0	3	116
					5W	12691	3	0	2	112	13505	3	0	2	119	13412	3	0	2	118

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 888.546.5400 / Website www.kimlighting.com

HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
56L	17,000	750mA	140	No lens	FR	17031	2	0	2	124	18123	2	0	2	132	17999	2	0	2	131
					FR-BC	10701	0	0	1	78	11387	0	0	1	83	11309	0	0	1	82
					2	15740	2	0	2	114	16748	2	0	2	122	16634	2	0	2	121
					2-BC	9239	1	0	2	67	9831	1	0	2	71	9764	1	0	2	71
					3	15635	2	0	3	113	16637	2	0	3	121	16523	2	0	3	120
					3-BC	9348	1	0	2	67	9947	1	0	2	71	9879	1	0	2	71
					4	15715	1	0	3	114	16722	1	0	3	121	16608	1	0	3	121
					4-BC	11644	1	0	3	85	12391	1	0	3	90	12306	1	0	3	89
					4W	16006	2	0	4	116	17032	2	0	4	124	16915	2	0	4	123
					4W-BC	10052	1	0	2	73	10696	1	0	3	78	10623	1	0	3	77
					5QM	16309	4	0	2	118	17354	4	0	2	126	17235	4	0	2	125
					5QN	16936	4	0	1	123	18022	4	0	1	131	17898	4	0	1	130
					5R	16164	4	0	4	117	17200	4	0	4	125	17082	4	0	4	124
					5W	15989	4	0	2	116	17013	4	0	2	123	16897	4	0	2	123
				clear lens	FR	16162	1	0	2	116	17198	2	0	2	124	17080	2	0	2	123
					FR-BC	10155	0	0	1	73	10659	0	0	1	77	10732	0	0	1	77
					2	14936	2	0	2	108	15894	2	0	2	115	15785	2	0	2	114
					2-BC	8768	1	0	2	63	9330	1	0	2	67	9266	1	0	2	67
					3	14837	2	0	3	107	15788	2	0	3	114	15680	2	0	3	113
					3-BC	8683	1	0	2	62	9239	1	0	2	66	9176	1	0	2	66
					4	14913	1	0	3	107	15869	1	0	3	114	15760	1	0	3	114
					4-BC	11050	1	0	3	80	11758	1	0	3	85	11678	1	0	3	84
					4W	15189	2	0	4	109	16163	2	0	4	116	16052	2	0	4	116
					4W-BC	9539	0	0	2	69	10150	1	0	2	73	10081	1	0	2	73
					5QM	15476	4	0	2	112	16468	4	0	2	119	16355	4	0	2	118
					5QN	16072	4	0	1	116	17102	4	0	1	123	16985	4	0	1	122
					5R	15339	4	0	4	111	16323	4	0	4	118	16211	4	0	4	117
					5W	15173	4	0	2	109	16145	4	0	2	116	16035	4	0	2	116
68L		625mA	150	HDL lens	3	14192	3	0	3	96	14999	3	0	3	101	14896	3	0	3	101
					5W	14514	3	0	2	98	15338	3	0	2	104	15233	3	0	2	103

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.6000 / Website www.kimlighting.com

HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

PHOTOMETRY

UR20-56L-140-4K7-FR

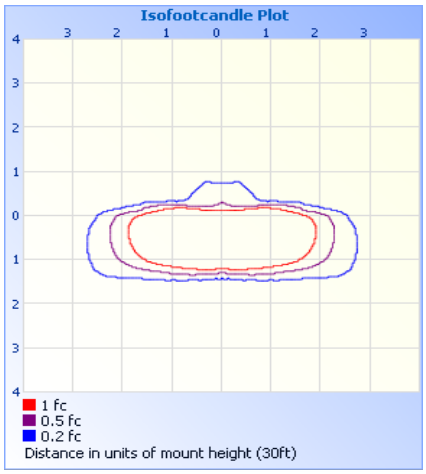
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18123**
Watts	**140**
Efficacy	**129.5**
IES Type	**II**
BUG Rating	**B2-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	16164	89.2%
Downward House Side	1959	10.8%
Downward Total	18123	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18123	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-2

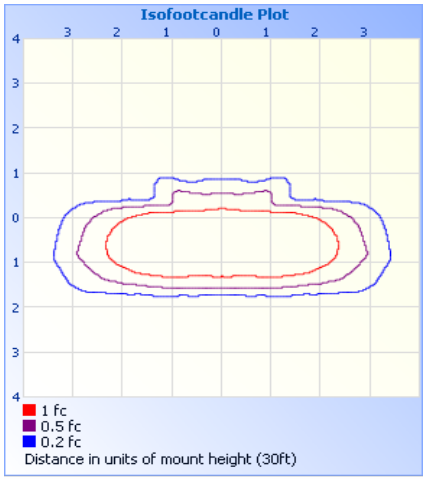
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**16748**
Watts	**140**
Efficacy	**119.6**
IES Type	**II**
BUG Rating	**B2-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	13888	82.9%
Downward House Side	2860	17.1%
Downward Total	16748	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16748	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-3

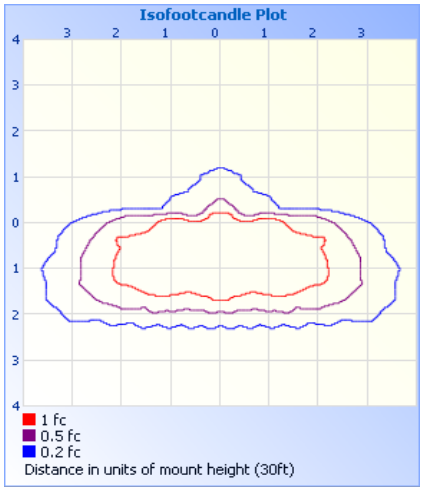
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**16637**
Watts	**140**
Efficacy	**118.8**
IES Type	**III**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14461	86.9%
Downward House Side	2176	13.1%
Downward Total	16637	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16637	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

PHOTOMETRY

UR20-56L-140-4K7-4

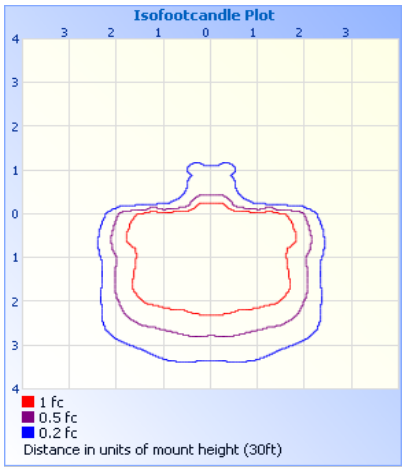
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**16722**
Watts	**140**
Efficacy	**119.4**
IES Type	**IV**
BUG Rating	**B1-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15112	90.4%
Downward House Side	1610	9.6%
Downward Total	16722	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16722	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-4W

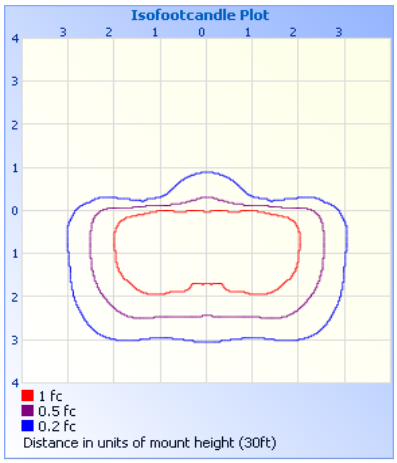
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17033**
Watts	**138**
Efficacy	**123.4**
IES Type	**IV**
BUG Rating	**B2-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15040	88.3%
Downward House Side	1993	11.7%
Downward Total	17033	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17033	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-5QM

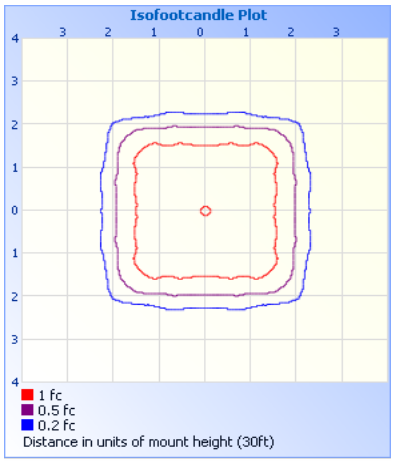
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17354**
Watts	**140**
Efficacy	**124.0**
IES Type	**VS**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8677	50.0%
Downward House Side	8677	50.0%
Downward Total	17354	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17354	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] / Website www.kimlighting.com

HUBBELL Lighting

UR20

ARCHITECTURAL AREA/SITE

PHOTOMETRY

UR20-56L-140-4K7-5QN

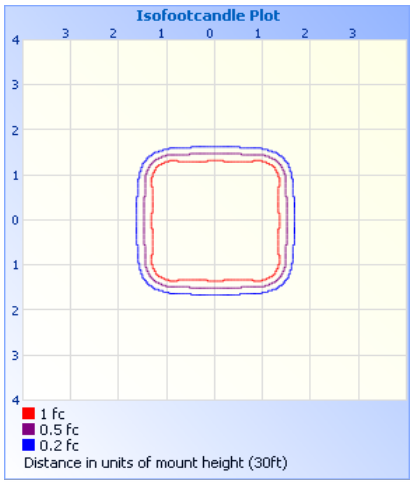
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18023**
Watts	**140**
Efficacy	**128.7**
IES Type	**VS**
BUG Rating	**B4-U0-G1**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9012	50.0%
Downward House Side	9012	50.0%
Downward Total	18023	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18023	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-5R

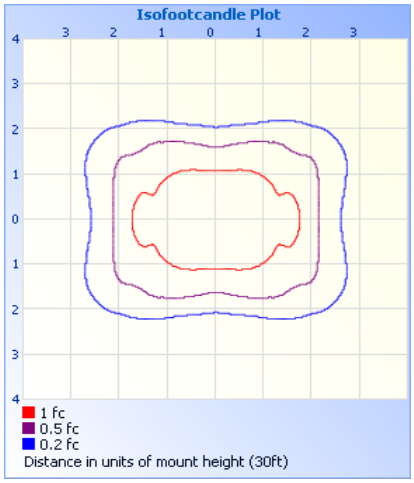
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17201**
Watts	**140**
Efficacy	**122.9**
IES Type	**III**
BUG Rating	**B4-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8601	50.0%
Downward House Side	8601	50.0%
Downward Total	17201	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17201	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-5W

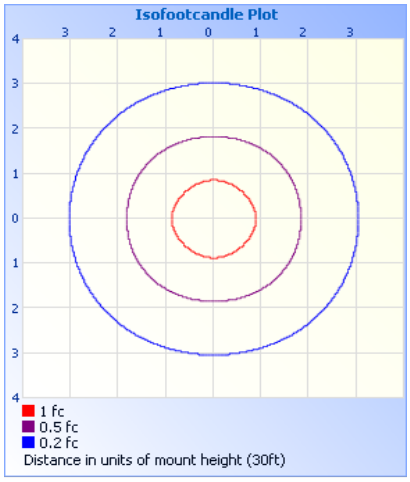
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17014**
Watts	**140**
Efficacy	**121.5**
IES Type	**III**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8507	50.0%
Downward House Side	8507	50.0%
Downward Total	17014	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17014	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING

DATE: LOCATION:

TYPE: PROJECT:

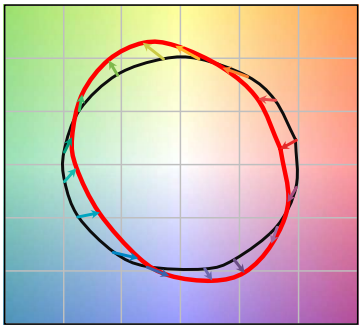
CATALOG #:

UR20

ARCHITECTURAL AREA/SITE

TM-30 DATA

COLOR VECTOR GRAPHIC

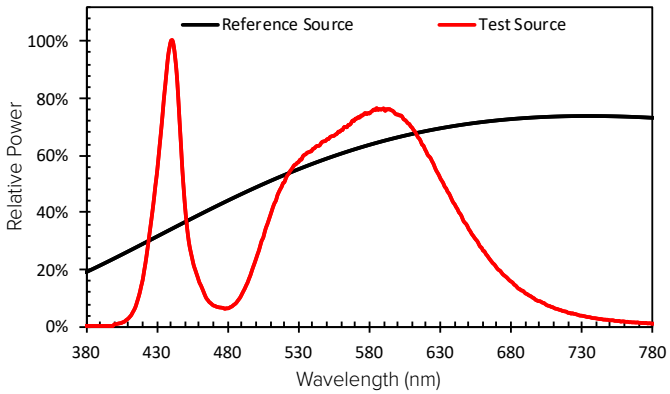


Reference Illuminant — Test Source

TEST SOURCE

R_f	68
R_g	99
CCT(K)	3947
D_{UV}	0.0004
x	0.3831
y	0.3793
CIE R_a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL DATA

Drive Current	LED Count	System Watts	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming				
													Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
298mA	24	25	120-480	50/60	0.21	0.12	0.10	0.09	0.07	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
298mA	28	30			0.25	0.14	0.13	0.11	0.09	0.06							
800mA	24	65			0.54	0.31	0.27	0.23	0.19	0.14							
700mA	28	70			0.58	0.34	0.29	0.25	0.20	0.15							
420mA	56	75			0.63	0.36	0.31	0.27	0.22	0.16							
350mA	68	80			0.67	0.38	0.33	0.29	0.23	0.17							
600mA	56	110			0.92	0.53	0.46	0.40	0.32	0.23							
500mA	68	115			0.96	0.55	0.48	0.42	0.33	0.24							
750mA	56	140			1.17	0.67	0.58	0.51	0.40	0.29							
625mA	68	150			1.25	0.72	0.63	0.54	0.43	0.31							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)						
Ambient Temp.	0	25,000	36,000	50,000	100,000	Reported L70
25°C / 77°F	100%	97%	95%	93%	87%	60khrs

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.0033 / website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

Altitude®

FEATURES

- Elegant form factor
- High performance optics up to 17,500 delivered lumens
- Diffusion lens for low glare comfort
- NX™ wireless control options



Altitude

c UL us LISTED

3000K and warmer CCTs only

CONTROL TECHNOLOGY

NX DISTRIBUTED INTELLIGENCE

RELATED PRODUCTS

Ouro Pavilion PGL8

SPECIFICATIONS

CONSTRUCTION

- One piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 with vents and .100" minimum wall thickness
- Separate internal driver compartment rated for IP66 ingress protection
- Finish: fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat
- Standard colors include (BLS) Black Gloss Smooth, (BLT) Black Matte Textured, (DBS) Dark Bronze Gloss Smooth, (GTT) Graphite Matte Textured, (LGS) Light Gray Gloss Smooth, (PSS) Platinum Silver Smooth, (VGS) Verde Green Smooth, (WH) White, and (CC) Custom Color (Include RAL#)
- Lens is impact resistant 1/8" tempered glass with anti-reflective coating
- Lens has a one-piece extruded vulcanized silicone gasket
- Lens frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness
- Lens frame has a one-piece O-ring extruded vulcanized silicone gasket
- Mid-frame one piece die-cast, low copper (<0.6% Cu) Aluminum Alloy 360 and .100" minimum wall thickness
- Mid-frame secures to Lens Frame and housing by stainless steel recessed Allen-head screws
- Silicone gaskets throughout
- All external fasteners are stainless steel

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB)
- Optical lenses are clear injection molded PMMA acrylic

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories recognized
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories recognized
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C

ELECTRICAL (CONTINUED)

- Dimming range from 10% to 100% through the use of standard 0-10V interface on the programmable driver
- Modular wiring harness in the service area provides user access to the dimming circuitry
- Optional factory programmed dimming profile
- Surge protection: 10,000k in parallel, 20,000k in series
- SF for 120, 277, 347 Line volts
  DF for 208, 240, 480 Line volts
- Wiring: No. 18AWM rated 105°C, wet rating.

CERTIFICATIONS AND LISTINGS

- UL 1598 Standard for Luminaires
- IP66 certified
- RoHS compliant

WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	1,673–18,452
Wattage Range	22–156
Efficacy Range (LPW)	56–137
Reported Life (Hours)	L70/60,000
Weight	21.5 lbs 9.75 kg
EPS Front View / Side View	.37 / .64

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

ORDERING GUIDE

Example: ALT1-54L-120-3K8-3-UNV-A34-GT-NXSPW30F-CLR

CATALOG #

HOUSING

ALT1

Housing		LED Engine		CCT/CRI		Distribution		Rotation		Voltage	
ALT1	Architectural Area/Site	**28L-20**	20W, 3,000 lm	**AM**	Amber[9]	**FR**	Type I/Front Row		Blank for no rotation	**UNV**	Universal 120–277V
		28L-40	40W, 5,000 lm	**3K7**	3000K, 70 CRI	**2**	Type II	**L**	Optic rotation left[1]	**347**	347V
		28L-60	60W, 7,500 lm	**3K8**	3000K, 80 CRI	**3**	Type III	**R**	Optic rotation right[1]	**480**	480V
		28L-85	85W, 10,000 lm	**3K9**	3000K, 90 CRI	**4**	Type IV				
		54L-95	95W, 12,500 lm	**4K7**	4000K, 70 CRI	**4W**	Type IV Wide				
		54L-120	120W, 15,000 lm	**4K8**	4000K, 80 CRI	**5QM**	Type V Square Medium				
		54L-155	155W, 17,500 lm	**5K7**	5000K, 70 CRI	**5QN**	Type V Square Narrow				
				5K8	5000K, 80 CRI	**5R**	Type V Rectangular				
						5W	Type V Wide (Round)				

Mounting		Fixture Finish		Control Options		Options		Control Accessories	
ASQ	Arm Square pole	**BL**	Black	**7PR**	7 pin PCR, wireless control enabled	**BC**	Backlight Control[6]	**SCPREMOTE**	Remote control for SCP option. Order at least one per project to program and control the occupancy sensor
A34	Arm mt 3.3–4.2" OD pole	**DB**	Dark Bronze	**7PR-TL**	7 pin PCR with twist lock photocontrol	**SF**	Single Fuse	**SW7PR**	SiteSync™ on fixture module via 7PR
A46	Arm mt 4.5–6.0" OD pole	**GT**	Graphite	**7PR-SC**	7 pin PCR with shorting cap	**DF**	Double Fuse	**SWUSB**	SiteSync™ Software on USB
MAF	Horizontal Slipfitter 2.375" OD arm	**LG**	Light Grey	**AD-012**	AstroDIM: 50% output at midnight[10]	**TB**	Terminal Block	**SWTAB**	SiteSync™ Windows Tablet[8]
SVSF	Vertical Slipfitter Mount square for 2" pipe tenon, (2.375" OD)	**PS**	Platinum Silver	**AD-022**	AstroDIM: 50% output midnight to 4 AM[10]	**CLR**	Clear Lens	**SWBRG**	SiteSync™ Wireless Bridge Node
VSF	Vertical Slipfitter Mount for 2" pipe tenon, (2.375" OD)	**TT**	Titanium	**AD-032**	AstroDIM: 50% output 10PM[10]	**HDL**	Diffuse Lens[7]	**SWFC**	SiteSync™ Field Commission Service
WB	Wall Bracket for area wall mount	**WH**	White	**AD-042**	AstroDIM: 50% output 10PM to 4AM[10]			**WIR-RME-L**	wiSCAPE™ External Fixture Module
		CC	Custom Color[2]	**NXSP14F**	Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' [3,4]			**NXOFM-1R1D-UNV**	NX External Contol Node
				NXSP30F	Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30' [3,4]				
				NXSPW14F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14' [3,4]				
				NXSPW30F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30' [3,4]				
				NXWE	NX Wireless Enabled				
				SCL-8F	Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights up to 8'				
				SCL-40F	Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights 9' to 40'				
				SCP-8F	Remote control programable line voltage sensor, use with SCPREMOTE				
				SCP-40F	Remote control programable line voltage sensor, use with SCPREMOTE				
				SWP	Site Sync™ Pre Commission Wireless Module[3,4,5]				
				SWPM-40F	Site Sync with Sensor 9' to 40' MH[3,4,5]				

Notes:

1 Not available with 5QM and 5W distributions

2 Consult factory

3 Not available with other sensor or wireless control options

4 Not available in 480V

5 Specify group and zone at time of order, See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node

6 Not available with Type 5 distributions, CLR, or HDL option

7 Only available in Type 3 or Type 5W

8 Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries

9 Wildlife friendly

10 Not available for 28L-20 engine and sensor options

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / Website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PRODUCT EXCEPTIONS & DETAILS

Configuration			EPA
	1SA	1 Arm Side Mount	0.98
	2SB	2 Arm Side Mount	1.48
	2SL	2 Arm Side Mount	1.96
	3ST	3 Arm Side Mount	2.20

Configuration			EPA
	3SY*	3 Arm Side Mount	2.46
	4SC	4 Arm Side Mount	2.46
	1W	Single Wall Mount	n/a
	HSF	Horizontal Slipfitter	n/a

DELIVERED LUMENS

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	20	3,000	No Lens	FR	3110	0	0	0	141	3274	0	0	0	149	3318	1	0	0	148
				FR-BC	2036	0	0	0	93	2143	0	0	0	97	2172	0	0	0	97
				2	2903	1	0	1	132	3056	1	0	1	139	3097	1	0	1	138
				2-BC	1771	0	0	0	80	1864	0	0	0	85	1889	0	0	0	84
				3	2945	1	0	1	131	3100	1	0	1	138	3141	1	0	1	140
				3-BC	1779	0	0	1	81	1873	0	0	1	85	1898	0	0	1	85
				4	2943	0	0	1	134	3098	0	0	1	141	3139	0	0	1	141
				4-BC	2189	0	0	1	100	2304	0	0	1	105	2335	0	0	1	104
				4W	2927	1	0	1	133	3081	1	0	1	140	3122	1	0	1	139
				4W-BC	1673	0	0	1	76	1761	0	0	1	80	1785	0	0	1	80
				5R	3025	2	0	2	137	3184	2	0	2	145	3227	2	0	2	144
				5QM	3069	2	0	0	139	3230	2	0	0	147	3273	2	0	0	146
				5QN	3051	2	0	0	139	3211	2	0	0	146	3254	2	0	0	145
				5W	3024	2	0	1	137	3183	2	0	1	145	3226	2	0	1	144
			Clear Lens	FR	2909	0	0	0	132	3062	0	0	0	139	3103	0	0	0	141
				2	2715	1	0	1	123	2858	1	0	1	130	2896	1	0	1	132
				3	2754	1	0	1	125	2899	1	0	1	132	2938	1	0	1	134
				4	2752	0	0	1	125	2897	0	0	1	132	2936	0	0	1	133
				4W	2738	1	0	1	124	2882	1	0	1	131	2920	1	0	1	133
				5R	2829	2	0	2	129	2978	2	0	2	135	3018	2	0	2	137
				5QM	2870	2	0	0	130	3021	2	0	0	137	3062	2	0	0	139
				5QN	2853	2	0	0	130	3003	2	0	0	137	3044	2	0	0	138
				5W	2829	2	0	1	129	2977	2	0	1	135	3017	2	0	1	137
			HDL Lens	3	2341	1	0	1	106	2464	1	0	1	112	2497	1	0	1	114
				5W	2405	1	0	1	109	2531	1	0	1	115	2565	1	0	1	117

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / Website www.kimlighting.com

HUBBELL® Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	40	5,000	No Lens	FR	4870	1	0	0	128	5127	1	0	0	135	5195	1	0	0	137
				FR-BC	3189	0	0	0	84	3356	0	0	0	88	3401	0	0	0	90
				2	4546	1	0	1	120	4785	1	0	1	126	4849	1	0	1	128
				2-BC	2773	0	0	1	73	2919	0	0	1	77	2958	0	0	1	78
				3	4611	1	0	2	121	4854	1	0	2	128	4919	1	0	2	129
				3-BC	2786	0	0	1	73	2933	0	0	1	77	2972	0	0	1	78
				4	4608	1	0	2	121	4851	1	0	2	128	4915	1	0	2	129
				4-BC	3428	0	0	1	90	3608	0	0	1	95	3656	0	0	1	96
				4W	4584	1	0	2	121	4825	1	0	2	127	4889	1	0	2	129
				4W-BC	2621	0	0	1	69	2758	0	0	1	73	2795	0	0	1	74
				5R	4737	2	0	2	125	4986	3	0	1	131	5053	3	0	3	133
				5QM	4806	2	0	1	126	5058	2	0	1	133	5126	2	0	1	135
				5QN	4777	2	0	0	126	5028	2	0	0	132	5096	2	0	0	134
				5W	4736	3	0	1	125	4985	2	0	2	131	5052	3	0	1	133
			Clear Lens	FR	4555	1	0	0	120	4795	1	0	0	126	4859	1	0	0	128
				2	4252	1	0	1	112	4476	1	0	1	118	4536	1	0	1	119
				3	4333	1	0	1	114	4561	1	0	1	120	4622	1	0	1	121
				4	4310	0	0	2	113	4537	1	0	2	119	4598	1	0	2	121
				4W	4287	1	0	2	113	4513	1	0	2	119	4573	1	0	2	120
				5R	4431	2	0	2	117	4663	2	0	2	123	4726	2	0	2	124
				5QM	4495	2	0	1	118	4731	2	0	1	125	4794	2	0	1	126
				5QN	4468	2	0	0	118	4703	2	0	0	124	4766	2	0	0	125
				5W	4430	3	0	1	117	4663	3	0	1	123	4725	3	0	1	124
			HDL Lens	3	3741	1	0	1	98	3937	1	0	1	104	3990	1	0	1	105
				5W	3891	2	0	1	102	4095	2	0	1	108	4150	2	0	1	109

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	60	7,500	No Lens	FR	7347	1	0	1	122	7733	1	0	1	129	7837	1	0	1	131
				FR-BC	4810	0	0	0	80	5063	0	0	0	84	5131	0	0	0	86
				2	6858	1	0	2	114	7218	1	0	2	120	7315	1	0	2	122
				2-BC	4183	0	0	1	70	4403	0	0	1	73	4462	0	0	1	74
				3	6956	1	0	2	116	7322	1	0	2	122	7420	1	0	2	123
				3-BC	4203	0	0	1	70	4424	0	0	1	74	4483	0	0	1	75
				4	6951	1	0	2	116	7317	1	0	2	122	7415	1	0	2	124
				4-BC	5171	0	0	2	86	5443	0	0	2	91	5516	0	0	2	92
				4W	6915	1	0	2	115	7278	1	0	2	121	7376	1	0	2	123
				4W-BC	3953	0	0	2	66	4161	0	0	2	69	4216	0	0	2	70
				5R	7145	3	0	3	119	7521	3	0	3	125	7622	3	0	3	127
				5QM	7249	3	0	1	121	7630	3	0	1	127	7732	3	0	1	129
				5QN	7206	3	0	0	120	7585	3	0	0	126	7687	3	0	0	128
				5W	7144	3	0	2	119	7520	3	0	2	125	7620	3	0	2	127
			Clear Lens	FR	6872	1	0	1	115	7233	1	0	1	121	7330	1	0	1	122
				2	6414	1	0	2	107	6751	1	0	2	113	6842	1	0	2	114
				3	6506	1	0	2	108	6848	1	0	2	114	6940	1	0	2	116
				4	6502	1	0	2	108	6844	1	0	2	114	6935	1	0	2	116
				4W	6468	1	0	2	108	6807	1	0	2	113	6899	1	0	2	115
				5R	6683	3	0	3	111	7035	3	0	3	117	7129	3	0	3	119
				5QM	6780	3	0	1	113	7137	3	0	1	119	7232	3	0	1	121
				5QN	6740	2	0	0	112	7094	3	0	0	118	7189	3	0	0	120
				5W	6682	3	0	2	111	7033	3	0	2	117	7128	3	0	2	119
			HDL Lens	3	5531	2	0	1	92	5821	2	0	1	97	5899	2	0	1	98
				5W	5680	2	0	1	95	5979	2	0	1	100	6059	2	0	1	101

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] • Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	85	10,000	No Lens	FR	9699	1	0	1	113	10209	1	0	1	119	10346	1	0	1	120
				FR-BC	6350	0	0	1	74	6684	0	0	1	78	6773	0	0	1	79
				2	9054	1	0	2	105	9530	2	0	2	111	9657	2	0	2	112
				2-BC	5523	0	0	1	64	5813	0	0	1	68	5891	0	0	1	68
				3	9183	1	0	2	107	9666	1	0	2	112	9795	1	0	2	114
				3-BC	5549	0	0	2	65	5841	0	0	2	68	5919	0	0	2	69
				4	9177	1	0	2	107	9660	1	0	2	112	9789	1	0	2	114
				4-BC	6827	0	0	2	79	7186	0	0	2	84	7282	0	0	2	85
				4W	9129	1	0	3	106	9609	1	0	3	112	9737	1	0	3	113
				4W-BC	5219	0	0	2	61	5493	0	0	2	64	5567	0	0	2	65
				5R	9433	3	0	3	110	9929	3	0	3	115	10062	3	0	3	117
				5QM	9570	3	0	1	111	10073	3	0	1	117	10208	3	0	1	119
				5QN	9514	3	0	0	111	10014	3	0	0	116	10148	3	0	0	118
				5W	9432	4	0	2	110	9927	4	0	2	115	10060	4	0	2	117
			Clear Lens	FR	9072	1	0	1	105	9549	1	0	1	111	9677	1	0	1	113
				2	8468	1	0	2	98	8913	1	0	2	104	9033	1	0	2	105
				3	8589	1	0	2	100	9041	1	0	2	105	9162	1	0	2	107
				4	8584	1	0	2	100	9035	1	0	2	105	9156	1	0	2	106
				4W	8538	1	0	2	99	8987	1	0	3	105	9108	1	0	3	106
				5R	8823	3	0	3	103	9287	3	0	3	108	9411	3	0	3	109
				5QM	8951	3	0	1	104	9422	3	0	1	110	9548	3	0	1	111
				5QN	8898	3	0	0	103	9366	3	0	0	109	9491	3	0	0	110
				5W	8822	3	0	2	103	9285	4	0	2	108	9410	4	0	2	109
			HDL Lens	3	7302	2	0	2	85	7685	2	0	2	89	7788	2	0	2	91
				5W	7499	2	0	1	87	7893	2	0	1	92	7999	2	0	1	93

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	95	12,500	No Lens	FR	11792	1	0	1	125	12412	1	0	1	132	12578	1	0	1	134
				FR-BC	7848	0	0	1	83	8260	0	0	1	88	8371	0	0	1	90
				2	11210	2	0	2	119	11800	2	0	2	126	11958	2	0	2	126
				2-BC	5993	0	0	1	64	6308	0	0	1	67	6392	0	0	1	69
				3	11225	1	0	2	119	11815	2	0	2	126	11974	2	0	2	127
				3-BC	6273	0	0	2	67	6603	0	0	2	70	6691	0	0	2	72
				4	11311	1	0	2	120	11906	1	0	3	127	12065	1	0	3	128
				4-BC	7291	0	0	2	78	7674	0	0	2	82	7777	0	0	2	84
				4W	11203	2	0	3	119	11792	2	0	3	125	11950	2	0	3	127
				4W-BC	5603	0	0	2	60	5898	0	0	2	63	5977	0	0	2	65
				5R	11623	3	0	3	124	12234	3	0	3	130	12398	3	0	3	131
				5QM	11770	3	0	2	125	12389	3	0	2	132	12555	3	0	2	133
				5QN	11799	3	0	0	126	12420	3	0	0	132	12586	3	0	0	133
				5W	11594	4	0	2	123	12204	4	0	2	130	12367	4	0	2	131
			Clear Lens	FR	11029	1	0	1	117	11609	1	0	1	124	11765	1	0	1	125
				2	10485	2	0	2	112	11036	2	0	2	117	11184	2	0	2	119
				3	10555	1	0	2	112	11110	1	0	2	118	11259	1	0	2	120
				4	10579	1	0	2	113	11136	1	0	2	118	11285	1	0	2	120
				4W	10479	1	0	3	111	11029	2	0	3	117	11177	2	0	3	119
				5R	10871	3	0	3	116	11443	3	0	3	122	11596	3	0	3	123
				5QM	11009	3	0	2	117	11588	3	0	2	123	11743	3	0	2	125
				5QN	11036	3	0	0	117	11616	3	0	0	124	11772	3	0	0	125
				5W	10845	4	0	2	115	11415	4	0	2	121	11568	4	0	2	123
			HDL Lens	3	8736	2	0	2	93	9195	2	0	2	98	9318	2	0	2	100
				5W	9152	3	0	1	97	9633	3	0	1	102	9762	3	0	1	104

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	120	15,000	No Lens	FR	14390	1	0	1	118	15146	1	0	1	124	15349	1	0	1	125
				FR-BC	9577	1	0	1	78	10080	1	0	1	83	10215	1	0	1	84
				2	13680	2	0	2	112	14399	2	0	2	118	14592	2	0	2	120
				2-BC	7313	0	0	1	60	7697	0	0	2	63	7800	0	0	2	64
				3	13698	2	0	3	112	14418	2	0	3	118	14611	2	0	3	120
				3-BC	7655	0	0	2	63	8057	0	0	2	66	8165	0	0	2	67
				4	13803	1	0	3	113	14528	1	0	3	119	14723	1	0	3	121
				4-BC	8897	0	0	2	73	9365	0	0	2	77	9490	0	0	2	78
				4W	13671	2	0	3	112	14390	2	0	3	118	14583	2	0	4	120
				4W-BC	6838	1	0	2	56	7197	1	0	2	59	7294	1	0	2	60
				5R	14184	4	0	4	116	14929	4	0	4	122	15129	4	0	4	124
				5QM	14363	3	0	2	118	15118	4	0	2	124	15321	4	0	2	126
				5QN	14399	4	0	4	118	15156	4	0	1	124	15359	4	0	1	126
				5W	14149	4	0	2	116	14893	4	0	2	122	15092	4	0	2	124
			Clear Lens	FR	13459	1	0	1	110	14167	1	0	1	116	14356	1	0	2	118
				2	12795	2	0	2	105	13468	2	0	2	110	13648	2	0	2	112
				3	12812	2	0	2	105	13486	2	0	2	111	13666	2	0	2	112
				4	12910	1	0	3	106	13589	1	0	3	111	13771	1	0	3	113
				4W	12787	2	0	3	105	13459	2	0	3	110	13640	2	0	3	112
				5R	13266	4	0	4	109	13964	4	0	4	114	14151	4	0	4	116
				5QM	13434	3	0	2	110	14140	3	0	2	116	14330	3	0	2	117
				5QN	13467	4	0	0	110	14175	4	0	0	116	14365	4	0	0	118
				5W	13234	4	0	2	108	13929	4	0	2	114	14116	4	0	2	116
			HDL Lens	3	10892	3	0	2	89	11464	3	0	2	94	11618	3	0	2	95
				5W	11250	3	0	1	92	11841	3	0	2	97	12000	3	0	2	98

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

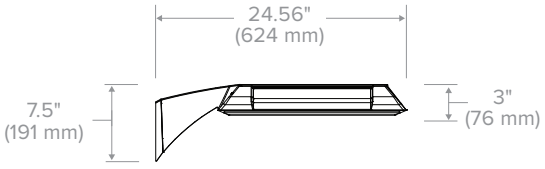
DELIVERED LUMENS (CONTINUED)

LEDs #	Nominal Watts	Nominal Lumens	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54L	155	17,500	No Lens	FR	17299	2	0	2	111	18208	2	0	2	117	18452	2	0	2	119
				FR-BC	11513	1	0	1	74	12118	1	0	1	78	12280	1	0	1	79
				2	16445	2	0	2	105	17310	2	0	3	111	17542	2	0	3	112
				2-BC	8791	0	0	2	56	9253	0	0	2	59	9377	0	0	2	60
				3	16467	2	0	3	106	17333	2	0	3	111	17565	2	0	3	113
				3-BC	9202	1	0	2	59	9686	1	0	2	62	9816	1	0	2	63
				4	16593	1	0	3	106	17465	1	0	3	112	17699	1	0	4	113
				4-BC	10696	0	0	2	69	11258	1	0	2	72	11409	1	0	2	73
				4W	16435	2	0	4	105	17299	2	0	4	111	17531	2	0	4	112
				4W-BC	8220	1	0	2	53	8652	1	0	2	55	8768	1	0	2	56
				5R	17051	4	0	4	109	17947	4	0	4	115	18188	4	0	4	117
				5QM	17267	4	0	2	111	18174	4	0	2	117	18418	4	0	2	118
				5QN	17309	4	0	1	111	18219	4	0	1	117	18463	4	0	1	118
				5W	17009	4	0	2	109	17903	4	0	2	115	18143	4	0	2	116
			Clear Lens	FR	16180	1	0	2	104	17030	1	0	2	109	17258	1	0	2	111
				2	15382	2	0	2	99	16190	2	0	2	104	16407	2	0	2	105
				3	15402	2	0	3	99	16212	2	0	3	104	16429	2	0	3	105
				4	15520	1	0	3	99	16336	1	0	3	105	16555	1	0	3	106
				4W	15372	2	0	4	99	16180	2	0	4	104	16397	2	0	4	105
				5R	15948	4	0	4	102	16787	4	0	4	108	17011	4	0	4	109
				5QM	16150	4	0	2	104	16999	4	0	2	109	17227	4	0	2	110
				5QN	16190	4	0	1	104	17041	4	0	1	109	17269	4	0	1	111
				5W	15909	4	0	2	102	16745	4	0	2	107	16969	4	0	2	109
			HDL Lens	3	13093	3	0	2	84	13782	3	0	2	88	13966	3	0	2	90
				5W	13524	3	0	2	87	14235	3	0	2	91	14426	3	0	2	92

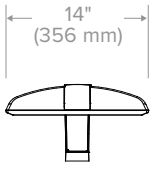
CRI Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

Amber Multiplier	
CCT	Multiplier
5000K	1
AM	0.1727

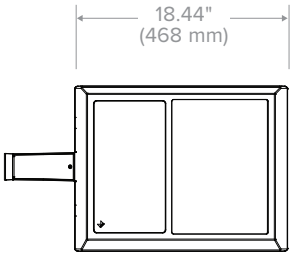
DIMENSIONS



Side View



Front View



Top View

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.281.1000 / Website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-FR

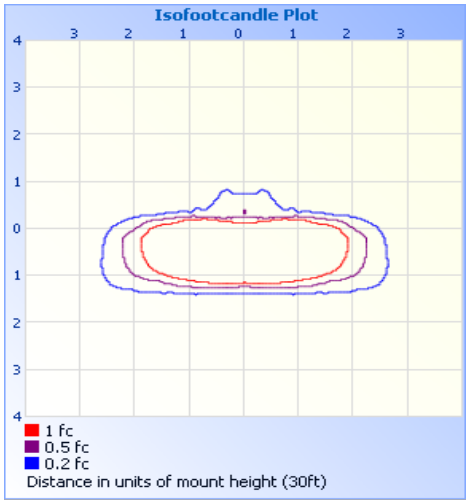
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18208**
Watts	**156**
Efficacy	**116.7**
IES Type	**I**
BUG Rating	**B2-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	16101	88.4%
Downward House Side	2107	11.6%
Downward Total	18208	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18208	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-2

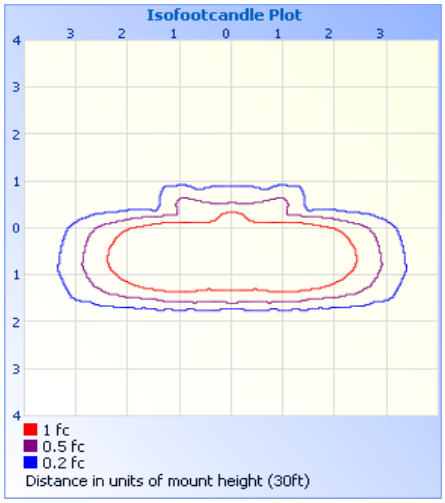
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17309**
Watts	**156**
Efficacy	**111.0**
IES Type	**II**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14323	82.7%
Downward House Side	2986	17.3%
Downward Total	17309	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17309	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-3

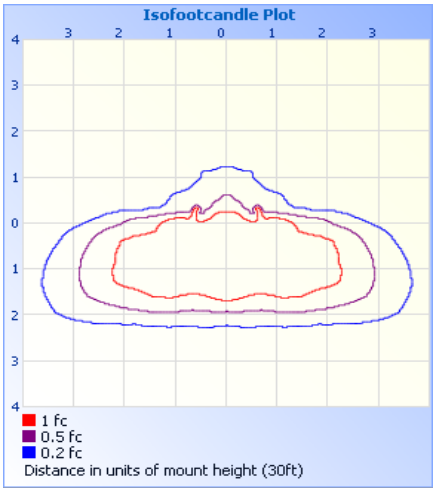
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17332**
Watts	**156**
Efficacy	**111.1**
IES Type	**III**
BUG Rating	**B2-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14911	86.0%
Downward House Side	2421	14.0%
Downward Total	17332	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17332	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL® Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-4

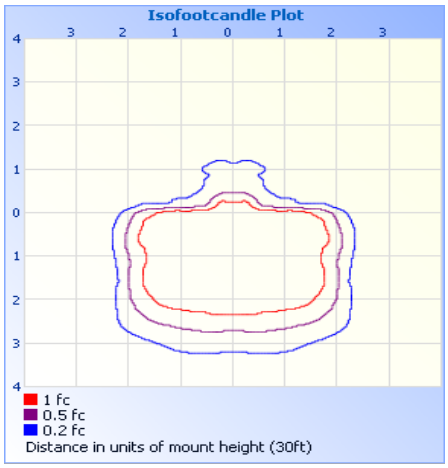
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17465**
Watts	**156**
Efficacy	**112.0**
IES Type	**IV**
BUG Rating	**B1-U0-G3**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15757	90.2%
Downward House Side	1708	9.8%
Downward Total	17465	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17465	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-4W

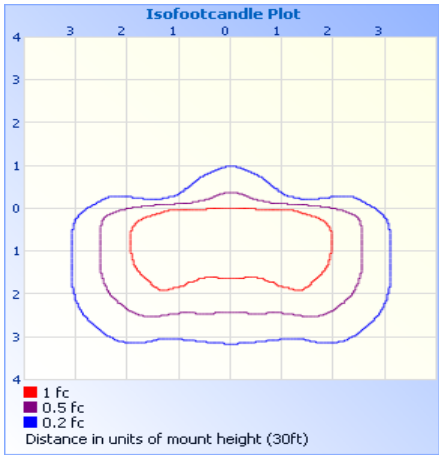
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17299**
Watts	**156**
Efficacy	**110.9**
IES Type	**IV**
BUG Rating	**B2-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	15320	88.6%
Downward House Side	1979	11.4%
Downward Total	17299	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17299	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5R

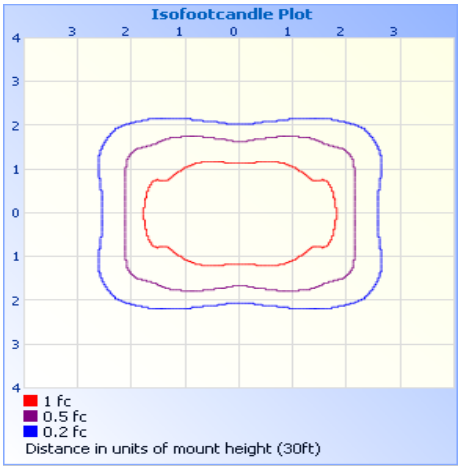
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17947**
Watts	**156**
Efficacy	**115.0**
IES Type	**III**
BUG Rating	**B4-U0-G4**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8974	50.0%
Downward House Side	8974	50.0%
Downward Total	17947	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17947	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] Website www.kimlighting.com

HUBBELL Lighting

ALT1

ARCHITECTURAL AREA/SITE

PHOTOMETRY

ALT1-54L-155-4k7-5QM

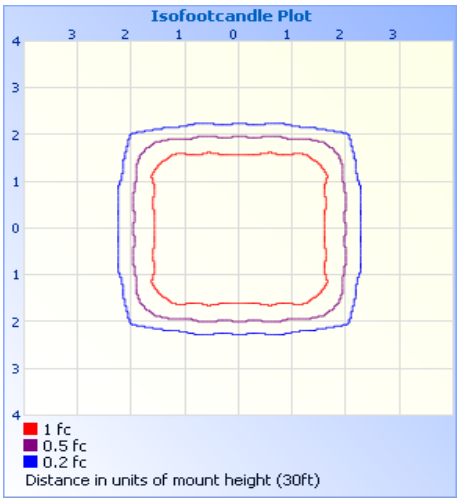
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18173**
Watts	**156**
Efficacy	**116.5**
IES Type	**V**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9087	50.0%
Downward House Side	9087	50.0%
Downward Total	18173	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18173	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5QN

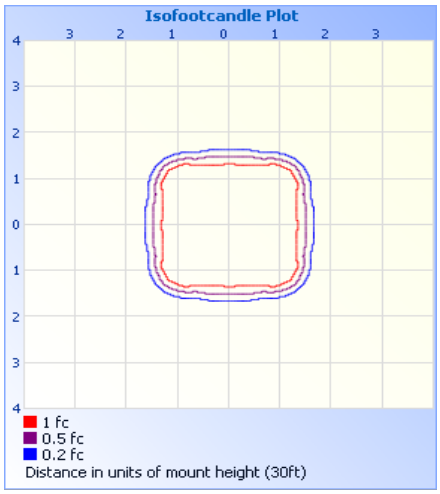
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**18219**
Watts	**156**
Efficacy	**116.8**
IES Type	**V**
BUG Rating	**B4-U0-G1**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	9110	50.0%
Downward House Side	9110	50.0%
Downward Total	18219	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	18219	100%

ISOFOOT CANDLE PLOT



ALT1-54L-155-4k7-5W

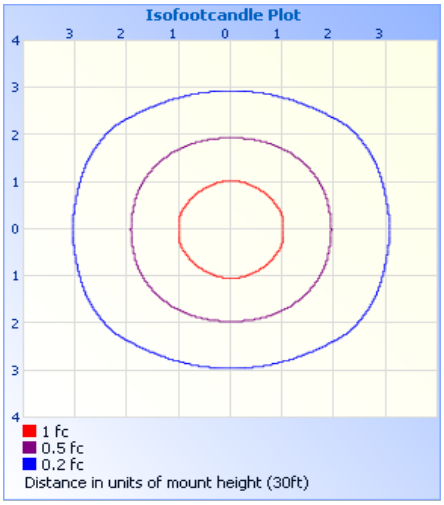
LUMINAIRE DATA

Description	**4000K, 70CRI**
Delivered Lumens	**17904**
Watts	**156**
Efficacy	**114.8**
IES Type	**V**
BUG Rating	**B4-U0-G2**
Mounting Height	**30 ft**
Grid Scale	**30 ft**

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8952	50.0%
Downward House Side	8952	50.0%
Downward Total	17904	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	17904	100%

ISOFOOT CANDLE PLOT



© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL Lighting

KIM LIGHTING®

DATE: LOCATION:

TYPE: PROJECT:

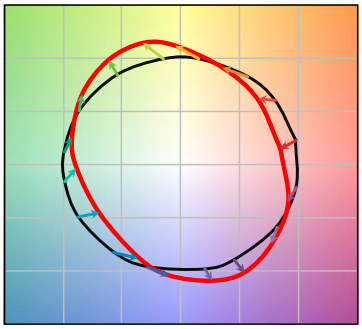
CATALOG #:

ALT1

ARCHITECTURAL AREA/SITE

TM-30 DATA

COLOR VECTOR GRAPHIC

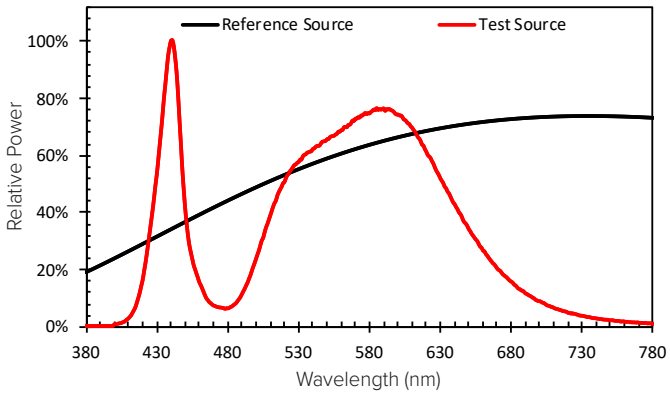


Reference Illuminant — Test Source

TEST SOURCE

R_f	68
R_g	99
CCT(K)	3947
D_{UV}	0.0004
x	0.3831
y	0.3793
CIE R_a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



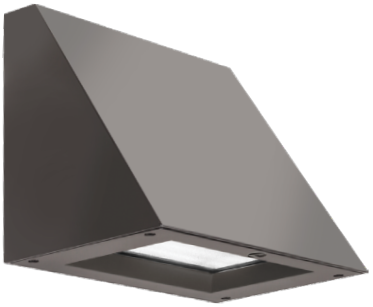
ELECTRICAL DATA

Electrical													Dimming			
# LED	System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
28	22	250 mA	120-480	50/60	0.18	0.11	0.09	0.08	0.06	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
	38	400 mA			0.32	0.18	0.16	0.14	0.11	0.08							
	60	650 mA			0.50	0.29	0.25	0.22	0.17	0.13							
	86	950 mA			0.72	0.41	0.36	0.31	0.25	0.18							
54	94	550 mA			0.78	0.45	0.39	0.34	0.27	0.20							
	122	700 mA			1	0.59	0.51	0.44	0.35	0.25							
	156	900 mA			1.30	0.75	0.65	0.56	0.45	0.33							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)						
Hours	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	96.9%	95.3%	93.3%	86.6%	> 60,000

© 2020 Kim Lighting, a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 8[illegible] website www.kimlighting.com

HUBBELL® Lighting



WDGE2 LED
Architectural Wall Sconce

Catalog Number

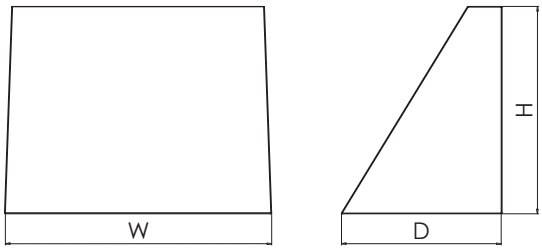
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth: 7″
Height: 9″
Width: 11.5″
Weight: (without options) 13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT DDBXD

Series	Package		Color Temperature		CRI	Distribution		Voltage	Mounting	
WDGE2 LED	P1[1]	P1SW	27K	2700K	80CRI	VF	Visual comfort forward throw	MVOLT	**Shipped included**	**Shipped separately**
	P2[1]	P2SW	30K	3000K	90CRI	VW	Visual comfort wide	347[3]	SRM Surface mounting bracket	AWS 3/8inch Architectural wall spacer
	P3[1]	P3SW	35K	3500K				480[3]		BBW Surface-mounted back box
	P4[1]	Door with small window (SW) is required to accommodate sensors. See page 2 for more details.	40K	4000K						PBBW Premium surface-mounted back box (top, left, right conduit entry)
	P5[1]		50K[2]	5000K						

Options

E4WH	Emergency battery backup, CEC compliant (4W, 0°C min)
E10WH	Emergency battery backup, CEC compliant (10W, 5°C min)
E20WC	Emergency battery backup, CEC compliant (18W, -20°C min)
PE[4]	Photocell, Button Type
DS[5]	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG[6]	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for premium back box (PBBW). Total of 4 entry points.

Standalone Sensors/Controls (only available with P1SW, P2SW & P3SW)

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls (only available with P1SW, P2SW & P3SW)

NLTAIR2 PIR	nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights.
NLTAIR2 PIRH	nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

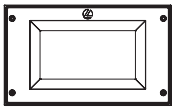
Accessories

Ordered and shipped separately.

WDGEAWS DDBXD U	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2PBBW DDBXD U	WDGE2 Premium surface-mounted back box (specify finish)
WSBBW DDBXD U	Surface - mounted back box (specify finish)

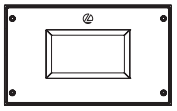
NOTES

1 P1-P5 not available with sensors/controls. Sensors/controls only available with P1SW, P2SW and P3SW.
2 50K not available in 90CRI
3 347V and 480V not available with E4WH, E10WH, E20WC or DS.
4 PE not available in 480V or with sensors/controls
5 DS option not available with E4WH, E10WH, E20WC or sensors/controls.
6 DMG option not available with sensors/controls



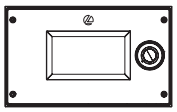
Default configuration with no sensors/controls.

Power Packages: P1, P2, P3, P4, P5



Small Window (SW) configuration

Power Packages: P1SW, P2SW, P3SW



Configuration with sensors/controls

Power Packages: P1SW, P2SW, P3SW

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)		30K (3000K, 80 CRI)		35K (3500K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
P1 / P1SW	10W	VF	1,166	119	1,209	123	1,251	128	1,256	128	1,254	128
		VW	1,197	122	1,241	126	1,284	131	1,289	131	1,286	131
P2 / P2SW	15W	VF	1,878	129	1,947	134	2,015	139	2,023	139	2,019	139
		VW	1,927	133	1,997	137	2,067	142	2,075	143	2,071	143
P3 / P3SW	23W	VF	2,908	129	3,015	134	3,119	138	3,132	139	3,126	139
		VW	2,983	132	3,093	137	3,200	142	3,213	143	3,206	142
P4	35W	VF	4,096	117	4,247	121	4,394	126	4,412	126	4,403	126
		VW	4,202	120	4,357	125	4,508	129	4,526	129	4,517	129
P5	48W	VF	5,567	115	5,772	119	5,972	123	5,996	124	5,984	124
		VW	5,711	118	5,921	122	6,127	126	6,151	127	6,139	127

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1 / P1SW	10W	0.082	0.049	0.043	0.038	--	--
	13W	--	--	--	--	0.046	0.033
P2 / P2SW	15W	0.132	0.081	0.072	0.064	--	--
	18W	--	--	--	--	0.056	0.041
P3 / P3SW	23W	0.195	0.114	0.100	0.088	--	--
	26W	--	--	--	--	0.079	0.058
P4	35W	0.302	0.175	0.152	0.134	--	--
	38W	--	--	--	--	0.115	0.086
P5	48W	0.434	0.241	0.211	0.184	--	--
	52W	--	--	--	--	0.157	0.119

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

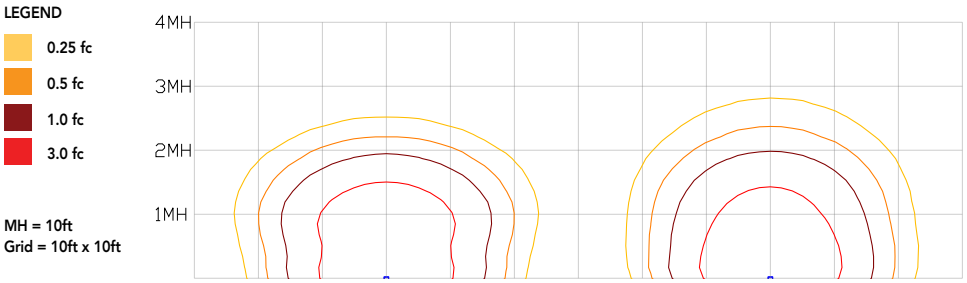
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.



WDGE2 LED P3 40K 80CRI VW

WDGE2 LED P3 40K 80CRI VF

Emergency Egress Options

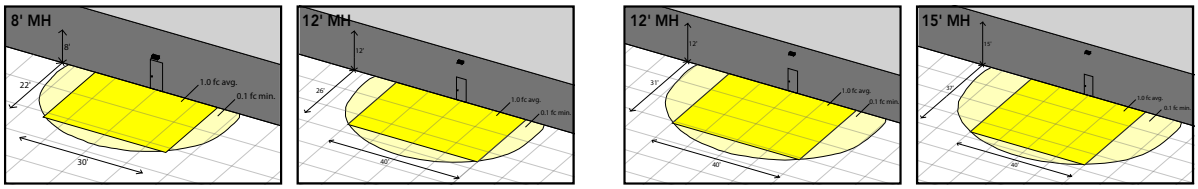
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E10WH or E20WC and VF distribution.

Grid = 10ft x 10ft



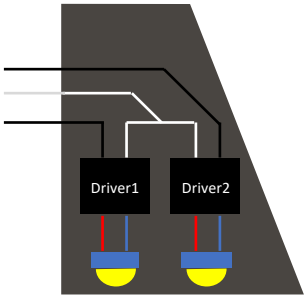
WDGE2 LED xx 40K 80CRI VF MVOLT E10WH

WDGE2 LED xx 40K 80CRI VF MVOLT E20WC

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Control / Sensor Options

Motion/Ambient Sensor (PIR_, PIRH_)

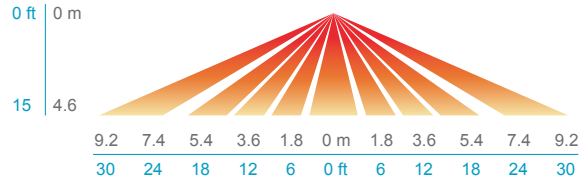
Motion/Ambeint sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

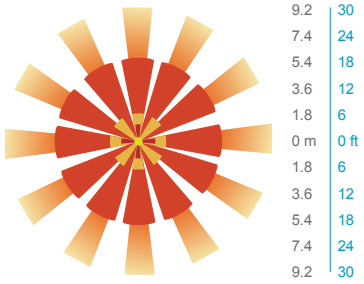
Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

PIR

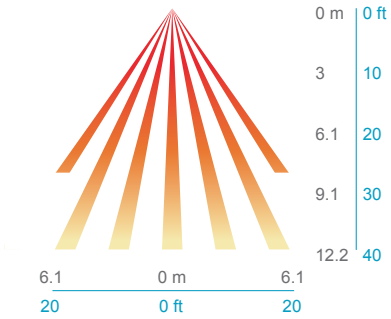
HIGH VIEW



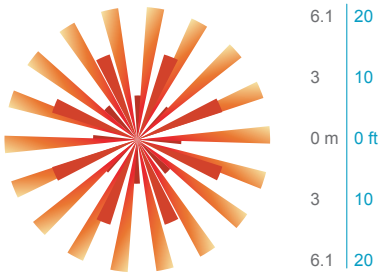


PIRH

SIDE VIEW



TOP VIEW



Option	Dim Level	High Level (when triggered	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

Mounting, Options & Accessories



NLTAIR2 PIR – nLight AIR Motion/Ambient Sensor

D = 7″

H = 11″

W = 11.5″

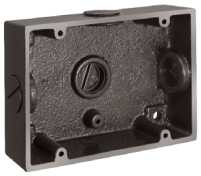


PBBW – Premium Back Box

D = 1.75″

H = 9″

W = 11.5″



BBW – Standard Back Box

D = 1.5″

H = 4″

W = 5.5″



AWS – 3/8inch Architectural Wall Spacer

D = 0.38″

H = 4.4″

W = 7.5″

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2).

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8″ Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient.
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

© 2019-2020 Acuity Brands Lighting, Inc. All rights reserved.

University of Southern Maine
Career and Student Success Center & Residence Hall

Stormwater Management Report
Revised July 24, 2020

Applicant:

University of Southern Maine
Bedford Street
Portland, Maine 04101

Submitted by:

SMRT, Inc.
Architecture Engineering Planning
144 Fore Street / P.O. Box 618
Portland, Maine 04104

TABLE OF CONTENTS

1.0 PROJECT DESCRIPTION 4

2.0 STORMWATER NARRATIVE 5
- 2.1 Site Location 5
- 2.2 Receiving Waters 5
- 2.3 Historic Flooding 5
- 2.4 Alterations to Natural Drainage Ways 5
- 2.5 Methodology and Modeling Assumptions 5
- 2.6 Permitting Requirements 7
- 2.7 Proposed BMPs 7
- 2.8 Existing BMPs Impacted by Proposed Development 7
- 2.9 Project Impacts 8

3.0 STORM WATER QUANTITY ANALYSIS 8
- 3.1 Pre-Development Conditions 8
- 3.2 Post-Development Conditions 9

4.0 MAINTENANCE 11

5.0 CONCLUSIONS 11

6.0 REFERENCES 11

APPENDICES

Appendix A-1 **Pre and Post Development Watershed Plans**
Appendix A-2 **HydroCad Runoff and Routing Calculations**
Appendix A-3 **Water Quality Plan and Calculations**
Appendix A-4 **Stormwater System Maintenance Plan**
Appendix A-5 **Preliminary Geotechnical Report, S.W. Cole, Jan. 28, 2020**

Appendix A-6 FEMA Firm Map

1.0 PROJECT DESCRIPTION

The University of Southern Maine (USM) is proposing to construct two new capital buildings on approximately 3.6 acres of the Portland campus of the University of Southern Maine. The project is known as the Career and Student Success Center & Residence Hall project. The project area is bounded by the easterly corner of the block defined by Falmouth, Durham, and Bedford Streets. This area presently includes a large public parking lot, the Woodbury Student Center (approx. 21,701 sf), the Facilities Management building (8,950 sf), and associated service areas, parking, and infrastructure. This project will remove all features in the project area. Essential services, infrastructure, and offices will be relocated on campus prior to commencing demolition.

The project will replace the Woodbury Center with an updated and properly-sized student activity center to be known as the Career Student Success Center (CSSC). The CSSC will be an approximately 27,000 sf building with two stories to accommodate multiple campus uses including dining, bookstore, student activities, formal mass gathering, and informal collaboration spaces. The new residence hall has been sited on the corner of Durham and Bedford Streets to establish a prominent, singular structure that will improve the campus gateway image. The building will be approximately 32,500 sf in a “C” shape with wings of 5 and 8 stories and provide housing for approximately 571 students in multiple dwelling unit layouts.

The project watershed is presently developed with no natural resource areas remaining. The existing topography generally slopes easterly toward the corner of Bedford and Durham Streets. The new buildings have been sited to generally maintain and compliment the existing topography of the project area. All runoff from the site is currently and will continue to be collected by storm drain structures of the City system in Bedford and Durham Streets. There are no surface drainage discharge locations from this project watershed.

Based on a geotechnical investigation, the subsurface soil conditions at the site typically consist of uncontrolled fill overlying glaciomarine sand, silt, and clay. Bedrock was typically encountered at 5 to 26 feet below grade. Groundwater was encountered at depths ranging from 8 to 16 feet. The majority of the mapped surficial soils are stiff, silty clary which is most commonly classified as Hydrologic Type C soils. A Geotechnical Evaluation of the proposed property has been prepared by S.W. Cole Engineering, Inc. and is included within the Appendix of this report.

2.0 STORM WATER NARRATIVE

2.1 Site Location

The project area is bounded by the easterly corner of the block defined by Falmouth, Durham, and Bedford Streets. The site is presently developed as a higher education campus with

buildings, paved areas, and landscaped areas. There are no areas of natural resources remaining on the site.

2.2 Receiving Waters

The Portland campus is located in the Back Cove watershed. Runoff from the site presently drains to the City storm drain system in Bedford Street and flows northerly to discharge into Back Cove. This area is not identified as part of an Urban Impaired Stream watershed by MDEP or the City of Portland.

2.3 Historic Flooding

There is no evidence of historical flooding on the project site. FEMA Flood Insurance Rate Map (Community Panel Number 2300510013B) dated July 17, 1986 indicates that no portion of the project area is within the floodplain associated with Back Cove.

2.4 Alterations to Natural Drainage Ways

Drainage characteristics will remain relatively the same from the pre to the post development condition. No alterations to natural drainage ways are proposed as part of this project.

2.5 Methodology and Modeling Assumptions

Runoff and routing calculations have been performed for the watershed areas affected by the proposed development under pre-development and post-development conditions scenarios. Times of concentration and runoff curve number calculations have been performed using the method described in Natural Resource Conservation Service (NRCS) Technical Release 55 (TR-55) – Urban Hydrology for Small Watersheds. The TR-20 based HydroCad modeling software has been utilized to perform the more complex runoff and routing calculations, some of which are beyond the scope of the TR-55 method. Time of concentration calculations have been amended where the value given by the TR-55 method is less than five minutes. In these cases a standard minimum value of five minutes has been used to keep this parameter within the acceptable working range of the model and prevent computational errors.

Design rainfall events have been modeled using the SCS Type III hydrograph for 24-hour duration storms. The rainfall depth for each return period is taken from Chapter 500, Stormwater Management, Appendix H. The rainfall values for standard design storm frequencies are shown in the table below.

24-Hour Rainfalls for Cumberland County SE at Design Storm Frequencies				
Chapter 500, Stormwater Management, Appendix H				
Frequency	2-Year	10-Year	25-Year	100-Year
Rainfall Depth	3.1 in	4.6 in	5.8 in	8.1 in

The onsite soils have been generally identified as Hydrologic Group C through geotechnical investigation. The existing topography of the site was determined by field survey and existing surface covers were identified by site inspection.

Stormwater BMPs have been designed to effectively capture, detain and treat runoff from developed areas of the site before allowing it to discharge in a non-erosive manner to downstream areas. The Maine Best Management Practices Manual (current edition on-line) and the Maine Erosion and Sediment Control Best Management Practices Manual for Designers and Engineers (current edition on-line) have been used as guidelines in the design of the storm water system.

2.6 Permitting Requirements

The proposed project area is part of a previously approved Site Location of Development Act permit for the Portland campus. The project is not in a lake watershed nor is it in an Urban Impaired Stream watershed and as such will not be required to meet the Phosphorus Standard or the Urban Impaired Stream Standards.

Per Chapter 500 standards, the project will be required to meet the Basic and General Standards, and the site was analyzed under the Redevelopment Treatment standard to identify the treatment target. The project was also analyzed for the flooding standard to provide stormwater quantity control for the 2-year, 10-year, 25-year storm events. The 100-year storm event was also analyzed to determine the resulting impacts.

Redevelopment Treatment Standard.

The project meets the definition of a redevelopment project and a pollutant ranking calculation was performed by the standard to determine the treatment required. For a project area of approximately 157,971 sf, the calculation is as follows:

Pollutant Ranking	Pre Development Area (sf)	Pre-Development Ranking
5	0	0.00
4	87532	8.04
3	424	0.03
2	67840	3.12
1	2175	0.05
	Total: 157971	**Weighted Average: 3.10**

Pollutant Ranking	Post Development Area (sf)	Post-Development Ranking
5	0.00	0.00
4	11194	1.03
3	0.00	0.00
2	139474	6.40
1	7303	0.17
	Total: 157971	**Weighted Average: 2.10**

The proposed project results in a significant increase in building footprint, though there is a significant decrease in medium intensity parking area. The existing impact ranking is 3.1 and the proposed impact ranking is 2.1. This provides a net balance of -1.00. Per Table 3 of Chapter 500, the treatment level for this redevelopment project is 50% or approximately 78,986 sf.

Developed Area

The project area meeting the developed area definition is approximately 165,175 sf, including the area of the residence hall, CSSC, service area, lawn and landscape areas, and associated features. See C-122 Water Quality Plan.

Treatment Target
For a 50% redevelopment treatment, the target is to treat a minimum of 82,588 sf.

2.7 Proposed BMPs

The stormwater management system for this development is intended to provide effective water quality and quantity control/treatment for new development areas and to protect downstream stormwater infrastructure and natural resources from potential detrimental impacts. The site layout allows adequate area for surface filtration-style features. The following treatment BMPs were selected from Section 7.1 of the Maine Best Management Practices Manual.

A. Grassed Underdrained Soil Filters

Three grassed underdrained soil filters are proposed to meet the treatment goal from the developed area associated with the project. The roof areas of the new buildings provide a direct flow of runoff for treatment and roof drains will discharge directly to inlet control structures in each soil filter. The water quality volume is based on 1" of runoff from the tributary impervious area and 0.4" of runoff from the tributary landscaped areas.

B. BioRetention Cell Soil Filters

Three grassed underdrained soil filters are proposed to meet the treatment goal from the developed area associated with the project. The roof areas of the new buildings provide a direct flow of runoff for treatment and roof drains will discharge directly to inlet control structures in each soil filter. The water quality volume is based on 1" of runoff from the tributary impervious area and 0.4" of runoff from the tributary landscaped areas.

C. Total Developed Area Treated

The total developed area treated by the five features is as follows:

Feature	Developed Area Treated	Developed Area (sf)
VFF 1	Courtyard Areas	14,050
VFF 2	Dorm roof, site pavement and lawn areas	11,496
VFF 3	CSSC Roof, site pavement and lawn areas	34,500
BRC 1	Dorm Roof	10,548
BRC 2	Dorm Roof	10,000
	Total Area	**80,594 sf**
	Treatment Target	**78,986 sf**

The treatment target is met by the proposed design.

2.8 Existing BMPs Impacted by Proposed Development

There are no existing BMPs impacted by the Proposed Development.

2.9 Project Impacts

The development of this project will result in the reduction of approximately 1.16 acres (50,706 sf) of impervious area. The project will construct multi-story buildings to replace two one-story buildings with a lower intensity of use. The project will also create two significant vegetated areas to support the general campus population and the dormitory population. A "Quad" of lawn area will be created where an existing parking lot is presently, and a courtyard of lawn area will be created for the dorm where existing buildings are presently. These conditions will result in less impervious area. Another condition that reduces project impacts is that this parcel is drained in multiple locations to the City storm drain system in Durham and Bedford Streets. These drainage patterns are preserved in the post development condition and represents multiple flows that are reduced in the post development condition. The new stormwater management system is designed to provide water quality treatment through the use of the three vegetated soil filters. The focus of the design is on source control of pollutants and the prevention of erosive velocities to downstream receiving areas. The stormwater calculations demonstrate that the system will achieve the pollutant removal efficiency required by State and local regulations, maintains the existing drainage patterns of the site to a high degree, and the runoff from all areas will be similar to the site conditions before development.

3.0 STORM WATER QUANTITY ANALYSIS

The project area presently discharges to the City of Portland storm drain system in both Bedford and Durham Streets. The change in impervious area is approximately 1.0 acres which will significantly reduce the peak flow and volume of stormwater runoff from the project area. The impact to the City storm drain system will likely be an increase in its available capacity such that it is likely that downstream conditions will be improved as a result of the project.

Pre-Development Conditions

For pre-development conditions scenario, the site is divided into four subcatchment areas, representing runoff to Bedford Street, Durham Street, roof runoff to Bedford Street, and roof runoff to Durham Street. The analysis point for this model is a hypothetical point downstream of the drain manhole at the intersection of Durham and Bedford Streets.

A. Subcatchment 1S

Subcatchment 1S represents the northerly half of the project area adjacent to Sullivan Hall and the community garden. This area drains in an easterly direction to the City storm drain system in Durham Street.

B. Subcatchment 2S

Subcatchment 2S represents the southerly half of the project area adjacent to Masterton Hall and the Woodbury Center. This area drains southerly direction to the City storm drain system in Bedford Street.

C. Subcatchment #25

Subcatchment #25 represents the roof area of the Facilities Management building at #25 Bedford Street. The roof drains directly to the City storm drain system in Durham Street.

D. Subcatchment #35

Subcatchment #35 represents the roof area of the Woodbury Center building at #35 Bedford Street. The roof drains directly to the City storm drain system in Bedford Street.

The pre-development subcatchment areas, cover conditions, and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in the Appendix A-1 of this report. A Pre-Development Conditions Watershed Plan (C-120) is included.

Post-Development Conditions

For the post–development conditions, the site is developed with the two new buildings, new grassed Quad, grassed courtyard, and associated features and landscaping.

A. Subcatchment 1S

Subcatchment 1S represents the northerly half of the project area adjacent to Sullivan Hall and the community garden. This area drains in an easterly direction to the City storm drain system in Durham Street. The subcatchment was modified to show a reduced area as a result of construction of the CSSC (Subcatchments Dorm1, Dorm 2, Dorm 3, Dorm 4, Dorm 5, and CTYRD).

B. Subcatchment 2S

represents the southerly half of the project area adjacent to Masterton Hall and the Woodbury Center. This area drains southerly direction to the City storm drain system in Bedford Street DP-3. The subcatchment was modified to show a reduced area as a result of construction of the CSSC (Subcatchment CSSC).

C. Subcatchment Dorm1

Subcatchment Dorm1 represents roof runoff from the residence hall, which will be treated by a bioretention cell (BRC1) along the Durham facade.

D. Subcatchment Dorm 2

Subcatchment Dorm2 represents roof runoff from the residence hall, which will be treated by a vegetated soil filter(VFF2) near the Central Heating building.

E. Subcatchment CTYRD

Subcatchment CTYRD represents the courtyard area including lawn and hardscape areas, which will be treated by a vegetated soil filter (VFF3) in the courtyard.

F. Subcatchment CSSC

Subcatchment CSSC represents the SCCS roof runoff, which will be treated by a vegetated soil filter (VFF3) adjacent to the building.

G. Subcatchment Dorm 3

Subcatchment Dorm represents roof runoff from the residence hall, which will be treated by a bioretention cell (BRC2) along the westerly façade of the building.

H. Subcatchment Dorm 4

Subcatchment Dorm 4 represents roof runoff from the residence hall, which will not be treated and will drain to the Durham Street storm drain system.

I. Subcatchment Dorm 5

Subcatchment Dorm 5 represents roof runoff from the residence hall, which will not be treated and will drain to the Durham Street storm drain system.

Stormwater Modeling

HydroCAD software (based on TR-20 methods) was utilized to model the change in stormwater runoff to the City storm drain system for pre and post conditions. It is noted that the model was not intended to model the actual flow conditions in the storm drain system, but rather identify the change(s) in runoff inflow to the system. This model approach should provide a result that shows the flooding standard has been met by reducing the amount of runoff from the project area and consequently creating new capacity in the City storm drain for future flows. The point of analysis for the comparison was a fictional point downstream of the drain manhole (i.d. 1834) at the corner of Bedford and Durham. The model was prepared to reflect changes in surface conditions which is the most significant factor affecting peak flow rates between the two conditions. The presence of treatment features (vegetated filter fields) was also modeled and had a minor influence in attenuating the peak flows for the post development condition. A summary of the pre-development versus post-development conditions runoff rates is as follows:

Peak Flows to City Storm Drain System in CFS				
Storm Event	**Pre-Development (cfs)**	**Post Development (cfs)**	**Net (cfs)**	**Percentage**
2 yr storm	10.14	5.58	-4.56	-45%
10 yr storm	16.21	9.83	-6.38	-39%
25 yr storm	21.05	15.19	-5.86	-28%
100 yr storm	30.19	27.54	-2.65	-9%

Storm Drain Conveyance

The site storm drain system has generally been designed to convey a 10 year Storm Event. The culvert outlets from the vegetated soil filters have been designed to convey that value at a minimum (using Manning's Equation), with planned additional capacity for larger storm events.

10 Year Storm Event for Vegetated Soil Filters		
Outlet Culvert	**Peak Flow (cfs)**	**Storm Drain Design Capacity ***
VFF 1	0.09	15" dia.; 5.47 cfs min. (two culverts for redundancy
VFF 2	0.08	12" dia.; 2.98 cfs min.
VFF 3	0.30	12" dia.; 2.98 cfs min.
BRC1	0.23	12" dia.; 2.98 cfs min.
BRC2	0.97	12" dia.; 2.98 cfs min.

* Min. slope = 0.005, Manning's n = 0.011

4.0 MAINTENANCE

A comprehensive Maintenance Plan has been developed for the Stormwater Best Management Practices for this facility. A copy of the Plan is included in Appendix A-4.

5.0 CONCLUSIONS

The runoff and routing calculations demonstrate that the development will result in a reduction in the peak rate of runoff for the 2-year, 10-year, 25-year, and 100-year return periods.

Water quality treatment is provided that meets redevelopment standards for new developed areas associated with the project. Three vegetated soil filters provide treatment for greater than 50% of the developed area which meets the Chapter 500 treatment requirements for redevelopment.

6.0 REFERENCES

- Maine Stormwater Management Design Manual Volume III BMP Technical Design Manual, current edition on-line.

- Maine Erosion and Sediment Control Best Management Practices Manual for Designers and Engineers, current edition on-line.

- Preliminary Geotechnical Engineering Services, Proposed Residential Hall & Student Success Center, prepared by S.W. Cole Engineering, Inc., January 28, 2020.

Appendix A-1 Pre and Post Development Watershed Plans



REV	DESCRIPTION	DATE

ISSUED FOR SD AND PERMITTING
3-6-20

CURRENT ISSUE STATUS:

TRUE NORTH:

SMRT Architects and Engineers
144 Fore Street/P.O. Box 618
Portland, Maine 04104
1.877.700.7678
www.smrtinc.com
Architecture • Engineering • Planning

UNIVERSITY OF SOUTHERN MAINE
CAREER AND STUDENT SUCCESS CENTER & RESIDENCE HALL

PORTLAND, MAINE

PRE-DEVELOPMENT WATERSHED PLAN

SHEET TITLE:

0 15' 30' 60' 90'

SCALE: 1" = 30'

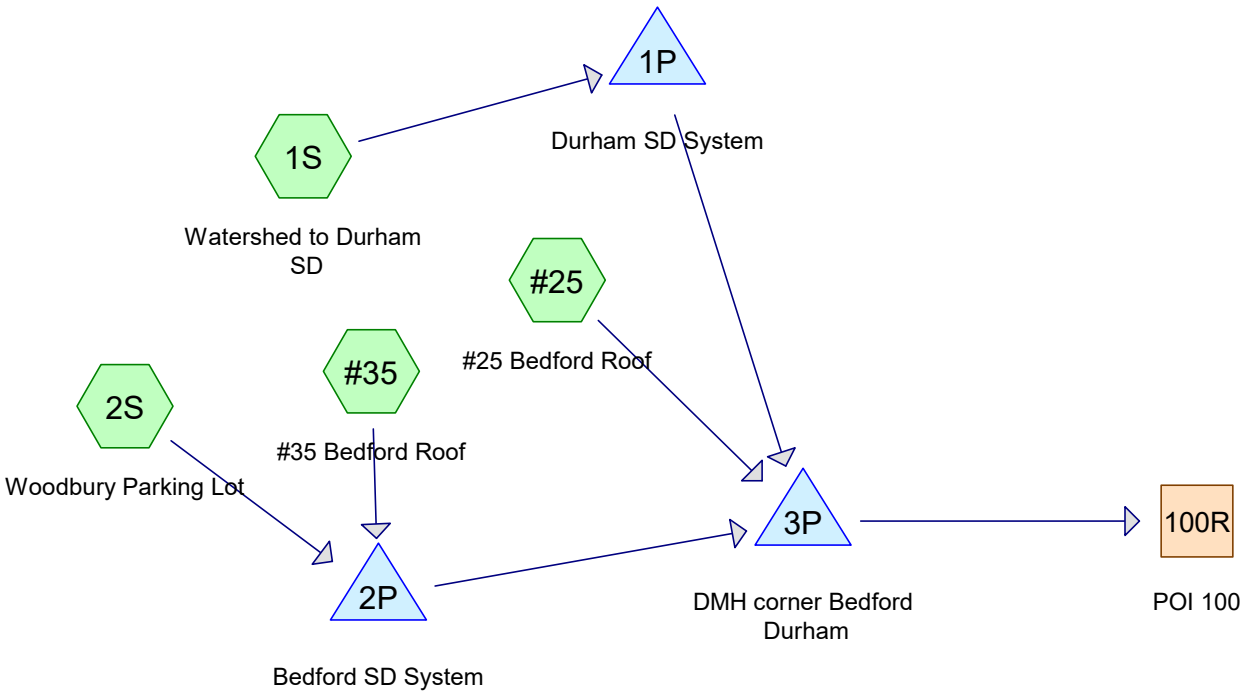
PROJECT MANAGER:	KD	PROJECT NO:	19206
A/E OF RECORD:	JTA		
JOB CAPTAIN:	SDL		
DRAWN BY:	WSM		
SMRT FILE:	C-120-19206	SHEET No.	C-120

©COPYRIGHT 2020 SMRT INC

NOT FOR CONSTRUCTION

24x36

Appendix A-2 **HydroCAD Runoff and Routing Calculations**



Subcat Reach Pond Link

Routing Diagram for 19206 Ex Cond
Prepared by SMRT, Printed 3/4/2020
HydroCAD® 10.00-24 s/n 00729 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.097	74	>75% Grass cover, Good, HSG C (1S, 2S)
3.480	98	Paved parking, HSG A (#25, #35, 1S, 2S)
4.577	**92**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
3.480	HSG A	#25, #35, 1S, 2S
0.000	HSG B	
1.097	HSG C	1S, 2S
0.000	HSG D	
0.000	Other	
4.577		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.097	0.000	0.000	1.097	>75% Grass cover, Good	1S, 2S
3.480	0.000	0.000	0.000	0.000	3.480	Paved parking	#25, #35, 1S, 2S
3.480	**0.000**	**1.097**	**0.000**	**0.000**	**4.577**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	22.53	13.35	300.0	0.0306	0.009	24.0	0.0	0.0
2	2P	21.90	13.35	300.0	0.0285	0.009	36.0	0.0	0.0
3	3P	13.35	11.00	200.0	0.0117	0.014	24.0	0.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment #25: #25 Bedford Roof Runoff Area=8,950 sf 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.62 cfs 0.046 af

Subcatchment #35: #35 Bedford Roof Runoff Area=27,201 sf 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=1.89 cfs 0.140 af

Subcatchment 1S: Watershed to Durham Runoff Area=53,341 sf 62.15% Impervious Runoff Depth>1.86"
Tc=10.0 min CN=89 Runoff=2.45 cfs 0.190 af

Subcatchment 2S: Woodbury Parking Lot Runoff Area=109,883 sf 74.87% Impervious Runoff Depth>2.12"
Tc=10.0 min CN=92 Runoff=5.64 cfs 0.447 af

Reach 100R: POI 100 Inflow=10.14 cfs 0.822 af
Outflow=10.14 cfs 0.822 af

Pond 1P: Durham SD System Peak Elev=23.18' Storage=6 cf Inflow=2.45 cfs 0.190 af
24.0" Round Culvert n=0.009 L=300.0' S=0.0306 '/' Outflow=2.46 cfs 0.190 af

Pond 2P: Bedford SD System Peak Elev=22.91' Storage=7 cf Inflow=7.20 cfs 0.586 af
36.0" Round Culvert n=0.009 L=300.0' S=0.0285 '/' Outflow=7.20 cfs 0.586 af

Pond 3P: DMH corner Bedford Durham Peak Elev=14.81' Storage=13 cf Inflow=10.14 cfs 0.822 af
24.0" Round Culvert n=0.014 L=200.0' S=0.0117 '/' Outflow=10.14 cfs 0.822 af

Total Runoff Area = 4.577 ac Runoff Volume = 0.822 af Average Runoff Depth = 2.16"
23.98% Pervious = 1.097 ac 76.02% Impervious = 3.480 ac

Summary for Subcatchment #25: #25 Bedford Roof

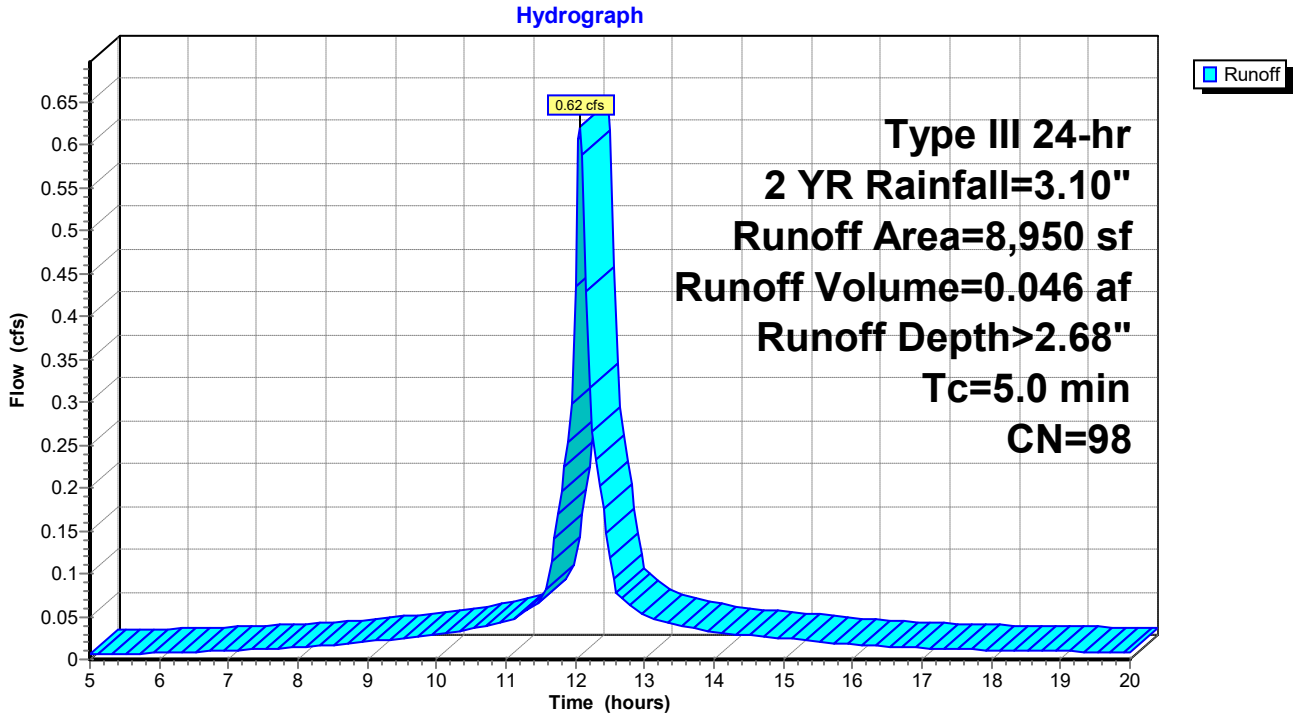
Runoff = 0.62 cfs @ 12.07 hrs, Volume= 0.046 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

Area (sf)	CN	Description
8,950	98	Paved parking, HSG A
8,950		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #25: #25 Bedford Roof



Summary for Subcatchment #35: #35 Bedford Roof

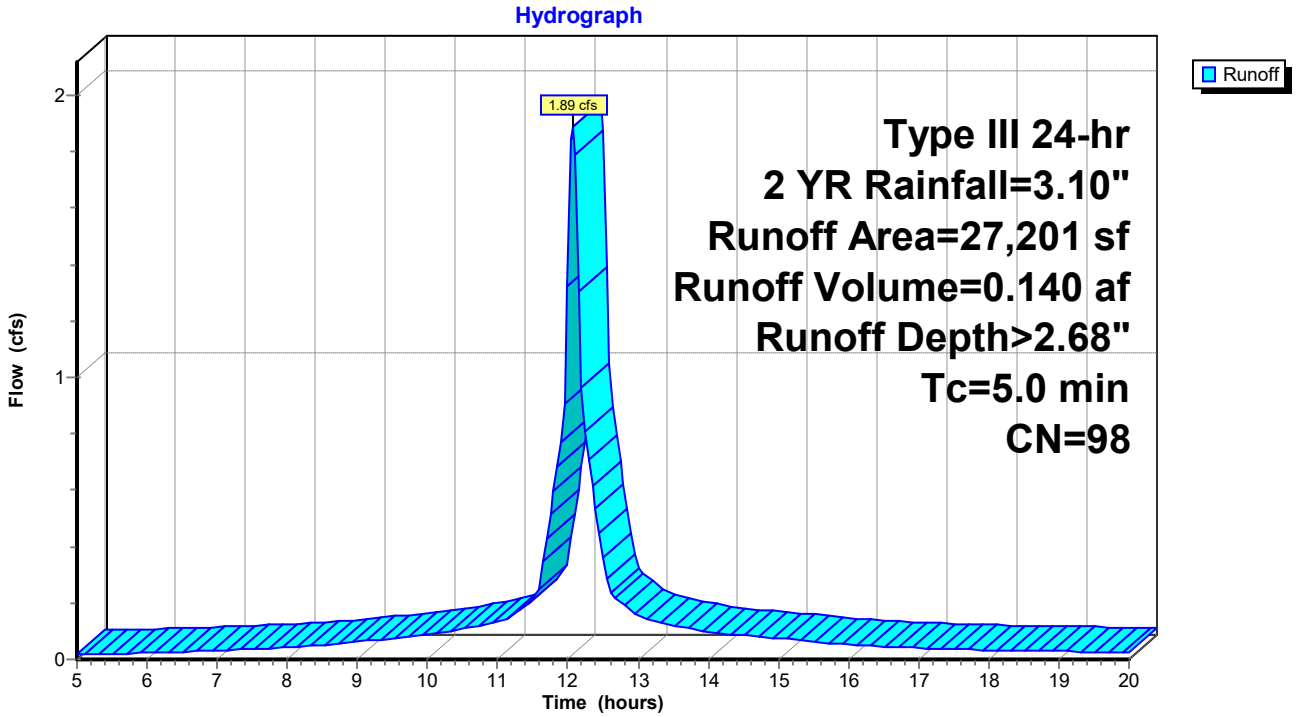
Runoff = 1.89 cfs @ 12.07 hrs, Volume= 0.140 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

Area (sf)	CN	Description
27,201	98	Paved parking, HSG A
27,201		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #35: #35 Bedford Roof



Summary for Subcatchment 1S: Watershed to Durham SD

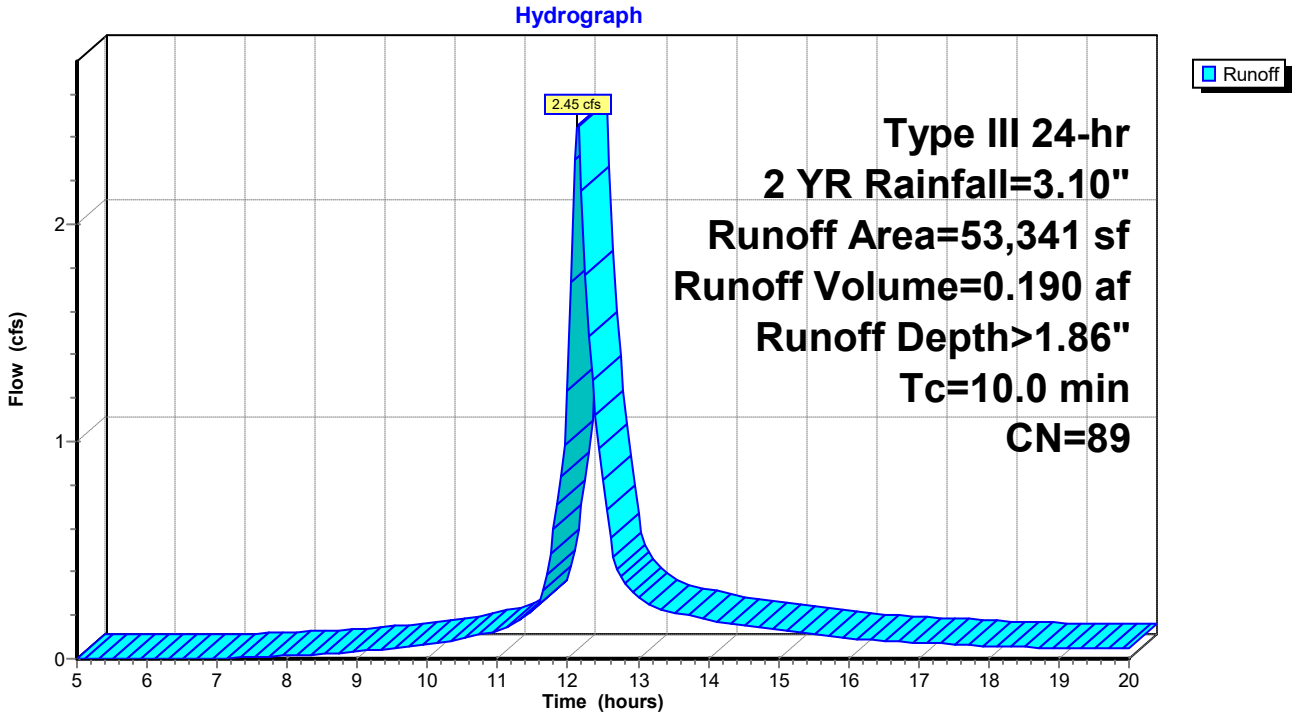
Runoff = 2.45 cfs @ 12.14 hrs, Volume= 0.190 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

Area (sf)	CN	Description
33,152	98	Paved parking, HSG A
20,189	74	>75% Grass cover, Good, HSG C
53,341	89	Weighted Average
20,189		37.85% Pervious Area
33,152		62.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Watershed to Durham SD



Summary for Subcatchment 2S: Woodbury Parking Lot

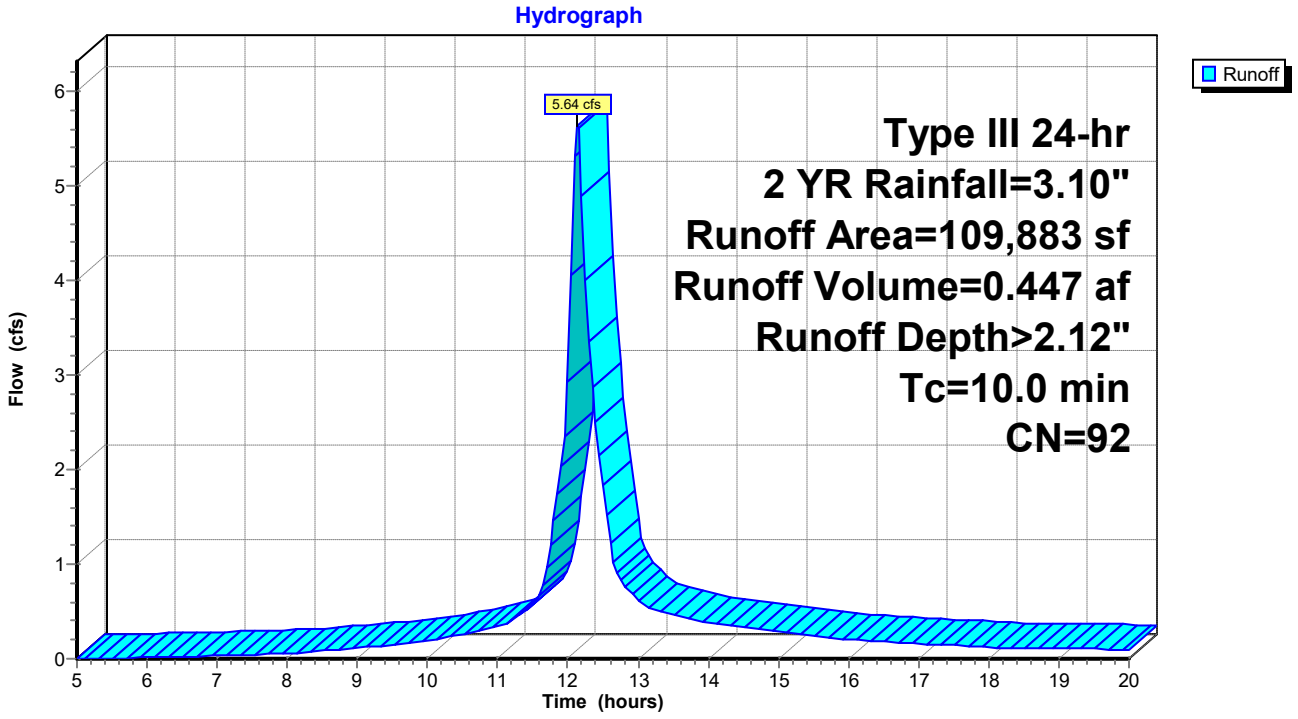
Runoff = 5.64 cfs @ 12.14 hrs, Volume= 0.447 af, Depth> 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

Area (sf)	CN	Description
82,271	98	Paved parking, HSG A
27,612	74	>75% Grass cover, Good, HSG C
109,883	92	Weighted Average
27,612		25.13% Pervious Area
82,271		74.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Woodbury Parking Lot

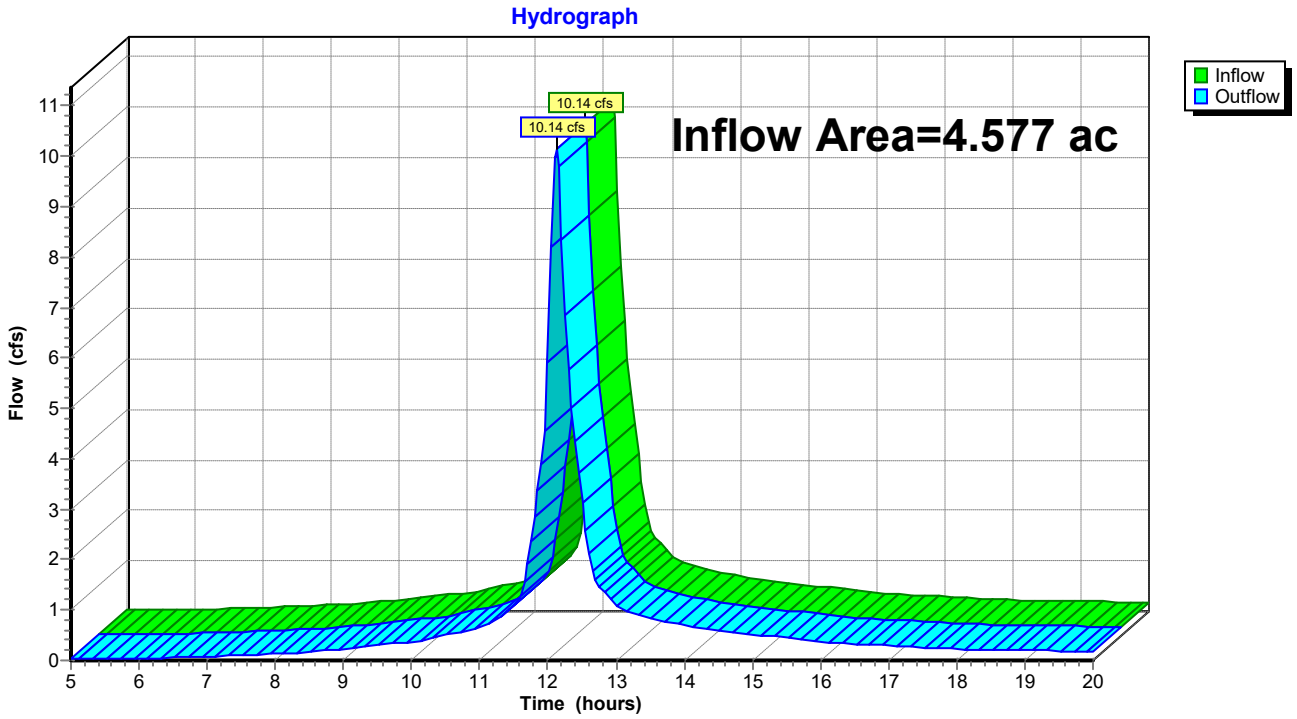


Summary for Reach 100R: POI 100

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 2.16" for 2 YR event
Inflow = 10.14 cfs @ 12.12 hrs, Volume= 0.822 af
Outflow = 10.14 cfs @ 12.12 hrs, Volume= 0.822 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 100R: POI 100



Summary for Pond 1P: Durham SD System

Inflow Area = 1.225 ac, 62.15% Impervious, Inflow Depth > 1.86" for 2 YR event
Inflow = 2.45 cfs @ 12.14 hrs, Volume= 0.190 af
Outflow = 2.46 cfs @ 12.14 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min
Primary = 2.46 cfs @ 12.14 hrs, Volume= 0.190 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.18' @ 12.14 hrs Surf.Area= 9 sf Storage= 6 cf

Plug-Flow detention time= 0.1 min calculated for 0.190 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (782.5 - 782.4)

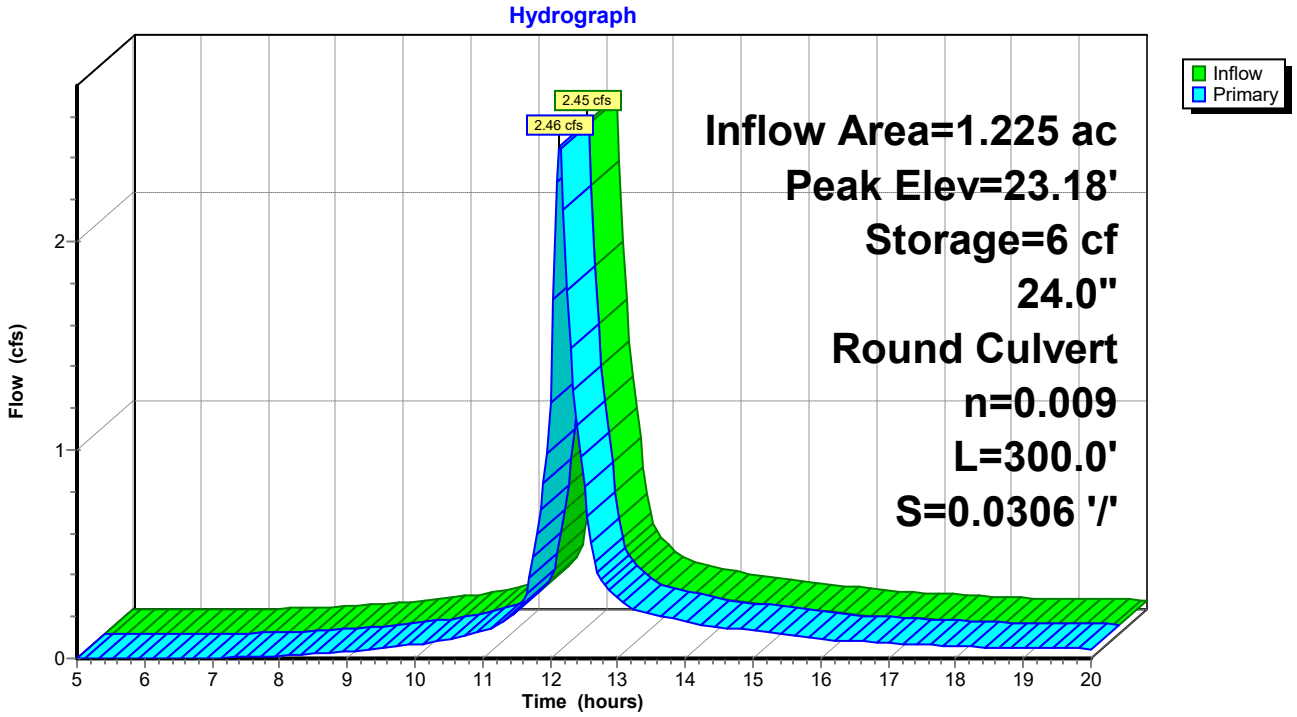
Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	100	1	51
29.00	15,000	6,040	6,091
30.00	1,000,000	507,500	513,591

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.42 cfs @ 12.14 hrs HW=23.18' (Free Discharge)
↑**1=Culvert** (Inlet Controls 2.42 cfs @ 2.74 fps)

Pond 1P: Durham SD System



Summary for Pond 2P: Bedford SD System

Inflow Area = 3.147 ac, 79.86% Impervious, Inflow Depth > 2.24" for 2 YR event
Inflow = 7.20 cfs @ 12.12 hrs, Volume= 0.586 af
Outflow = 7.20 cfs @ 12.12 hrs, Volume= 0.586 af, Atten= 0%, Lag= 0.0 min
Primary = 7.20 cfs @ 12.12 hrs, Volume= 0.586 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 22.91' @ 12.12 hrs Surf.Area= 9 sf Storage= 7 cf

Plug-Flow detention time= 0.0 min calculated for 0.584 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (763.1 - 763.1)

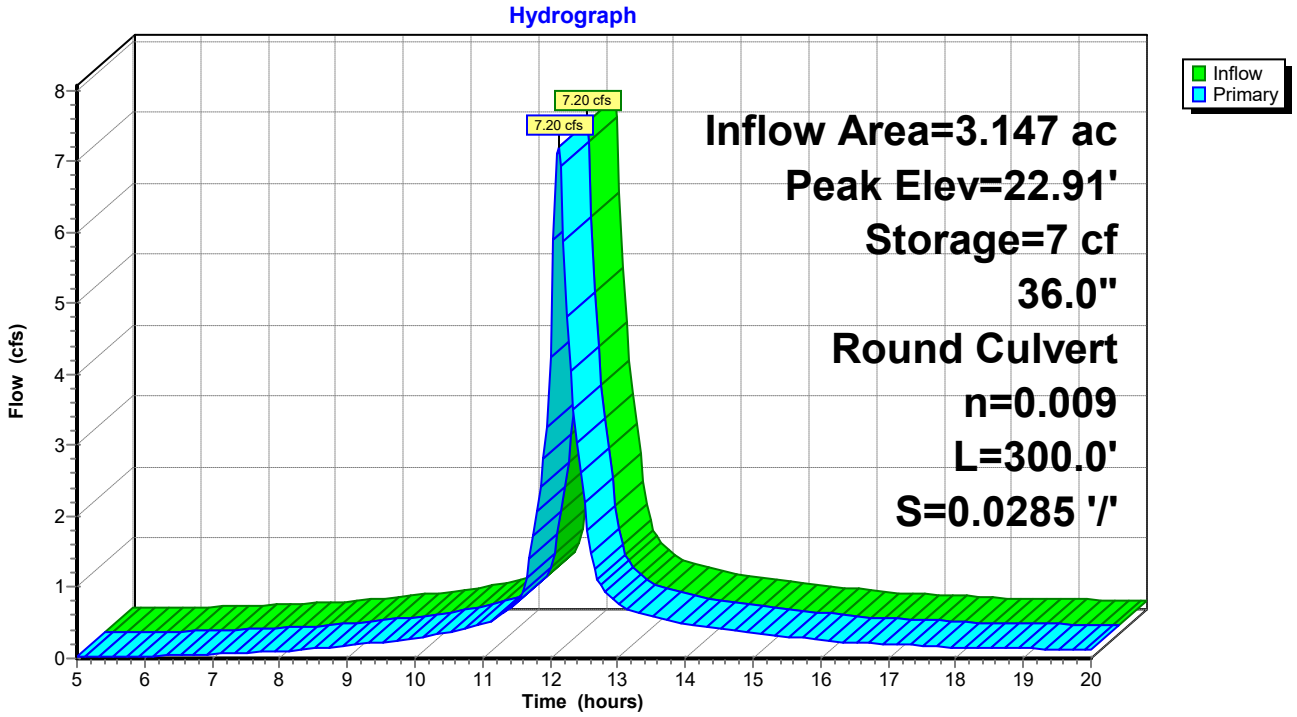
Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=7.03 cfs @ 12.12 hrs HW=22.90' (Free Discharge)
1=Culvert (Inlet Controls 7.03 cfs @ 3.41 fps)

Pond 2P: Bedford SD System



Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 2.16" for 2 YR event
Inflow = 10.14 cfs @ 12.12 hrs, Volume= 0.822 af
Outflow = 10.14 cfs @ 12.12 hrs, Volume= 0.822 af, Atten= 0%, Lag= 0.0 min
Primary = 10.14 cfs @ 12.12 hrs, Volume= 0.822 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 14.81' @ 12.12 hrs Surf.Area= 9 sf Storage= 13 cf

Plug-Flow detention time= 0.1 min calculated for 0.822 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (766.2 - 766.2)

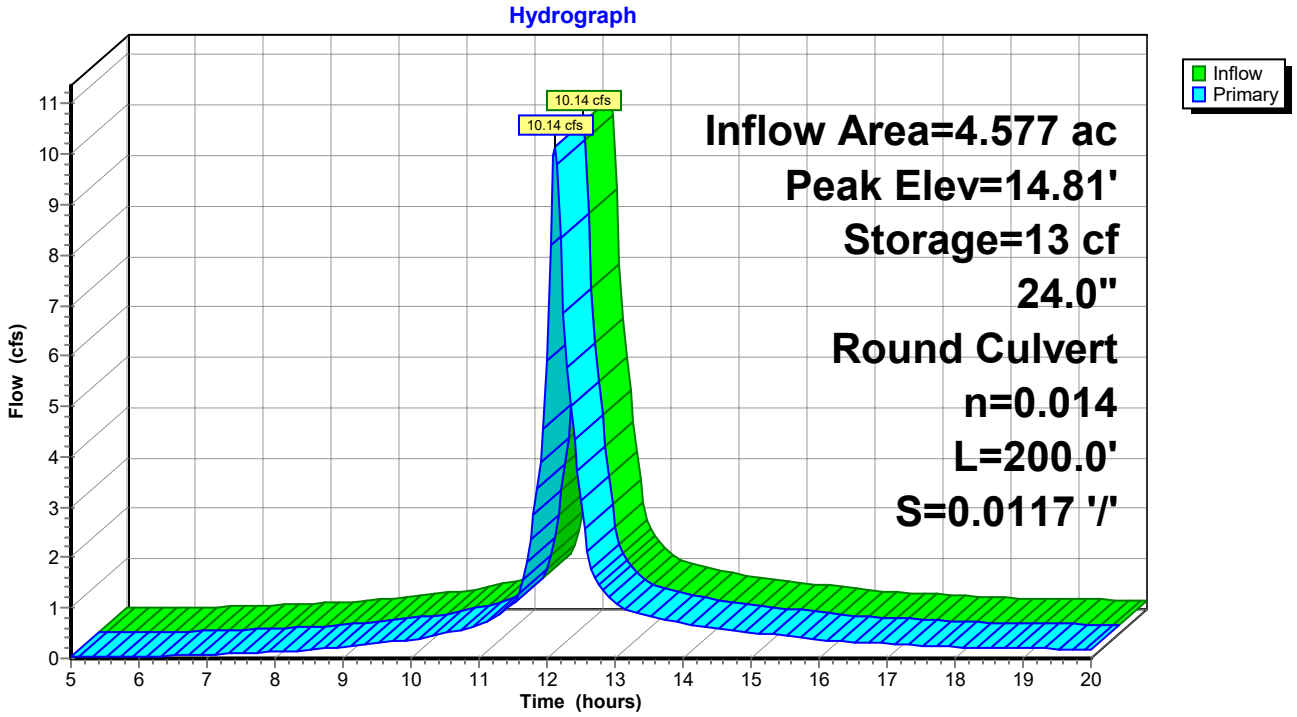
Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=9.91 cfs @ 12.12 hrs HW=14.79' (Free Discharge)
1=Culvert (Inlet Controls 9.91 cfs @ 4.09 fps)

Pond 3P: DMH corner Bedford Durham



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment #25: #25 Bedford Roof Runoff Area=8,950 sf 100.00% Impervious Runoff Depth>4.05"
Tc=5.0 min CN=98 Runoff=0.93 cfs 0.069 af

Subcatchment #35: #35 Bedford Roof Runoff Area=27,201 sf 100.00% Impervious Runoff Depth>4.05"
Tc=5.0 min CN=98 Runoff=2.83 cfs 0.211 af

Subcatchment 1S: Watershed to Durham Runoff Area=53,341 sf 62.15% Impervious Runoff Depth>3.19"
Tc=10.0 min CN=89 Runoff=4.11 cfs 0.326 af

Subcatchment 2S: Woodbury Parking Lot Runoff Area=109,883 sf 74.87% Impervious Runoff Depth>3.49"
Tc=10.0 min CN=92 Runoff=9.03 cfs 0.734 af

Reach 100R: POI 100 Inflow=16.21 cfs 1.341 af
Outflow=16.21 cfs 1.341 af

Pond 1P: Durham SD System Peak Elev=23.39' Storage=8 cf Inflow=4.11 cfs 0.326 af
24.0" Round Culvert n=0.009 L=300.0' S=0.0306 '/' Outflow=4.11 cfs 0.326 af

Pond 2P: Bedford SD System Peak Elev=23.20' Storage=9 cf Inflow=11.37 cfs 0.945 af
36.0" Round Culvert n=0.009 L=300.0' S=0.0285 '/' Outflow=11.37 cfs 0.945 af

Pond 3P: DMH corner Bedford Durham Peak Elev=15.50' Storage=19 cf Inflow=16.22 cfs 1.341 af
24.0" Round Culvert n=0.014 L=200.0' S=0.0117 '/' Outflow=16.21 cfs 1.341 af

Total Runoff Area = 4.577 ac Runoff Volume = 1.341 af Average Runoff Depth = 3.52"
23.98% Pervious = 1.097 ac 76.02% Impervious = 3.480 ac

Summary for Subcatchment #25: #25 Bedford Roof

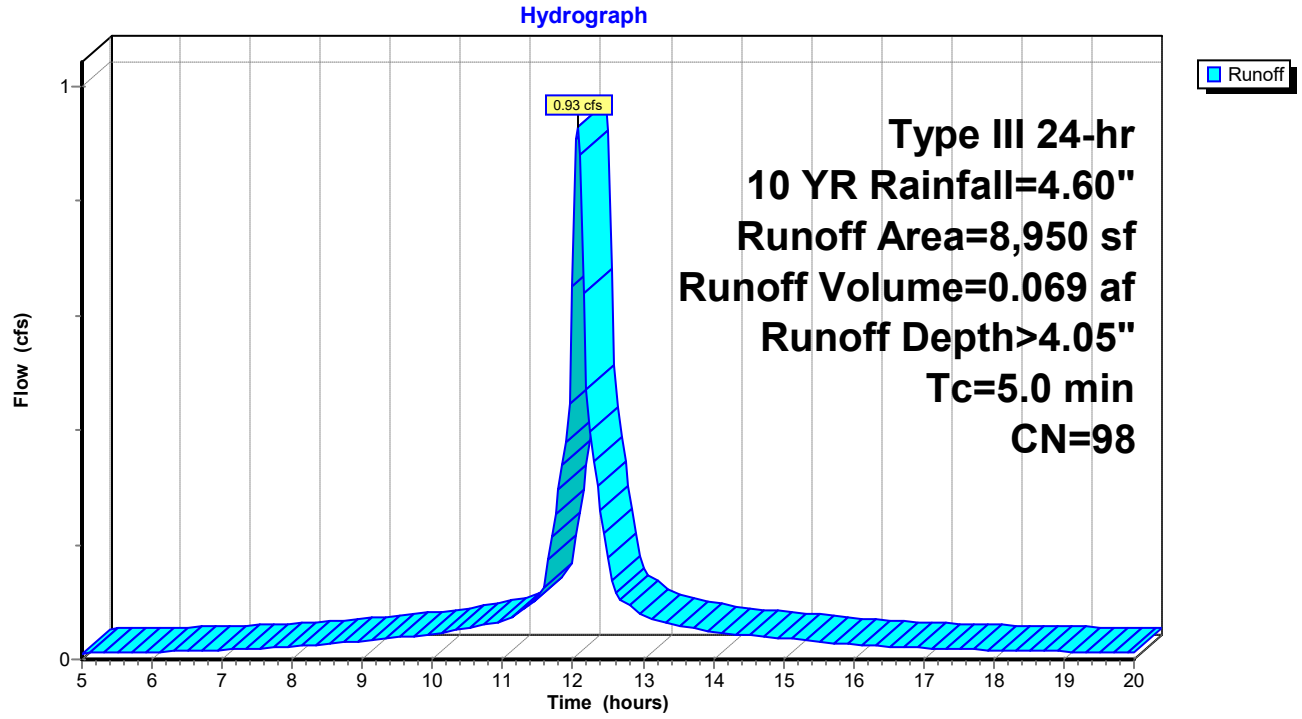
Runoff = 0.93 cfs @ 12.07 hrs, Volume= 0.069 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

Area (sf)	CN	Description
8,950	98	Paved parking, HSG A
8,950		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #25: #25 Bedford Roof



Summary for Subcatchment #35: #35 Bedford Roof

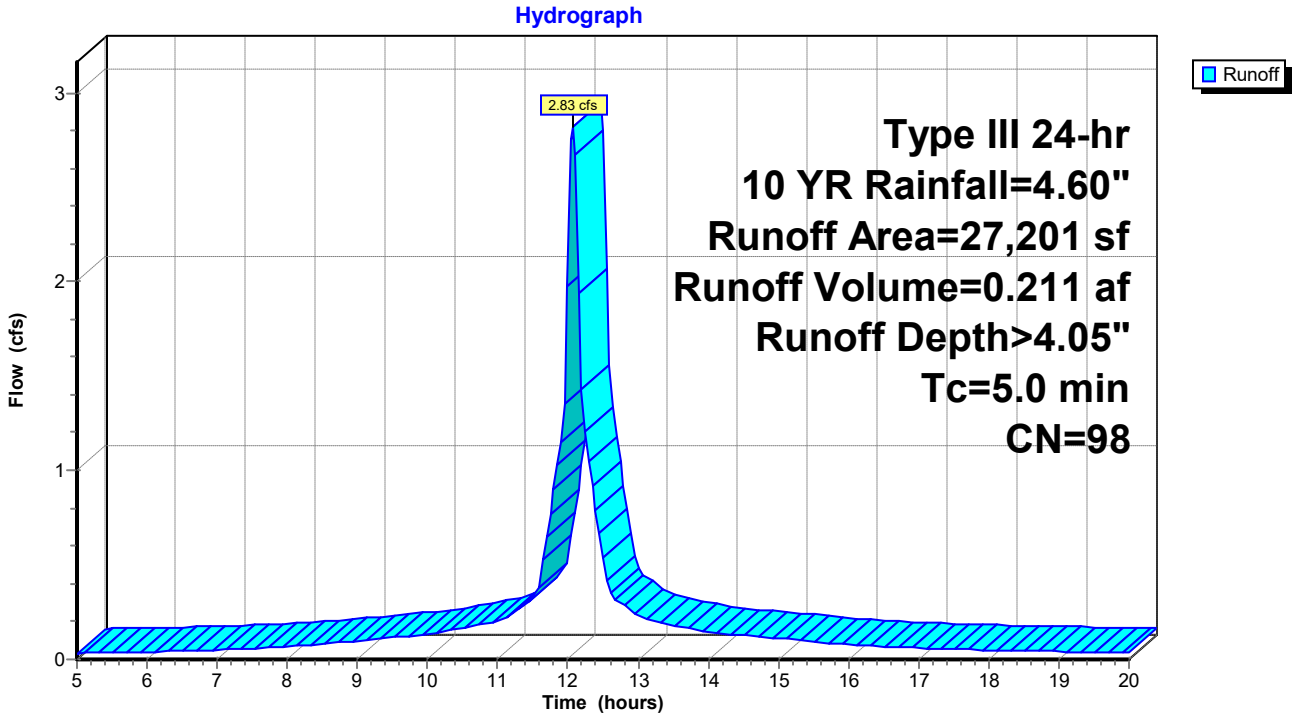
Runoff = 2.83 cfs @ 12.07 hrs, Volume= 0.211 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

Area (sf)	CN	Description
27,201	98	Paved parking, HSG A
27,201		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #35: #35 Bedford Roof



Summary for Subcatchment 1S: Watershed to Durham SD

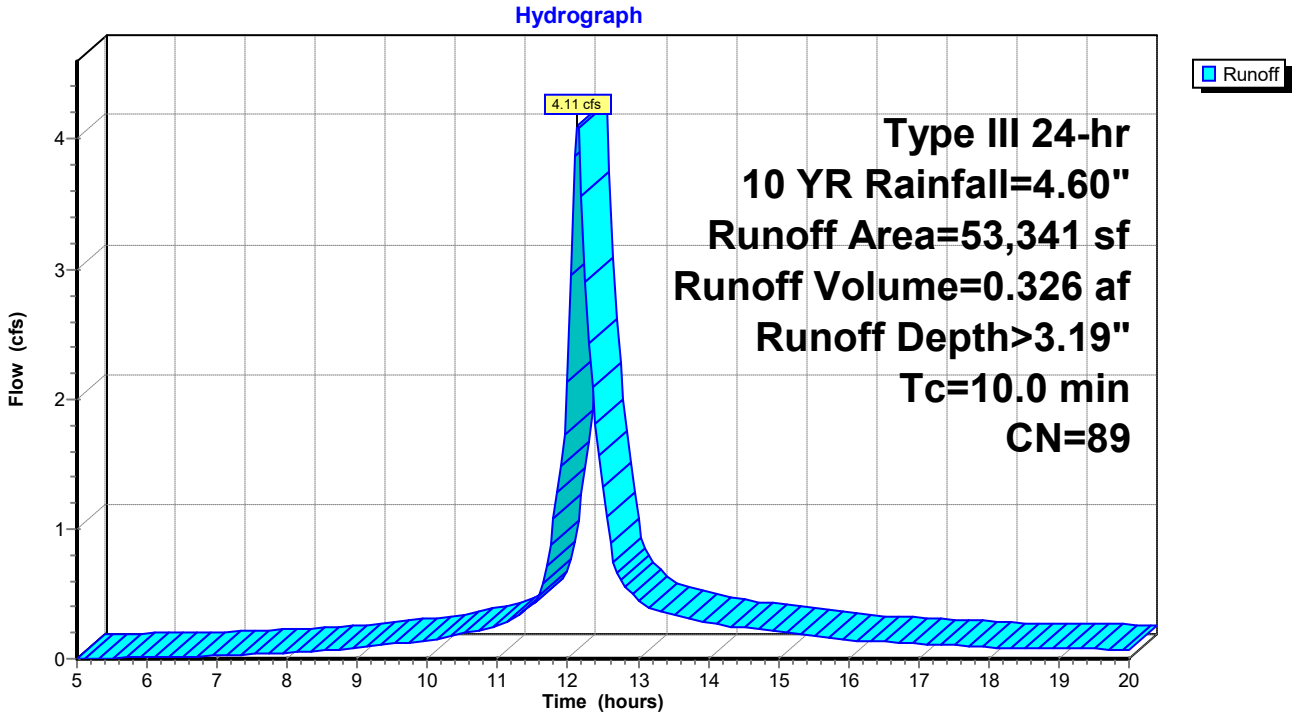
Runoff = 4.11 cfs @ 12.14 hrs, Volume= 0.326 af, Depth> 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

Area (sf)	CN	Description
33,152	98	Paved parking, HSG A
20,189	74	>75% Grass cover, Good, HSG C
53,341	89	Weighted Average
20,189		37.85% Pervious Area
33,152		62.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Watershed to Durham SD



Summary for Subcatchment 2S: Woodbury Parking Lot

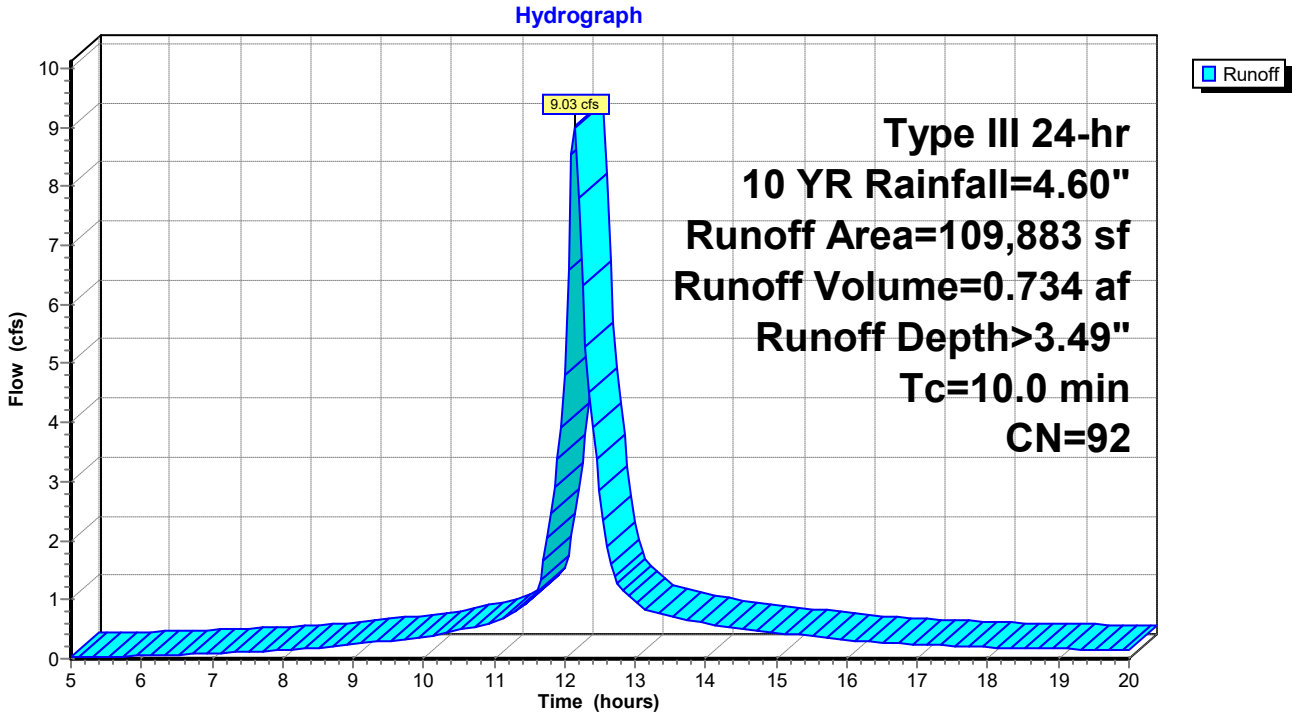
Runoff = 9.03 cfs @ 12.14 hrs, Volume= 0.734 af, Depth> 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

Area (sf)	CN	Description
82,271	98	Paved parking, HSG A
27,612	74	>75% Grass cover, Good, HSG C
109,883	92	Weighted Average
27,612		25.13% Pervious Area
82,271		74.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Woodbury Parking Lot

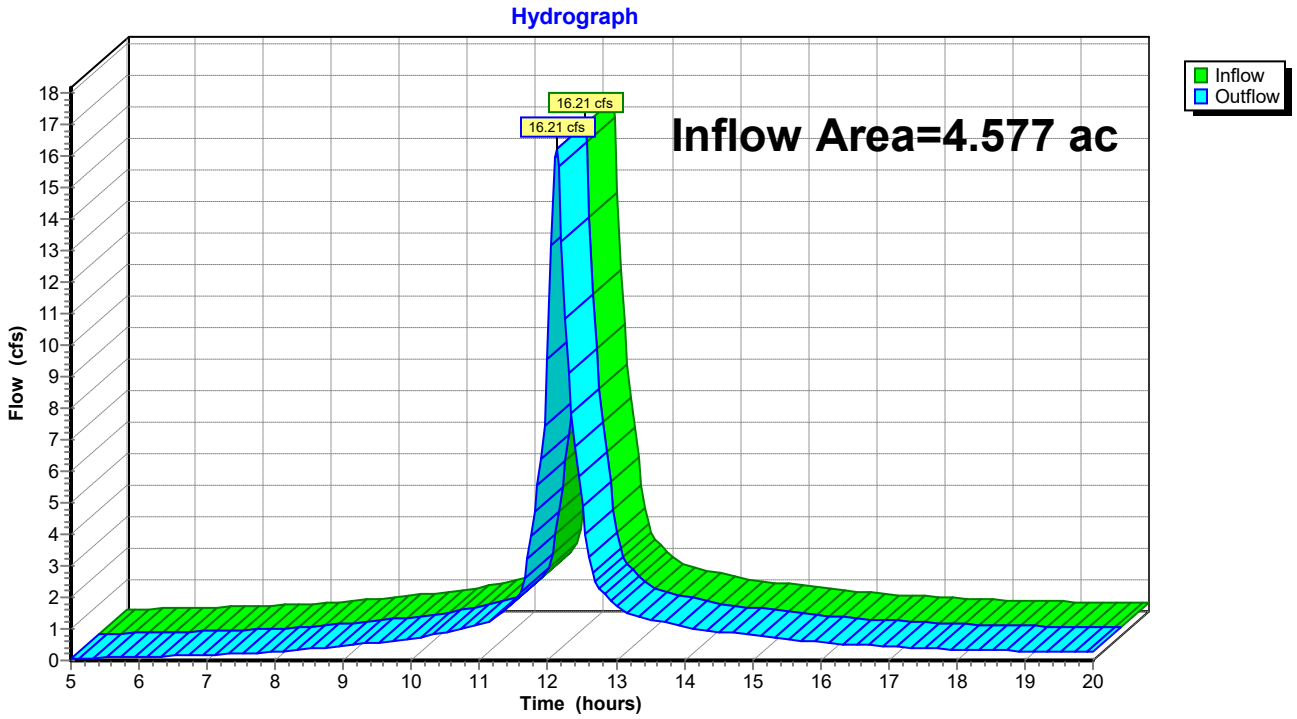


Summary for Reach 100R: POI 100

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 3.52" for 10 YR event
Inflow = 16.21 cfs @ 12.12 hrs, Volume= 1.341 af
Outflow = 16.21 cfs @ 12.12 hrs, Volume= 1.341 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 100R: POI 100



Summary for Pond 1P: Durham SD System

Inflow Area = 1.225 ac, 62.15% Impervious, Inflow Depth > 3.19" for 10 YR event
Inflow = 4.11 cfs @ 12.14 hrs, Volume= 0.326 af
Outflow = 4.11 cfs @ 12.14 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 4.11 cfs @ 12.14 hrs, Volume= 0.326 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.39' @ 12.14 hrs Surf.Area= 9 sf Storage= 8 cf

Plug-Flow detention time= 0.1 min calculated for 0.326 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (769.6 - 769.6)

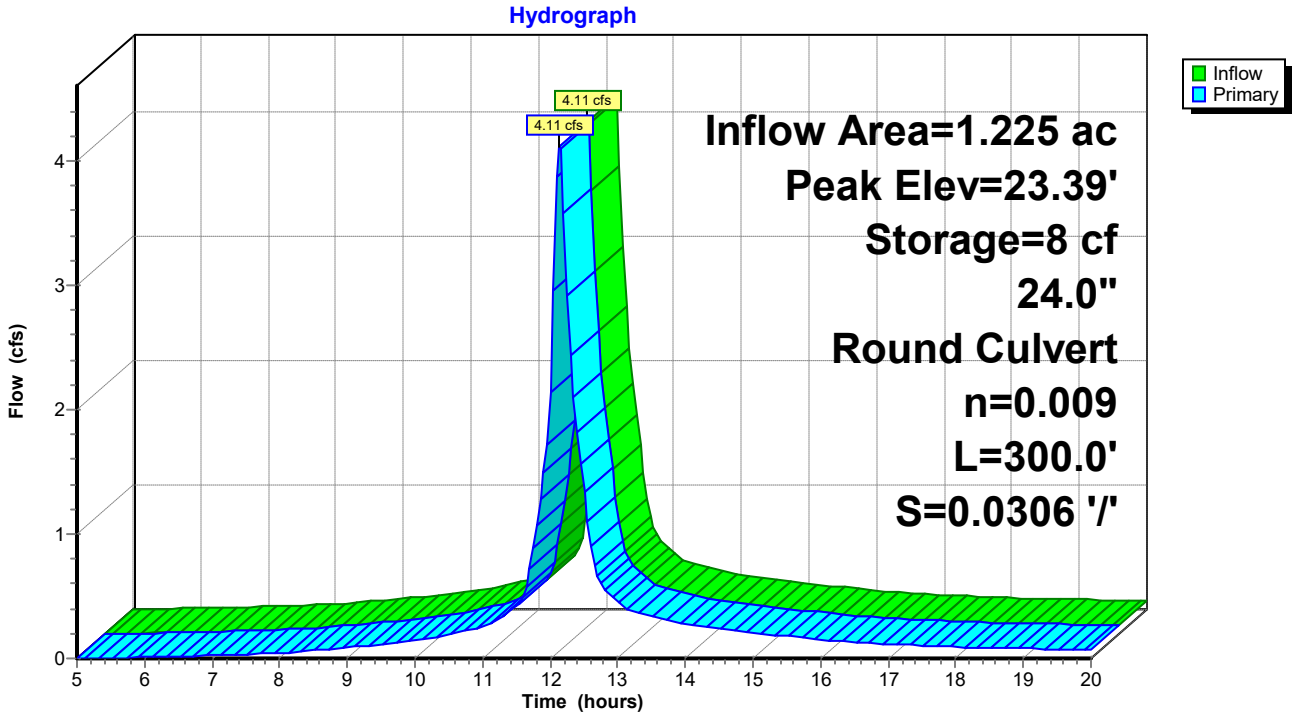
Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	100	1	51
29.00	15,000	6,040	6,091
30.00	1,000,000	507,500	513,591

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.04 cfs @ 12.14 hrs HW=23.39' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 4.04 cfs @ 3.15 fps)

Pond 1P: Durham SD System



Summary for Pond 2P: Bedford SD System

Inflow Area = 3.147 ac, 79.86% Impervious, Inflow Depth > 3.60" for 10 YR event
Inflow = 11.37 cfs @ 12.12 hrs, Volume= 0.945 af
Outflow = 11.37 cfs @ 12.12 hrs, Volume= 0.945 af, Atten= 0%, Lag= 0.0 min
Primary = 11.37 cfs @ 12.12 hrs, Volume= 0.945 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.20' @ 12.12 hrs Surf.Area= 9 sf Storage= 9 cf

Plug-Flow detention time= 0.0 min calculated for 0.942 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (754.2 - 754.2)

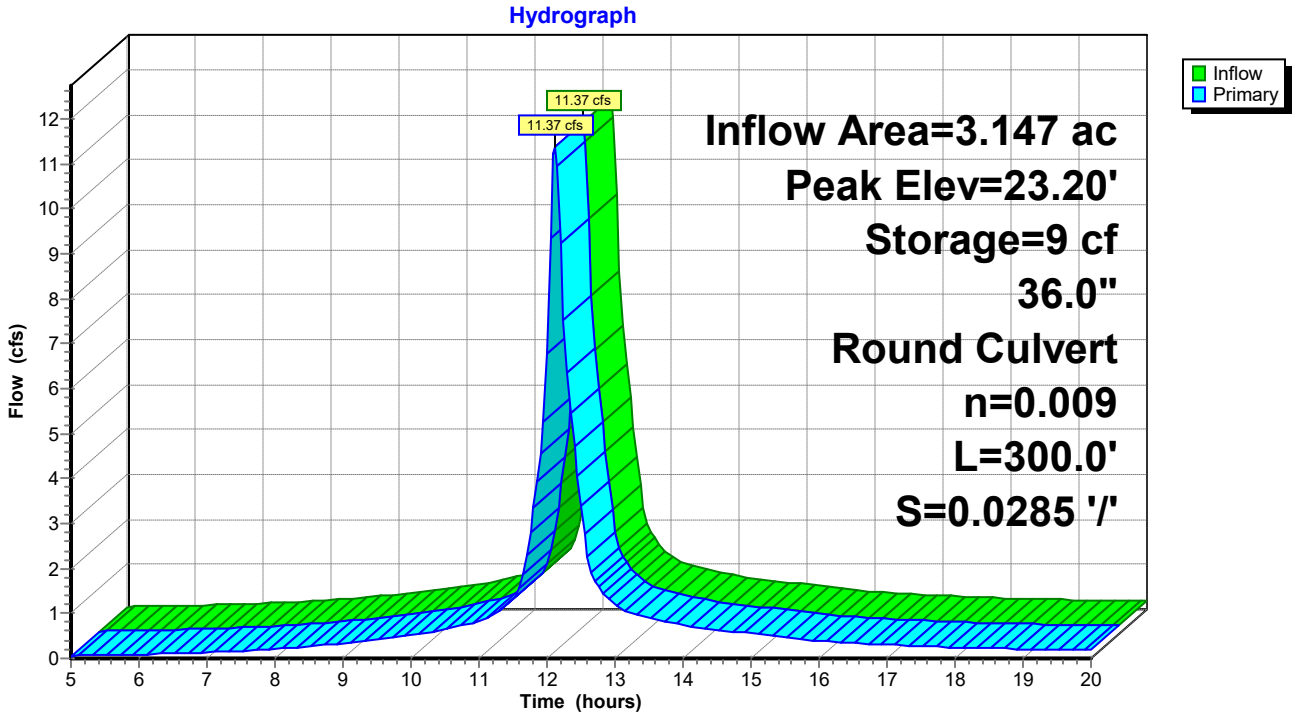
Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=11.11 cfs @ 12.12 hrs HW=23.18' (Free Discharge)
↑**1=Culvert** (Inlet Controls 11.11 cfs @ 3.86 fps)

Pond 2P: Bedford SD System



Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 3.52" for 10 YR event
Inflow = 16.22 cfs @ 12.12 hrs, Volume= 1.341 af
Outflow = 16.21 cfs @ 12.12 hrs, Volume= 1.341 af, Atten= 0%, Lag= 0.0 min
Primary = 16.21 cfs @ 12.12 hrs, Volume= 1.341 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 15.50' @ 12.12 hrs Surf.Area= 9 sf Storage= 19 cf

Plug-Flow detention time= 0.1 min calculated for 1.336 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (757.0 - 757.0)

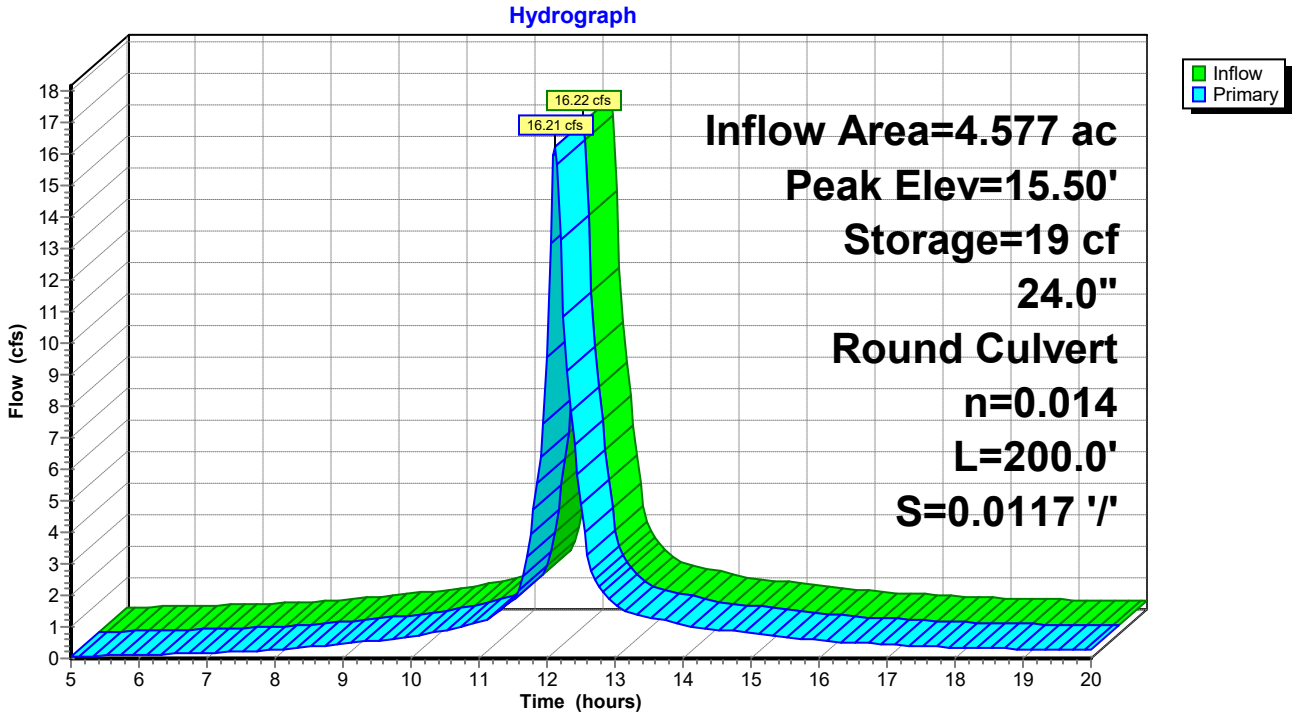
Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=15.85 cfs @ 12.12 hrs HW=15.45' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 15.85 cfs @ 5.04 fps)

Pond 3P: DMH corner Bedford Durham



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment #25: #25 Bedford Roof Runoff Area=8,950 sf 100.00% Impervious Runoff Depth>5.15"
Tc=5.0 min CN=98 Runoff=1.18 cfs 0.088 af

Subcatchment #35: #35 Bedford Roof Runoff Area=27,201 sf 100.00% Impervious Runoff Depth>5.15"
Tc=5.0 min CN=98 Runoff=3.57 cfs 0.268 af

Subcatchment 1S: Watershed to Durham Runoff Area=53,341 sf 62.15% Impervious Runoff Depth>4.29"
Tc=10.0 min CN=89 Runoff=5.42 cfs 0.438 af

Subcatchment 2S: Woodbury Parking Lot Runoff Area=109,883 sf 74.87% Impervious Runoff Depth>4.60"
Tc=10.0 min CN=92 Runoff=11.71 cfs 0.967 af

Reach 100R: POI 100 Inflow=21.05 cfs 1.760 af
Outflow=21.05 cfs 1.760 af

Pond 1P: Durham SD System Peak Elev=23.54' Storage=9 cf Inflow=5.42 cfs 0.438 af
24.0" Round Culvert n=0.009 L=300.0' S=0.0306 '/' Outflow=5.42 cfs 0.438 af

Pond 2P: Bedford SD System Peak Elev=23.40' Storage=11 cf Inflow=14.68 cfs 1.235 af
36.0" Round Culvert n=0.009 L=300.0' S=0.0285 '/' Outflow=14.68 cfs 1.235 af

Pond 3P: DMH corner Bedford Durham Peak Elev=16.28' Storage=26 cf Inflow=21.05 cfs 1.760 af
24.0" Round Culvert n=0.014 L=200.0' S=0.0117 '/' Outflow=21.05 cfs 1.760 af

Total Runoff Area = 4.577 ac Runoff Volume = 1.760 af Average Runoff Depth = 4.62"
23.98% Pervious = 1.097 ac 76.02% Impervious = 3.480 ac

Summary for Subcatchment #25: #25 Bedford Roof

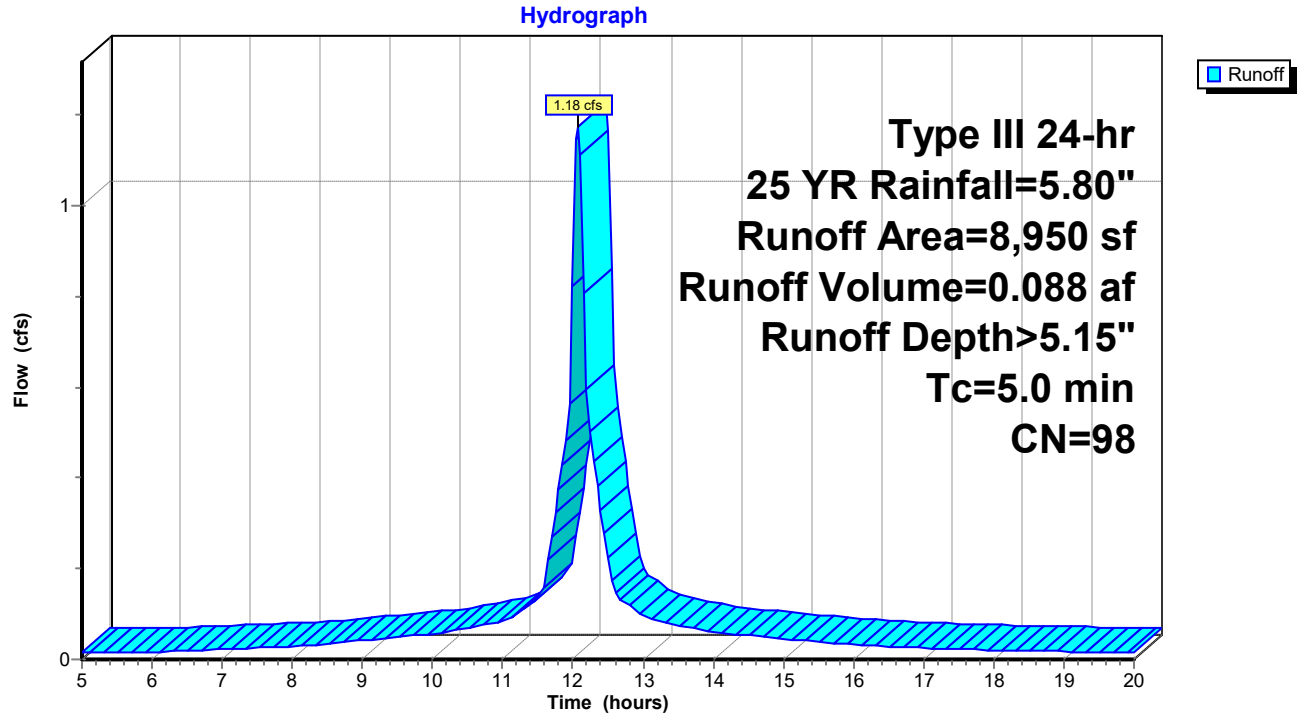
Runoff = 1.18 cfs @ 12.07 hrs, Volume= 0.088 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (sf)	CN	Description
8,950	98	Paved parking, HSG A
8,950		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #25: #25 Bedford Roof



Summary for Subcatchment #35: #35 Bedford Roof

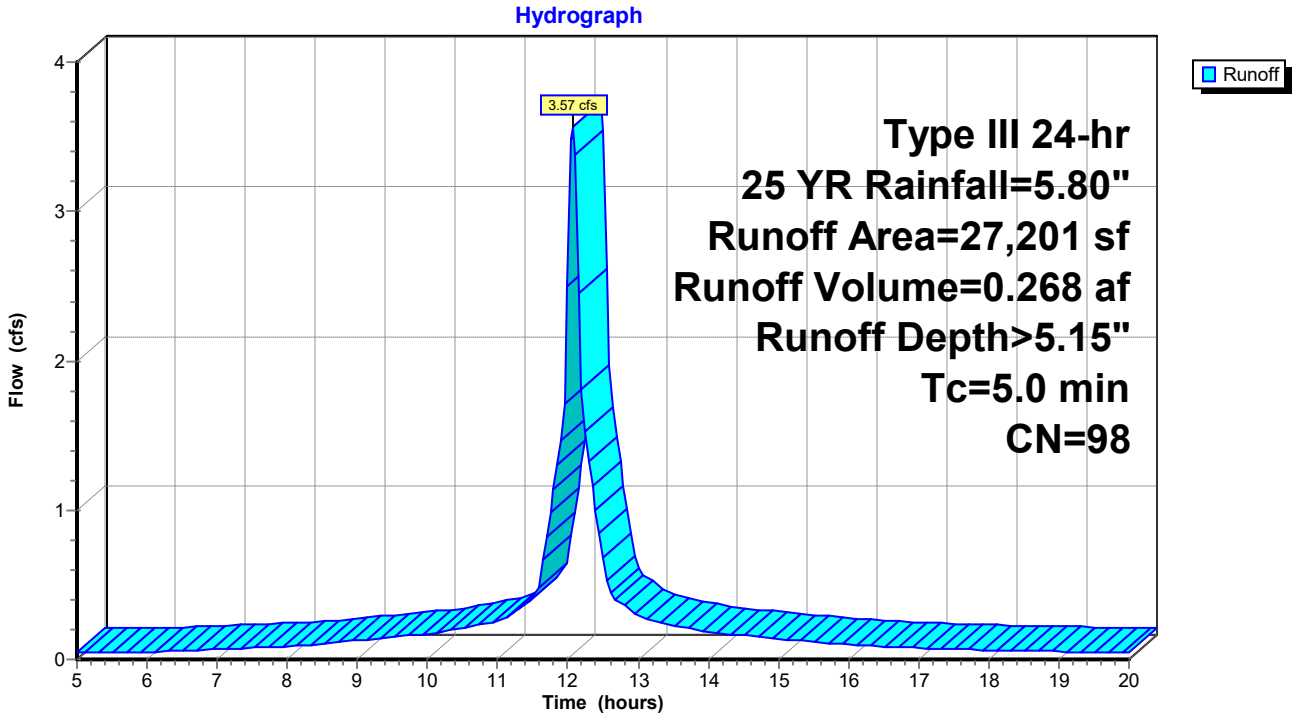
Runoff = 3.57 cfs @ 12.07 hrs, Volume= 0.268 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (sf)	CN	Description
27,201	98	Paved parking, HSG A
27,201		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #35: #35 Bedford Roof



Summary for Subcatchment 1S: Watershed to Durham SD

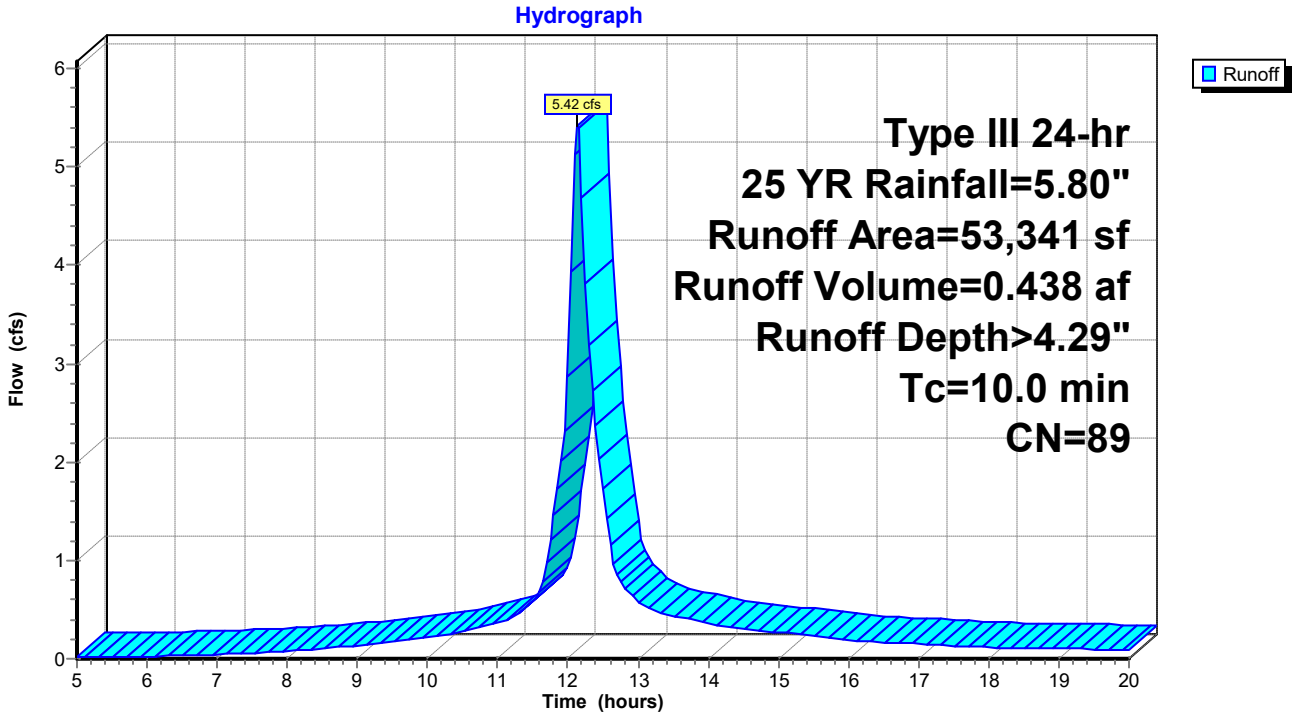
Runoff = 5.42 cfs @ 12.14 hrs, Volume= 0.438 af, Depth> 4.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (sf)	CN	Description
33,152	98	Paved parking, HSG A
20,189	74	>75% Grass cover, Good, HSG C
53,341	89	Weighted Average
20,189		37.85% Pervious Area
33,152		62.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Watershed to Durham SD



Summary for Subcatchment 2S: Woodbury Parking Lot

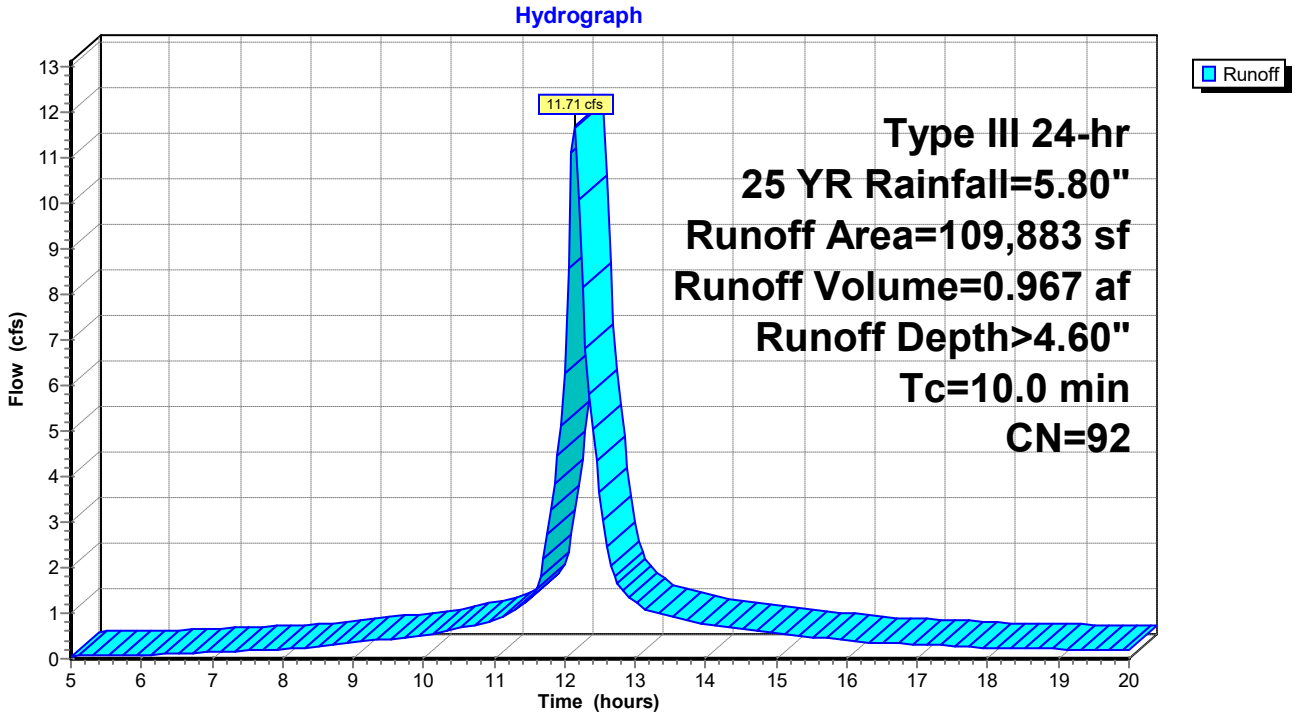
Runoff = 11.71 cfs @ 12.14 hrs, Volume= 0.967 af, Depth> 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (sf)	CN	Description
82,271	98	Paved parking, HSG A
27,612	74	>75% Grass cover, Good, HSG C
109,883	92	Weighted Average
27,612		25.13% Pervious Area
82,271		74.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Woodbury Parking Lot

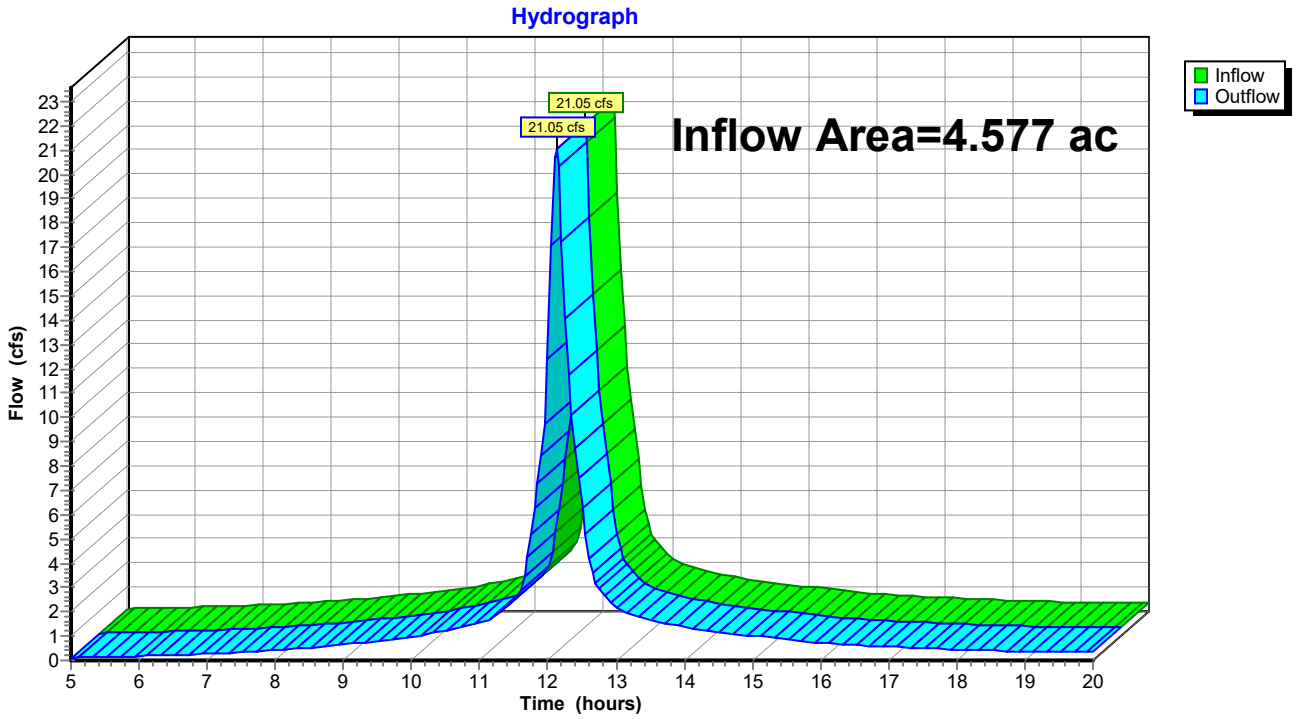


Summary for Reach 100R: POI 100

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 4.62" for 25 YR event
Inflow = 21.05 cfs @ 12.12 hrs, Volume= 1.760 af
Outflow = 21.05 cfs @ 12.12 hrs, Volume= 1.760 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 100R: POI 100



Summary for Pond 1P: Durham SD System

Inflow Area = 1.225 ac, 62.15% Impervious, Inflow Depth > 4.29" for 25 YR event
Inflow = 5.42 cfs @ 12.14 hrs, Volume= 0.438 af
Outflow = 5.42 cfs @ 12.14 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.0 min
Primary = 5.42 cfs @ 12.14 hrs, Volume= 0.438 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.54' @ 12.14 hrs Surf.Area= 9 sf Storage= 9 cf

Plug-Flow detention time= 0.1 min calculated for 0.438 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (762.9 - 762.9)

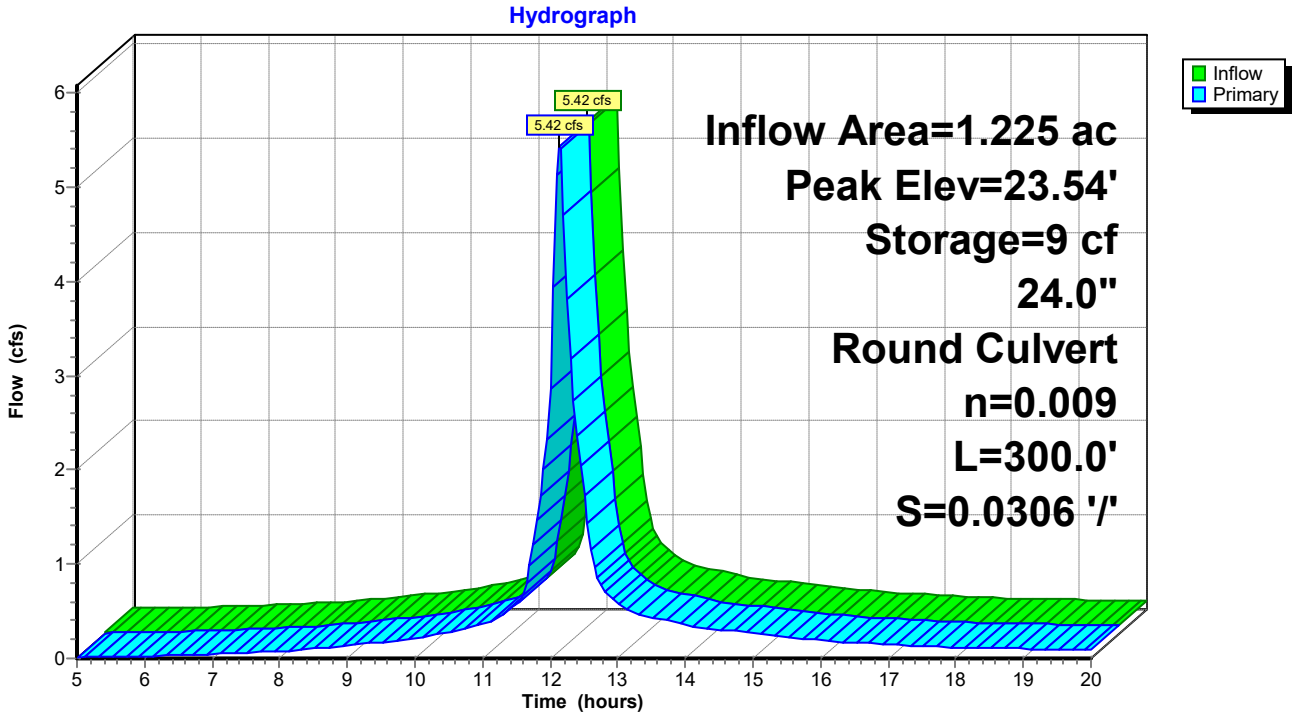
Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	100	1	51
29.00	15,000	6,040	6,091
30.00	1,000,000	507,500	513,591

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.34 cfs @ 12.14 hrs HW=23.53' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 5.34 cfs @ 3.40 fps)

Pond 1P: Durham SD System



Summary for Pond 2P: Bedford SD System

Inflow Area = 3.147 ac, 79.86% Impervious, Inflow Depth > 4.71" for 25 YR event
Inflow = 14.68 cfs @ 12.12 hrs, Volume= 1.235 af
Outflow = 14.68 cfs @ 12.12 hrs, Volume= 1.235 af, Atten= 0%, Lag= 0.0 min
Primary = 14.68 cfs @ 12.12 hrs, Volume= 1.235 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.40' @ 12.12 hrs Surf.Area= 9 sf Storage= 11 cf

Plug-Flow detention time= 0.0 min calculated for 1.235 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (750.0 - 750.0)

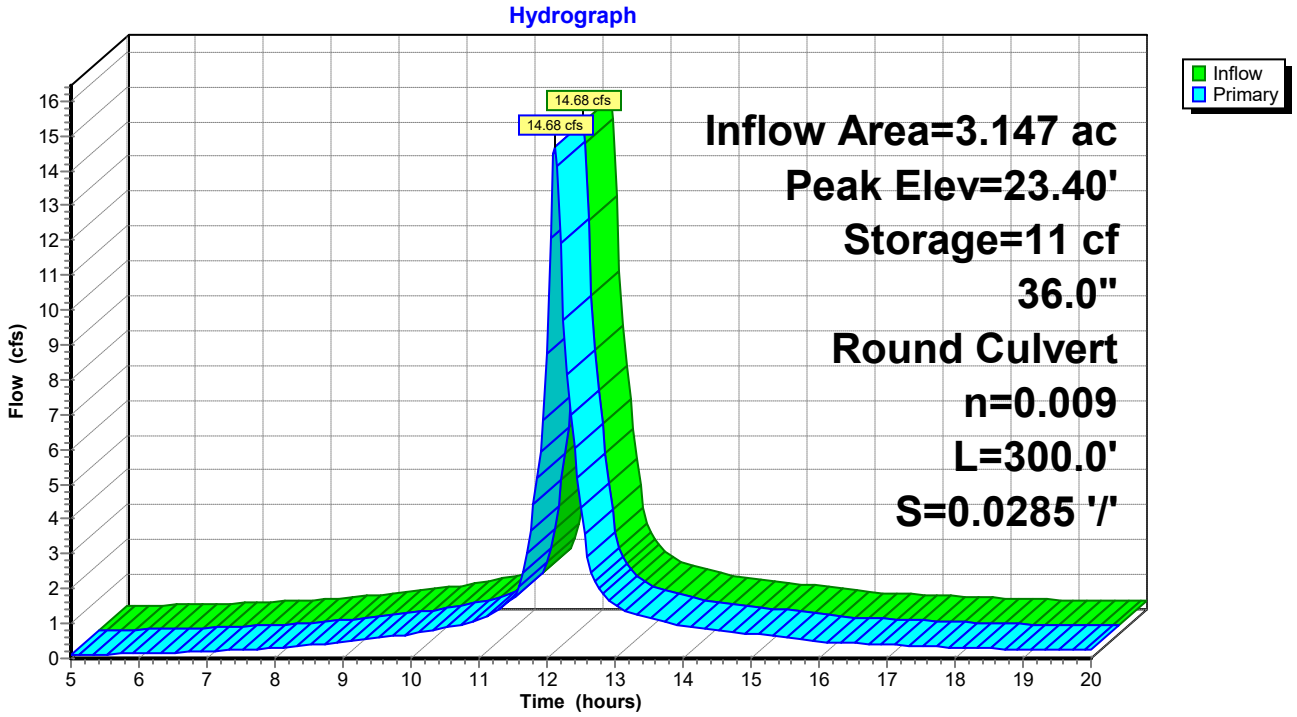
Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=14.35 cfs @ 12.12 hrs HW=23.38' (Free Discharge)
1=Culvert (Inlet Controls 14.35 cfs @ 4.14 fps)

Pond 2P: Bedford SD System



Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 4.62" for 25 YR event
Inflow = 21.05 cfs @ 12.12 hrs, Volume= 1.760 af
Outflow = 21.05 cfs @ 12.12 hrs, Volume= 1.760 af, Atten= 0%, Lag= 0.0 min
Primary = 21.05 cfs @ 12.12 hrs, Volume= 1.760 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 16.28' @ 12.12 hrs Surf.Area= 9 sf Storage= 26 cf

Plug-Flow detention time= 0.1 min calculated for 1.754 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (752.4 - 752.4)

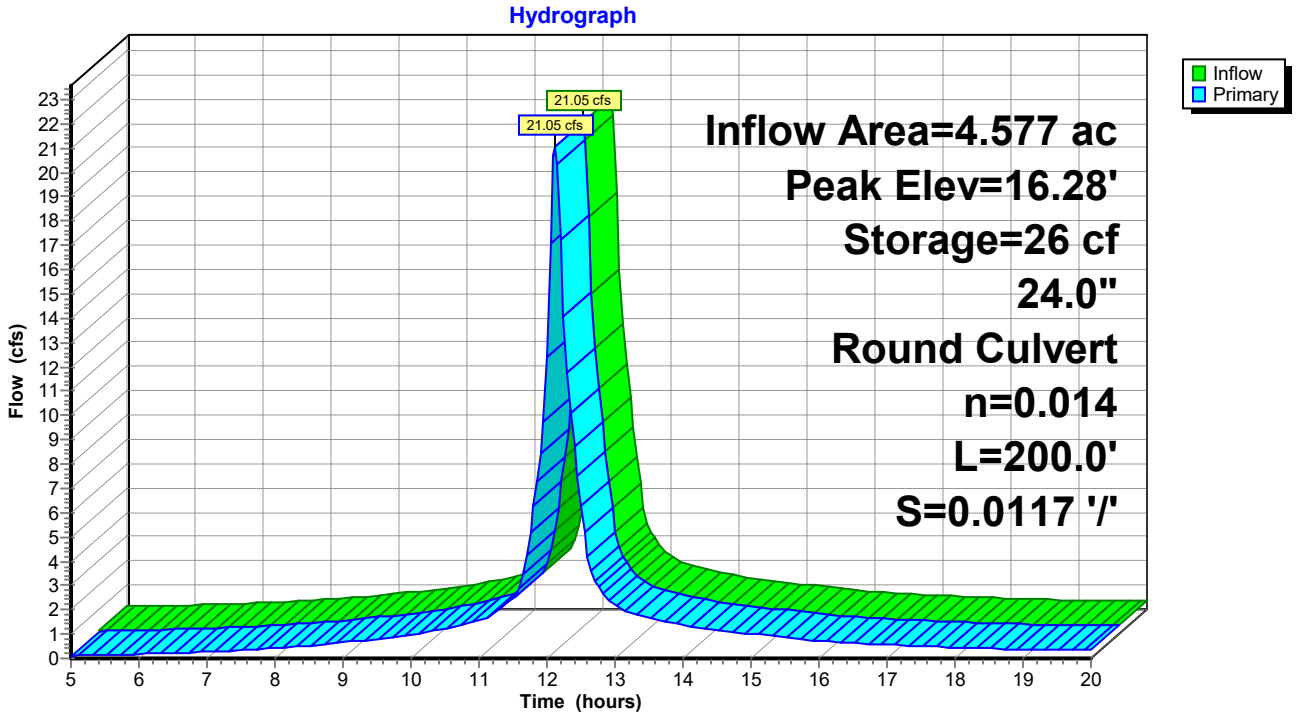
Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=20.57 cfs @ 12.12 hrs HW=16.20' (Free Discharge)
↑**1=Culvert** (Inlet Controls 20.57 cfs @ 6.55 fps)

Pond 3P: DMH corner Bedford Durham



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment #25: #25 Bedford Roof Runoff Area=8,950 sf 100.00% Impervious Runoff Depth>7.24"
Tc=5.0 min CN=98 Runoff=1.64 cfs 0.124 af

Subcatchment #35: #35 Bedford Roof Runoff Area=27,201 sf 100.00% Impervious Runoff Depth>7.24"
Tc=5.0 min CN=98 Runoff=5.00 cfs 0.377 af

Subcatchment 1S: Watershed to Durham Runoff Area=53,341 sf 62.15% Impervious Runoff Depth>6.40"
Tc=10.0 min CN=89 Runoff=7.93 cfs 0.654 af

Subcatchment 2S: Woodbury Parking Lot Runoff Area=109,883 sf 74.87% Impervious Runoff Depth>6.72"
Tc=10.0 min CN=92 Runoff=16.80 cfs 1.413 af

Reach 100R: POI 100 Inflow=30.19 cfs 2.567 af
Outflow=30.19 cfs 2.567 af

Pond 1P: Durham SD System Peak Elev=23.79' Storage=11 cf Inflow=7.93 cfs 0.654 af
24.0" Round Culvert n=0.009 L=300.0' S=0.0306 '/' Outflow=7.93 cfs 0.653 af

Pond 2P: Bedford SD System Peak Elev=23.74' Storage=14 cf Inflow=20.97 cfs 1.790 af
36.0" Round Culvert n=0.009 L=300.0' S=0.0285 '/' Outflow=20.97 cfs 1.790 af

Pond 3P: DMH corner Bedford Durham Peak Elev=19.27' Storage=53 cf Inflow=30.23 cfs 2.567 af
24.0" Round Culvert n=0.014 L=200.0' S=0.0117 '/' Outflow=30.19 cfs 2.567 af

Total Runoff Area = 4.577 ac Runoff Volume = 2.567 af Average Runoff Depth = 6.73"
23.98% Pervious = 1.097 ac 76.02% Impervious = 3.480 ac

Summary for Subcatchment #25: #25 Bedford Roof

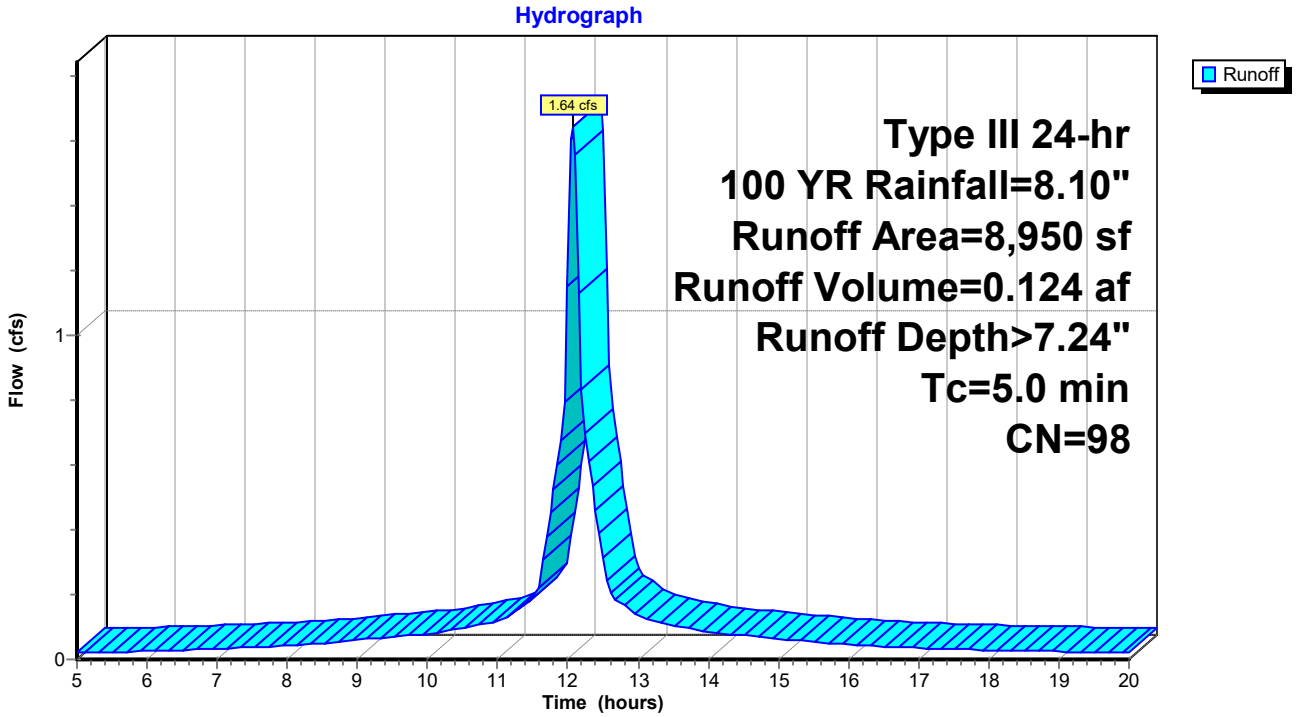
Runoff = 1.64 cfs @ 12.07 hrs, Volume= 0.124 af, Depth> 7.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

Area (sf)	CN	Description
8,950	98	Paved parking, HSG A
8,950		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #25: #25 Bedford Roof



Summary for Subcatchment #35: #35 Bedford Roof

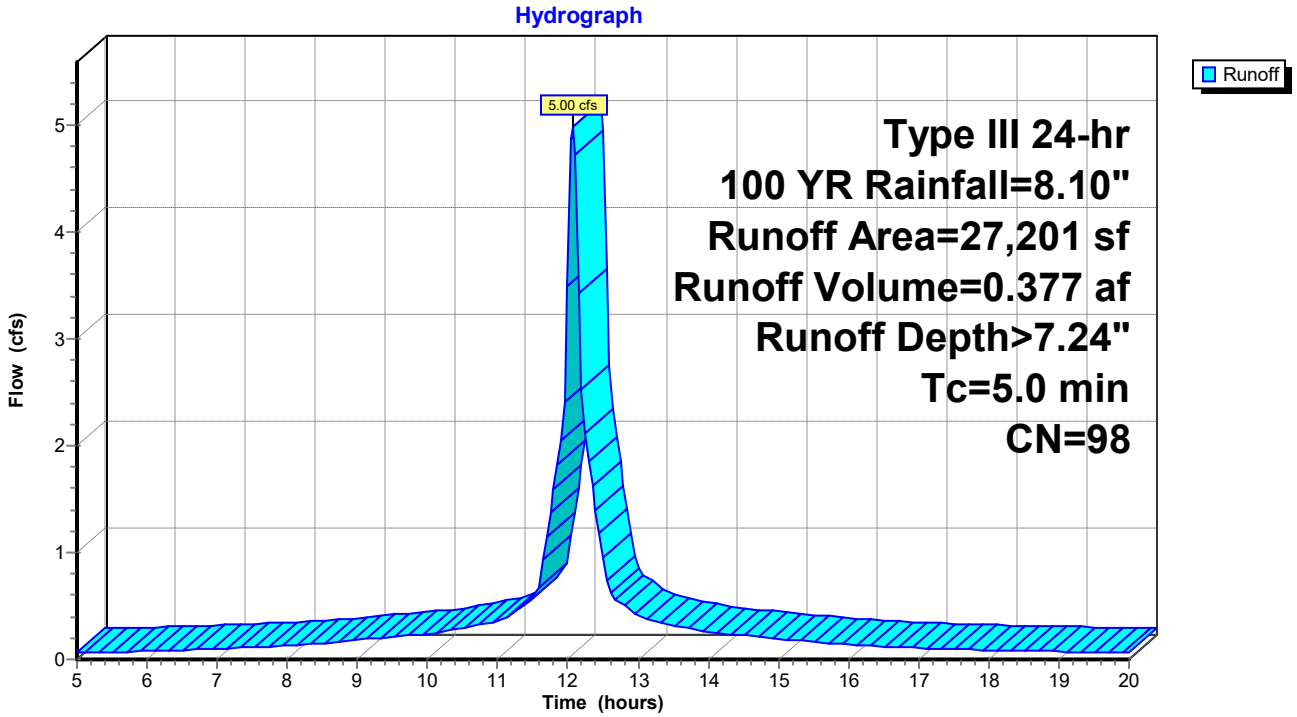
Runoff = 5.00 cfs @ 12.07 hrs, Volume= 0.377 af, Depth> 7.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

Area (sf)	CN	Description
27,201	98	Paved parking, HSG A
27,201		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment #35: #35 Bedford Roof



Summary for Subcatchment 1S: Watershed to Durham SD

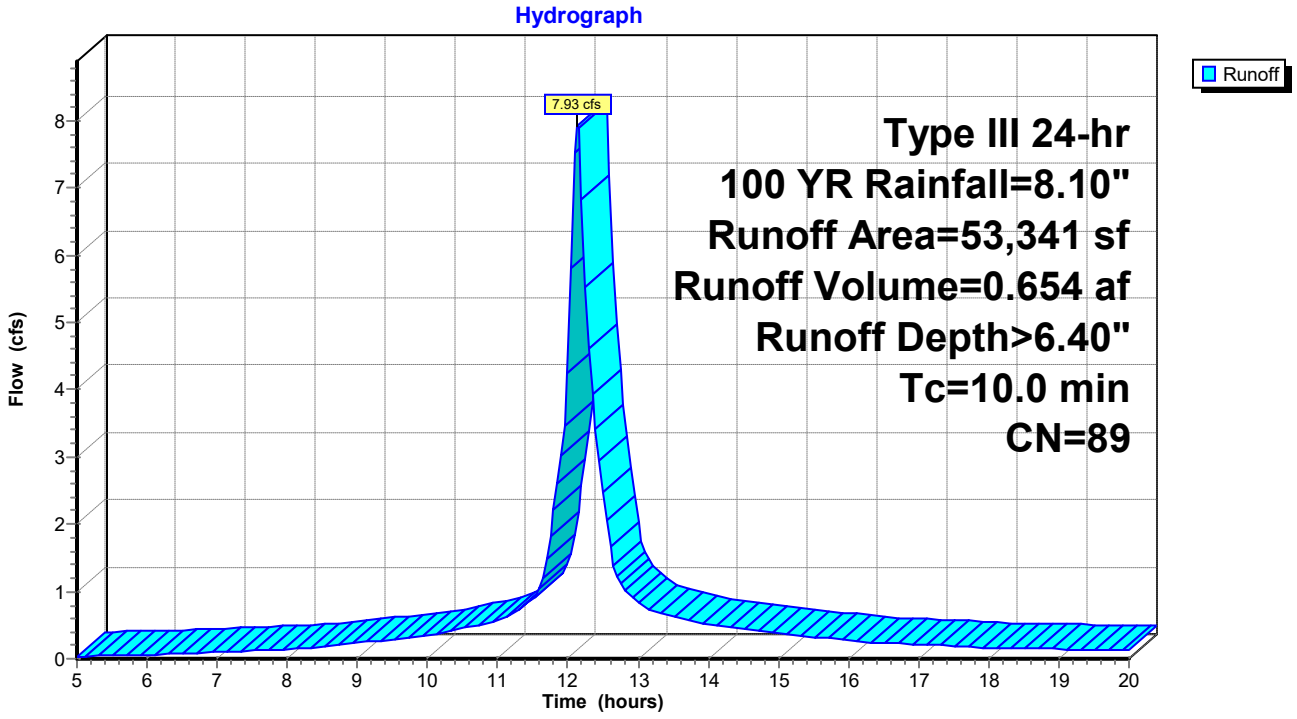
Runoff = 7.93 cfs @ 12.14 hrs, Volume= 0.654 af, Depth> 6.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

Area (sf)	CN	Description
33,152	98	Paved parking, HSG A
20,189	74	>75% Grass cover, Good, HSG C
53,341	89	Weighted Average
20,189		37.85% Pervious Area
33,152		62.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Watershed to Durham SD



Summary for Subcatchment 2S: Woodbury Parking Lot

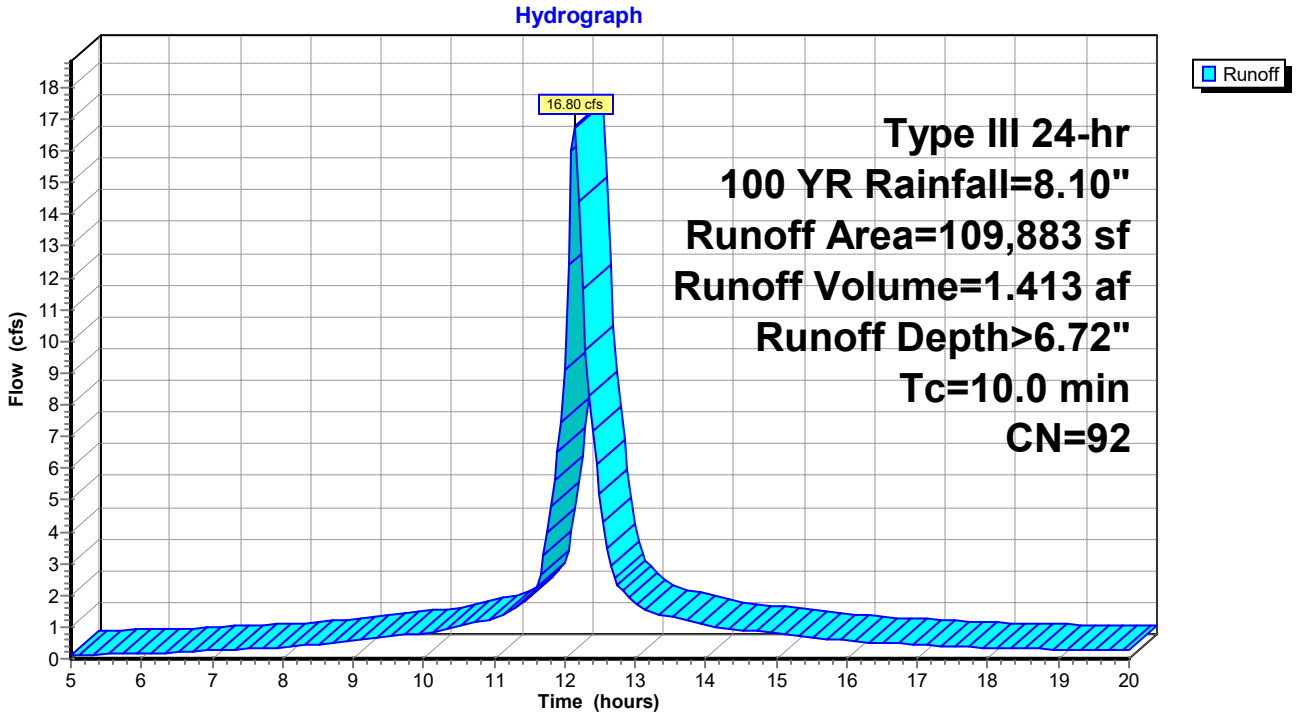
Runoff = 16.80 cfs @ 12.14 hrs, Volume= 1.413 af, Depth> 6.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

Area (sf)	CN	Description
82,271	98	Paved parking, HSG A
27,612	74	>75% Grass cover, Good, HSG C
109,883	92	Weighted Average
27,612		25.13% Pervious Area
82,271		74.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Woodbury Parking Lot

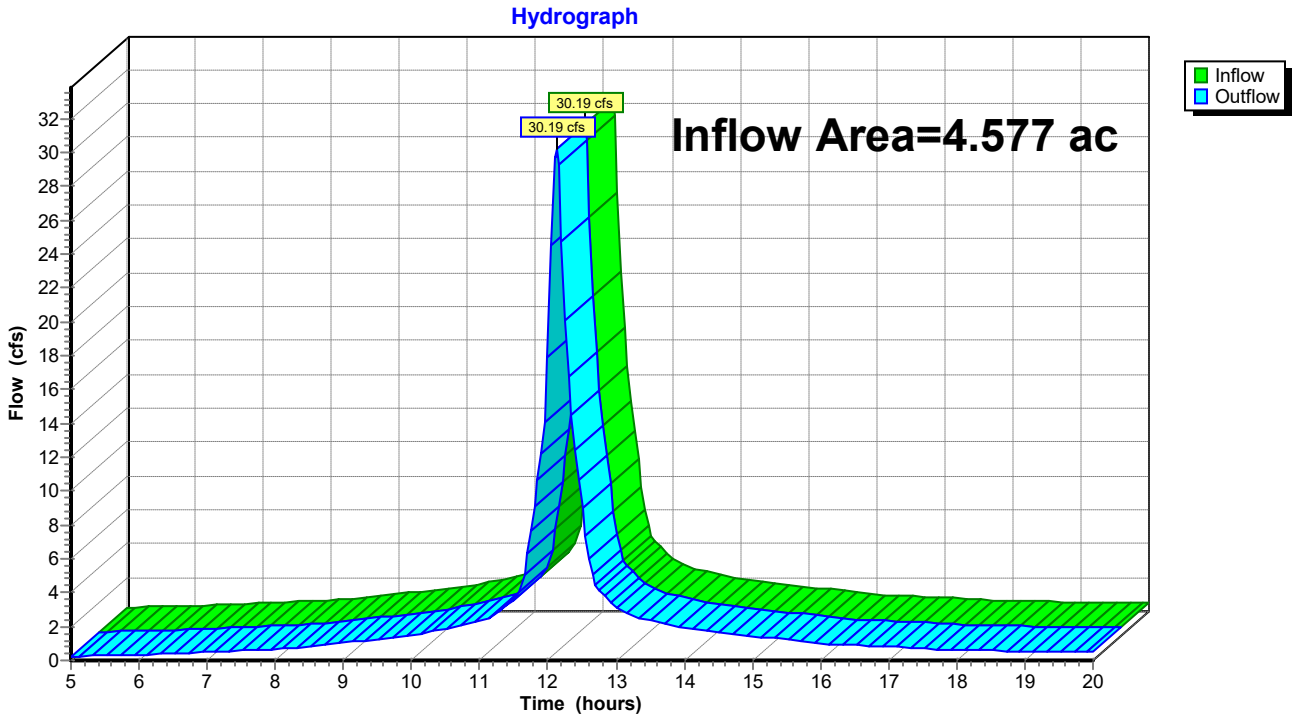


Summary for Reach 100R: POI 100

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 6.73" for 100 YR event
Inflow = 30.19 cfs @ 12.12 hrs, Volume= 2.567 af
Outflow = 30.19 cfs @ 12.12 hrs, Volume= 2.567 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 100R: POI 100



Summary for Pond 1P: Durham SD System

Inflow Area = 1.225 ac, 62.15% Impervious, Inflow Depth > 6.40" for 100 YR event
Inflow = 7.93 cfs @ 12.14 hrs, Volume= 0.654 af
Outflow = 7.93 cfs @ 12.14 hrs, Volume= 0.653 af, Atten= 0%, Lag= 0.0 min
Primary = 7.93 cfs @ 12.14 hrs, Volume= 0.653 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.79' @ 12.14 hrs Surf.Area= 9 sf Storage= 11 cf

Plug-Flow detention time= 0.1 min calculated for 0.653 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (754.9 - 754.9)

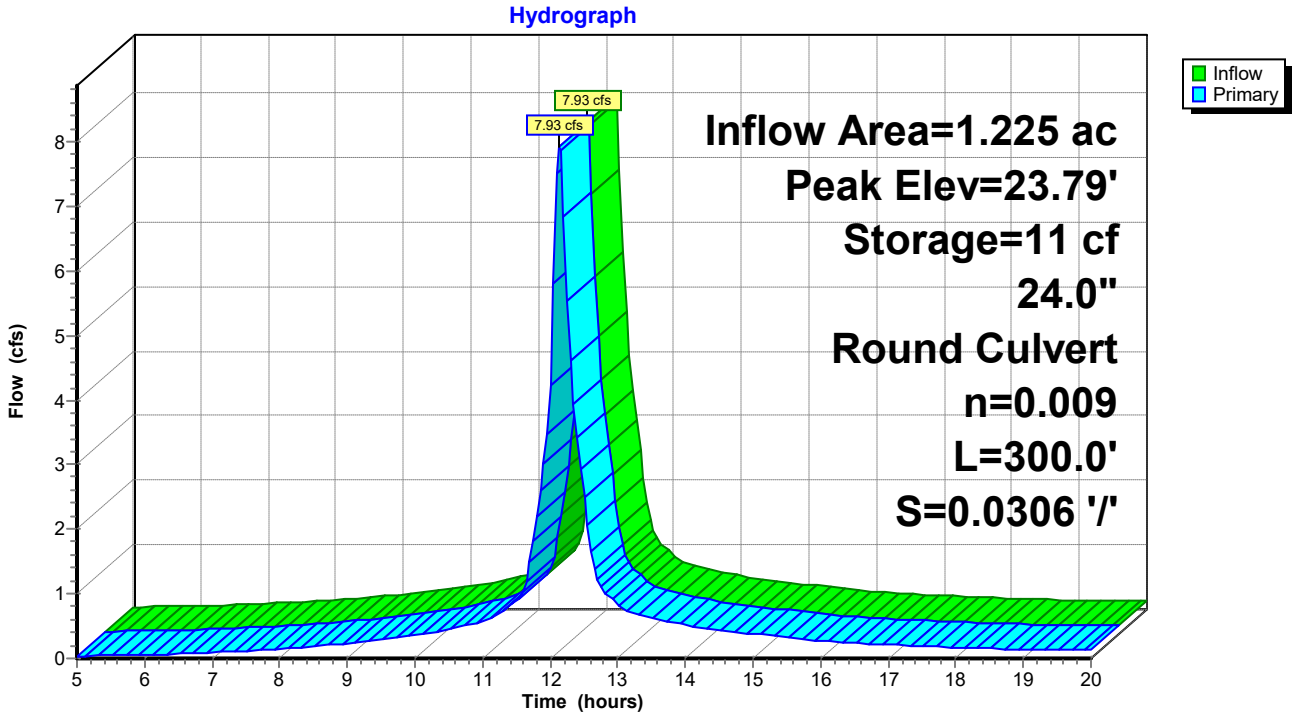
Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,591 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	100	1	51
29.00	15,000	6,040	6,091
30.00	1,000,000	507,500	513,591

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.79 cfs @ 12.14 hrs HW=23.77' (Free Discharge)
↑**1=Culvert** (Inlet Controls 7.79 cfs @ 3.80 fps)

Pond 1P: Durham SD System



Summary for Pond 2P: Bedford SD System

Inflow Area = 3.147 ac, 79.86% Impervious, Inflow Depth > 6.82" for 100 YR event
Inflow = 20.97 cfs @ 12.12 hrs, Volume= 1.790 af
Outflow = 20.97 cfs @ 12.12 hrs, Volume= 1.790 af, Atten= 0%, Lag= 0.0 min
Primary = 20.97 cfs @ 12.12 hrs, Volume= 1.790 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 23.74' @ 12.12 hrs Surf.Area= 9 sf Storage= 14 cf

Plug-Flow detention time= 0.0 min calculated for 1.790 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (744.9 - 744.9)

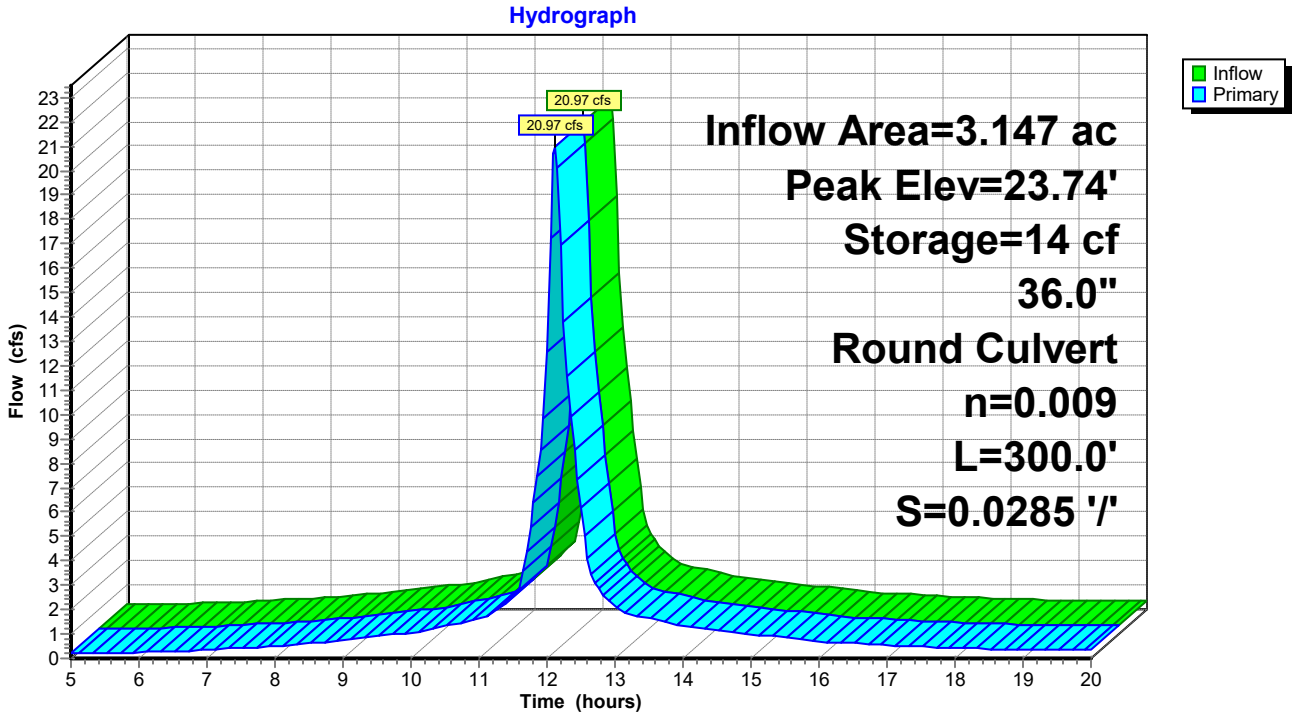
Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=20.51 cfs @ 12.12 hrs HW=23.71' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 20.51 cfs @ 4.59 fps)

Pond 2P: Bedford SD System



Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.577 ac, 76.02% Impervious, Inflow Depth > 6.73" for 100 YR event
Inflow = 30.23 cfs @ 12.12 hrs, Volume= 2.567 af
Outflow = 30.19 cfs @ 12.12 hrs, Volume= 2.567 af, Atten= 0%, Lag= 0.1 min
Primary = 30.19 cfs @ 12.12 hrs, Volume= 2.567 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 19.27' @ 12.12 hrs Surf.Area= 9 sf Storage= 53 cf

Plug-Flow detention time= 0.1 min calculated for 2.567 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (746.9 - 746.9)

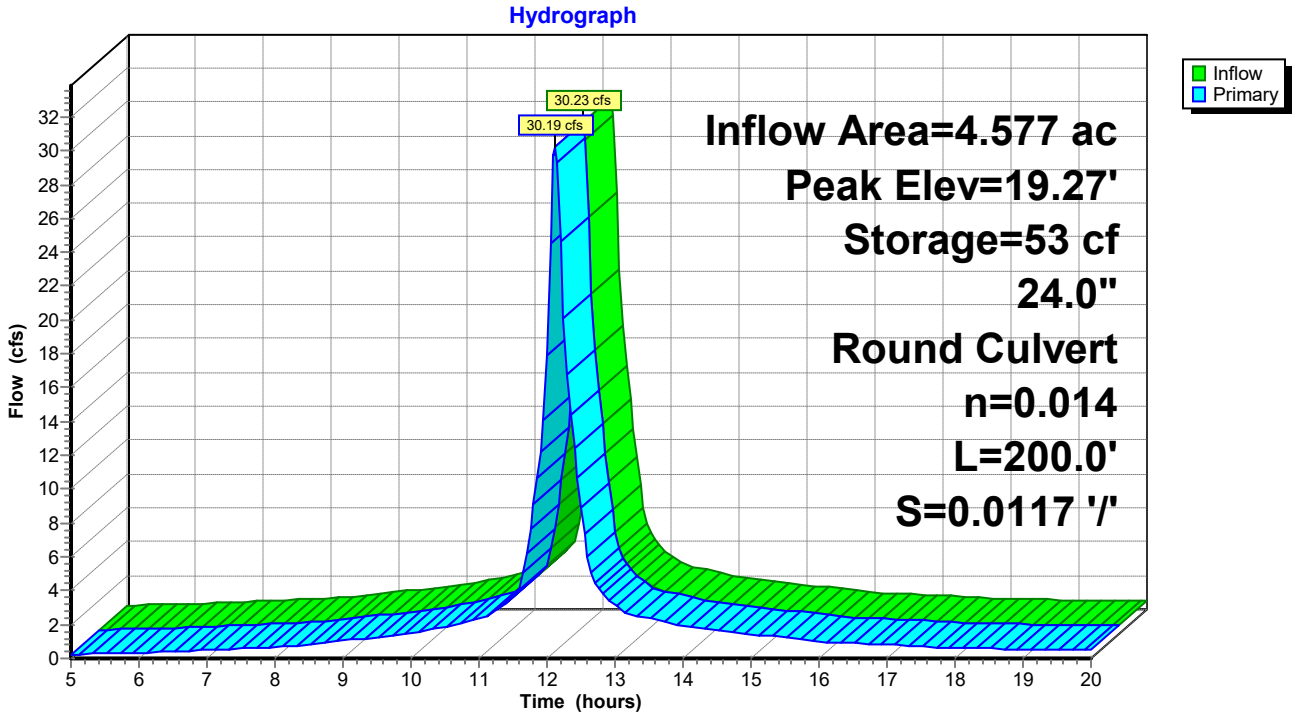
Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

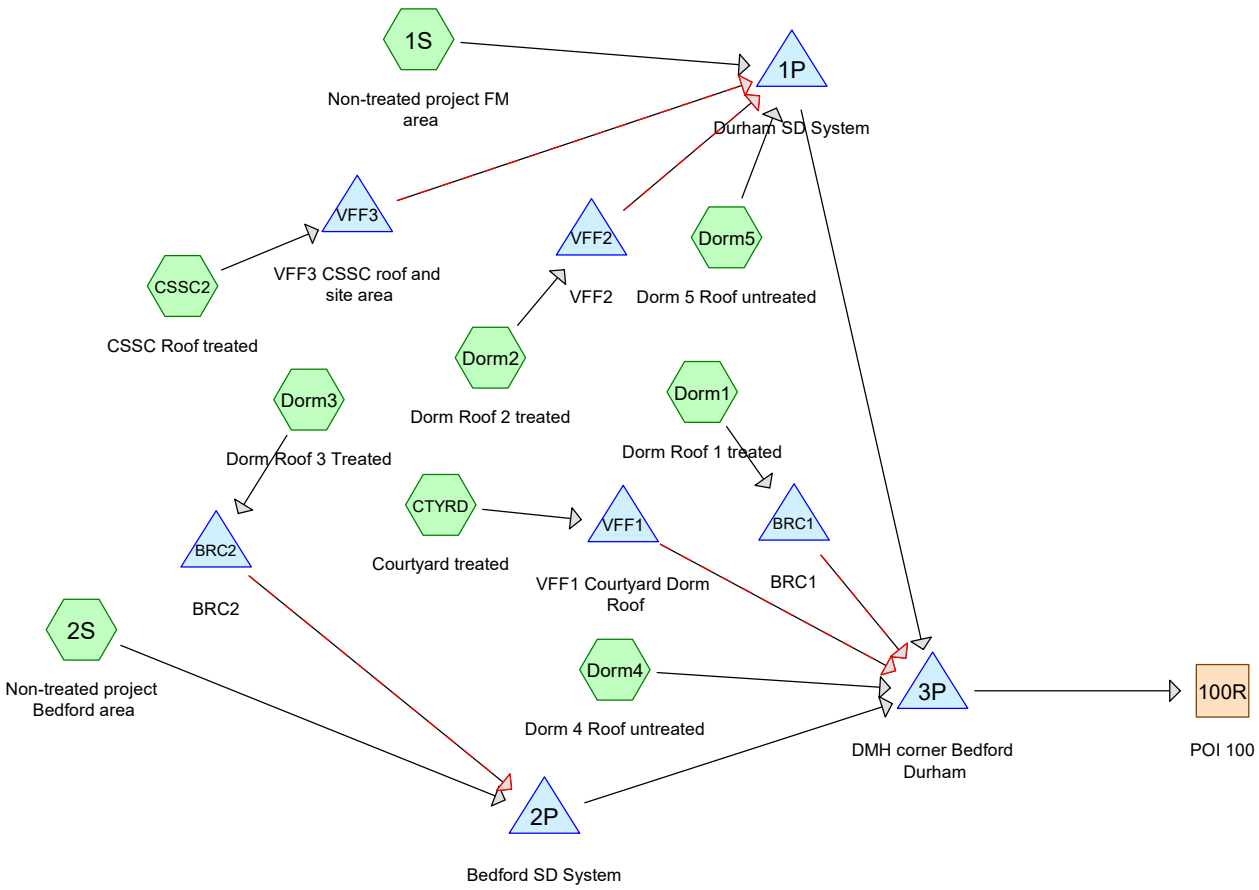
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=29.51 cfs @ 12.12 hrs HW=19.02' (Free Discharge)
1=Culvert (Barrel Controls 29.51 cfs @ 9.39 fps)

Pond 3P: DMH corner Bedford Durham





Subcat Reach Pond Link

Routing Diagram for 19206 Prop Cond 200723
Prepared by SMRT, Printed 7/26/2020
HydroCAD® 10.00-24 s/n 00729 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Non-treated project FM area

Runoff = 1.79 cfs @ 12.15 hrs, Volume= 0.148 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

Area (sf)	CN	Description
20,981	98	Paved parking, HSG A
27,303	74	>75% Grass cover, Good, HSG C
48,284	84	Weighted Average
27,303		56.55% Pervious Area
20,981		43.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment 2S: Non-treated project Bedford area

Runoff = 2.35 cfs @ 12.15 hrs, Volume= 0.194 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	25,948	98	Paved Sidewalks, hardscape
	40,467	74	>75% Grass cover, Good, HSG C
	66,415	83	Weighted Average
	40,467		60.93% Pervious Area
	25,948		39.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment CSSC2: CSSC Roof treated

Runoff = 2.19 cfs @ 12.07 hrs, Volume= 0.161 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	27,000	98	SSC Roof treated
	6,400	74	>75% Grass cover, Good, HSG C
*	1,100	98	Sidewalk
	34,500	94	Weighted Average
	6,400		18.55% Pervious Area
	28,100		81.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment CTYRD: Courtyard treated

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.032 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
	11,850	74	>75% Grass cover, Good, HSG C
*	2,200	98	Hardscape in courtyard
	14,050	78	Weighted Average
	11,850		84.34% Pervious Area
	2,200		15.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm1: Dorm Roof 1 treated

Runoff = 0.64 cfs @ 12.07 hrs, Volume= 0.047 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	8,000	98	Dorm Roof treated
*	2,000	80	BRC Bed
	10,000	94	Weighted Average
	2,000		20.00% Pervious Area
	8,000		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm2: Dorm Roof 2 treated

Runoff = 0.47 cfs @ 12.08 hrs, Volume= 0.034 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	4,000	98	Dorm Roof treated
*	7,046	74	>75% Grass cover, Good, HSG C VFF 1 area
*	450	98	Sidewalk
	11,496	83	Weighted Average
	7,046		61.29% Pervious Area
	4,450		38.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm3: Dorm Roof 3 Treated

Runoff = 0.69 cfs @ 12.07 hrs, Volume= 0.051 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	8,928	98	Dorm Roof treated
*	1,620	80	BRC bed
	10,548	95	Weighted Average
	1,620		15.36% Pervious Area
	8,928		84.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm4: Dorm 4 Roof untreated

Runoff = 0.54 cfs @ 12.07 hrs, Volume= 0.042 af, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	6,100	98	Dorm roof untreated
*	1,700	98	Bedford Sidewalk
	7,800	98	Weighted Average
	7,800		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm5: Dorm 5 Roof untreated

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.028 af, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	5,280	98	Dorm Roof untreated
	5,280		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 100R: POI 100

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 1.59" for 2 YR event
Inflow = 5.58 cfs @ 12.14 hrs, Volume= 0.633 af
Outflow = 5.58 cfs @ 12.14 hrs, Volume= 0.633 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Durham SD System

Inflow Area = 2.286 ac, 59.07% Impervious, Inflow Depth > 1.66" for 2 YR event
Inflow = 2.22 cfs @ 12.13 hrs, Volume= 0.317 af
Outflow = 2.22 cfs @ 12.13 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min
Primary = 2.22 cfs @ 12.13 hrs, Volume= 0.317 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.15' @ 12.13 hrs Surf.Area= 9 sf Storage= 6 cf

Plug-Flow detention time= 0.2 min calculated for 0.317 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (905.5 - 905.4)

Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,753 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	500	3	53
29.00	15,000	6,200	6,253
30.00	1,000,000	507,500	513,753

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.18 cfs @ 12.13 hrs HW=23.14' (Free Discharge)
↑**1=Culvert** (Inlet Controls 2.18 cfs @ 2.67 fps)

Summary for Pond 2P: Bedford SD System

Inflow Area = 1.767 ac, 45.32% Impervious, Inflow Depth = 1.54" for 2 YR event
Inflow = 2.87 cfs @ 12.15 hrs, Volume= 0.226 af
Outflow = 2.87 cfs @ 12.15 hrs, Volume= 0.226 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.15 hrs, Volume= 0.226 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 22.52' @ 12.15 hrs Surf.Area= 9 sf Storage= 3 cf

Plug-Flow detention time= 0.0 min calculated for 0.226 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (842.6 - 842.6)

Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=2.87 cfs @ 12.15 hrs HW=22.52' (Free Discharge)
↑**1=Culvert** (Inlet Controls 2.87 cfs @ 2.69 fps)

Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 1.59" for 2 YR event
Inflow = 5.58 cfs @ 12.14 hrs, Volume= 0.633 af
Outflow = 5.58 cfs @ 12.14 hrs, Volume= 0.633 af, Atten= 0%, Lag= 0.0 min
Primary = 5.58 cfs @ 12.14 hrs, Volume= 0.633 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 14.37' @ 12.14 hrs Surf.Area= 9 sf Storage= 9 cf

Plug-Flow detention time= 0.2 min calculated for 0.633 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (868.3 - 868.2)

Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=5.49 cfs @ 12.14 hrs HW=14.36' (Free Discharge)
1=Culvert (Inlet Controls 5.49 cfs @ 3.43 fps)

Summary for Pond BRC1: BRC1

Inflow Area = 0.230 ac, 80.00% Impervious, Inflow Depth > 2.44" for 2 YR event
Inflow = 0.64 cfs @ 12.07 hrs, Volume= 0.047 af
Outflow = 0.11 cfs @ 12.54 hrs, Volume= 0.047 af, Atten= 83%, Lag= 27.9 min
Primary = 0.11 cfs @ 12.54 hrs, Volume= 0.047 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.30' @ 12.54 hrs Surf.Area= 1,922 sf Storage= 570 cf

Plug-Flow detention time= 32.3 min calculated for 0.047 af (100% of inflow)
Center-of-Mass det. time= 32.3 min (820.1 - 787.8)

Volume	Invert	Avail.Storage	Storage Description
#1	22.99'	20,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.99	1	0	0
23.00	1,800	9	9
23.50	2,002	951	960
24.00	2,200	1,051	2,010
25.00	35,000	18,600	20,610

Device	Routing	Invert	Outlet Devices
#1	Device 2	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	19.00'	**12.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 18.00' S= 0.0143 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#3	Secondary	23.75'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Device 2	22.99'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.11 cfs @ 12.54 hrs HW=23.30' (Free Discharge)
└**2=Culvert** (Passes 0.11 cfs of 7.37 cfs potential flow)
  ├**1=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.99' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond BRC2: BRC2

Inflow Area = 0.242 ac, 84.64% Impervious, Inflow Depth > 2.54" for 2 YR event
Inflow = 0.69 cfs @ 12.07 hrs, Volume= 0.051 af
Outflow = 0.52 cfs @ 12.16 hrs, Volume= 0.032 af, Atten= 25%, Lag= 5.1 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.52 cfs @ 12.16 hrs, Volume= 0.032 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 29.57' @ 12.16 hrs Surf.Area= 1,656 sf Storage= 958 cf

Plug-Flow detention time= 186.6 min calculated for 0.032 af (62% of inflow)
Center-of-Mass det. time= 87.0 min (869.5 - 782.5)

Volume	Invert	Avail.Storage	Storage Description
#1	28.99'	14,992 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.99	1	0	0
29.00	1,656	8	8
29.50	1,656	828	836
30.00	1,656	828	1,664
31.00	25,000	13,328	14,992

Device	Routing	Invert	Outlet Devices
#1	Primary	23.00'	**12.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.00' / 19.00' S= 0.0667 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	29.75'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#3	Device 1	29.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	29.00'	**2.410 in/hr Exfiltration over Surface area above 29.00'** Excluded Surface area = 1,656 sf

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
└**4=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.51 cfs @ 12.16 hrs HW=29.57' (Free Discharge)
└**1=Culvert** (Passes 0.51 cfs of 9.32 cfs potential flow)
└**3=Orifice/Grate** (Weir Controls 0.51 cfs @ 0.88 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF1: VFF1 Courtyard Dorm Roof

Inflow Area = 0.323 ac, 15.66% Impervious, Inflow Depth = 1.20" for 2 YR event
Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.032 af
Outflow = 0.01 cfs @ 22.80 hrs, Volume= 0.001 af, Atten= 98%, Lag= 643.1 min
Primary = 0.01 cfs @ 22.80 hrs, Volume= 0.001 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.50' @ 22.80 hrs Surf.Area= 1,562 sf Storage= 1,366 cf

Plug-Flow detention time= 732.5 min calculated for 0.001 af (3% of inflow)
Center-of-Mass det. time= 547.3 min (1,397.3 - 850.0)

Volume	Invert	Avail.Storage	Storage Description
#1	22.49'	22,618 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.49	1	0	0
22.50	1,080	5	5
23.00	1,395	619	624
24.00	1,728	1,562	2,186
24.50	15,000	4,182	6,368
25.00	50,000	16,250	22,618

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**15.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 13.65' S= 0.0713 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.50'	**110.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 22.80 hrs HW=23.50' (Free Discharge)
└**1=Culvert** (Passes 0.00 cfs of 23.27 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.00 cfs @ 0.13 fps)
└**3=Exfiltration** (Passes 0.00 cfs of 0.09 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.49' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF2: VFF2

Inflow Area = 0.264 ac, 38.71% Impervious, Inflow Depth = 1.53" for 2 YR event
Inflow = 0.47 cfs @ 12.08 hrs, Volume= 0.034 af
Outflow = 0.01 cfs @ 17.56 hrs, Volume= 0.005 af, Atten= 97%, Lag= 328.7 min
Primary = 0.01 cfs @ 17.56 hrs, Volume= 0.005 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.01' @ 17.56 hrs Surf.Area= 1,161 sf Storage= 1,250 cf

Plug-Flow detention time= 530.7 min calculated for 0.005 af (15% of inflow)
Center-of-Mass det. time= 379.9 min (1,213.4 - 833.5)

Volume	Invert	Avail.Storage	Storage Description
#1	22.50'	17,193 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.50	504	0	0
24.00	1,152	1,242	1,242
25.00	2,500	1,826	3,068
25.10	10,000	625	3,693
26.00	20,000	13,500	17,193

Device	Routing	Invert	Outlet Devices
#1	Primary	21.00'	**12.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.00' / 15.00' S= 0.0400 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	24.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.50'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.60'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.01 cfs @ 17.56 hrs HW=24.01' (Free Discharge)
1=Culvert (Passes 0.01 cfs of 5.99 cfs potential flow)
2=Orifice/Grate (Weir Controls 0.01 cfs @ 0.27 fps)
3=Exfiltration (Passes 0.01 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.50' (Free Discharge)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond VFF3: VFF3 CSSC roof and site area

Inflow Area = 0.792 ac, 81.45% Impervious, Inflow Depth > 2.44" for 2 YR event
Inflow = 2.19 cfs @ 12.07 hrs, Volume= 0.161 af
Outflow = 0.17 cfs @ 13.13 hrs, Volume= 0.136 af, Atten= 92%, Lag= 63.3 min
Primary = 0.17 cfs @ 13.13 hrs, Volume= 0.136 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 41.06' @ 13.13 hrs Surf.Area= 3,040 sf Storage= 3,983 cf

Plug-Flow detention time= 278.1 min calculated for 0.136 af (84% of inflow)
Center-of-Mass det. time= 212.2 min (1,000.0 - 787.8)

Volume	Invert	Avail.Storage	Storage Description
#1	39.49'	13,735 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.49	1	0	0
39.50	2,000	10	10
40.00	2,400	1,100	1,110
41.00	3,000	2,700	3,810
41.50	3,350	1,588	5,398
42.00	30,000	8,338	13,735

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 24.00' S= 0.0367 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	40.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	39.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	41.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.17 cfs @ 13.13 hrs HW=41.06' (Free Discharge)
└**1=Culvert** (Passes 0.17 cfs of 8.80 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.17 cfs of 19.80 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.17 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=39.49' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Non-treated project FM area

Runoff = 3.25 cfs @ 12.14 hrs, Volume= 0.268 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

Area (sf)	CN	Description
20,981	98	Paved parking, HSG A
27,303	74	>75% Grass cover, Good, HSG C
48,284	84	Weighted Average
27,303		56.55% Pervious Area
20,981		43.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment 2S: Non-treated project Bedford area

Runoff = 4.33 cfs @ 12.14 hrs, Volume= 0.358 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	25,948	98	Paved Sidewalks, hardscape
	40,467	74	>75% Grass cover, Good, HSG C
	66,415	83	Weighted Average
	40,467		60.93% Pervious Area
	25,948		39.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment CSSC2: CSSC Roof treated

Runoff = 3.42 cfs @ 12.07 hrs, Volume= 0.257 af, Depth> 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	27,000	98	SSC Roof treated
	6,400	74	>75% Grass cover, Good, HSG C
*	1,100	98	Sidewalk
	34,500	94	Weighted Average
	6,400		18.55% Pervious Area
	28,100		81.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment CTYRD: Courtyard treated

Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.064 af, Depth= 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
	11,850	74	>75% Grass cover, Good, HSG C
*	2,200	98	Hardscape in courtyard
	14,050	78	Weighted Average
	11,850		84.34% Pervious Area
	2,200		15.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm1: Dorm Roof 1 treated

Runoff = 0.99 cfs @ 12.07 hrs, Volume= 0.074 af, Depth> 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	8,000	98	Dorm Roof treated
*	2,000	80	BRC Bed
	10,000	94	Weighted Average
	2,000		20.00% Pervious Area
	8,000		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm2: Dorm Roof 2 treated

Runoff = 0.87 cfs @ 12.08 hrs, Volume= 0.062 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	4,000	98	Dorm Roof treated
*	7,046	74	>75% Grass cover, Good, HSG C VFF 1 area
*	450	98	Sidewalk
	11,496	83	Weighted Average
	7,046		61.29% Pervious Area
	4,450		38.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm3: Dorm Roof 3 Treated

Runoff = 1.06 cfs @ 12.07 hrs, Volume= 0.081 af, Depth> 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	8,928	98	Dorm Roof treated
*	1,620	80	BRC bed
	10,548	95	Weighted Average
	1,620		15.36% Pervious Area
	8,928		84.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm4: Dorm 4 Roof untreated

Runoff = 0.81 cfs @ 12.07 hrs, Volume= 0.063 af, Depth> 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	6,100	98	Dorm roof untreated
*	1,700	98	Bedford Sidewalk
	7,800	98	Weighted Average
	7,800		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm5: Dorm 5 Roof untreated

Runoff = 0.55 cfs @ 12.07 hrs, Volume= 0.043 af, Depth> 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	5,280	98	Dorm Roof untreated
	5,280		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 100R: POI 100

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 2.92" for 10 YR event
Inflow = 9.83 cfs @ 12.13 hrs, Volume= 1.166 af
Outflow = 9.83 cfs @ 12.13 hrs, Volume= 1.166 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Durham SD System

Inflow Area = 2.286 ac, 59.07% Impervious, Inflow Depth > 3.03" for 10 YR event
Inflow = 3.83 cfs @ 12.13 hrs, Volume= 0.576 af
Outflow = 3.84 cfs @ 12.13 hrs, Volume= 0.576 af, Atten= 0%, Lag= 0.0 min
Primary = 3.84 cfs @ 12.13 hrs, Volume= 0.576 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.36' @ 12.13 hrs Surf.Area= 9 sf Storage= 7 cf

Plug-Flow detention time= 0.2 min calculated for 0.576 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (905.4 - 905.3)

Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,753 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	500	3	53
29.00	15,000	6,200	6,253
30.00	1,000,000	507,500	513,753

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.77 cfs @ 12.13 hrs HW=23.35' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.77 cfs @ 3.09 fps)

Summary for Pond 2P: Bedford SD System

Inflow Area = 1.767 ac, 45.32% Impervious, Inflow Depth = 2.85" for 10 YR event
Inflow = 5.26 cfs @ 12.14 hrs, Volume= 0.419 af
Outflow = 5.26 cfs @ 12.14 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 5.26 cfs @ 12.14 hrs, Volume= 0.419 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 22.76' @ 12.14 hrs Surf.Area= 9 sf Storage= 5 cf

Plug-Flow detention time= 0.0 min calculated for 0.418 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (823.0 - 822.9)

Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=5.16 cfs @ 12.14 hrs HW=22.75' (Free Discharge)
↑**1=Culvert** (Inlet Controls 5.16 cfs @ 3.14 fps)

Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 2.92" for 10 YR event
Inflow = 9.83 cfs @ 12.13 hrs, Volume= 1.166 af
Outflow = 9.83 cfs @ 12.13 hrs, Volume= 1.166 af, Atten= 0%, Lag= 0.0 min
Primary = 9.83 cfs @ 12.13 hrs, Volume= 1.166 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 14.78' @ 12.13 hrs Surf.Area= 9 sf Storage= 13 cf

Plug-Flow detention time= 0.1 min calculated for 1.164 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (865.0 - 864.9)

Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=9.65 cfs @ 12.13 hrs HW=14.77' (Free Discharge)
1=Culvert (Inlet Controls 9.65 cfs @ 4.05 fps)

Summary for Pond BRC1: BRC1

Inflow Area = 0.230 ac, 80.00% Impervious, Inflow Depth > 3.89" for 10 YR event
Inflow = 0.99 cfs @ 12.07 hrs, Volume= 0.074 af
Outflow = 0.24 cfs @ 12.46 hrs, Volume= 0.074 af, Atten= 76%, Lag= 23.3 min
Primary = 0.24 cfs @ 12.46 hrs, Volume= 0.074 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.53' @ 12.46 hrs Surf.Area= 2,013 sf Storage= 1,014 cf

Plug-Flow detention time= 58.2 min calculated for 0.074 af (100% of inflow)
Center-of-Mass det. time= 58.1 min (835.8 - 777.7)

Volume	Invert	Avail.Storage	Storage Description
#1	22.99'	20,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.99	1	0	0
23.00	1,800	9	9
23.50	2,002	951	960
24.00	2,200	1,051	2,010
25.00	35,000	18,600	20,610

Device	Routing	Invert	Outlet Devices
#1	Device 2	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	19.00'	**12.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 18.00' S= 0.0143 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#3	Secondary	23.75'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Device 2	22.99'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.23 cfs @ 12.46 hrs HW=23.53' (Free Discharge)
└**2=Culvert** (Passes 0.23 cfs of 7.59 cfs potential flow)
  ├**1=Orifice/Grate** (Weir Controls 0.12 cfs @ 0.54 fps)
  └**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.99' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond BRC2: BRC2

Inflow Area = 0.242 ac, 84.64% Impervious, Inflow Depth > 3.99" for 10 YR event
Inflow = 1.06 cfs @ 12.07 hrs, Volume= 0.081 af
Outflow = 0.98 cfs @ 12.11 hrs, Volume= 0.061 af, Atten= 7%, Lag= 2.2 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.98 cfs @ 12.11 hrs, Volume= 0.061 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 29.61' @ 12.11 hrs Surf.Area= 1,656 sf Storage= 1,022 cf

Plug-Flow detention time= 145.2 min calculated for 0.061 af (76% of inflow)
Center-of-Mass det. time= 62.9 min (836.7 - 773.8)

Volume	Invert	Avail.Storage	Storage Description
#1	28.99'	14,992 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.99	1	0	0
29.00	1,656	8	8
29.50	1,656	828	836
30.00	1,656	828	1,664
31.00	25,000	13,328	14,992

Device	Routing	Invert	Outlet Devices
#1	Primary	23.00'	**12.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.00' / 19.00' S= 0.0667 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	29.75'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#3	Device 1	29.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	29.00'	**2.410 in/hr Exfiltration over Surface area above 29.00'** Excluded Surface area = 1,656 sf

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
↑└**4=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.97 cfs @ 12.11 hrs HW=29.61' (Free Discharge)
↑└**1=Culvert** (Passes 0.97 cfs of 9.35 cfs potential flow)
↑└**3=Orifice/Grate** (Weir Controls 0.97 cfs @ 1.09 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
↑└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF1: VFF1 Courtyard Dorm Roof

Inflow Area = 0.323 ac, 15.66% Impervious, Inflow Depth = 2.38" for 10 YR event
Inflow = 0.90 cfs @ 12.08 hrs, Volume= 0.064 af
Outflow = 0.09 cfs @ 13.02 hrs, Volume= 0.033 af, Atten= 90%, Lag= 56.3 min
Primary = 0.09 cfs @ 13.02 hrs, Volume= 0.033 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.58' @ 13.02 hrs Surf.Area= 1,590 sf Storage= 1,496 cf

Plug-Flow detention time= 242.4 min calculated for 0.033 af (51% of inflow)
Center-of-Mass det. time= 124.9 min (954.9 - 830.0)

Volume	Invert	Avail.Storage	Storage Description
#1	22.49'	22,618 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.49	1	0	0
22.50	1,080	5	5
23.00	1,395	619	624
24.00	1,728	1,562	2,186
24.50	15,000	4,182	6,368
25.00	50,000	16,250	22,618

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**15.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 13.65' S= 0.0713 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.50'	**110.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.09 cfs @ 13.02 hrs HW=23.58' (Free Discharge)
└**1=Culvert** (Passes 0.09 cfs of 23.51 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.09 cfs of 1.28 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.09 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.49' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF2: VFF2

Inflow Area = 0.264 ac, 38.71% Impervious, Inflow Depth = 2.81" for 10 YR event
Inflow = 0.87 cfs @ 12.08 hrs, Volume= 0.062 af
Outflow = 0.08 cfs @ 13.02 hrs, Volume= 0.033 af, Atten= 91%, Lag= 56.8 min
Primary = 0.08 cfs @ 13.02 hrs, Volume= 0.033 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.21' @ 13.02 hrs Surf.Area= 1,435 sf Storage= 1,514 cf

Plug-Flow detention time= 241.3 min calculated for 0.033 af (54% of inflow)
Center-of-Mass det. time= 130.3 min (946.3 - 815.9)

Volume	Invert	Avail.Storage	Storage Description
#1	22.50'	17,193 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.50	504	0	0
24.00	1,152	1,242	1,242
25.00	2,500	1,826	3,068
25.10	10,000	625	3,693
26.00	20,000	13,500	17,193

Device	Routing	Invert	Outlet Devices
#1	Primary	21.00'	**12.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.00' / 15.00' S= 0.0400 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	24.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.50'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.60'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.08 cfs @ 13.02 hrs HW=24.21' (Free Discharge)
└**1=Culvert** (Passes 0.08 cfs of 6.23 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.08 cfs of 2.51 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.08 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.50' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF3: VFF3 CSSC roof and site area

Inflow Area = 0.792 ac, 81.45% Impervious, Inflow Depth > 3.89" for 10 YR event
Inflow = 3.42 cfs @ 12.07 hrs, Volume= 0.257 af
Outflow = 0.94 cfs @ 12.42 hrs, Volume= 0.231 af, Atten= 72%, Lag= 21.0 min
Primary = 0.31 cfs @ 12.42 hrs, Volume= 0.211 af
Secondary = 0.63 cfs @ 12.42 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 41.54' @ 12.42 hrs Surf.Area= 5,521 sf Storage= 5,578 cf

Plug-Flow detention time= 298.8 min calculated for 0.231 af (90% of inflow)
Center-of-Mass det. time= 250.1 min (1,027.8 - 777.7)

Volume	Invert	Avail.Storage	Storage Description
#1	39.49'	13,735 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.49	1	0	0
39.50	2,000	10	10
40.00	2,400	1,100	1,110
41.00	3,000	2,700	3,810
41.50	3,350	1,588	5,398
42.00	30,000	8,338	13,735

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 24.00' S= 0.0367 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	40.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	39.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	41.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.30 cfs @ 12.42 hrs HW=41.54' (Free Discharge)
└**1=Culvert** (Passes 0.30 cfs of 8.93 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.30 cfs of 23.90 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.30 cfs)

Secondary OutFlow Max=0.59 cfs @ 12.42 hrs HW=41.54' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 0.59 cfs @ 0.50 fps)

Summary for Subcatchment 1S: Non-treated project FM area

Runoff = 4.44 cfs @ 12.14 hrs, Volume= 0.370 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

Area (sf)	CN	Description
20,981	98	Paved parking, HSG A
27,303	74	>75% Grass cover, Good, HSG C
48,284	84	Weighted Average
27,303		56.55% Pervious Area
20,981		43.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment 2S: Non-treated project Bedford area

Runoff = 5.97 cfs @ 12.14 hrs, Volume= 0.496 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	25,948	98	Paved Sidewalks, hardscape
	40,467	74	>75% Grass cover, Good, HSG C
	66,415	83	Weighted Average
	40,467		60.93% Pervious Area
	25,948		39.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment CSSC2: CSSC Roof treated

Runoff = 4.39 cfs @ 12.07 hrs, Volume= 0.334 af, Depth> 5.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	27,000	98	SSC Roof treated
	6,400	74	>75% Grass cover, Good, HSG C
*	1,100	98	Sidewalk
	34,500	94	Weighted Average
	6,400		18.55% Pervious Area
	28,100		81.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment CTYRD: Courtyard treated

Runoff = 1.29 cfs @ 12.08 hrs, Volume= 0.091 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
	11,850	74	>75% Grass cover, Good, HSG C
*	2,200	98	Hardscape in courtyard
	14,050	78	Weighted Average
	11,850		84.34% Pervious Area
	2,200		15.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm1: Dorm Roof 1 treated

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 0.097 af, Depth> 5.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	8,000	98	Dorm Roof treated
*	2,000	80	BRC Bed
	10,000	94	Weighted Average
	2,000		20.00% Pervious Area
	8,000		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm2: Dorm Roof 2 treated

Runoff = 1.20 cfs @ 12.07 hrs, Volume= 0.086 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	4,000	98	Dorm Roof treated
*	7,046	74	>75% Grass cover, Good, HSG C VFF 1 area
*	450	98	Sidewalk
	11,496	83	Weighted Average
	7,046		61.29% Pervious Area
	4,450		38.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm3: Dorm Roof 3 Treated

Runoff = 1.36 cfs @ 12.07 hrs, Volume= 0.104 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	8,928	98	Dorm Roof treated
*	1,620	80	BRC bed
	10,548	95	Weighted Average
	1,620		15.36% Pervious Area
	8,928		84.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm4: Dorm 4 Roof untreated

Runoff = 1.02 cfs @ 12.07 hrs, Volume= 0.081 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	6,100	98	Dorm roof untreated
*	1,700	98	Bedford Sidewalk
	7,800	98	Weighted Average
	7,800		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm5: Dorm 5 Roof untreated

Runoff = 0.69 cfs @ 12.07 hrs, Volume= 0.055 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	5,280	98	Dorm Roof untreated
	5,280		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 100R: POI 100

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 4.04" for 25 YR event
Inflow = 15.19 cfs @ 12.16 hrs, Volume= 1.609 af
Outflow = 15.19 cfs @ 12.16 hrs, Volume= 1.609 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Durham SD System

Inflow Area = 2.286 ac, 59.07% Impervious, Inflow Depth > 4.15" for 25 YR event
Inflow = 7.17 cfs @ 12.17 hrs, Volume= 0.790 af
Outflow = 7.16 cfs @ 12.17 hrs, Volume= 0.790 af, Atten= 0%, Lag= 0.0 min
Primary = 7.16 cfs @ 12.17 hrs, Volume= 0.790 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.71' @ 12.17 hrs Surf.Area= 9 sf Storage= 11 cf

Plug-Flow detention time= 0.1 min calculated for 0.789 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (885.7 - 885.6)

Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,753 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	500	3	53
29.00	15,000	6,200	6,253
30.00	1,000,000	507,500	513,753

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.90 cfs @ 12.17 hrs HW=23.69' (Free Discharge)
↑**1=Culvert** (Inlet Controls 6.90 cfs @ 3.66 fps)

Summary for Pond 2P: Bedford SD System

Inflow Area = 1.767 ac, 45.32% Impervious, Inflow Depth = 3.95" for 25 YR event
Inflow = 7.15 cfs @ 12.13 hrs, Volume= 0.581 af
Outflow = 7.15 cfs @ 12.13 hrs, Volume= 0.581 af, Atten= 0%, Lag= 0.0 min
Primary = 7.15 cfs @ 12.13 hrs, Volume= 0.581 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 22.91' @ 12.13 hrs Surf.Area= 9 sf Storage= 7 cf

Plug-Flow detention time= 0.0 min calculated for 0.580 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (813.2 - 813.2)

Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=7.01 cfs @ 12.13 hrs HW=22.90' (Free Discharge)
↑**1=Culvert** (Inlet Controls 7.01 cfs @ 3.40 fps)

Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 4.04" for 25 YR event
Inflow = 15.20 cfs @ 12.16 hrs, Volume= 1.609 af
Outflow = 15.19 cfs @ 12.16 hrs, Volume= 1.609 af, Atten= 0%, Lag= 0.0 min
Primary = 15.19 cfs @ 12.16 hrs, Volume= 1.609 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 15.35' @ 12.16 hrs Surf.Area= 9 sf Storage= 18 cf

Plug-Flow detention time= 0.1 min calculated for 1.607 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (852.9 - 852.9)

Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=15.01 cfs @ 12.16 hrs HW=15.33' (Free Discharge)
1=Culvert (Inlet Controls 15.01 cfs @ 4.79 fps)

Summary for Pond BRC1: BRC1

Inflow Area = 0.230 ac, 80.00% Impervious, Inflow Depth > 5.05" for 25 YR event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 0.097 af
Outflow = 0.58 cfs @ 12.25 hrs, Volume= 0.097 af, Atten= 54%, Lag= 10.5 min
Primary = 0.58 cfs @ 12.25 hrs, Volume= 0.097 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.57' @ 12.25 hrs Surf.Area= 2,029 sf Storage= 1,097 cf

Plug-Flow detention time= 53.9 min calculated for 0.097 af (100% of inflow)
Center-of-Mass det. time= 53.7 min (826.8 - 773.1)

Volume	Invert	Avail.Storage	Storage Description
#1	22.99'	20,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.99	1	0	0
23.00	1,800	9	9
23.50	2,002	951	960
24.00	2,200	1,051	2,010
25.00	35,000	18,600	20,610

Device	Routing	Invert	Outlet Devices
#1	Device 2	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	19.00'	**12.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 18.00' S= 0.0143 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#3	Secondary	23.75'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Device 2	22.99'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.57 cfs @ 12.25 hrs HW=23.57' (Free Discharge)
└**2=Culvert** (Passes 0.57 cfs of 7.63 cfs potential flow)
  ├**1=Orifice/Grate** (Weir Controls 0.46 cfs @ 0.85 fps)
  └**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.99' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond BRC2: BRC2

Inflow Area = 0.242 ac, 84.64% Impervious, Inflow Depth > 5.15" for 25 YR event
Inflow = 1.36 cfs @ 12.07 hrs, Volume= 0.104 af
Outflow = 1.27 cfs @ 12.11 hrs, Volume= 0.085 af, Atten= 6%, Lag= 2.1 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 1.27 cfs @ 12.11 hrs, Volume= 0.085 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 29.63' @ 12.11 hrs Surf.Area= 1,656 sf Storage= 1,057 cf

Plug-Flow detention time= 126.1 min calculated for 0.085 af (81% of inflow)
Center-of-Mass det. time= 54.8 min (824.7 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	28.99'	14,992 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.99	1	0	0
29.00	1,656	8	8
29.50	1,656	828	836
30.00	1,656	828	1,664
31.00	25,000	13,328	14,992

Device	Routing	Invert	Outlet Devices
#1	Primary	23.00'	**12.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.00' / 19.00' S= 0.0667 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	29.75'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#3	Device 1	29.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	29.00'	**2.410 in/hr Exfiltration over Surface area above 29.00'** Excluded Surface area = 1,656 sf

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
└**4=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=1.25 cfs @ 12.11 hrs HW=29.63' (Free Discharge)
└**1=Culvert** (Passes 1.25 cfs of 9.36 cfs potential flow)
└**3=Orifice/Grate** (Weir Controls 1.25 cfs @ 1.19 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF1: VFF1 Courtyard Dorm Roof

Inflow Area = 0.323 ac, 15.66% Impervious, Inflow Depth = 3.40" for 25 YR event
Inflow = 1.29 cfs @ 12.08 hrs, Volume= 0.091 af
Outflow = 0.11 cfs @ 13.12 hrs, Volume= 0.060 af, Atten= 91%, Lag= 62.8 min
Primary = 0.11 cfs @ 13.12 hrs, Volume= 0.060 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.01' @ 13.12 hrs Surf.Area= 2,001 sf Storage= 2,205 cf

Plug-Flow detention time= 250.9 min calculated for 0.060 af (66% of inflow)
Center-of-Mass det. time= 150.5 min (970.1 - 819.7)

Volume	Invert	Avail.Storage	Storage Description
#1	22.49'	22,618 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.49	1	0	0
22.50	1,080	5	5
23.00	1,395	619	624
24.00	1,728	1,562	2,186
24.50	15,000	4,182	6,368
25.00	50,000	16,250	22,618

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**15.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 13.65' S= 0.0713 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.50'	**110.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.11 cfs @ 13.12 hrs HW=24.01' (Free Discharge)
└**1=Culvert** (Passes 0.11 cfs of 24.75 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.11 cfs of 19.07 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.49' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF2: VFF2

Inflow Area = 0.264 ac, 38.71% Impervious, Inflow Depth = 3.91" for 25 YR event
Inflow = 1.20 cfs @ 12.07 hrs, Volume= 0.086 af
Outflow = 0.11 cfs @ 13.02 hrs, Volume= 0.057 af, Atten= 91%, Lag= 56.5 min
Primary = 0.11 cfs @ 13.02 hrs, Volume= 0.057 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.57' @ 13.02 hrs Surf.Area= 1,922 sf Storage= 2,120 cf

Plug-Flow detention time= 247.3 min calculated for 0.057 af (67% of inflow)
Center-of-Mass det. time= 149.7 min (956.3 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1	22.50'	17,193 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.50	504	0	0
24.00	1,152	1,242	1,242
25.00	2,500	1,826	3,068
25.10	10,000	625	3,693
26.00	20,000	13,500	17,193

Device	Routing	Invert	Outlet Devices
#1	Primary	21.00'	**12.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.00' / 15.00' S= 0.0400 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	24.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.50'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.60'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.11 cfs @ 13.02 hrs HW=24.57' (Free Discharge)
↑**1=Culvert** (Passes 0.11 cfs of 6.63 cfs potential flow)
↑**2=Orifice/Grate** (Passes 0.11 cfs of 11.30 cfs potential flow)
↑**3=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.50' (Free Discharge)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF3: VFF3 CSSC roof and site area

Inflow Area = 0.792 ac, 81.45% Impervious, Inflow Depth > 5.05" for 25 YR event
Inflow = 4.39 cfs @ 12.07 hrs, Volume= 0.334 af
Outflow = 2.39 cfs @ 12.21 hrs, Volume= 0.308 af, Atten= 45%, Lag= 8.2 min
Primary = 0.45 cfs @ 12.21 hrs, Volume= 0.242 af
Secondary = 1.94 cfs @ 12.21 hrs, Volume= 0.066 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 41.59' @ 12.21 hrs Surf.Area= 8,008 sf Storage= 5,894 cf

Plug-Flow detention time= 254.4 min calculated for 0.308 af (92% of inflow)
Center-of-Mass det. time= 214.1 min (987.2 - 773.1)

Volume	Invert	Avail.Storage	Storage Description
#1	39.49'	13,735 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.49	1	0	0
39.50	2,000	10	10
40.00	2,400	1,100	1,110
41.00	3,000	2,700	3,810
41.50	3,350	1,588	5,398
42.00	30,000	8,338	13,735

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 24.00' S= 0.0367 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	40.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	39.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	41.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.44 cfs @ 12.21 hrs HW=41.59' (Free Discharge)
└**1=Culvert** (Passes 0.44 cfs of 8.94 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.44 cfs of 24.26 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.44 cfs)

Secondary OutFlow Max=1.90 cfs @ 12.21 hrs HW=41.59' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 1.90 cfs @ 0.73 fps)

Summary for Subcatchment 1S: Non-treated project FM area

Runoff = 6.73 cfs @ 12.14 hrs, Volume= 0.572 af, Depth> 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

Area (sf)	CN	Description
20,981	98	Paved parking, HSG A
27,303	74	>75% Grass cover, Good, HSG C
48,284	84	Weighted Average
27,303		56.55% Pervious Area
20,981		43.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment 2S: Non-treated project Bedford area

Runoff = 9.12 cfs @ 12.14 hrs, Volume= 0.772 af, Depth> 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	25,948	98	Paved Sidewalks, hardscape
	40,467	74	>75% Grass cover, Good, HSG C
	66,415	83	Weighted Average
	40,467		60.93% Pervious Area
	25,948		39.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment CSSC2: CSSC Roof treated

Runoff = 6.23 cfs @ 12.07 hrs, Volume= 0.480 af, Depth> 7.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	27,000	98	SSC Roof treated
	6,400	74	>75% Grass cover, Good, HSG C
*	1,100	98	Sidewalk
	34,500	94	Weighted Average
	6,400		18.55% Pervious Area
	28,100		81.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment CTYRD: Courtyard treated

Runoff = 2.06 cfs @ 12.07 hrs, Volume= 0.147 af, Depth= 5.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
	11,850	74	>75% Grass cover, Good, HSG C
*	2,200	98	Hardscape in courtyard
	14,050	78	Weighted Average
	11,850		84.34% Pervious Area
	2,200		15.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm1: Dorm Roof 1 treated

Runoff = 1.80 cfs @ 12.07 hrs, Volume= 0.139 af, Depth> 7.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	8,000	98	Dorm Roof treated
*	2,000	80	BRC Bed
	10,000	94	Weighted Average
	2,000		20.00% Pervious Area
	8,000		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm2: Dorm Roof 2 treated

Runoff = 1.84 cfs @ 12.07 hrs, Volume= 0.134 af, Depth> 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	4,000	98	Dorm Roof treated
*	7,046	74	>75% Grass cover, Good, HSG C VFF 1 area
*	450	98	Sidewalk
	11,496	83	Weighted Average
	7,046		61.29% Pervious Area
	4,450		38.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm3: Dorm Roof 3 Treated

Runoff = 1.92 cfs @ 12.07 hrs, Volume= 0.149 af, Depth> 7.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	8,928	98	Dorm Roof treated
*	1,620	80	BRC bed
	10,548	95	Weighted Average
	1,620		15.36% Pervious Area
	8,928		84.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm4: Dorm 4 Roof untreated

Runoff = 1.43 cfs @ 12.07 hrs, Volume= 0.113 af, Depth> 7.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	6,100	98	Dorm roof untreated
*	1,700	98	Bedford Sidewalk
	7,800	98	Weighted Average
	7,800		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment Dorm5: Dorm 5 Roof untreated

Runoff = 0.97 cfs @ 12.07 hrs, Volume= 0.077 af, Depth> 7.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.10"

	Area (sf)	CN	Description
*	5,280	98	Dorm Roof untreated
	5,280		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 100R: POI 100

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 6.22" for 100 YR event
Inflow = 27.54 cfs @ 12.14 hrs, Volume= 2.478 af
Outflow = 27.54 cfs @ 12.14 hrs, Volume= 2.478 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Durham SD System

Inflow Area = 2.286 ac, 59.07% Impervious, Inflow Depth > 6.34" for 100 YR event
Inflow = 13.92 cfs @ 12.14 hrs, Volume= 1.208 af
Outflow = 13.93 cfs @ 12.14 hrs, Volume= 1.208 af, Atten= 0%, Lag= 0.0 min
Primary = 13.93 cfs @ 12.14 hrs, Volume= 1.208 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.37' @ 12.14 hrs Surf.Area= 9 sf Storage= 17 cf

Plug-Flow detention time= 0.2 min calculated for 1.208 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (858.5 - 858.5)

Volume	Invert	Avail.Storage	Storage Description
#1	22.53'	513,753 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.53	9	0	0
28.19	9	51	51
28.20	500	3	53
29.00	15,000	6,200	6,253
30.00	1,000,000	507,500	513,753

Device	Routing	Invert	Outlet Devices
#1	Primary	22.53'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.53' / 13.35' S= 0.0306 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.73 cfs @ 12.14 hrs HW=24.34' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 13.73 cfs @ 4.59 fps)

Summary for Pond 2P: Bedford SD System

Inflow Area = 1.767 ac, 45.32% Impervious, Inflow Depth > 6.12" for 100 YR event
Inflow = 10.79 cfs @ 12.13 hrs, Volume= 0.901 af
Outflow = 10.79 cfs @ 12.13 hrs, Volume= 0.901 af, Atten= 0%, Lag= 0.0 min
Primary = 10.79 cfs @ 12.13 hrs, Volume= 0.901 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.16' @ 12.13 hrs Surf.Area= 9 sf Storage= 9 cf

Plug-Flow detention time= 0.1 min calculated for 0.901 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (800.6 - 800.6)

Volume	Invert	Avail.Storage	Storage Description
#1	22.18'	559,750 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.18	9	0	0
27.72	9	50	50
27.82	5,000	250	300
28.00	100,000	9,450	9,750
29.00	1,000,000	550,000	559,750

Device	Routing	Invert	Outlet Devices
#1	Primary	21.90'	**36.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.90' / 13.35' S= 0.0285 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=10.58 cfs @ 12.13 hrs HW=23.15' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 10.58 cfs @ 3.80 fps)

Summary for Pond 3P: DMH corner Bedford Durham

Inflow Area = 4.784 ac, 53.60% Impervious, Inflow Depth > 6.22" for 100 YR event
Inflow = 27.52 cfs @ 12.14 hrs, Volume= 2.478 af
Outflow = 27.54 cfs @ 12.14 hrs, Volume= 2.478 af, Atten= 0%, Lag= 0.1 min
Primary = 27.54 cfs @ 12.14 hrs, Volume= 2.478 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 18.23' @ 12.14 hrs Surf.Area= 9 sf Storage= 44 cf

Plug-Flow detention time= 0.1 min calculated for 2.475 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (833.7 - 833.7)

Volume	Invert	Avail.Storage	Storage Description
#1	13.35'	607,878 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
13.35	9	0	0
21.96	9	77	77
22.00	15,000	300	378
23.00	100,000	57,500	57,878
24.00	1,000,000	550,000	607,878

Device	Routing	Invert	Outlet Devices
#1	Primary	13.35'	**24.0" Round Culvert** L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 13.35' / 11.00' S= 0.0117 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf

Primary OutFlow Max=27.02 cfs @ 12.14 hrs HW=18.04' (Free Discharge)
1=Culvert (Barrel Controls 27.02 cfs @ 8.60 fps)

Summary for Pond BRC1: BRC1

Inflow Area = 0.230 ac, 80.00% Impervious, Inflow Depth > 7.27" for 100 YR event
Inflow = 1.80 cfs @ 12.07 hrs, Volume= 0.139 af
Outflow = 1.48 cfs @ 12.13 hrs, Volume= 0.139 af, Atten= 18%, Lag= 3.8 min
Primary = 1.48 cfs @ 12.13 hrs, Volume= 0.139 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 23.64' @ 12.13 hrs Surf.Area= 2,057 sf Storage= 1,243 cf

Plug-Flow detention time= 49.0 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 48.9 min (816.8 - 767.9)

Volume	Invert	Avail.Storage	Storage Description
#1	22.99'	20,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.99	1	0	0
23.00	1,800	9	9
23.50	2,002	951	960
24.00	2,200	1,051	2,010
25.00	35,000	18,600	20,610

Device	Routing	Invert	Outlet Devices
#1	Device 2	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	19.00'	**12.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 18.00' S= 0.0143 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#3	Secondary	23.75'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Device 2	22.99'	**2.410 in/hr Exfiltration over Surface area**

Primary OutFlow Max=1.44 cfs @ 12.13 hrs HW=23.64' (Free Discharge)
└**2=Culvert** (Passes 1.44 cfs of 7.69 cfs potential flow)
  └**1=Orifice/Grate** (Weir Controls 1.32 cfs @ 1.21 fps)
  └**4=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.99' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond BRC2: BRC2

Inflow Area = 0.242 ac, 84.64% Impervious, Inflow Depth > 7.37" for 100 YR event
Inflow = 1.92 cfs @ 12.07 hrs, Volume= 0.149 af
Outflow = 1.82 cfs @ 12.10 hrs, Volume= 0.129 af, Atten= 5%, Lag= 1.9 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 1.82 cfs @ 12.10 hrs, Volume= 0.129 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 29.67' @ 12.10 hrs Surf.Area= 1,656 sf Storage= 1,116 cf

Plug-Flow detention time= 102.9 min calculated for 0.129 af (87% of inflow)
Center-of-Mass det. time= 44.7 min (810.3 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1	28.99'	14,992 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.99	1	0	0
29.00	1,656	8	8
29.50	1,656	828	836
30.00	1,656	828	1,664
31.00	25,000	13,328	14,992

Device	Routing	Invert	Outlet Devices
#1	Primary	23.00'	**12.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.00' / 19.00' S= 0.0667 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	29.75'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#3	Device 1	29.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	29.00'	**2.410 in/hr Exfiltration over Surface area above 29.00'** Excluded Surface area = 1,656 sf

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
└**4=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=1.80 cfs @ 12.10 hrs HW=29.67' (Free Discharge)
└**1=Culvert** (Passes 1.80 cfs of 9.39 cfs potential flow)
└**3=Orifice/Grate** (Weir Controls 1.80 cfs @ 1.34 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.99' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF1: VFF1 Courtyard Dorm Roof

Inflow Area = 0.323 ac, 15.66% Impervious, Inflow Depth = 5.48" for 100 YR event
Inflow = 2.06 cfs @ 12.07 hrs, Volume= 0.147 af
Outflow = 0.41 cfs @ 12.51 hrs, Volume= 0.116 af, Atten= 80%, Lag= 26.1 min
Primary = 0.41 cfs @ 12.51 hrs, Volume= 0.116 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.21' @ 12.51 hrs Surf.Area= 7,408 sf Storage= 3,163 cf

Plug-Flow detention time= 197.2 min calculated for 0.116 af (79% of inflow)
Center-of-Mass det. time= 118.1 min (924.2 - 806.1)

Volume	Invert	Avail.Storage	Storage Description
#1	22.49'	22,618 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.49	1	0	0
22.50	1,080	5	5
23.00	1,395	619	624
24.00	1,728	1,562	2,186
24.50	15,000	4,182	6,368
25.00	50,000	16,250	22,618

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**15.0" Round Culvert X 2.00** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.00' / 13.65' S= 0.0713 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf
#2	Device 1	23.50'	**24.0" x 24.0" Horiz. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.50'	**110.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.41 cfs @ 12.51 hrs HW=24.21' (Free Discharge)
└**1=Culvert** (Passes 0.41 cfs of 25.32 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.41 cfs of 31.55 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.41 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.49' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond VFF2: VFF2

Inflow Area = 0.264 ac, 38.71% Impervious, Inflow Depth > 6.07" for 100 YR event
Inflow = 1.84 cfs @ 12.07 hrs, Volume= 0.134 af
Outflow = 1.47 cfs @ 12.16 hrs, Volume= 0.105 af, Atten= 20%, Lag= 5.4 min
Primary = 0.12 cfs @ 12.16 hrs, Volume= 0.073 af
Secondary = 1.36 cfs @ 12.16 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 24.69' @ 12.16 hrs Surf.Area= 2,083 sf Storage= 2,358 cf

Plug-Flow detention time= 192.0 min calculated for 0.105 af (79% of inflow)
Center-of-Mass det. time= 114.2 min (908.5 - 794.3)

Volume	Invert	Avail.Storage	Storage Description
#1	22.50'	17,193 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.50	504	0	0
24.00	1,152	1,242	1,242
25.00	2,500	1,826	3,068
25.10	10,000	625	3,693
26.00	20,000	13,500	17,193

Device	Routing	Invert	Outlet Devices
#1	Primary	21.00'	**12.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.00' / 15.00' S= 0.0400 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	24.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	22.50'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	24.60'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.12 cfs @ 12.16 hrs HW=24.68' (Free Discharge)
└**1=Culvert** (Passes 0.12 cfs of 6.75 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.12 cfs of 14.81 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.12 cfs)

Secondary OutFlow Max=1.23 cfs @ 12.16 hrs HW=24.68' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 1.23 cfs @ 0.73 fps)

Summary for Pond VFF3: VFF3 CSSC roof and site area

Inflow Area = 0.792 ac, 81.45% Impervious, Inflow Depth > 7.27" for 100 YR event
Inflow = 6.23 cfs @ 12.07 hrs, Volume= 0.480 af
Outflow = 5.15 cfs @ 12.13 hrs, Volume= 0.455 af, Atten= 17%, Lag= 3.4 min
Primary = 0.64 cfs @ 12.13 hrs, Volume= 0.289 af
Secondary = 4.50 cfs @ 12.13 hrs, Volume= 0.166 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 41.65' @ 12.13 hrs Surf.Area= 11,541 sf Storage= 6,542 cf

Plug-Flow detention time= 204.0 min calculated for 0.455 af (95% of inflow)
Center-of-Mass det. time= 173.7 min (941.6 - 767.9)

Volume	Invert	Avail.Storage	Storage Description
#1	39.49'	13,735 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.49	1	0	0
39.50	2,000	10	10
40.00	2,400	1,100	1,110
41.00	3,000	2,700	3,810
41.50	3,350	1,588	5,398
42.00	30,000	8,338	13,735

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 24.00' S= 0.0367 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Device 1	40.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 2	39.49'	**2.410 in/hr Exfiltration over Surface area**
#4	Secondary	41.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.64 cfs @ 12.13 hrs HW=41.65' (Free Discharge)
└**1=Culvert** (Passes 0.64 cfs of 8.96 cfs potential flow)
└**2=Orifice/Grate** (Passes 0.64 cfs of 24.75 cfs potential flow)
└**3=Exfiltration** (Exfiltration Controls 0.64 cfs)

Secondary OutFlow Max=4.41 cfs @ 12.13 hrs HW=41.65' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 4.41 cfs @ 0.97 fps)

Appendix A-3 **Water Quality Calculation**

Appendix A-4 Stormwater System Maintenance Plan

STORMWATER FACILITIES
INSPECTION AND MAINTENANCE PLAN
Revised July 2020

Student Success Center and Residence Hall
University of Southern Maine, Portland, Maine

During construction activities, the maintenance of all stormwater measures will be the direct responsibility of the Contractor undertaking the work. All work shall conform to the terms and conditions and the Maine General Permit for Construction Activities (MCGP). After acceptance by the Owner, the maintenance of all stormwater management facilities, the establishment of any contract services required to implement the programs, and the keeping of records and maintenance log book will be the responsibility University of Southern Maine (USM). Notwithstanding any other schedule noted below, general inspections should be conducted by facilities staff monthly during wet weather conditions(rainfall of 0.5 inch or more) from March to November.

Piped Drainage Systems

Piped drainage systems shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and any erosion damage observed at the pipe inlet and outlet. Sediment shall be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means. Sediment shall be contained at the pipe outlets and not allowed to transport downstream.

Driveways, Walkways and Parking Lots

Accumulations of winter sand along paved surfaces shall be cleared at least once a year, preferably in the spring, to minimize transportation of sediment during rainfall events. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. No gravel roads or shoulders on project,

Inlet and Outlet Grates

Inlet and outlet grates have been designed for some of the pipe culvert sections and outlet structures at the site. These are intended to trap and control floatables and debris within the stormwater system. The grates should be inspected on a quarterly basis, and after large storm events (rainfall in excess of 1.0 inch) for build-up of debris and other potentially detrimental material. Periodic maintenance of these features will be required to keep grates clear and prevent damage to either the grate itself or the attached structure.

Vegetated Underdrained Filter Ponds

Inspections of the vegetatated underdrained filter ponds shall be conducted on a semi-annual basis and following significant rainfall events (rainfall in excess of 1.0 inch). Delayed or poor maintenance practices can result in loss of treatment capacity. Records should be kept of all maintenance operations to help plan future work and identify problem areas. The basin embankments should be maintained to preserve their integrity including, but not limited to,

vegetation maintenance, rodent control, erosion control and repair, and outlet control structure maintenance and repair. The embankments should be inspected annually for erosion or destabilization of side slopes, embankment settling and other signs of overtop structural failure.

The basins should be mowed at least semi-annually and clippings should be removed to minimize the amount of organic material accumulation in the basin. Sediment and debris should be removed from sediment forebays at least annually. The filter pond areas shall not be used for snow storage. Snow storage should be sited so that snow melt flows to a pretreatment BMP before reaching the filtration area. Vehicular equipment used to maintain or rehabilitate a filter pond should work from the pond perimeter and not enter the pond areas, as this will compact the soil surface and reduce filtration capacity. Under no circumstances should heavy equipment be used within soil filter areas unless removal of the filter material is proposed.

The surface of the filter ponds may clog with fine sediments over time. Maintenance of good grass cover should minimize this; however, if ponded runoff does not infiltrate within 48 hours, rototilling the top of the soil bed may be required to re-establish the soils filtration capacity. After a period of five to ten years the soil filter material may need to be replaced entirely to maintain the pollution removal function (the filter material is effectively a sorptive filter with a finite capacity). The end of the effective life of the filter material will be evidenced by significantly diminished infiltration rates and a reduction in outflow through the underdrain system. Removed soil filter material can be disposed of properly at a landfill.

BioRetention Cells

Inspections of the bioretention cells features shall be conducted on a semi-annual basis and following significant rainfall events (rainfall in excess of 1.0 inch). Delayed or poor maintenance practices can result in loss of treatment capacity. Records should be kept of all maintenance operations to help plan future work and identify problem areas. The basin embankments should be maintained to preserve their integrity including, but not limited to, vegetation maintenance, rodent control, erosion control and repair, and outlet control structure maintenance and repair. The embankments should be inspected annually for erosion or destabilization of side slopes, embankment settling and other signs of overtop structural failure.

Sediment and debris should be removed from sediment forebays at least annually. The retention cell areas shall not be used for snow storage. Snow storage should be sited so that snow melt flows to a pretreatment BMP before reaching the filtration area. Vehicular equipment used to maintain or rehabilitate a bioretention cell should work from outside the limits and not enter cell areas, as this will compact the soil surface and reduce filtration capacity. Under no circumstances should heavy equipment be used within bioretention cell areas unless removal of the filter material is proposed.

The surface of the bioretention cells may clog with fine sediments over time. Maintenance of landscaping cover should minimize this; however, if ponded runoff does not infiltrate within 48 hours, replanting of the filter bed may be required to re-establish the soils filtration capacity. After a period of five to ten years the soil filter material may need to be replaced entirely to maintain the pollution removal function (the filter material is effectively a sorptive filter with a finite capacity). The end of the effective life of the filter material will

be evidenced by significantly diminished infiltration rates and a reduction in outflow through the underdrain system. Removed soil filter material can be disposed of properly at a landfill.

Appendix A-5 **S.W. Cole Engineering, Inc. Geotechnical Report**

REPORT

19-1813 S

January 28, 2020

Preliminary Geotechnical Engineering Services

Proposed Residential Hall
& Student Success Center
University of Southern Maine
Bedford Street and Durham Street
Portland, Maine

Prepared For:
University of Southern Maine
Capital Planning & Project Management
Attention: Ann Vashon, Project Manager
25 Bedford Street
Portland, Maine 04101

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Scope and Purpose 1
1.2 Site and Proposed Construction 1
2.0 EXPLORATION AND TESTING 2
2.1 Explorations 2
2.2 Testing 2
3.0 SUBSURFACE CONDITIONS 3
3.1 Soil and Bedrock 3
3.2 Groundwater 3
4.0 EVALUATION AND RECOMMENDATIONS 3
4.1 Foundation and Floor Slab Considerations 3
4.2 Excavation and Dewatering Considerations 4
4.3 Weather Considerations 5
4.4 Recommendations for Additional Study 6
5.0 CLOSURE 6

Appendix A Limitations
Appendix B Figures
Appendix C Exploration Logs & Key

19-1813 S

January 28, 2020

University of Southern Maine
Capital Planning & Project Management
Attention: Ann Vashon, Project Manager
25 Bedford Street
Portland, Maine 04101

Subject: Preliminary Geotechnical Engineering Services
Proposed Residential Housing & Student Success Center
University of Southern Maine
Bedford Street & Durham Street
Portland, Maine

Dear Ann:

In accordance with our Contract, dated January 14, 2020, we have reviewed prior subsurface explorations for the subject project. This report summarizes our findings and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to review our prior subsurface information at the site in order to assess suitable foundation types and earthwork considerations associated with the proposed building construction. Our scope of services included a review of prior explorations completed at the site in July 2019, a geotechnical assessment of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The site of the proposed construction is located on the University of Southern Maine (USM) Portland Campus and is situated on the easterly side of the intersection of Durham and Bedford Streets in Portland, Maine. The site is currently occupied by two buildings,

as well as paved and landscaped areas. We understand the existing Woodbury Campus Center and the adjacent facilities office building structures will be razed in favor of the proposed construction.

Based on conceptual information provided at this time, we understand redevelopment plans call for construction of a student housing structure and a student center building. The student housing structure will consist of two connected L-shaped structures; one 8-story and one 5-story, with on-grade floor slabs on the ground floor level. The Student Success Center is proposed on the westerly side of the Student Housing buildings in an area currently occupied by paved parking and landscaped areas. The proposed Student Center structure will be 4-stories.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Eight test borings (B-19-1 through B-19-8) were made at the site on July 30 and 31, 2020 by S. W. Cole Explorations, LLC. The exploration locations were selected by USM and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C.

2.2 Testing

The prior test borings were drilled using hollow stem auger techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. SPT blow counts and PPT results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further visual classification. Laboratory testing was not requested by the client.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Beneath a surficial layer of pavement or topsoil, test borings B-19-1, B-19-2, B-19-3, B-19-6, B-19-7 and B-19-8, made in the proposed Residence Hall and Student Success Center development area, encountered a soil profile generally consisting of uncontrolled fill overlying native deposits of glaciomarine sand, silt and clay, overlying a thin veneer of outwash sand, mantling refusal surfaces (probable bedrock) at depths varying from about 11 to 26 feet below the ground surface. The uncontrolled fills generally varied from 1 to 3 feet thick, except at B-19-6 where the uncontrolled fills extend down to probable bedrock at a depth of about 13 feet, and B-19-7 where the uncontrolled fill extend down to what appears to be native sand and silt at a depth of about 9 feet.

Test borings B-19-4 and B-19-5 were made northwest of the proposed development area and encountered a surficial layer of topsoil overlying native deposits of silty sand, overlying shallow refusal surfaces (probable bedrock) at depths of about 5 feet below the ground surface.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Groundwater was encountered at depths varying from about 8 to 16 feet in the borings within the proposed development area. Groundwater likely becomes perched on the relatively impervious silty clay and bedrock surfaces encountered at the test borings. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 Foundation and Floor Slab Considerations

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle foundation and floor slab considerations include:

Residential Hall: The subsurface conditions beneath the proposed Residential Hall are generally unsuitable for direct support of spread footing foundations; consequently, we recommend pile-supported foundations or, rigid inclusions be considered to improve the ground for support of spread footing foundations.

On-grade floor slabs bearing on a layer of compacted Structural Fill overlying properly prepared soil subgrades appear feasible for the Residential Hall.

Based on the available subsurface information, we preliminarily interpret the soil profile beneath the Residence Hall at correspond to Seismic Soil Site Class E (IBC 2015).

Student Success Center: Although none of the prior test borings are located directly beneath the Student Success Center, the nearby test borings suggest the trend of soil and bedrock conditions generally improves from east to west. We anticipate the Student Success Center is likely underlain by uncontrolled fills overlying stable native sands, overlying relatively shallow bedrock. At this time, based on the nearby exploration information, we recommend planning consider aggregate pier ground improvement or, over-excavation and replacement of unsuitable soils with compacted Structural Fill for support of spread footing foundations.

On-grade floor slabs bearing on a layer of compacted Structural Fill overlying properly prepared soil subgrades appear feasible for the Student Success Center.

Based on the available subsurface information, we anticipate the soil profile beneath the Student Success Center would correspond to Seismic Soil Site Class D (IBC 2015).

4.2 Excavation and Dewatering Considerations

Excavation work will generally encounter uncontrolled fills, silty sand, silt, clay soils, groundwater, and bedrock with depth. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur ideally during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays, when wet. Low ground pressure tracked equipment may be needed and temporary haul roads overlying geotextile fabric may be necessary. Final cuts to soil subgrades should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Based on the trend of subsurface findings, we anticipate bedrock removal may be required in the western portion of the development area. As blasting is restricted in the City of Portland, bedrock removal by hoe-ramming should be anticipated. We recommend pre-construction surveys be completed on surrounding structures, water supply wells and infrastructure prior to commencing excavation activities.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, water supply wells and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity.

Sumping and pumping dewatering techniques should be adequate to control groundwater in foundation and most utility excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

The on-site granular fills and native sands may be suitable for reuse as compacted Granular Borrow in paved and landscape areas. The drier native silts and clays are unsuitable for reuse in building and paved areas, but may be reused in landscape areas. The saturated silts and clays are unsuitable for reuse and should be properly disposed off-site.

4.3 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.4 Recommendations for Additional Study

We recommend additional test boring explorations and in-situ geophysical testing be performed at the site to further explore the subsurface conditions and Seismic Site Class.

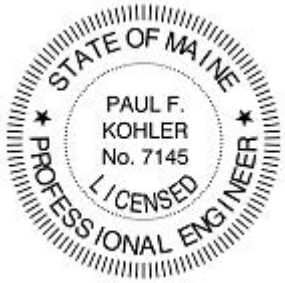
5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the design phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Paul F. Kohler, P.E.
Senior Geotechnical Engineer



TJB:pfk/emw

APPENDIX A

Limitations

This report has been prepared for the exclusive use of the University of Southern Maine (USM) for specific application to the proposed Residence Hall and Student Success Center on the USM Campus in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures

DURHAM STREET

BEDFORD STREET

PROPOSED RESIDENCE HALL

PROPOSED STUDENT SUCCESS CENTER

B-19-1

B-19-2

B-19-3

B-19-4

B-19-5

B-19-6

B-19-7

B-19-8

8" PIPE L=199.2' S=0.015

8" PIPE L=232.2' S=0.010

8" PIPE L=227.5' S=0.006

8" PIPE L=257.5' S=0.010

SD 22.1

SD 22.2

SD 22

SD 21.5

SD 21.4

SD 21.1

SD 21.2

SD 20.1

SD 20.3

SD 20

SD 20.4

SD 12

SD 13

SD 14

FFE 25.00

FFE 25.50

FFE 25.50

FFE 25.50

FFE 37.00

+ 25.00

+ 38.50

+ 35.00

+ 35.00

+ 35.00

+ 35.00

7+00

6+00

5+00

4+00

3+00

2+00

1+00

0+00

LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=60' SCALE PLAN OF THE SITE PROVIDED BY UNIVERSITY OF SOUTHERN MAINE, (USM) AND OVERLAID WITH A 1"=30' SCALE PLAN ENTITLED "BORING PLAN," PREPARED BY SMRT AND PROVIDED AS A PORTABLE DOCUMENT FORMAT (PDF) FILE.
2. THE BORING LOCATIONS WERE SELECTED AND ESTABLISHED IN THE FIELD BY USM AND LOCATED ON THIS PLAN BY MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND IS NOT TO BE USED FOR CONSTRUCTION.

0 30 60 Feet

S.W.COLE ENGINEERING,INC.

UNIVERSITY OF SOUTHERN MAINE

EXPLORATION LOCATION PLAN

PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED STUDENT HOUSING AND SUCCESS CENTER
BEDFORD STREET
PORTLAND, MAINE

Job No.:	19-1813	Scale:	1" = 30'
Date :	01/28/2020	Sheet:	1

R:\2019\19-1813\CAD\Drawings\19-1813-EEP.dwg 1/28/2020 12:05 PM 11, CDeA, S. W. Cole Engineering Inc.

APPENDIX C

Exploration Logs and Key

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-1
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 25' Estimated | **TOTAL DEPTH (FT):** 25.5 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 16 ft 7/30/2019 Soils Saturated at 16 +/- ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0.4-2.4	24/18	4-7-6-6			0.3 Asphalt Pavement Medium dense dark brown fine to medium SAND with some silt and gravel (Fill)	
										2.0 Very stiff becoming stiff brown Silty CLAY with some brown sand layers	
20	5		2D		5-7 6-	24/24	3-5-9-10	q_P=7 to 8 ksf			
										9.0 Loose or soft brown Silty CLAY with silty sand layers	
15	10		3D		10-12 11-	24/20	WOH-2-3-5	q_P=5 to 7 ksf		11.0 Very stiff to stiff brown Silty CLAY with some brown silty sand layers	
					14-			q_P=2 ksf		14.0 Medium brown silty CLAY with brown silty sand layers	▽
10	15		4D		15-17	24/24	1-2-4-1				
					17-			q_P=0.3 ksf		16.5 Soft gray Silty CLAY	
										19.0 Medium gray sandy silty CLAY with gray sand layers	
5	20		5D		20-22 20.5-	24/24	3-3-7-10	q_P=1 ksf		21.0 Medium dense brown fine SAND with some silt, some clayey silt layers Some gravel	
0	25		6D		25-25.3	4/4	60/4"			25.0 Dense brown Silty SAND and GRAVEL	

Auger Refusal at 25.5 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-1

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-2
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 26.5' Estimated | **TOTAL DEPTH (FT):** 17.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Brett Raiche | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 14 ft 7/30/2019 Saturated soils at 14 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
25			1D		0.3-2.3	24/18	6-2-2-4			0.3 Asphalt Pavement 0.5 Medium dense brown Silty CLAY and SAND (Mixed Fill) 1.2 Medium dense brown SAND, some silt, some gravel (Fill) Very stiff brown Silty CLAY, occasional sand layers	
	5		2D		5-7 5.5-	24/20	2-3-4-5	q_P=6 to 7 ksf			
20										9.0 Soft or loose brown Silty Sandy CLAY	
	10		3D		10-12 11-	24/24	WOH- 2-2-4	q_P=1 to 1.5 ksf		10.5 Medium varved brown Silty CLAY with frequent sand layers	▽
15											
	15		4D		15-16.3	16/8	6-10- 50/4"			14.5 Medium dense brown Silty SAND, some fine gravel, pieces of broken rock in tip of spoon	
10											

Auger Refusal at 17.0 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-2

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-3
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 31.5' Estimated
TOTAL DEPTH (FT): 11.5
LOGGED BY: Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Corey Culligan
DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50
AUGER ID/OD: 2 1/4 in / 5 5/8 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic
HAMMER WEIGHT (lbs): 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.91
HAMMER DROP (inch): 30
WATER LEVEL DEPTHS (ft): ▽ 8 ft 7/30/2019 Sand seams wet at 8 +/- ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
30			1D		0.3-2.3	24/14	6-8-4-4			0.3 Asphalt Pavement 1.0 Medium dense brown Gravelly SAND, trace silt (Fill)	
					2-			q_P=8 ksf		Very stiff brown Silty CLAY, some thin brown sand layers	
	5		2D		5-7	24/20	5-3-4-5				
25					6-			q_P=4 to 7 ksf			▽
										8.0 Medium dense brown SAND, some silt	
	10		3D		10-11.5	18/14	3-2-60				
20										11.0 Probable weathered BEDROCK Auger Refusal at 11.5 feet Probable Bedrock	

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-3

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-4
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 42' Estimated | **TOTAL DEPTH (FT):** 5.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0-2	24/12	1-3-5-9			Topsoil with organics	
										0.7 Medium dense light brown Silty SAND, trace fine gravel	
40											
										3.0 Medium dense brown Silty SAND, some gravel, pieces of broken rock in tip of spoon	
	5		2D		5-5.3	3/3	50/3"			5.0 Probable weathered BEDROCK	

Auger Refusal at 5.3 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-4

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-5
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 42' Estimated | **TOTAL DEPTH (FT):** 5.0 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0-2	24/14	1-1-4-12			0.3 Topsoil with organics 0.8 Medium dense light brown Silty SAND, trace fine gravel	
40			2D		2-4	24/16	12-18-18-30			Medium dense to dense brown Silty SAND, some gravel, pieces of broken rock in tip of spoon	
	5									4.0 Probable weathered BEDROCK	

Auger Refusal at 5.0 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-5

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

S.W.COLE EXPLORATIONS, LLC

BORING LOG

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-6
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 41.5' Estimated
TOTAL DEPTH (FT): 13.3
LOGGED BY: Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Corey Culligan
DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50
AUGER ID/OD: 2 1/4 in / 5 5/8 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic
HAMMER WEIGHT (lbs): 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.91
HAMMER DROP (inch): 30
WATER LEVEL DEPTHS (ft): ▽ 11 ft 7/31/2019 Soils appear saturated at 11 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
40			1D		0-2	24/14	4-16-11-10			0.3 Topsoil with organics Medium dense brown Silty SAND, some gravel (Probable Fill or disturbed soil)	
			2D		2-4	24/16	8-11-13-10				
	5		3D		5-7	24/20	6-9-9-9				
35											
	10		4D		10-12	24/6	5-5-5-3			Possible loose blast spoils FILL	▽
30										13.0 Probable weathered BEDROCK Auger Refusal at 13.3 feet Probable Bedrock	

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-6

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-7
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 33.5' Estimated | **TOTAL DEPTH (FT):** 12.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0.5-2.5	24/15	20-16-12-9			0.5 Asphalt Pavement 0.8 Dense brown SAND and GRAVEL, trace silt (Pavement Base Fill) 1.5 Medium dense brown Gravelly SAND, trace silt (Pavement Subbase Fill)	
30										Medium dense to dense brown silty SAND, some gravel (Probable Fill)	
	5		2D		5-7	24/20	9-11-12-16				
25										9.0 Dense brown SAND and SILT with pieces of weathered rock	
	10		3D		10-11.7	20/16	11-28-38-50/2"			10.5 Very dense, highly weathered ROCK (Sapprolite) 11.7 Probable weathered BEDROCK	

Auger Refusal at 12.3 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-7

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

BORING LOG

S.W.COLE EXPLORATIONS, LLC

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

BORING NO.: B-19-8
SHEET: 1 of 1
PROJECT NO. 19-1813
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 29' Estimated | **TOTAL DEPTH (FT):** 13.9 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Corey Culligan | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 10 ft 7/31/2019 Soils appeared saturated at 10 ft +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth
			1D		0.3-2.3	24/12	7-7-4-5			0.3 Asphalt Pavement 0.8 Medium dense brown Gravelly SAND, trace silt (Pavement Base Fill)	
										Loose brown silty SAND with brown silty CLAY (Mixed Fill)	
										3.0 Very stiff brown silty CLAY	
25											
	5		2D		5-7 6-	24/20	3-3-4-6	q_P=5 to 6 ksf			
20											
	10		3D		10-12 11-	24/20	4-6-8-7	q_P=1 to 2 ksf		9.0 Medium Dense, varved brown Silty SAND with brown silty clay layers	▽
										12.5 Probable cobbles or weathered BEDROCK	

Auger Refusal at 13.9 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-19-8

BORING / WELL 19-1813 USM PRELIM.GPJ SWCE TEMPLATE.GDT 1/28/20

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

Appendix A-6 **FEMA Firm Map**

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION IN FT. (NGVD)[1]	DESCRIPTION OF LOCATION
RM 28	56.00	Disk set vertically in north face near the northwest corner of 3-story building housing the Casco Bank on Forest Avenue, 1.2 miles northwest along Forest Avenue from the Post Office near the intersection of Forest Avenue and Woodford Street.
RM 29	35.25	Copper bolt set in top of granite post flush with surface, located approximately 0.85 mile northwest along Forest Avenue from Post Office near intersection of Forest Avenue and Noyes Street, 9.0 feet northwest of northwest curb of Noyes Street and 8.5 feet southwest of southwest curb of Forest Avenue.
RM 30	25.36	Disk set in top of concrete foundation of Oakhurst Dairy building at No. 364 Forest Avenue, 35 feet southwest of north corner of building and level with street, approximately 0.55 mile northwest of Post Office near intersection of Hudson Street.
RM 31	11.88	MDOT plaque set in centerline of service doorway of Franklin Street Pumping Station at intersection of Franklin Street and Marginal Way.
RM 32	9.89	Brass disk set in top of reinforced concrete post 10 inches below present ground level, 250 feet south of C. Profenno Company, 127 Marginal Way, and 350 feet north of intersection of Preble Street and Marginal Way, 27.5 feet southeast of centerline of Marginal Way.
RM 33	36.80	Disk set vertically in northeast face of concrete foundation of 2-story brick building, 56 feet northwest of Seawall Street and 1 foot northwest of east corner of building, near Seawall Street Railroad Station and 360 feet north of crossing of Portland Terminal Railroad and Seawall Street.
RM 34	22.81	Disk set in sidewalk on west side of Saint John Street and opposite intersection of A Street at corner of entrance to Arlan's Shopping Center parking lot, in center of sidewalk and 4.28 feet west of western edge of Saint John Street and approximately 177.4 feet from Arlan's Store.
RM 35	12.83	Chiseled X cut in bolt on rim of fire hydrant on northwest side of Commercial Street, 550 feet northeast of High Street, 76 feet south of Pole No. 29.1, across from No. 322 Commercial Street.
RM 36	28.34	Disk set flush in top of concrete endwall railing at northwest end of Interstate 295 bridge over the Fore River, 21.7 feet south of Portland-South Portland city line sign, and 24.7 feet west of the centerline of Interstate 295 southbound, and 3.5 feet above pavement grade at curb line.
RM 37	22.23	Disk set vertically in center of south face of large rock set in second layer of masonry retaining wall on north of railroad tracks, 45.5 feet east of west end of wall, located .75 mile east from the overpass of U.S. Route 1 over tracks and 142 feet east of east edge of Emery Street foot bridge over tracks.
RM 38	15.56	Disk set vertically in southeast side of first concrete pier southeast of Commercial Street, 25.0 feet southeast of centerline of Commercial Street, 39 feet southwest of northeast end of pier, 0.85 mile west from Custom House at State Route 77 bridge over Fore River.

[1] National Geodetic Vertical Datum of 1929

Project Location

ZONE A2 (EL 10)
ZONE A4 (EL 11)
ZONE A1
ZONE A5
ZONE B
ZONE C
ZONE V3 (EL 12)
BACK COVE
FORE RIVER
THOMPSON POINT
RM 28
RM 29
RM 30
RM 31
RM 32
RM 33
RM 34
RM 35
RM 36
RM 37
RM 38
CORPORATE LIMITS
PORTLAND TERMINAL RAILROAD
CANADIAN NATIONAL RAILWAY
WOODFORD STREET
REVERE
LINCOLN
COYLE
ASHMONT
BELMONT
FOREST STREET
DARTMOUTH
NOYES STREET
DEERING AVENUE
WILLIAM FESSENDEN
HUDSON
PORTLAND TERMINAL RAILROAD
BRIGHTON AVENUE
STEVENS AVENUE
CAPISIC STREET
FROST
CONGRESS
LASSEL
MITTON
POWELAND
DAVIS
BEAMAN STREET
A STREET
B STREET
C STREET
D STREET
ST JOHN STREET
VALLEY
BRAMHALL
PROMENADE
CHADWICK
VAUGHAN
WESTERN
PARK AVENUE
CUMBERLAND
WINTER STREET
STATE STREET
HIGH STREET
PLEASANT STREET
CONGRESS STREET
SPRING
FORE STREET
MARGINAL WAY
SOMERSET
LANCASTER
PREBLE STREET
CEDAR
CHAPEL
STONE
CUMBERLAND
PEARL
VELMOST
ALDER
HANOVER
EMERY
BRATTLE
DANA
DAFFORTH
SALEM
BARRACKET ROAD
COMMERCIAL
CANADIAN NATIONAL RAILWAY
RAILWAY
ANDERSON
WASHINGTON AVENUE
COVE
HAMMOND AVENUE
DIAMOND
FOX
MADISON
KENNEDY
FRANKLIN
OXFORD
SMITH
EAST
MAYO
BOYD STREET
AVENUE

ADJOINING AREA SHOWN AS INSET A ON PANEL 230051 0016 B

KEY TO MAP

- 500-Year Flood Boundary
- 100-Year Flood Boundary
- Zone Designations*
- 100-Year Flood Boundary
- 500-Year Flood Boundary
- Base Flood Elevation Line With Elevation In Feet**
- Base Flood Elevation in Feet Where Uniform Within Zone**
- Elevation Reference Mark
- Zone D Boundary
- River Mile

ZONE B / ZONE A1 / ZONE A5 / ZONE B

513

(EL 987)

RM7×

•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depth less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance and flood plain management purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas. The coastal flooding elevations shown may differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

For adjoining map panels, see separately printed Index To Map Panels.

Coastal base flood elevations shown on this map include the effects of wave action.

Coastal base flood elevations apply only landward of 0.0 NGVD.

INITIAL IDENTIFICATION:
APRIL 29, 1977
FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 17, 1986
FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE
400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND, MAINE
CUMBERLAND COUNTY

PANEL 13 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0013 B

EFFECTIVE DATE:
JULY 17, 1986

COASTAL BASE FLOOD ELEVATIONS APPLY ONLY LANDWARD OF 0.0 NGVD

Federal Emergency Management Agency

University of Southern Maine
Portland Commons Residence Hall
Preliminary Plan for Summer/Fall Move-In

Proposed Planning Committee Membership
USM - Transportation Coordinator, Parking Office, Public Safety, Residential Life, Graduate Student
Community – City of Portland, Neighborhood and Oakhurst

Two spring meetings to develop a plan in order to effectively communicate to all stakeholders. An additional meeting in late July or early August to finalize all logistics and an early/mid-September meeting to evaluate the plan and make recommendations for improvement.

Overview
30% (175 students) – SUMMER RESIDENTS & EARLY ARRIVALS - student staff, student-athletes, etc.
returning groups arrive in small numbers during a 10-day to two week period
35% (200 students) Blue Move-In Day
35% (200 students) Gold Move-In Day

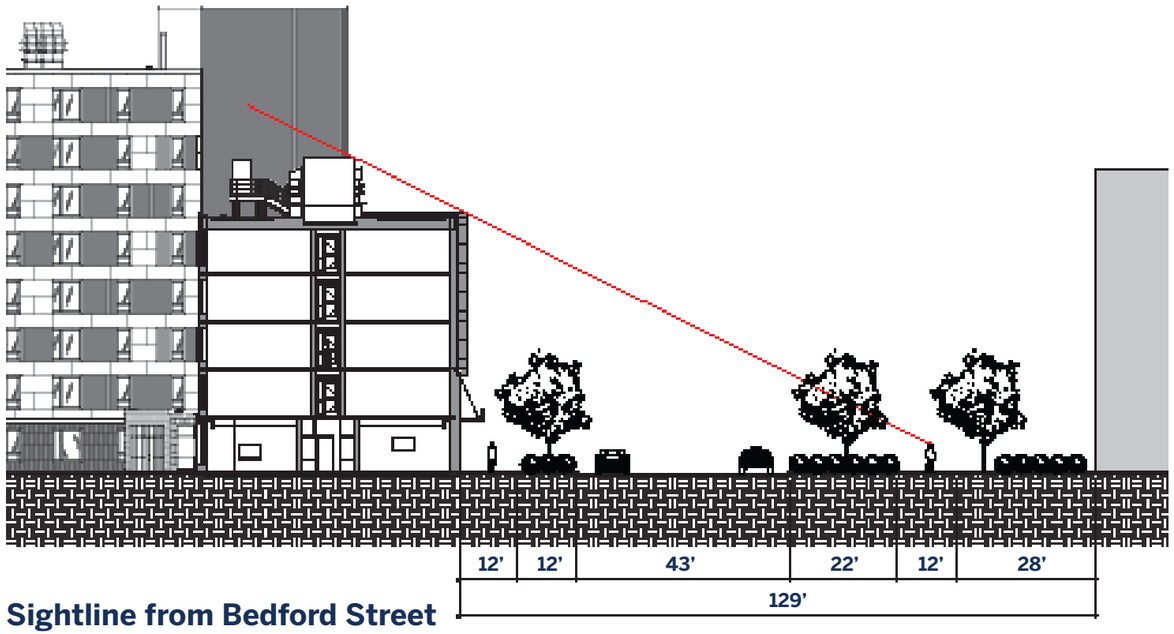
Blue/Gold Move-In Days
Students will be assigned different dates (Blue or Gold) and times of the day (8 am to 6 pm) to prevent congestion and long lines. Assignments will be determined by floor & room or Alpha by last name. Each hour time block would have 20 students moving in to the residence hall.

Procedures (for students)
1. Plan to arrive on the assigned date and during the designated time slot
2. Follow directions (up Bedford Street/down Falmouth Street) towards entrance to Durham Street
3. Staff will control vehicle flow and access to Durham Street unloading areas (as space is available) The Sullivan Gym parking lot/garage will be utilized as a vehicle staging area
4. When at unloading area, Student will start the curbside check-in process with Res Life staff
5. When checked-in, student vehicle will be unloaded in designated/approved areas (Heat Plant parking lot on Durham Street)
6. Once items are unloaded, vehicle will be moved to the Bedford Street parking garage
7. Once vehicle is parked in the Bedford Street garage, items will be taken to room by hand or with provided carts

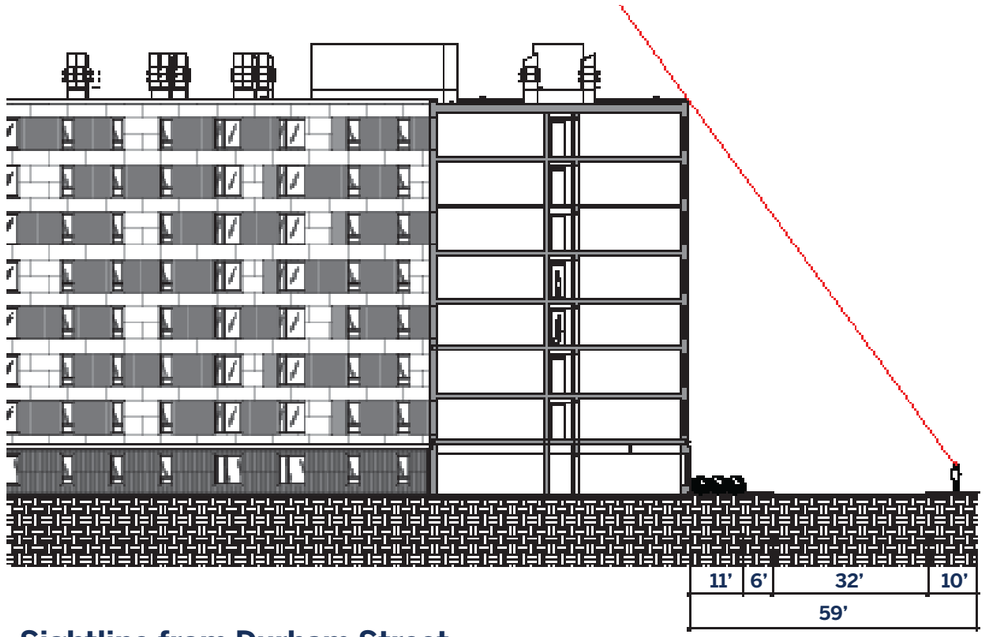
Move-Out Plan
Currently in Gorham, we do not have a move-out plan as students move out sporadically over a two-week period. We would envision a similar process in Portland. The Planning Committee would be charged in March of each year to develop similar procedures for anticipated high-capacity days (Commencement and lease end date).

Notes
The Portland Commons Residence Hall is for Law, Graduate and Upper class students. Very few families will participate in the move-in/move-out process.

Sightline Diagram

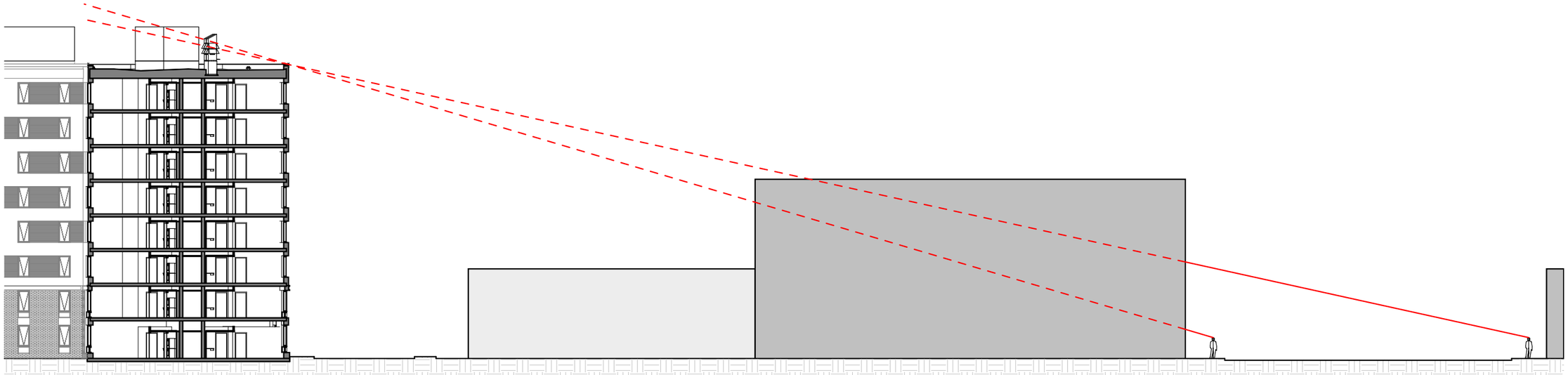


Sightline from Bedford Street



Sightline from Durham Street

Sightline Diagram



Sightline from Forest Ave

University of Southern Maine

Traffic Movement Permit - Section 7

Proposed Residence Hall, Student Center, and Parking Garage

October 2020

Introduction

This Traffic Impact Analysis is provided as Section 7 of the Traffic Movement Permit (TMP) application for the proposed residence hall, student center and parking garage on the Portland campus of the University of Southern Maine (USM). This analysis incorporates comments received at the project Scoping Meeting that was held virtually on August 6, 2020.

The project consists of a 580 bed residence hall, a Career and Student Center, and up to a 500 parking space parking garage. The 580 bed residence hall will be located on the corner of Bedford Street and Durham Street. The new Student Center will be located to the west of the residence hall, set back from Bedford Street. Vehicular access for loading will be provided to the sites via a lot off of Durham Street. Pedestrian access to the dormitory will be via a front entrance on Bedford Street, an entrance on Durham Street and an entrance across from the Student Center. The main entrances to the student center will face the lawn towards Bedford Street with an additional entrance to the rear of the building.

The residence hall and student center are part of a project currently undergoing permitting from the City of Portland. Although the parking garage is not currently part of a City permit application, the parking garage is a part of this TMP application as it is expected to closely follow the permitting of the residence hall and student center. For the purposes of this analysis, the parking garage will likely be located on the site of the existing Sullivan Gym lot, between the Student Center and Falmouth Street with a parking supply between 400 and 500 spaces. A project location map can be found in Attachment 7A.

Existing Condition

Existing Traffic Volume Data

The area around USM has been the subject of significant transportation analysis and study. The City of Portland has studied intersections on the west side of the campus as a part of the Deering Roundabout project. The intersections to the east, along Forest Avenue, were studied as a part of the *Portland-South Portland Smart Corridor Plan* project. Historic information was collected where available.

Current turning movement count data was initially collected at the study area intersections of Forest Avenue at Bedford Street; Forest Avenue at Falmouth Street; and at Falmouth Street, Brighton Avenue and Deering Avenue. Traffic data was collected on Tuesday February 25, 2020 when both USM and local Portland schools were in session. The weather was cloudy and approximately 40-degrees. Data was collected during the typical peak commuter peak periods, 7:00 to 9:00 AM and 4:00 to 6:00 PM. The peak hour occurred from 7:30 to 8:30 AM and 4:30 to 5:30 PM at the three study area intersections. The appropriate adjustment to result in the 30th highest hour of the year was researched using the weekly mean factors published by MaineDOT based on the classification of the roadway: urban, arterial, recreational, or a mixture of the three. As a result, the raw volumes collected in February 2020 were adjusted by a factor of 1.02, the weekly mean factor, and 0.89, the highest volume week factor.

Additional data was collected for the intersection of Bedford Street and Deering Avenue from the Deering Corner Roundabout project. Finally, 2019 Inrix data was obtained for the intersections of Falmouth Street at Oakdale Street and Bedford Street and Deering Avenue. The Inrix data for these two intersections was added to the 2020 Adjusted volumes network and balanced. All traffic volume data is provided in Attachment 7A.

In addition to seasonally adjusting the traffic volumes, to account for background traffic growth, the volumes were also increased by one percent per year to a future horizon year of 2023 when the proposed project is anticipated to open and to 2028, a five year horizon after the project opening.

Crash Summary

A review of MaineDOT's most recent High Crash Location (HCL) Report (2017-2019) revealed that two intersections within the project study area are classified as HCL by MaineDOT[1]. MaineDOT uses two criteria to define HCLs. Both criteria must be met in order to be classified as an HCL:

- A critical rate factor (CRF) of 1.00 or more for a three-year period. A CRF compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicated a rate of less than average and:
- A minimum of eight crashes over the same three-year period.

MaineDOT identified two locations in the site vicinity as an HCL, the intersection of Falmouth Street at Deering Avenue and Brighton Avenue and the intersection of Forest Avenue at Bedford Street and Baxter Boulevard. The intersection of Falmouth Street at Deering Avenue and Brighton Avenue is currently being reconstructed as a roundabout in order to reduce the number of crashes at this location.

Maine Public Crash Data Query Tool[2] was reviewed to further investigate reported crashes occurring over the most recent three-year period in the vicinity of the project. The crashes occurring at the study area intersections are summarized in **Table 1** below. The high crash location reports can be found in Attachment 7B.

1 MaineDOT Public Map Viewer Tool. https://www.maine.gov/mdot/mapviewer/. Queried 09/8/2020.
2 Maine Public Crash Query Tool. https://mdotapps.maine.gov/MaineCrashPublic/Home. Queried 07/8/2020.

Table 1: Crash Summary

		Crash Severity			Crash Type					
Intersection	Total	Fatal	Injury	PDO	Rear End or Sideswipe	Intersection Movement	Went Off Road	Ped	Bike	Other
Deering Avenue Brighton Ave Falmouth St**	22	0	5	17	20	1	1	0	0	0
Forest Ave Bedford St Baxter Blvd**	46	0	15	31	36	8	2	0	0	0
Falmouth St Forest Ave Preble St	20	0	3	17	12	6	0	0	1	1
Oakdale St Falmouth St										
Deering Ave Bedford St	2	0	1	1	2	0	0	0	0	0
Durham St Bedford St	3	0	1	2	2	1	0	0	0	0
Durham St Falmouth St	2	0	0	2	2	0	0	0	0	0
Access on Bedford St	4	0	2	2	1	1	0	1	1	0
Access on Durham St										

Note: There were no fatalities at the above HCLS.
** HCL

As indicated above, based on the MaineDOT Public Query Tool and the MaineDOT Public Map Viewer for HCLs, the only HCLs in the vicinity are at the intersection of Falmouth Street at Deering Avenue and Brighton Avenue and the intersection of Forest Avenue at Bedford Street and Baxter Boulevard. Mitigation measures in the form of a roundabout are currently under construction at the intersection of Falmouth Street at Deering Avenue and Brighton Avenue. The intersection of Forest Avenue at Bedford Street and Baxter Boulevard has a high instance of rear end collisions. Potential mitigation could include signal timing modifications including optimization of the clearance intervals or signal coordination of the adjacent intersections.

There have been two crashes involving a bicycle and an additional crash involving a pedestrian in the past three years at the student center driveway. Both crashes resulted in a non-fatal injury. Measures have been installed recently to alert drivers' attention to the presence of pedestrian crossing locations.

Historic Context on University of Southern Maine Campus

University of Southern Maine has last participated in the Traffic Movement Permit process in 2006 when the application was submitted for the Wishcamper Center. As a result, the enrollment changes on the campus since that time were investigated. As shown in **Table 2** below, the enrollment in both full time equivalents, as well as, full student numbers peaked in 2006 with 8,949 full time equivalents and 7,348 full time students in the USM system. The enrollment reduced to a low of 5,681 full time equivalents in 2016, but has been increasing in recent years. In academic year 2019-2020, the number of full time equivalents was 6,123 students.

Table 2: University of Southern Maine Enrollment

FY	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TOTAL STUDENTS - FTE	7348	7180	7157	7035	6971	7051	6764	6871	6462	6083	5681	5713	5894	6123

1. FTE - full time equivalenrts

Future Condition

Roadway Infrastructure

As indicated above, the study area has been the focus of significant transportation analysis and infrastructure improvements. The future conditions for the study area include a significant infrastructure change at the intersection of Falmouth Street, Brighton Avenue and Deering Avenue. Beginning in Spring 2020, construction began at this signalized intersection to create a roundabout. As shown in **Figure 1** from the City of Portland website, the eastern leg of Brighton Avenue will be discontinued, and the traffic redirected to the southeast Deering Avenue leg of the intersection. The remaining five legs of the intersection will form the new roundabout. For future conditions analyses, this intersection will be analyzed as a roundabout in all scenarios.

The traffic volume data collected at the intersection of Falmouth Street, Brighton Avenue and Deering Avenue was redistributed to represent the volumes that will exist at the five-leg roundabout in the future, rather than the current six-leg condition.

Figure 1: Proposed Roundabout at Falmouth Street, Brighton Avenue and Deering Avenue (City of Portland)



In addition to the impending improvements at Falmouth Street, Brighton Avenue and Deering Avenue, the *Portland-South Portland Smart Corridor Plan* evaluated alternatives for improving traffic operations along Forest Avenue. In the vicinity of USM, those improvements included improving accommodations for cyclists and shortening pedestrian crossing distances by narrowing travel lanes and shortening turning radii.

As a part of a DPW water resources project, striping changes have been incorporated to better serve cyclists at these intersections and adaptive traffic signal control is being implemented. This technology will allow for a more responsive signal system that, for example, ends green time for approaches that do not have traffic on them and lengthens green time for approaches with additional demand. For the purposes of the analysis, the signal operations from the *Portland-South Portland Smart Corridor Plan* were field checked and used as a baseline operation.

Other Developments in the Vicinity of the Site

Projects that have been approved but are not yet occupied as well as projects that have applied for approval are required to be included in the predevelopment traffic volumes. City of Portland staff have indicated that the traffic from the following projects should be included in the background traffic for the project. A map of the locations of these projects is provided in Attachment 7C.

- 132 Marginal Way (Bayside Village conversion) (PL-000709-2019). This building appears to be occupied. The submission for this project indicated approximately the same number of trips existing and proposed.
- 191 Marginal Way TMP (PL-001137-2020) This commercial development has been constructed but the Dunkin and other tenants have not occupied. With a Dunkin, and other small commercial uses, based on the trip assignment, there are minimal new trips distributed to the network to impact near USM.
- 104 Grant Street (PL-000960-2020) This 23 residential unit building is under construction and vacant. The trip generation for the entire building is approximately 15 trips during the peak hour and based on location, a minimal number of trips may pass near USM along Deering Avenue.
- 510 Cumberland (PEZ-2017-132) The 33 new units (total 80 units) subsidized housing are currently under construction. Similar to Grant Street, this will include a low trip generation and even lower trips will pass by the USM study area via Deering Avenue.
- 58 Parris St. (PEZ 2017-287) has been constructed and has been occupied.
- 178 Kennebec (PL-000029-2018) The 46 unit condominium is under construction. Based on its location, a small number of the approximately 20 peak hour trips may use Forest Avenue past USM.
- Maine Med projects. Based on a review of the Maine Med projects, the parking garage for employees was the significant project listed. This garage is constructed and being used.

The traffic anticipated to be generated by these projects is illustrated in **Figure 2**.

Figure 2: Site Specific Development – Trips



Future No Build Condition

The traffic associated with the background developments was added to the intersection traffic volumes increased to the future horizon years. The volumes at the intersection of Falmouth Street at Deering Avenue and Brighton Avenue were redistributed to represent the configuration proposed in the roundabout. The resulting Fall 2023 and Fall 2028 traffic volumes are illustrated in **Figure 3** and **Figure 4**.

Figure 3: 2023 No Build Traffic Volumes

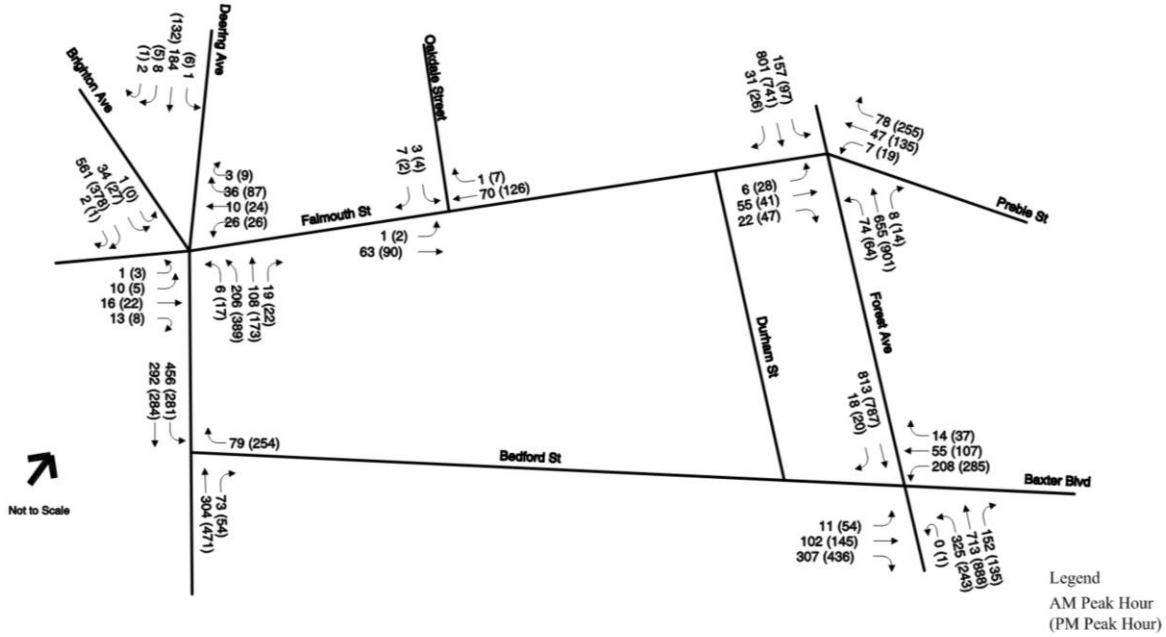
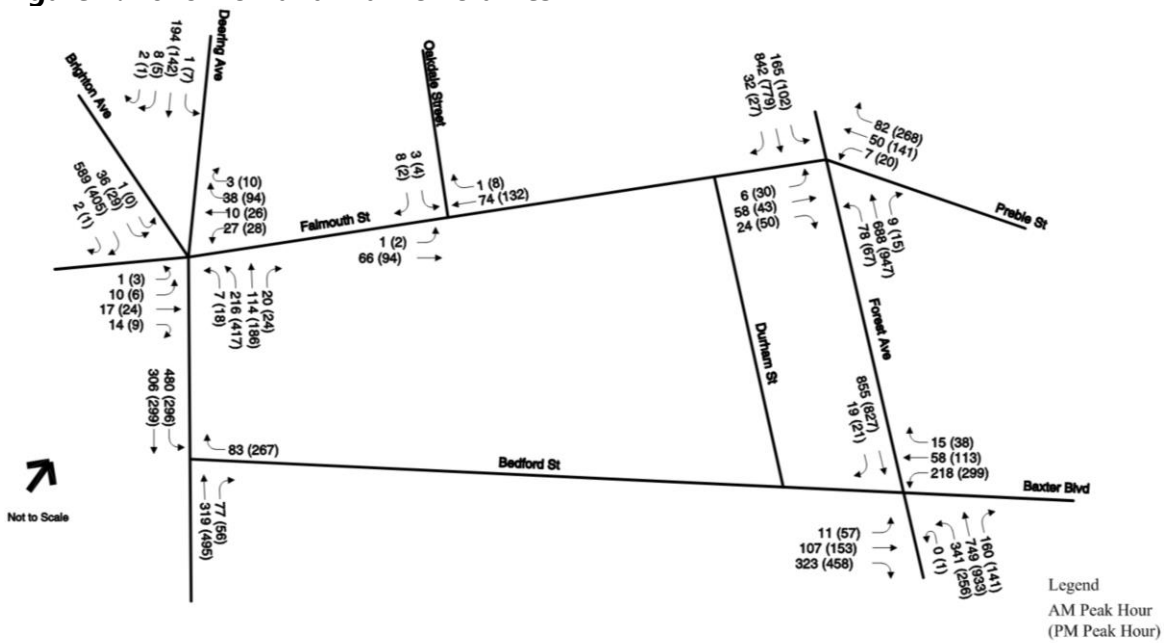


Figure 4: 2028 No Build Traffic Volumes



Trip Generation

The trip generation for the site was calculated based on the Institute of Transportation Engineers (ITE) publication, Trip Generation, 10th edition[3].

The proposed project includes the following uses:

- 580 bed residence hall,
- Career and student success building,
- Up to 500 space parking garage,
- An anticipated 1,066 student increase in enrollment by 2028 across the USM footprint.

Adding residential beds to a campus typically will reduce vehicle trips if enrollment is expected to remain the same. A portion of the student body who were previously commuting to and from the campus each day, now will reside on-campus and walk to classes. The students with cars will occasionally use them to drive to recreation or commercial establishments and others may get vehicular deliveries or visitors, but the reduction in the typical peak hour trips is usually significant.

The proposed Student Center is not expected to generate a significant number of trips as it is an expansion of an existing use on the campus and is expected to continue to serve the student population. With the improved facility, it is possible that additional special events could occur that would generate additional trips, but if they were to occur, the traffic would be intermittent and not generate a typical trip generation.

The most significant generator of trips on a college campus is typically increases in enrollment. Historically enrollment reached a peak in 2006 and then dropped a low in 2016. 2019 enrollment was almost 25% less than the 2006 enrollment. **Table 3** provides the anticipated enrollment starting with Fall 2019 and moving into the future across the USM footprint.

Table 3: University of Southern Maine Future Enrollment

FY	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
ENROLLMENT FUTURE - FTE	6123	6184	6245	6371	6498	6628	6694	6761	6829	6897
	Increase in Enrollment - FTE 2019-2023				**375**	**Increase in Enrollment - FTE 2023-2028**				**399**
TOTAL STUDENT ENROLLMENT	8429	8513	8598	8770	8946	9124	9215	9308	9401	9495
	Increase in Student Enrollment 2019-2023				**517**	**Increase in Student Enrollment 2023-2028**				**549**

1. FTE - full time equivalenrts

As shown, USM enrollment has been slowly growing in recent years but may have been limited due to a lack of on-campus housing. Recently, demand has been high for on-campus housing at the Gorham campus, resulting in 210 students being housed in triples (rooms with two other students). This indicates that there is already demand for 210 additional beds. In addition, based on surveys, the University has identified that 296

3 ITE Trip Generation Manual, 10th Edition.

additional undergraduate students and 106 existing graduate students currently are living off-campus that would like to be in on-campus housing. It is also likely that a number of students have opted to attend other Universities that could accommodate them in on-campus housing (in less than a triple room).

Regardless, the traffic count data was collected during the 2019-2020 season when enrollment was 6,123 full time equivalents. By 2023, when the proposed projects are anticipated to open, enrollment is expected to increase by 375 full time equivalents or 517 total students. By fall 2028, a five year horizon after the projects open, enrollment will increase by another 399 full time equivalents or 549 total students or a total enrollment increase of 1066 students.

The ITE trip generation was calculated for the weekday AM and PM peak hours of the generator using the Land Use Code (LUC) for University/College (LUC 550). No adjustments were made to the data in **Table 4** to account for trips made by other modes. Backup information is provided in Attachment 7D.

Table 4: Trip Generation

		Trip Generation - Proposed Site[1]
Weekday AM Peak Hour	Enter	125
	Exit	35
	Total	160
Weekday PM Peak Hour	Enter	51
	Exit	109
	Total	160

1 Trip Generation based on ITE 10th Edition, LUC 550, University/College (1,066 Students).

Trip Distribution

The distribution of the site related traffic was based on USM Portland student zip code information assuming the University will continue to draw from similar geographic areas.

Most site trips are anticipated to be generated to and from the south on Forest Avenue with 46 percent of traffic oriented to and from I-295 and an additional seven percent oriented to and from downtown Portland and parts of South Portland. The next sources of trips are 30 percent to and from Brighton Avenue and 14 percent to and from points north via Forest Avenue. Minor percentages access USM from Preble Street, Deering Avenue points south, and Oakdale Street.

Project Related Traffic Volumes

The trip generation of the proposed site is illustrated in **Figure 5**. The trip generation of the proposed site was added to the future traffic volumes to determine the 2023 and 2028 Build traffic volumes as shown in **Figure 6** and **Figure 7**.

Figure 5: Trip Generation for the Proposed Site

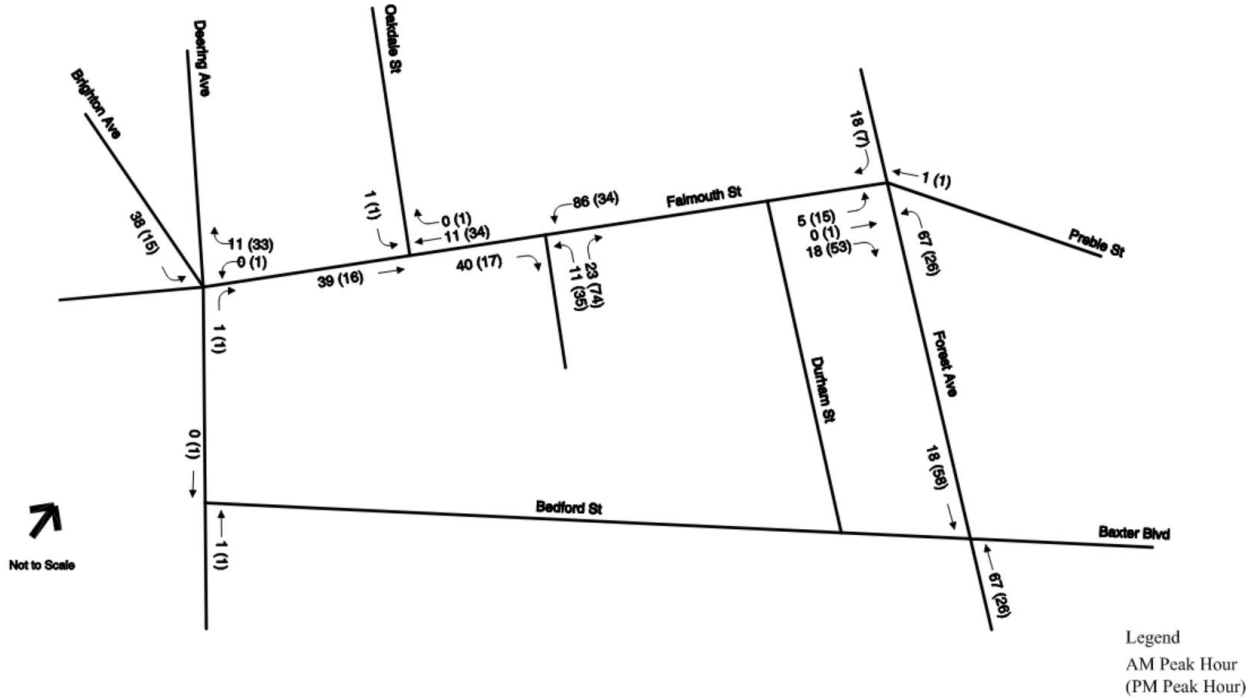


Figure 6: 2023 Build Traffic Volumes

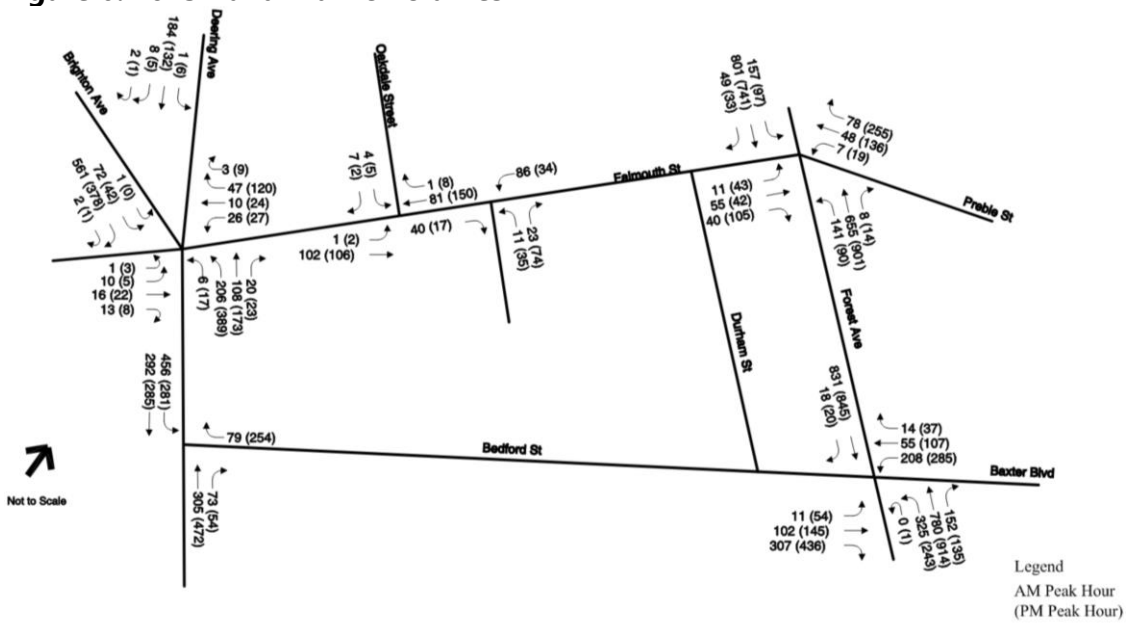
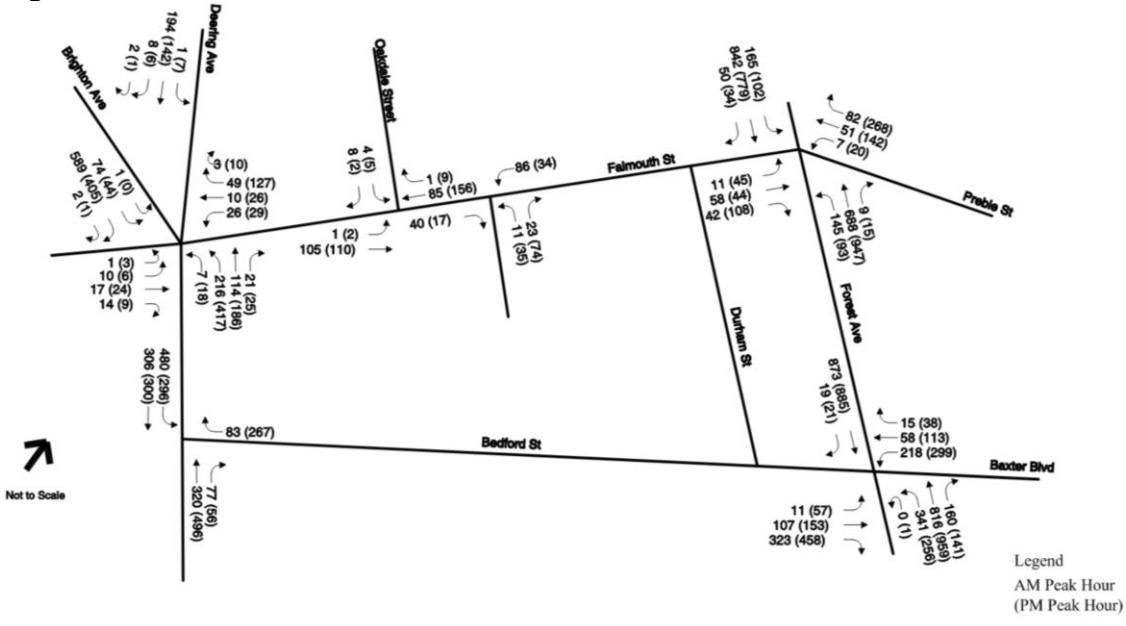


Figure 7: 2028 Build Traffic Volumes

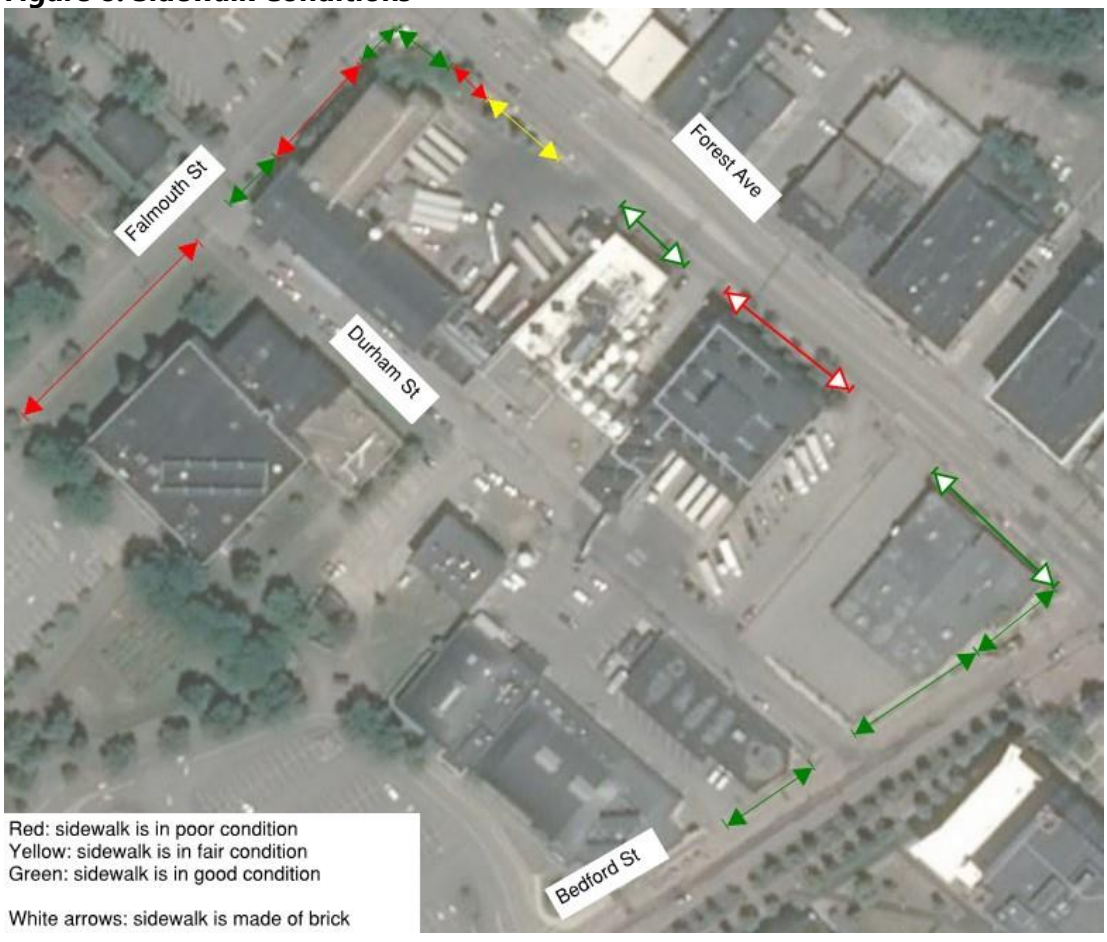


Pedestrian and Bicycle Facilities

With the increased number of residents in the immediate area, it is anticipated that the number of walking and biking trips will increase. Many of these bike trips are likely oriented to and from the cove for recreation. In addition, a number of these pedestrian and bicycle trips will be oriented to and from the retail locations along Forest Avenue. As indicated above, the bicycle accommodations in the study area have improved significantly in recent years with the provision of bicycle lanes and two stage bicycle turn boxes along Forest Avenue. Bicyclists are accommodated in bicycle lanes along Bedford Street and the lower vehicular volumes along Falmouth Street result in a comfortable riding environment on that roadway.

VHB conducted an inventory of the existing pedestrian conditions in the area as shown in **Figure 8**. As shown, there are a number of sidewalk segments that are in poor condition. There are low points in the broken sidewalk that would allow for pooling after a rain event and sections of brick sidewalk on Forest Avenue that are deformed.

Figure 8: Sidewalk Conditions



Pedestrian phases are incorporated into the traffic signal timing at the intersections of both Forest Avenue and Bedford Street and Forest Avenue and Falmouth Street by processing pedestrians concurrently with traffic flow and using lighted signage to indicate to yield to pedestrians. The location of the proposed residence hall would likely result in a desire line to cross Forest Avenue at Bedford Street. The *Portland-South Portland Smart Corridor Plan* included recommendations at Bedford Street and at Falmouth Street. The recommendations included bumping out curbing in order to shorten crossing distances. With shorter crossing distances, the cycle lengths can be lower and still accommodate the required minimums for pedestrian crossing times.

During the scoping meeting, a past pedestrian fatality was mentioned at Forest Avenue and Fenwick Road. Because the students will be traveling along either Bedford Street or Falmouth Street to reach Falmouth Street, it is unlikely that they would choose to not cross at one of those intersections. The pedestrian that chose to cross midblock was likely traveling to and from midblock destinations. The *Portland-South Portland Smart Corridor Plan* did include a Rectangular Rapid Flashing Beacon at this location, likely to address any desire line in this area.

Transportation Demand Management

Through a separate effort, USM has been developing a Transportation Demand Management (TDM) plan in an effort to reduce both campus wide peak parking demand as well as single occupant vehicle trips impacting area roadways during peak hours. Based on the baseline information collected, USM students and employees are already choosing human powered modes at a high rate (11% of students are walking and biking to campus and 13% of employees are walking or biking to campus). With the initiatives included in the plan, this mode split and the percentage of students and employees using transit and carpooling, are all expected to increase. Additional information is provided in the USM TDM. To be conservative in this analysis, no reduction in automobile trips was taken when calculating project related delay increases.

Traffic Analyses

Intersection Capacity Analyses

Intersection capacity analyses were performed for the study area intersections. Levels of service (LOS) were calculated based on the criteria published in the *2000 Highway Capacity Manual*.[4] Level of service is the term that defines the conditions that may occur on a given roadway or at an intersection when accommodating various traffic volume loads. Levels of service range from A to F with LOS A representing generally free flowing operating conditions and LOS F representing generally congested conditions. **Table 5** summarized LOS and delay for signalized and unsignalized intersections and roundabouts. Synchro 10 was used to determine the LOS at signalized intersections and Sidra Intersection 8 was used to determine the LOS at the proposed roundabout.

The initial Existing Conditions Synchro analysis for the Forest Avenue signalized intersections was developed using the analysis performed for the *Portland-South Portland Smart Corridor Plan*. VHB team members were a part of that project and had used field measured queues to calibrate the Synchro analysis

4 Highway Capacity Manual, Federal Highway Administration, Transportation Research Board, 2000.

at that time. No additional calibrations have occurred. Copies of the LOS calculations are provided in the Attachment 7E.

Table 5: LOS and Delay Summary

	Signalized Intersection	Unsignalized Intersection	Roundabout
LOS	**Delay (sec)**		
A	≤ 10	0 - 10	0 - 10
B	> 10 - 20	> 10 - 15	> 10 - 15
C	> 20 - 35	> 15 - 25	> 15 - 25
D	> 35 - 55	> 25 - 35	> 25 - 35
E	> 55 - 80	> 35 - 50	> 35 - 50
F	> 80	> 50	> 50

Table 6 summarizes the operational analysis at the signalized study area intersections during the 2023 and 2028 weekday AM and PM peak hours under No Build and Build conditions, respectively. As shown, the intersection of Forest Avenue at Falmouth Street and Preble Street is expected to operate at LOS B in 2023 and 2028. The operation will continue operating at LOS B under the Build condition with only a two second project related delay increase during both peak hours. A number of movements at this intersection are operating at LOS D and southbound queues do exceed the available storage. The southbound left movement is operating at LOS E under all scenarios. Even the heavy increase of the Forest Avenue northbound left turns onto Falmouth Street in the morning, the vehicle queue can be accommodated in the storage length available for the northbound left turn movement.

The signalized intersection of Forest Avenue at Bedford Street and Baxter Boulevard is expected to operate at LOS D in 2023 and 2028 both without and with the project. Project related delays are expected to be three seconds or less per vehicle. Even in the No Build condition, without project traffic, a number of movements at this intersection are operating at LOS E during the AM peak hour or LOS F during the PM peak hour. Vehicle queues are lengthy for many movements. In fact, the # symbol in the chart indicates that the volumes for 95th percentile cycle exceeds capacity. The installation of adaptive signal control ensures that the intersection operates at optimal conditions throughout the day.

Table 6: 2023 and 2028 Signalized Intersection Operations

Intersection		2023 No Build				2023 Build				2028 No Build				2028 Build			
Peak Hour	**SL^**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**
Forest Avenue at Falmouth Street/Preble Street																	
AM Peak Hour																	
Falmouth Avenue, EBLT	210	0.36	51.2	D	79	0.39	51.8	D	84	0.38	51.4	D	82	0.40	52.0	D	87
Falmouth Avenue, EBR	150	0.09	0.6	A	0	0.17	1.1	A	0	0.10	0.6	A	0	0.18	1.2	A	0
Preble Street, WBLT	630	0.29	49.2	D	74	0.29	48.8	D	76	0.30	49.3	D	78	0.29	48.9	D	79
Preble Street, WBR	630	0.17	5.0	A	27	0.17	5.0	A	27	0.17	4.9	A	28	0.17	4.8	A	28
Forest Avenue, NBL	200	0.35	35.7	D	108	0.56	39.1	D	179	0.36	35.2	D	114	0.57	39.8	D	190
Forest Avenue, NBT/TR	700	0.34	7.4	A	57	0.34	7.2	A	188	0.36	7.5	A	108	0.36	8.0	A	292
Forest Avenue, SBL	150	0.68	58.9	E	186	0.68	58.9	E	186	0.69	58.9	E	193	0.69	58.9	E	193
Forest Avenue, SBT/TR	250	0.44	12.4	B	277	0.49	14.9	B	323	0.46	12.8	B	298	0.51	15.5	B	347
Overall		**0.68**	**17.4**	**B**		**0.68**	**19.1**	**B**		**0.69**	**17.7**	**B**		**0.69**	**19.7**	**B**	
PM Peak Hour																	
Falmouth Avenue, EBLT	210	0.46	51.9	D	91	0.71	70.3	E	115	0.51	53.7	D	98	0.74	73.4	E	119
Falmouth Avenue, EBR	150	0.16	0.9	A	0	0.36	9.2	A	31	0.17	0.9	A	0	0.36	9.0	A	31
Preble Street, WBLT	630	0.65	56.5	E	179	0.65	56.5	E	181	0.66	56.8	E	187	0.66	56.6	E	187
Preble Street, WBR	630	0.58	28.4	C	176	0.57	28.4	C	176	0.59	29.0	C	187	0.59	28.8	C	186
Forest Avenue, NBL	200	0.24	24.6	C	m61	0.29	25.3	C	m86	0.25	25.0	C	m62	0.31	25.3	C	m87
Forest Avenue, NBT/TR	700	0.44	4.6	A	45	0.44	4.6	A	44	0.47	4.5	A	42	0.47	4.5	A	41
Forest Avenue, SBL	150	0.52	75.2	E	m123	0.52	75.3	E	m123	0.54	74.8	E	m120	0.54	74.7	E	m119
Forest Avenue, SBT/TR	250	0.38	10.9	B	141	0.41	11.7	B	141	0.40	10.0	A	126	0.43	10.9	B	126
Overall		**0.65**	**18.1**	**B**		**0.71**	**19.4**	**B**		**0.66**	**18.0**	**B**		**0.74**	**19.3**	**B**	
Forest Avenue at Bedford Street/Baxter Blvd																	
AM Peak Hour																	
Bedford Street, EBLT	530	0.43	45.8	D	138	0.42	45.7	D	138	0.43	45.4	D	143	0.43	45.4	D	143
Bedford Street, EBR	375	0.52	19.7	B	203	0.52	19.8	B	203	0.54	20.3	C	220	0.54	20.3	C	220
Baxter Blvd, WBL	140	0.83	72.6	E	#297	0.83	72.6	R	#297	0.86	76.0	E	#318	0.86	76.0	E	#318
Baxter Blvd, WBT	690	0.09	22.6	C	56	0.09	22.6	C	56	0.10	22.3	C	58	0.10	22.3	C	58
Baxter Blvd, WBR	75	0.03	0.1	A	0	0.03	0.1	A	0	0.03	0.1	A	0	0.03	0.1	A	0
Forest Avenue, NBL	1000+	0.84	62.7	E	#412	0.84	62.7	E	#412	0.88	67.2	E	#443	0.88	67.2	E	#443
Forest Avenue, NBT/TR	1000+	0.50	15.8	B	267	0.53	16.6	B	298	0.53	16.8	B	287	0.57	17.6	B	318
Forest Avenue, SBT/TR	700	0.86	44.0	D	#471	0.88	44.5	D	#488	0.93	51.0	D	#512	0.95	52.4	D	#529
Overall		**0.86**	**36.0**	**D**		**0.88**	**36.0**	**D**		**0.93**	**39.3**	**D**		**0.95**	**39.5**	**D**	
PM Peak Hour																	
Bedford Street, EBLT	530	0.66	51.4	D	239	0.66	51.4	D	239	0.69	52.9	D	253	0.69	52.9	D	253
Bedford Street, EBR	375	0.75	31.3	C	388	0.75	31.3	C	388	0.78	33.3	C	421	0.78	33.3	C	421
Baxter Blvd, WBL	140	1.06	114.7	F	#437	1.09	122.4	F	#437	1.14	139.5	F	#466	1.14	139.5	F	#466
Baxter Blvd, WBT	690	0.17	20.4	C	91	0.17	20.6	C	91	0.18	20.6	C	95	0.18	20.6	C	95
Baxter Blvd, WBR	75	0.06	0.9	A	3	0.06	0.9	A	3	0.07	1.0	A	3	0.07	1.0	A	3
Forest Avenue, NBL	1000+	0.90	79.7	E	#366	0.90	79.7	E	#366	0.94	88.3	F	#392	0.94	88.3	F	#392
Forest Avenue, NBT/TR	1000+	0.69	24.0	C	406	0.70	24.2	C	422	0.72	25	C	438	0.74	25.6	C	456
Forest Avenue, SBT/TR	700	0.88	35.4	D	#405	0.93	42.6	D	#493	0.92	40.1	D	#477	0.98	52	D	#534
Overall		**1.06**	**42.2**	**D**		**1.09**	**44.6**	**D**		**1.14**	**47.1**	**D**		**1.14**	**50.1**	**D**	

^ Storage length measured in feet, length of turning lane or distance to adjacent intersection
+ Volume to capacity ratio
* Delay expressed in seconds per vehicles
** Level of Service
Queue measured in feet
95th percentile volume exceeds capacity, queue may be longer
m 95th percentile queue is metered by an upstream signal

Table 7 summarizes the operational analysis at the unsignalized study area intersections during the 2023 and 2028 weekday AM and PM peak hours under No Build and Build conditions, respectively. At the intersection of Deering Street at Bedford Street, , the stop controlled approach, is anticipated to operate at LOS B with less than 12 seconds of delay during the AM peak hour and LOS C with approximately 20 seconds of delay or less during the PM peak hour in 2023 and 2028 No Build conditions. The addition of project related trips has minimal impact. The southbound approach of Deering Street is anticipated to

operate at LOS B with less than 11 seconds of delay under all scenarios due to the high volume of southbound left turns.

At the intersection of Falmouth Street at Oakdale Street, the stop controlled approach is anticipated to operate at LOS B or better with approximately 10 seconds or less of delay under the 2023 and 2028 No Build conditions. The addition of project related trips have minimal impact.

At the intersection of Falmouth Street at the USM Parking Garage Driveway, the stop controlled approach is anticipated to operate at LOS B or better with approximately 10 seconds or less of delay under the 2023 and 2028 Build conditions.

Table 7: 2023 and 2028 Unsignalized Intersection Operations

Intersection		2023 No Build				2023 Build				2028 No Build				2028 Build			
Peak Hour	**SL^**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**
Deering Street at Bedford Street																	
AM Peak Hour																	
Bedford Street, WBR	190	0.127	11.1	B	11	0.127	11.1	B	11	0.137	11.3	B	12	0.137	11.3	B	12
Deering Street, SBLT	300	0.431	10.5	B	55	0.432	10.5	B	56	0.462	10.9	B	62	0.463	10.9	B	63
PM Peak Hour																	
Bedford Street, WBR	190	0.511	18.4	C	72	0.511	18.4	C	72	0.556	20.2	C	84	0.557	20.3	C	84
Deering Street, SBLT	300	0.305	10.2	B	32	0.305	10.2	B	32	0.329	10.5	B	36	0.329	10.5	B	36
Falmouth Street at Oakdale Streeet																	
AM Peak Hour																	
Oakdale Street, SBLR	245	0.012	8.9	A	1	0.013	9.1	A	1	0.013	8.9	A	1	0.015	9.1	A	1
Falmouth Street, EBLT	620	0.001	7.4	A	0	0.001	7.4	A	0	0.001	7.4	A	0	0.001	7.4	A	0
PM Peak Hour																	
Oakdale Street, SBLR	245	0.008	9.6	A	1	0.010	9.9	A	1	0.008	9.6	A	1	0.010	10.0	B	1
Falmouth Street, EBLT	620	0.002	7.5	A	0	0.002	7.6	A	0	0.002	7.5	A	0	0.002	7.6	A	0
Falmouth Street at USM Driveway																	
AM Peak Hour																	
USM Driveway, NBLR	100					0.063	9.7	A	4					0.064	9.7	A	4
Falmouth Street, WBLT	500					0.046	7.6	A	5					0.046	7.6	A	5
PM Peak Hour																	
USM Driveway, NBLR	100					0.141	10.0	B	12					0.145	10.1	B	12
Falmouth Street, WBLT	500					0.018	7.5	A	1					0.025	7.5	A	1

^ Storage length measured in feet, length of turning lane or distance to adjacent intersection
+ Volume to capacity ratio
* Delay expressed in seconds per vehicles
** Level of Service
Queue measured in feet

Table 8 summarizes the operational analysis at the Brighton Avenue, Deering Avenue and Falmouth Street roundabout during the 2023 and 2028 weekday AM and PM peak hours under No Build and Build conditions, respectively. As shown, even with anticipated growth and project related traffic, the proposed infrastructure will result in a LOS A or better condition during the peak hours at the roundabout in 2023 and 2028.

Table 8: 2023 and 2028 Roundabout Levels of Service

Peak Hour		2023 No Build				2023 Build				2028 No Build				2028 Build			
Movement	**SL^**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**	**v/c+**	**Delay***	**LOS****	**Queue**
Falmouth Street at Deering Street and Brighton Avenue																	
AM Peak Hour																	
Deering Ave, SE	200	0.348	4.0	A	5	0.38	4.3	A	6	0.368	4.0	A	6	0.401	4.4	A	6
Falmouth St, NE	290	0.119	5.4	A	1	0.138	5.2	A	2	0.13	5.6	A	1	0.146	5.4	A	2
Deering Ave, NW	420	0.357	4.6	A	4	0.364	4.8	A	4	0.38	4.9	A	5	0.39	5.0	A	5
Brighton Ave, E	165	0.743	7.6	A	21	0.787	9.4	A	26	0.794	9.9	A	26	0.838	12.1	B	33
Falmouth St, SW	625	0.131	10.7	B	2	0.143	11.5	B	2	0.152	11.6	B	2	0.166	12.5	B	2
Overall		**0.743**	**6.2**	**A**		**0.787**	**7.1**	**A**		**0.794**	**7.2**	**A**		**0.838**	**8.4**	**A**	
PM Peak Hour																	
Deering Ave, SE	200	0.593	4.4	A	12	0.612	4.6	A	13	0.643	4.6	A	14	0.663	4.8	A	15
Falmouth St, NE	290	0.322	8.3	A	4	0.402	9.1	A	6	0.378	9.6	A	5	0.467	11.3	B	8
Deering Ave, NW	420	0.354	8.2	A	4	0.371	9.1	A	5	0.41	9.9	A	5	0.431	11.1	B	6
Brighton Ave, E	165	0.499	3.7	A	8	0.517	3.9	A	9	0.548	4.3	A	10	0.566	4.7	A	11
Falmouth St, SW	625	0.084	6.8	A	1	0.086	6.9	A	1	0.099	7.3	A	1	0.101	7.5	A	1
Overall		**0.593**	**5.2**	**A**		**0.612**	**5.6**	**A**		**0.643**	**5.8**	**A**		**0.663**	**6.4**	**A**	

^ Storage length measured in feet, distance to adjacent intersection
+ Volume to capacity ratio
* Delay expressed in seconds per vehicles
** Level of Service
Queue measured in feet

Multi-Way Stop Control Analysis

The intersection of Falmouth Street at Oakdale Street is a concern for the neighborhood. Although there is projected to be good operations and minimal delays, there is concern that with traffic to and from the proposed garage, that traffic and vehicle speeds will increase. The City has asked that USM conduct a multi-way stop control analysis. The Manual of Uniform Traffic Control Devices (MUTCD) guidelines state that the intersection should meet some of the follow requirements:

- Traffic control signals are justified;
- Five or more crashes have been reported in a 12-month and;
- The intersection meets minimum volume thresholds for any 8 hours:
    - 300 vehicles per hour on the major approach and,
    - 200 total vehicles, pedestrians, and bicycles on a minor approach.

The intersection of Falmouth Street at Oakdale Street does not meet the criteria for the installation of multi-way stop control per the MUTCD guidelines. There were no crashes reported at the intersection over the three year period between 2017 and 2019. In addition, the volumes on Falmouth Street and Oakdale Street during the peak hours do not meet the minimum thresholds.

The MUTCD includes additional criteria that may be considered including:

- Need to control left turns conflicts;
- Need to control pedestrian/vehicle conflicts at locations with high pedestrian volumes;
- Locations with limited sight lines and;
- Locations where two residential neighborhood collector streets meet and a multi-way stop would improve operations.

The intersection of Falmouth Street at Oakdale Street does not meet any of the secondary criteria for the installation of multi-way stop control.

Summary and Conclusions

The project consists of a 580 bed residence hall, Career and Student Center, and up to a 500 parking space parking garage. The 580 bed residence hall will be located on the corner of Bedford Street and Durham Street. The new Student Center will be located to the west of the residence hall, set back from Bedford Street. Vehicular access for loading will be provided to the sites via a lot off of Durham Street. Pedestrian access to the dormitory will be via a front entrance on Bedford Street, an entrance on Durham Street and an entrance across from the Student Center. The main entrances to the student center will face the lawn towards Bedford Street with an additional entrance to the rear of the building.

The proposed development program and associated increases in enrollment is anticipated to generate 160 new trips during the AM peak hour and 160 new trips during the PM peak hour. With these trips distributed onto the adjacent roadway network, the signalized intersection of Forest Avenue at Falmouth Street and Preble Street is expected to operate at LOS B with only a two second project related delay increase. The signalized intersection of Forest Avenue at Bedford Street and Baxter Boulevard is anticipated to operate at LOS under all scenarios with an increase in delay of three seconds or less due site traffic. The unsignalized intersections are anticipated to operate at LOS B or better under all scenarios with the exception of Deering Street at Bedford Street which will operate at LOS C or better. The planned roundabout at the intersection of Brighton Avenue, Deering Avenue, and Falmouth Street is expected to operate at LOS A under all scenarios.

Based on the increased pedestrian demand in the area, VHB recommends that the sidewalk crossing improvements identified in the *Portland-South Portland Smart Corridor Plan* be implemented in order to shorten the crossing distances at the intersections of Forest Avenue with Bedford Street and Baxter Boulevard and Forest Avenue with Falmouth Street and Preble Street. The reduction of crossing distances results in the ability to reduce the pedestrian crossing times and results in a more efficient intersection. USM has committed to construct these improvements.

The City of Portland Traffic Engineer has also indicated that the City is investigating modifications to the Forest Avenue signal operations that will allow the traffic signals to operate differently in the off peak periods that will be beneficial to pedestrians as they would not need to wait as long to receive a walk

indication. This modification would improve the pedestrian experience and is recommended as well. USM has committee to providing funds for this improvement up to $10,000 as a part of this project.

UNIVERSITY OF SOUTHERN MAINE

FACILITIES MASTER PLAN







Final, BOT Approved
January 27, 2019

CONTENTS

Executive Summary i

Introduction 1

The Portland Plan 11

The Gorham Plan 23

Lewiston-Auburn 33

Appendix 35

Space Needs Analysis

Facilities Condition Analysis

EXECUTIVE SUMMARY







The Facilities Master Plan (The Plan) is a university-wide evaluation of the University of Southern Maine (USM) campuses at Portland, Gorham and Lewiston-Auburn. The plan incorporates the visions, goals, facilities assessments, and the campus space needs assessments into a set of campus physical development recommendations. These recommendations not only address today's needs but also establish the long-term development potential for each campus.

Established to better serve the students and communities of southern Maine, USM's three campuses are all important to serving a diverse student body.

History

On December 26, 1878, Corthell Hall, the first university building of what would later become USM, was dedicated to the education of teachers in the town of Gorham. In 1918, Portland University opened just off Monument Square in downtown Portland in response to the lack of educational opportunities for accountants and business professionals needed for the economic growth of the City and region. These two institutions became the keystones of the University of Southern Maine, which in 1988 opened Lewiston-Auburn College to serve the needs of the growing metropolitan area north of Portland.

Today, the Portland Campus has 839,000 GSF of facilities with a fall 2017 headcount of 5,277. Portland's enrollment is the largest of the three campuses. Many of the Portland students reside on the Gorham campus or from adjacent off-campus housing along with commuters from other southern Maine communities. Ten miles away, the Gorham Campus has 1,168,000 GSF of facilities with a fall 2017 headcount of 2,570. The only campus with residence halls, Gorham houses approximately 1,200 students. About 35 miles away from the other two campuses, the Lewiston-Auburn Campus has 450,000 GSF of facilities with a headcount of 374.

Process

The Plan is a result of an inclusive, comprehensive, and strategic process involving a broad community constituency including students, staff, administration, faculty, alumni and representatives from the City of Portland and Town of Gorham.

In June of 2017, President Cummings charged a Campus Master Plan Steering Committee (CMPSC) to create The Plan with the support of its consultant team lead by the Maine based architectural and engineering firm of Harriman Associates. A three-phase process implemented through monthly meetings created a framework in which important ideas and direction were provided by the CMPSC to the consultant team. In addition, the consultant team met with selected faculty and staff and the CMPSC hosted forums and open house events at each of the campuses. The final plan is a product of this process led by the CMPSC and informed by campus facilities and space needs analysis.







Goals and Guiding Principles

The Plan process was guided by President's Cummings Goals and Guiding Principles created by the CMPSC for the University's physical development.

PRESIDENT'S GOALS

- USM will be known for academic excellence with real-world experiences as a core part of its academic program.
- 80% of our students will state that at least one individual (staff or faculty) knows them well, supports them, and believes in them.
- 72% of our students will remain at USM between each school year.
- 10% of our alumni will give to USM annually.
- The USM Foundation will raise $50 million in scholarships, infrastructure,and investments for our students.
- USM headcount enrollment will reach 10,000.
- USM will be designated as a 'Great Colleges to Work For®'.
- 80% will recommend USM to others.
- USM will establish a sustainable financial model by attaining industry standards attributable to a financially healthy institution.

CMPSC GUIDING PRINCIPLES

- **Student Experience**—the process, plan and implementation focuses upon improving the student's academic, co-curricular and living experience on each of the campuses.
- **Inclusiveness**—the process, plan and implementation support the ability of any member of the community to feel safe participating and being included as a valuable member of the USM community.
- **Net Zero Building Policy**—the plan prioritizes the capital renewal of existing facilities that are capable of, with investment, meeting the academic mission over building new facilities.
- **Public Safety**—the plan and subsequent implementation seeks to provide the safest campus environment possible through physical, programmatic and operational improvements.
- **Mobility**—the plan supports robust pedestrian, bicycle, shuttle bus, ride share and metro regional public transit systems that look beyond private vehicular parking to meet the transportation needs of the campus community.
- **Sustainability**—the plan supports all existing sustainability policies of the University.
- **Neighbors**—the plan seeks to establish campuses and campus communities that are positive members of the neighborhoods, mitigating negative impact and providing a beautiful and inviting campus landscape for all neighborhood members to enjoy.
- **Aesthetics**—the visual quality of the campus facilities is important to creating an environment that meets the mission and goals of the University.


HALL

The Portland Plan

> "To build a sustainable, iconic academic campus in the heart of Portland enhancing the commuter experience while creating a welcoming residential community."

The Portland Plan envisions a transformational future for the campus. This vision is supported by the long-term framework of physical attributes and is assembled to create a dynamic and flexible campus.

The circulation "frame" around the campus consists of US 295, Forest Avenue, Falmouth and Deering Street. Gateways into the campus are Forest/US295 and Falmouth and Deering Ave. The framework illustrates the simplicity of two greens lined by campus buildings and connected by campus circulation. The beauty of this framework is its ability to provide a flexible and bold future.

To accomplish the vision and create transformational moves that improve experiences for both commuter students and the new residential population, the plan carefully sites the development program and other campus improvements. The placement of facilities creates a new campus heart and identifies iconic sites for new large projects and additional growth within the current campus land holdings. A new campus quadrangle is created by combining several near-term projects including a new Career and Student Success Center, residence halls and significant landscape improvement.

Beyond the new campus heart, the Portland Plan identifies prominent iconic sites for a Center for the Arts and a new Professional Graduate Center. The first iconic site is located between the Wishcamper Center and the interstate, and the second is located by what is currently the Brighton Avenue extension. The key difference between the two is that the site behind Wishcamper has more regional visibility and is adjacent to the existing parking deck, while the Brighton Avenue Extension site has prominent neighborhood visibility and is on the campus pedestrian spine; however, either site can be a home for transformative programs beyond the two that have been identified in the planning process.

The largest land area for future development becomes available once the Professional Graduate Center is built and the current law school is demolished. The law school site with the existing surface parking lot could also be thought of as an iconic site, although it is at the campus/neighborhood edge and across Deering Avenue. Other future development sites include a site in front of the parking deck, between the Science Building and the Sullivan Complex and a small site west of Masterson Hall.



400,000 GSF | *Site available for academic, housing, parking or athletic growth beyond current program*

The Gorham Plan

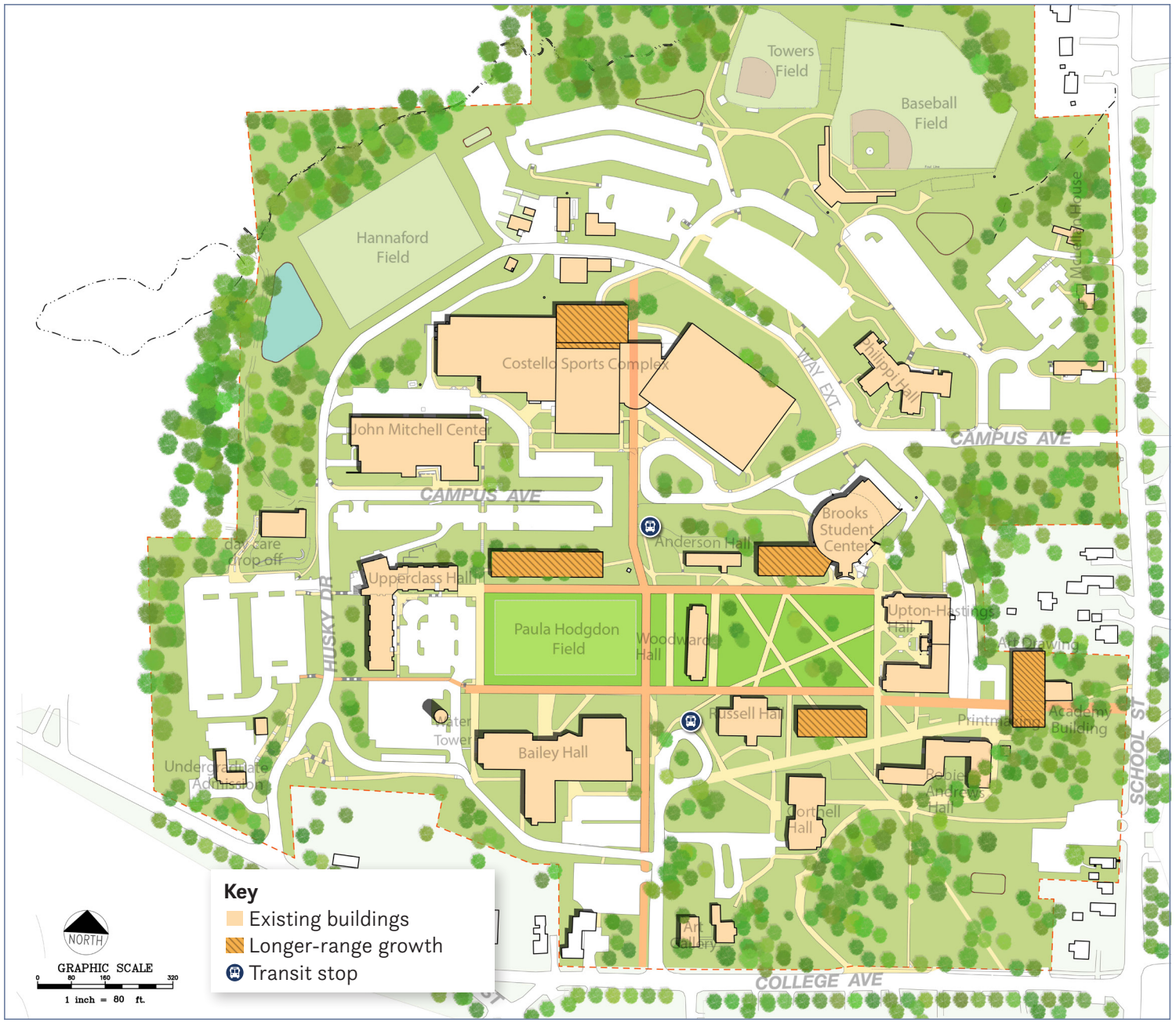
> "To sustainably strengthen an iconic campus focused upon the academic experience with an emphasis on campus life."



The Gorham Plan is built upon reestablishing a campus heart and providing a clear and safe pedestrian circulation system. The campus will be supported by efficient vehicular circulation that does not dominate the campus landscape. Providing a flexible and bold framework for future development, the plan illustrates the simplicity of reestablishing the campus green and connecting it to the larger campus and the Town of Gorham.

To fulfill the vision and create transformational moves that improve the student experience, the Gorham Plan recommends renewal of the campus heart and identifies sites for additional housing and academic sites to be built as they are needed.

A place for the Gorham campus community to come together, the renewed campus quad would be located at the top and center of the campus. To begin re-establishing the campus heart, a surface parking lot behind Russell Theater would be removed, and University Drive would be redesigned to be more pedestrian friendly. Complementing these landscape improvements would be capital renewal projects including the Campus Center and historic core structures such as Russell Hall, Robie-Andrews Hall, and Corthell Hall.


Towers Field
Baseball Field
Hannaford Field
Costello Sports Complex
John Mitchell Center
CAMPUS AVE
WAY EXT
Philippi Hall
Woodman House
CAMPUS AVE
day care drop-off
Upperclass Hall
HUSKY DR
Anderson Hall
Brooks Student Center
Paula Hodgdon Field
Woodward Hall
Upton-Hastings Hall
Art Drawing
Water Tower
Russell Hall
Printmaking
Academy Building
SCHOOL ST
Undergraduate Admission
Bailey Hall
Bibber Andrews Hall
Gorrell Hall
Art Gallery
COLLEGE AVE
Key
Existing buildings
Longer-range growth
Transit stop
NORTH
GRAPHIC SCALE
0 80 160 320
1 inch = 80 ft.

Lewiston-Auburn

In order to ensure alignment between academic offerings and a master plan, it was decided early in the process to postpone a master plan for the Lewiston-Auburn campus until a review of current and future academic programming for the campus was completed.

INTRODUCTION

USM Overview

The University of Southern Maine (USM) serves approximately 8,000 students at its campuses in Gorham, Portland and Lewiston-Auburn. The University of Maine School of Law, located on the USM Portland Campus, is also a part of the USM community.

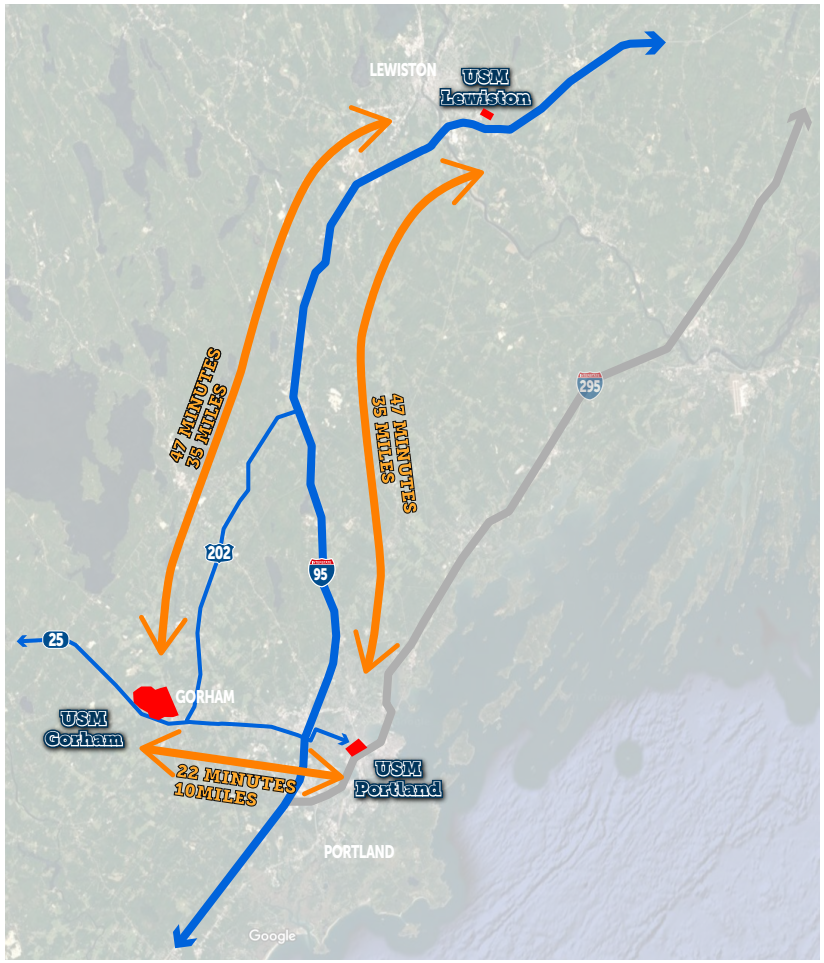
Over 87% of USM students are from Maine. Out-of-state students come principally from neighboring New England states.

The three campuses possess extremely different physical facilities:

- The Portland Campus, where most USM students attend their classes, is approximately 34 acres with 1,246,558 GSF of facilities.
- The historic Gorham campus sits on 96 acres, accommodating 1,168,000 GSF of buildings. The Gorham Campus Historic District includes 12 of the university's 125 acres and seven buildings added to the National Register of Historic Places in 1978.
- The Lewiston-Auburn campus sits on 10 acres and hosts 140,000 GSF in one building.

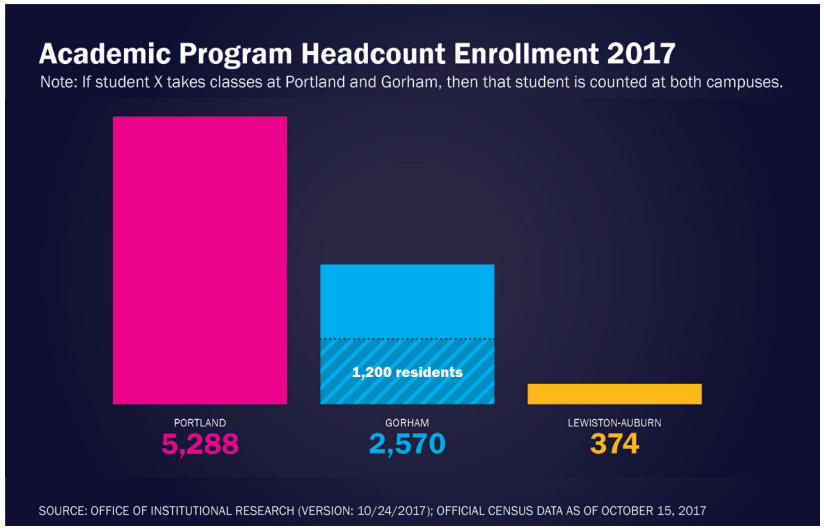
There is significant capacity at each campus for further development outside of what could be considered long-term strategic land acquisitions at each campus.

The University of Southern Maine, like its other University of Maine System counterparts, contends with the constant challenge of limited resources to address capital renewal and reinvestment. The lack of available funding has contributed to a growing backlog of deferred maintenance to campus buildings and grounds. Sightlines, a facilities management firm, estimates that USM campuses require $270 million to address maintenance and renewal.

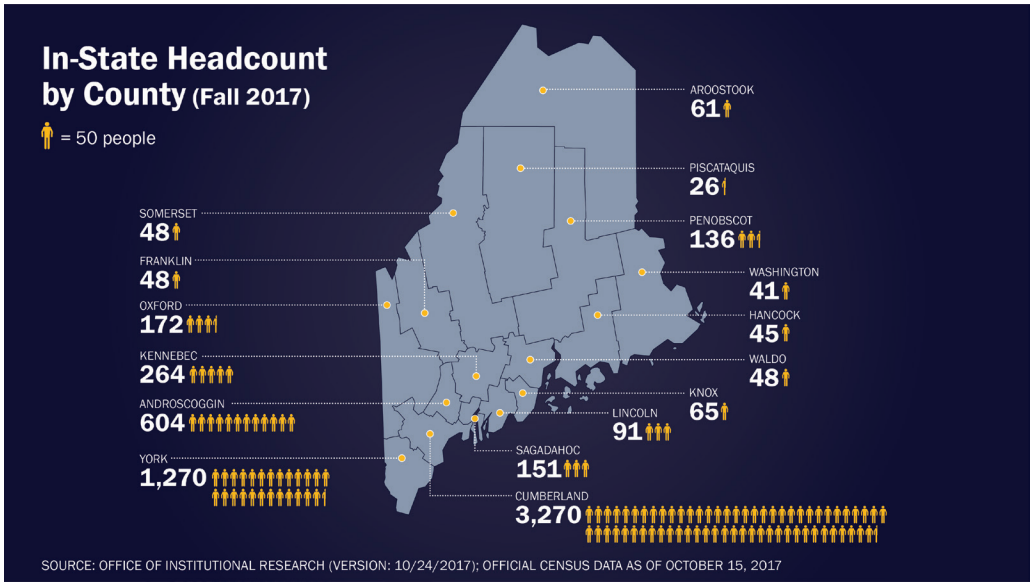


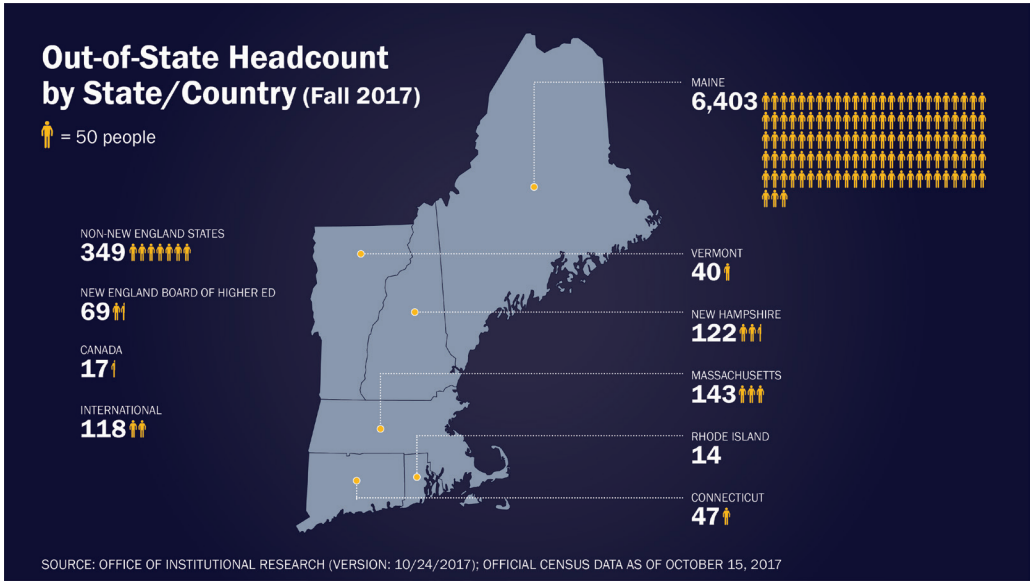
CAMPUS FACTS

USM CAMPUS	GROSS LAND AREA (AC)	BUILDING FLOOR AREA (SF)	FAR	PARKING SPACES
Portland	34	1,246,558	1.19	1,720
Gorham	96	1,168,000	0.28	1,600
Lewiston-Auburn	10	140,000	0.31	380



Note: The numbers are approximate.





Purpose

This Facilities Master Plan (The Plan) is a University-wide evaluation of the University of Southern Maine at Portland, Gorham and Lewiston-Auburn that combines detailed assessment, campus space needs assessments, and campus planning recommendations to address current, short-term and long-range needs. The Plan will be used to as an important policy document for state capital funding and the University's development efforts.

USM President's Goals

- USM will be known for academic excellence with real-world experiences as a core part of its academic program.
- 80% of our students will state that at least one individual (staff or faculty) knows them well, supports them, and believes in them.
- 72% of our students will remain at USM between each school year.
- 10% of our alumni will give to USM annually.
- The USM Foundation will raise $50 million in scholarships, infrastructure,and investments for our students.



- USM headcount enrollment will reach 10,000.
- USM will be designated as a 'Great Colleges to Work For®'.
- 80% will recommend USM to others.
- USM will establish a sustainable financial model by attaining industry standards attributable to a financially healthy institution.

Guiding Principles

- **Student Experience**—the process, plan and implementation focuses upon improving the student's academic, co-curricular and living experience on each of the campuses.
- **Inclusiveness**—the process, plan and implementation support the ability of any member of the community to feel safe participating and being included as a valuable member of the USM community.
- **Net Zero Building Policy**—the plan prioritizes the capital renewal of existing facilities that are capable of, with investment, meeting the academic mission over building new facilities.
- **Public Safety**—the plan and subsequent implementation seeks to provide the safest campus environment possible through physical, programmatic and operational improvements.
- **Mobility**—the plan supports robust pedestrian, bicycle, shuttle bus, ride share and metro regional public transit systems that look beyond private vehicular parking to meet the transportation needs of the campus community.
- **Sustainability**—the plan supports all existing sustainability policies of the University.
- **Neighbors**—the plan seeks to establish campuses and campus communities that are positive members of the neighborhoods, mitigating negative impact and providing a beautiful and inviting campus landscape for all neighborhood members to enjoy.
- **Aesthetics**—the visual quality of the campus facilities is important to creating an environment that meets the mission and goals of the University.

University Wide Sustainability

The facilities master plan envisions sustainability as a critical element underlying all new construction and considerations for renovations and renewal of existing buildings. As such, the Master Plan Steering Committee endorses the Campus Sustainability Strategic Plan, published in October of 2017.

- New buildings will support our Second Nature President's Carbon Commitment to be carbon neutral by 2040, following Portland's District 2030 benchmarks.
- We strive to achieve a 70% reduction in energy usage for each new building compared to the national average
- We strive to achieve a 50% reduction in water usage for each new building compared to the district average
- We strive for LEED silver certification or above
- We strive to incorporate innovative and sustainable local materials whenever possible, including elements like Cross Laminated Timber (CLT)
- We strive for a 35% reduction in heat and electricity emissions for existing buildings
- Transportation Demand Management (TDM) will be a subsequent study to help achieve the commitment of a 20% greenhouse gas reduction

Process

The Plan for USM is the result of an inclusive, comprehensive, and strategic process involving a broad community constituency including students, staff, administration faculty, alumni community leaders and representatives for the Towns of Portland and Gorham. Guided by the planning team of Harriman, Goody Clancy and Rickes Associates, the Campus Master Plan Steering Committee (CMPSC) provided important guidance, questions and feedback throughout the process. In addition to monthly steering committee meetings, members met with faculty, staff and students, as well as with neighborhood residents at meetings and open forums. There were thirteen steering committee meetings, 3 stakeholders meetings and 4 public forums over the past ten months. The final master plan derived from this process of community input, planning analyses and aspirational visioning.

The master planning process consisted of three phases: Analysis and Investigation, Concept Plan and Facilities Master Plan.

ANALYSIS AND INVESTIGATION

The existing Mission and a variety of institutional planning materials were reviewed for the planning team to gain an understanding of the needs, goals and institutional priorities at each of the USM campuses.

The planning team and CMPSC subsequently spent time on each campus to understand the current state of the campuses and their various features. Attention was paid to use patterns, building and site conditions, visual character, zoning and historic areas, and pedestrian and vehicular circulation. The planners analyzed the impact of regulatory requirements on the campus by reviewing state and local ordinance.

The team compiled capital improvement recommendations to inform planning decisions and short-term maintenance needs. The information was compiled and is incorporated into this report.

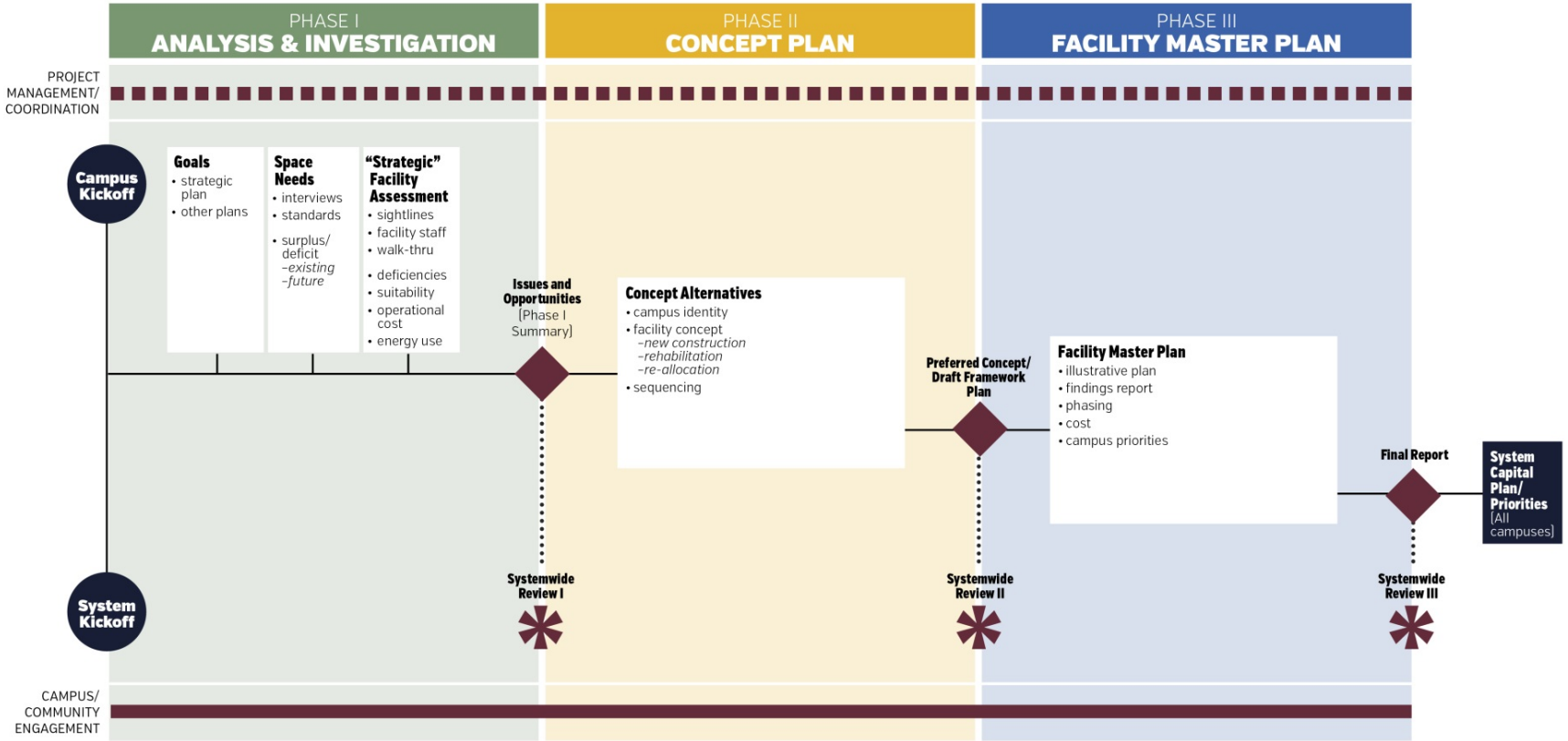
During this phase the team also met with academic and program leaders at each campus to ascertain current and future program needs and collected registration, class scheduling and personnel data to prepare the space utilization and needs analysis. The conclusions of this Space Needs Analysis for each campus are presented in an appendix at the end of this report.

CONCEPT PLAN

Using information gained during the Analysis and Investigation Phase, the Steering Committee with its consultants explored and developed conceptual options for the Portland and Gorham campuses. During this phase, options for the Lewiston-Auburn campus were postponed until a review of current and future academic programming for the campus is completed.

FACILITIES MASTER PLAN

Once the preferred concepts for the Portland and Gorham campuses were determined, the team developed and refined the campus plans in greater detail. The draft plan was shared with community members, USM employees and other interested parties through a series of 4 open forums. Capital renewal and new building projects were incorporated into the final master plan, with both short-term and long-term direction for capital investment and campus development. These initiatives, some of which were identified by previous studies, are integrated with current project priorities.



Planning Phasing Categories

To meet immediate facility needs and allow for aspirational visioning, three categories were created to organize the Master Plan Program Elements.

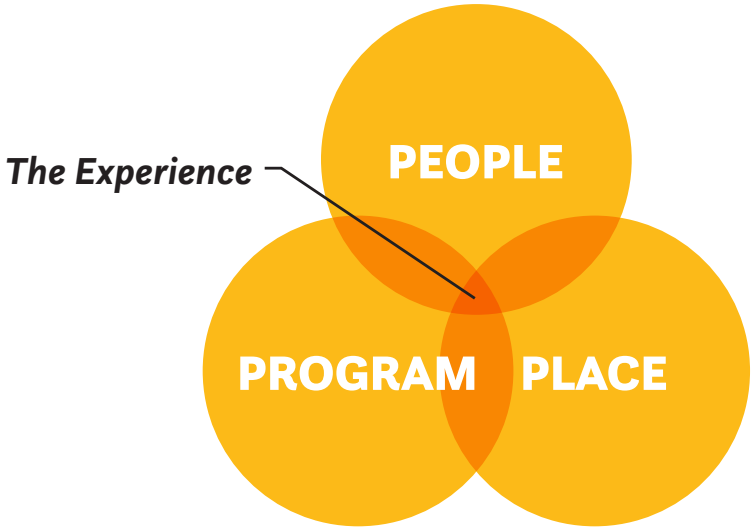
- The first category includes immediate facilities and space need deficiencies. Elements or items in category 1, immediate must-haves, are generally considered to be 'broken" and require immediate repair.
- The second category includes, short-term needs targeted within a 3- to 5-year window. The most transformational elements are designed to occur within the category 2 timeframe.
- The third category includes long-range needs based on the future growth in a 5- to 20-year timeframe. Items in category 3 are designed as placeholders to accommodate significant enrollment and or changes in academic needs.

1. **Immediate must-haves**
   - > Facilities issues
   - > Program exigencies
2. **Short-term—3-5 years**
   - > Facilities
   - > Program
   - > Campus
3. **Long-range— 5-20 years**
   - > Framework for aspirational planning
   - > Based on future growth



"Today's decisions create the long-range vision"

Scope of Master Plan



A successful Facilities Master Plan must integrate:

> **People**—students, faculty, staff and neighbors

> **Program**—teaching, research, campus life and outreach

> **Place**—buildings and infrastructure

The Campus Master Plan Steering Committee (CMPSC)

CO-CHAIRS

Jeannine Uzzi, Provost

Cyrus Hagge, USM Foundation

COMMITTEE MEMBERS

Cathy Clements, Classified Staff Senate Representative and Administrative Support Supervisor,Office of Admissions

David Cole, Gorham Community Representative and Former Gorham Town Manager

Ashley Collins, Professional Staff Senate Representative and Director of Prior Learning Assessment

Dean Joyce Gibson, LAC Campus Representative

Nancy Griffin, VP Enrollment Management and Student Affairs

Trevor Hustus, Chair of the Student Senate and UM System Trustee

Alan Kaschub, Director of School of Music

Professor Jerry LaSala, Department of Physics and Director of Southworth Planetarium

Joe Menard, Executive Chair of the Commuter Student Association

Buster Neel, Interim Chief Business Officer

Ed Suslovic, Portland Community Representative and Portland Metro Board Member, Former City Councilor and Legislator

Aaron Witham, Assistant Director for Sustainable Programs

Averi Varney, Student Government Senator

EX OFFICIO MEMBERS

Joan Cohen, USM President's Liaison

Jessica Picard, Assistant Director Finance & Administration for Facilities, Logistics for Committee

John Souther, Executive Director of Facilities Management

Bob Stein, Executive Director of Public Affairs

Consultant Team

Harriman is an integrated architecture, engineering and planning firm with offices in Maine, New Hampshire and Massachusetts. We collaborate with Colleges and Universities on a variety of infrastructure and building projects. Harriman has partnered with the University of Maine System on several projects including this USM Facilities Master Plan.

Goody Clancy is a Boston-based planning, architecture, and historic preservation firm. that creates achievable visions at all scales—from entire campuses to the smallest detail of a building. In 2017 they were participating in 76 projects on 32 college campuses in 16 states.

Rickes Associates has worked with over 200 institutions on nearly 400 projects, in 25 states and internationally. Its client base is comprised of public and private higher education institutions in all sectors, including research universities, liberal arts colleges, community colleges, faith-based institutions, HBCU's, women's colleges, and system offices.


THE
PORTLAND
PLAN
Brighton Ave
Deering Ave
Chamberlain Ave
Washburn Ave
Exeter St
Granite St
25
302

Introduction

The USM Portland campus has the largest enrollment of the three campuses with a fall 2017 headcount of 5,277. All are commuter students.

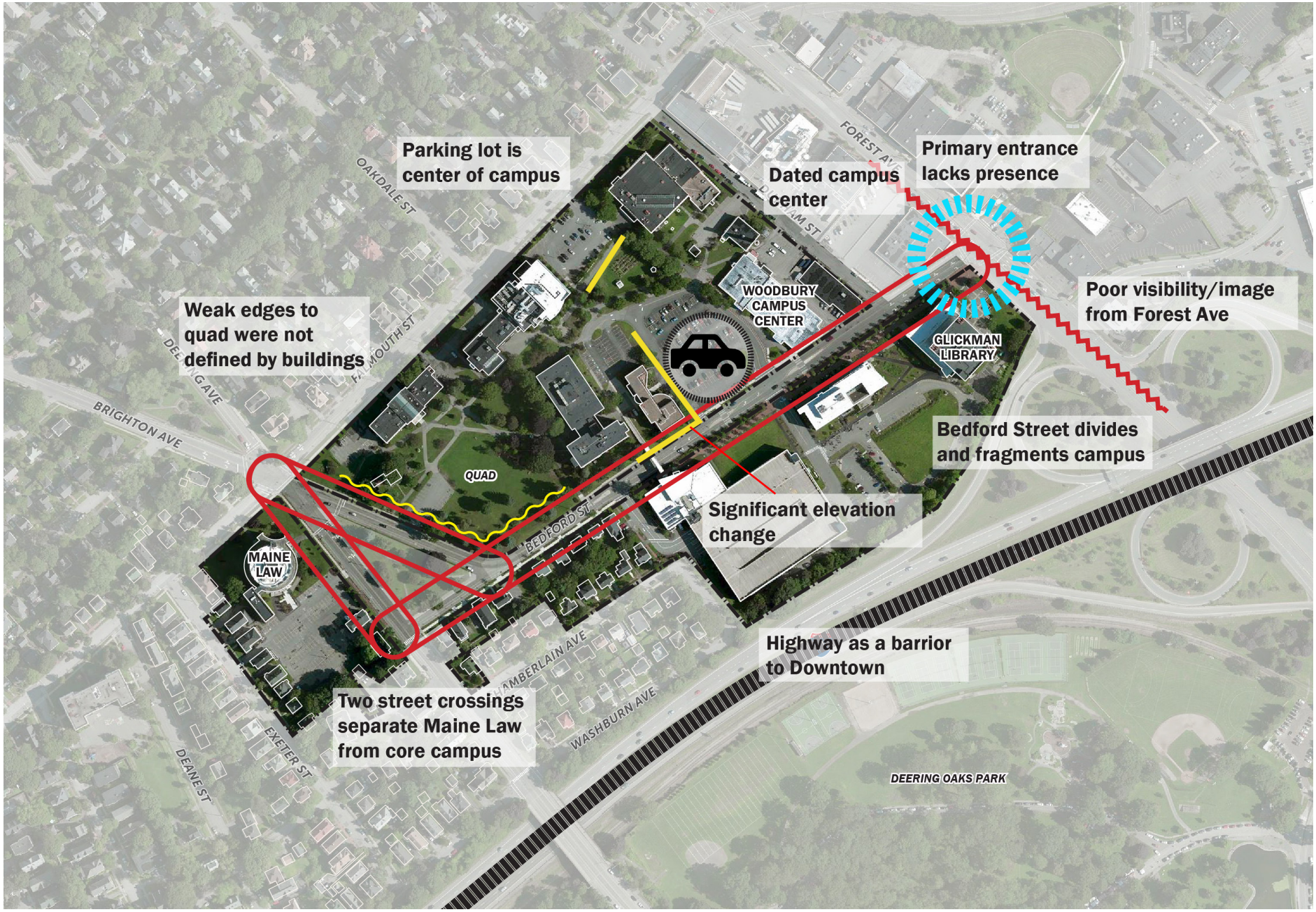
The Portland campus encompasses approximately 30 acres, with 27 buildings comprising 820,829 assignable square feet (ASF). The ASF, excluding the parking garage and unclassified space, is 425,729 ASF. This reflects the core campus space including classroom, laboratory, office, library, special and general use, health care, and central facilities.

Located less than one mile from the heart of downtown Portland, the Portland campus provides excellent access to social, cultural and internship opportunities. Linked to the Gorham campus ten miles to the west and the city center via frequent bus service, the Portland campus also has convenient access and visibility from Interstate-295, with Forest Avenue serving as the primary arrival point. A second important arrival point onto the campus is at the intersection of Deering, Brighton and Falmouth Streets, soon to be transformed into a roundabout. Bedford Street bisects the campus providing access to most of the parking supply for the campus.

The campus is in a completely developed urban neighborhood. The adjacent land consists of Interstate Highway 295 on the east, commercial uses on the north and residential uses on the west and south. The largest adjacent land use is the Oakhurst Dairy distribution center between the campus and Forest Ave. The adjacent residential areas provide housing for some of USM's students but are generally a set of very solid and cohesive neighborhoods.

The campus open space character is inconsistent in quality and design. The best open space on campus is currently defined by the Brighton Avenue Extension on the south, Bedford Street on the east, Luther Bonney on the north and Payson Smith Hall on the west. It is enhanced by several large deciduous trees dabbled through the space. Most of the other campus open spaces are interstitial spaces between buildings. The space with the most potential for campus transformation is the parking lot between Woodbury Campus Center and Masterton Hall.

The existing campus with a clear perimeter circulation, well-located gateways, and the arrangement of existing buildings all presents great opportunities for a strong campus framework capable of supporting considerable future growth.


Parking lot is center of campus
Dated campus center
Primary entrance lacks presence
Poor visibility/image from Forest Ave
Weak edges to quad were not defined by buildings
Bedford Street divides and fragments campus
Significant elevation change
Highway as a barrior to Downtown
Two street crossings separate Maine Law from core campus
WOODBURY CAMPUS CENTER
GLICKMAN LIBRARY
QUAD
MAINE LAW
OAKDALE ST
FALMOUTH ST
BRIGHTON AVE
BEDFORD ST
CHAMBERLAIN AVE
WASHBURN AVE
EXETER ST
DEANE ST
DEERING OAKS PARK

The Portland Plan

The following sections describe the facilities master plan for the Portland campus. Recommendations were the result of the analytical work and the planning process conducted by the CMPSC and its consultants with feedback and input provided internal and external stakeholders.

VISION

The vision for the Portland campus is grounded in today while being aspirational toward the future.

> "To build a sustainable, iconic academic campus in the heart of Portland enhancing the commuter experience while creating a welcoming residential community."

SUSTAINABILITY

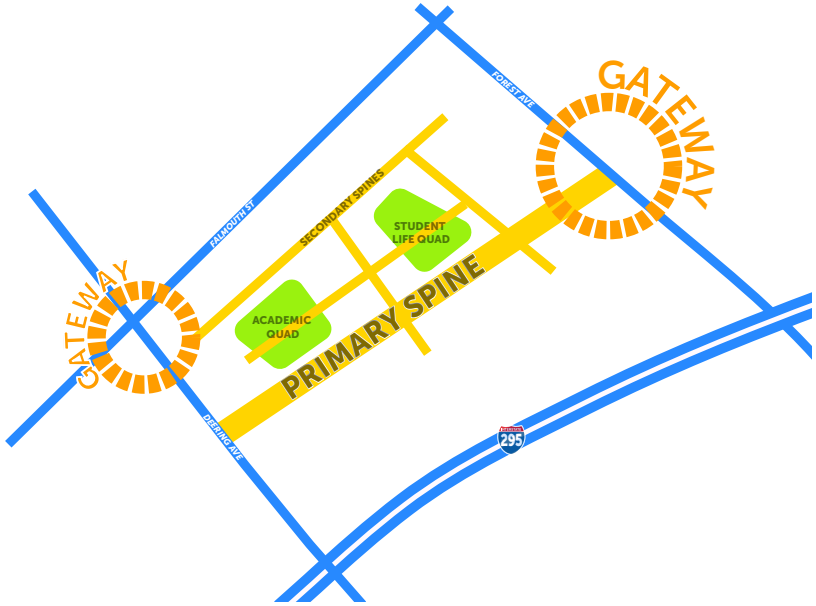
USM, as a 2007 signatory of the President's Carbon Commitment (formerly the American College and University Presidents' Climate Commitment), is working toward the goal of climate neutrality by 2040. The commitment requires the University to adopt several actions to reduce emissions of the six greenhouse gases addressed under the Kyoto Protocol, the most significant of which is carbon dioxide (CO_2). The Carbon Commitment also requires the University to develop a Climate Action Plan, establishing target dates for achieving climate neutrality; identify interim milestones; provide strategies for engaging the campus body in relevant research; and set out actions to make climate change and sustainability part of the curriculum. In October of 2017 USM's Climate Action Plan became part of the broader Campus Sustainability Strategic Plan structured on three content areas:

- **Energy** (energy reduction projects, minimum new construction benchmarks, increased sustainable transportation infrastructure and options)
- **Material Resources** (waste reduction and avoidance, recycling, and re-use efforts
- **Education and Outreach** (professional development for students, hands-on experiences improving campus, and increase eco-literacy)

To support the existing President's Carbon Commitment and to demonstrate sustainability leadership in the local community, the Master Plan Steering Committee recommends that the University sign the Portland 2030 District Commitment, whose benchmarking goals for new and existing buildings have been adopted in this Master Plan.

MASTER PLAN FRAMEWORK

The long-term framework describes the important physical attributes of the campus and how they are assembled to create a resilient and legible campus. The circulation "frame" around the campus consists of US 295, Forest Avenue, Falmouth Street and Deering. Gateways into the district remain unchanged. The framework illustrates the simplicity of two campus greens connected by campus circulation providing a flexible and bold framework for future development.



DEVELOPMENT PROGRAM

The Portland development program continues and expedites USM's capital renewal program and begins to build facilities that allow the campus to meet its vision. The program has been categorized into time periods in which the program requirements need to be developed.

Immediate (Now)

- **Continuing Capital Renewal**—This will be a continuation of the program the University has been managing over the past several years in which buildings and spaces in critical deferred maintenance are addressed. Payson Smith Hall, Luther Bonney Hall and the Science Building are all top candidates for investment as funding becomes available. The renovation of these buildings presents the opportunity through redesign of space to explore meeting some of the office and specialized classroom needs identified in the space needs analysis.

Short-Term (3-5 years)

- **Career and Student Success Center**—This building will replace the dining and cocurricular activity space currently in the Woodbury Campus Center. In addition, the vision for this building is to provide a common place for programs and functions which support both the academic success and long-term professional success of the USM student The building is anticipated to be approximately 40,000 GSF.
- **Student Housing**—The introduction of residence halls on the Portland campus is expected to be delivered in two phases: the first phase 400 beds and the second phase consisting of an additional 200 beds. It is anticipated that this will be built to accommodate upper class undergraduate students and graduate students.

PROGRAM ELEMENTS

Immediate

- Continuing Capital Renewal

Short-Term

- Career and Student Success Center
- Student Housing
- "Quad"
- Graduate Center for Professional Studies
- Center for the Arts
- Transportation

Long-Range

- Housing
- Academic

ILLUSTRATIVE IMAGES OF COMPARABLE PROGRAM ELEMENTS



Career and Student Success Center



Graduate Center



Interior of Student Housing



Quadrangle



Performance Space

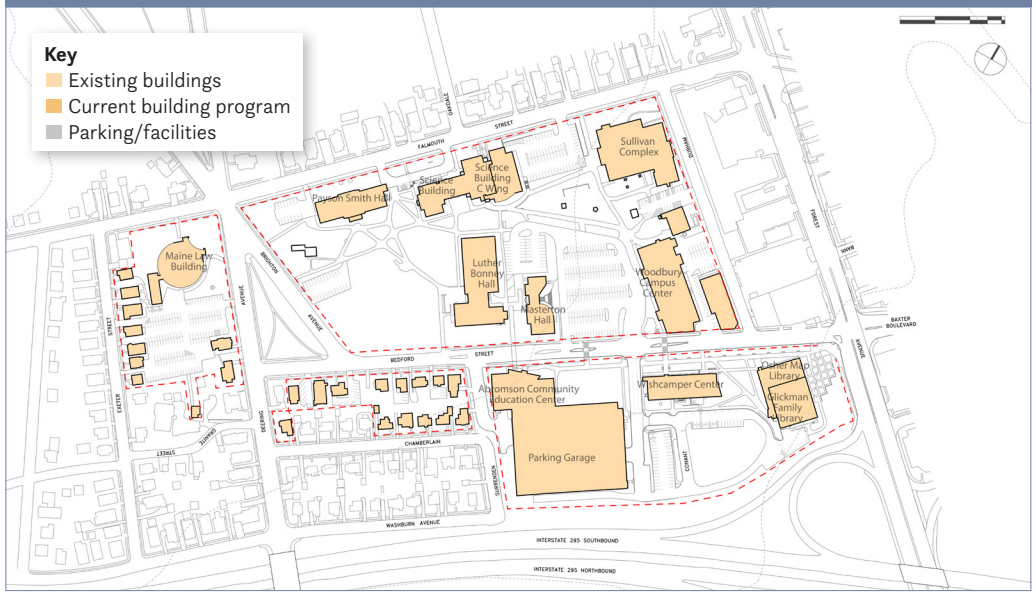
- **"Quad"**—A key component of the transformation of the Portland Campus is a second campus open space, located adjacent to the residence halls and the Career and Student Success Center.
- **Graduate Center for Professional Studies**— A new Graduate Center is anticipated to accommodate and integrate three primary programs: the University of Maine School of Law, a University of Maine MBA Program and possibly the Muskie School of Public Service. It is anticipated that the new facility will be in the range of approximately 160,000 gross square feet with a footprint of approximately 38,000-45,000 gross square feet.
- **Center for the Arts**—Serving both the needs of USM students and the community, this new facility will be a premier arts venue in Portland. It would include a 1,000-seat theatrical performance hall, 600-seat music theater, black box theater, and fine arts gallery space.

  USM has identified the need for a purpose-built performing arts building for decades. Currently, Theatre and Music perform on campus in small halls in retrofitted historical buildings with seating for no more than 182 audience members. Large ensembles and choral groups use off campus venues such as Gorham High School, Merrill Auditorium or churches in Portland for their concerts. USM also lacks a hall with an orchestra pit and lacks a theatre that has access to industry-standard technology. Creating a Center for the Arts in Portland will create the first ever purpose-built facility for the arts at USM. This will raise the profile of the arts at USM while providing a medium-sized performance center that is also needed by the greater Portland community. This Center for the Arts will not only showcase the work of USM's students, but will create a space for artistic collaboration in Portland.
- **Transportation**—The building plans for the Portland campus will affect parking, displacing current parking spaces, while creating new demands. The master plan accommodates 1,000 spaces, 600 displaced and 400 net new. It is anticipated that Metro passes for all students and employees will also help to address parking issues. To minimize the investment in parking supply, the system should be studied at each phase of the project, with a goal to encourage public, non auto centric transportation.

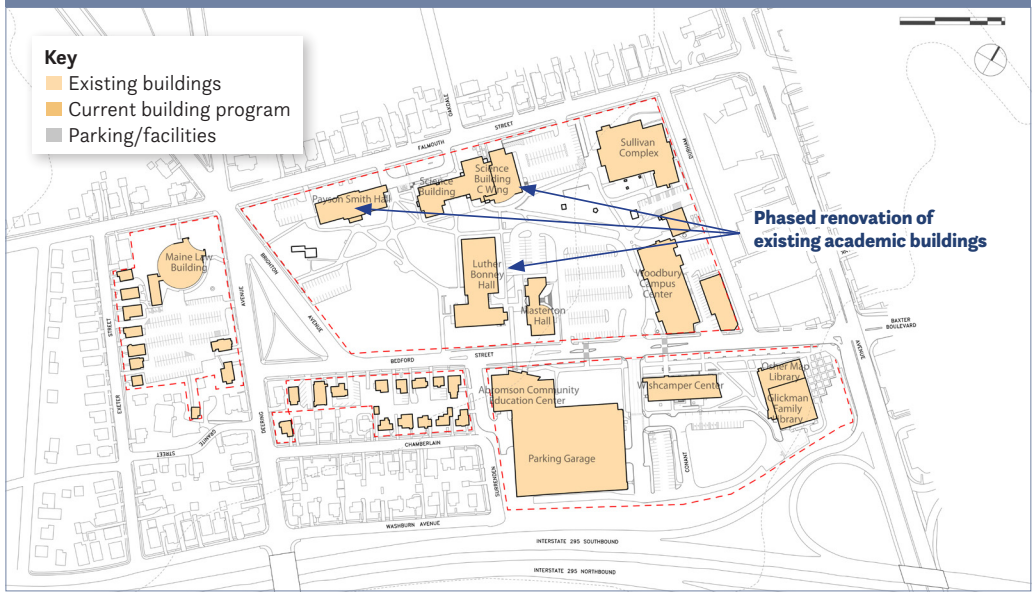
Long-Range

The plan looks to accommodate additional development that can become sites for a variety of uses, including housing, academics, and improvements to fitness and wellness by redeveloping Sullivan.

PHASING: THE CAMPUS TODAY



PHASING: IMMEDIATE



MASTER PLAN RECOMMENDATIONS

To accomplish the vision and transform the Portland campus, the master plan creates a new campus quad and identifies sites for the new large projects. The new campus quad will serve as the new campus heart, surrounded by a new residence hall and Career and Student Success Center.

Components of the plan:

- Building the new campus heart will need to be executed in phases. The first phase is to construct the Career and Student Success Center (CSSC). After looking at several alternative locations for the Center there was only one location that would be immediately available and centrally located on the campus. The selected location for the CSSC is in between the existing surface parking lot and the parking lot between the Sullivan Complex and Wing C of the Science building. Building on this site will help frame and create the new central quad; it will be visible from Bedford Street and can be connected to the Sullivan Complex.

  The second phase is to demolish the Woodbury Campus Center and make the site available for student housing. The plan recommends a 4-story building to accommodate 300 beds. The type and mix of units will be constructed to serve upper class undergraduates and graduate students. To capitalize on its location adjacent to the new quadrangle, the ground floor will be used to accommodate programs open to the whole campus community. In doing so, it will help activate and engage the new campus quad.

  The last step in completing the new campus heart is to construct the new quadrangle. This will require the relocation of the surface parking lot. The quad is seen as a place designed to accommodate a variety of programs, from special events like graduation to a place to congregate, relax or study between classes.

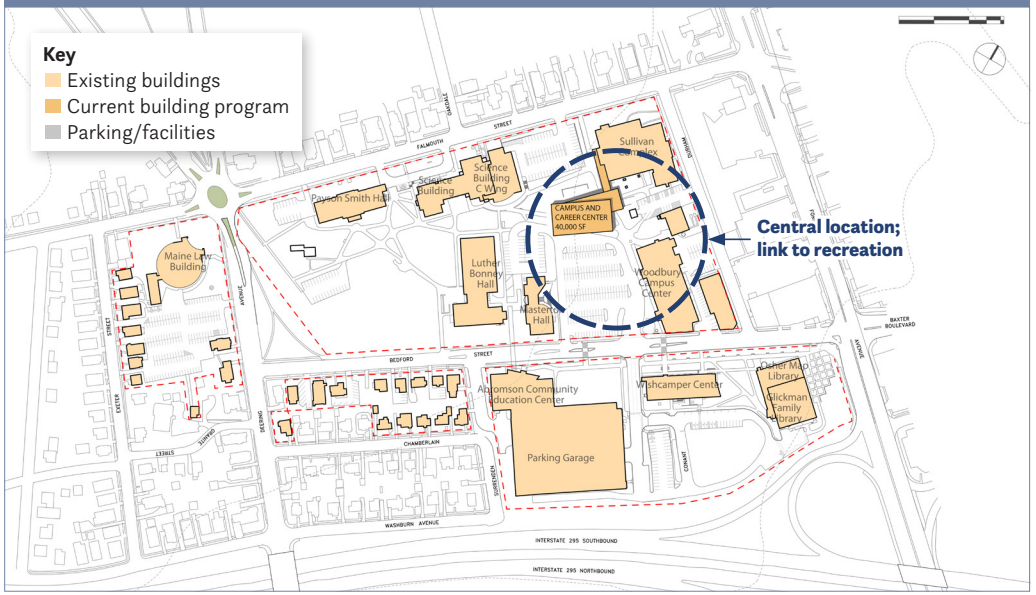
- The Center for the Arts will offer theater and fine arts gallery space, serving USM's Arts, Music and Theater programs, as well as community needs. After careful consideration of different

sites, the parking lot behind Wishcamper was selected as the best location for the Center.

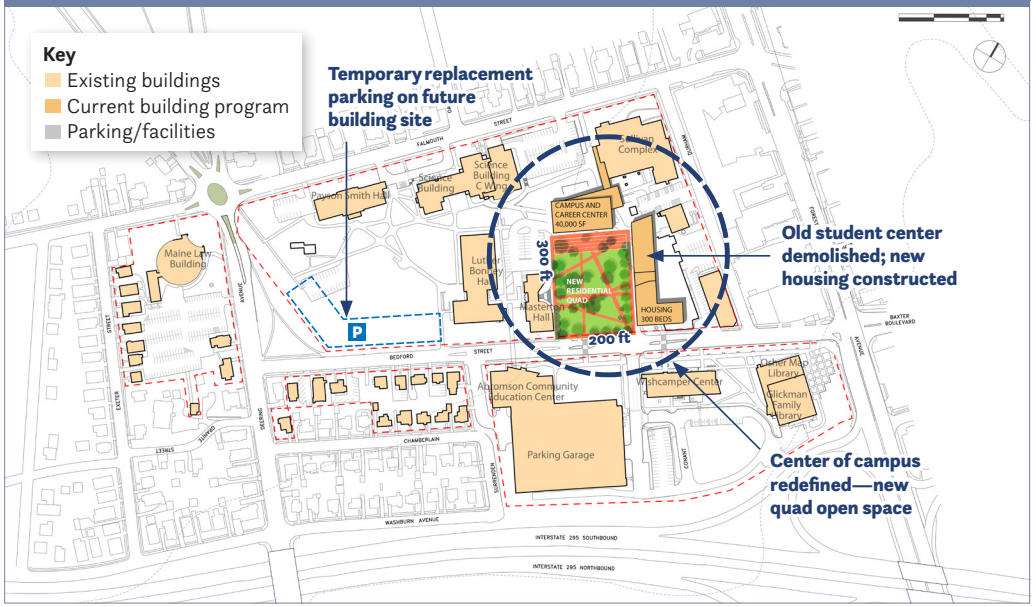
Key attributes of this site include highway visibility, adjacent parking and a campus edge location. The visibility from 295 of a stunningly designed building would provide USM an opportunity to enhance its image in the City and region and support its world-class music program. Given that the peak use of the Center will be primarily during off peak class times, the adjacent parking garage would provide a convenient location for patrons to park and attend events.

- The Graduate Center for Professional Studies will provide a single integrated space for the Law School, a new MBA program offered by the University of Maine, and USM's Muskie School of Public Service. Key attributes of a site for this building are visibility, immediate availability and ability to accommodate the estimated 160,000 GSF building. The preferred site for the Graduate Center is at the current Brighton Avenue Extension, which will be closed and given to USM once the City of Portland completes its roundabout project at the intersection of Brighton, Deering and Falmouth streets. This site's prominent location will help to further define the existing campus open space.
- After the development of the Graduate Center, the Law building can be demolished. The removal of the Law Building will open this site in the near term for additional surface parking and, in the long term, provide a site for future underdetermined campus uses.
- Additional sites were identified during the process that are not immediately needed for campus development. The sites are illustrated on figure x. Some of the sites are immediately available and could be used to accommodate student housing. The other sites will require some enabling projects to make them available for development. In total the plan identifies an additional 400,000 GSF of development potential above what is in the near-term program.
- Continued capital renewal of existing buildings will be addressed throughout all phases of the plan. During the replacement of aging

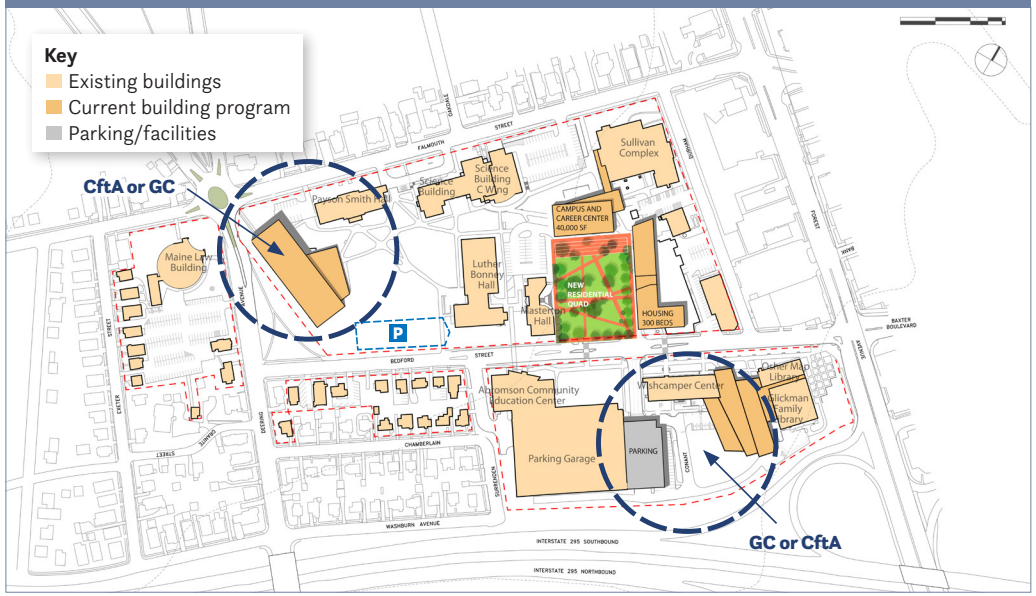
PHASING: SHORT-TERM—CAMPUS AND CAREER CENTER



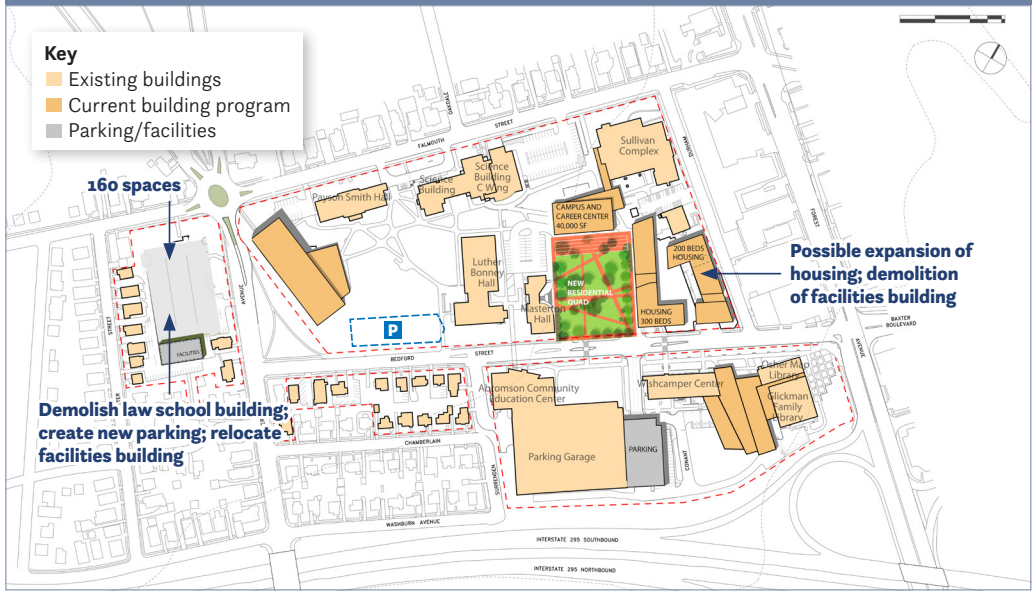
PHASING: SHORT-TERM—RESIDENTIAL AND QUAD



PHASING: SHORT-TERM—GRADUATE CENTER AND CENTER FOR THE ARTS



PHASING: PARKING AND ADDITIONAL HOUSING



infrastructure, these efforts should seek to efficiently add space to the campus. This can be accomplished by careful repurposing and reconfiguring spaces during the design and planning of the capital renewal projects. The existing capital renewal program will determine the priority of the buildings and spaces renovated throughout all phases of the plan.

The master plan recommendations do not violate any current restrictions in the City of Portland's overlay zone; however, they are seen as the basis to continue discussion with the City of Portland to update and create an institutional overlay district.

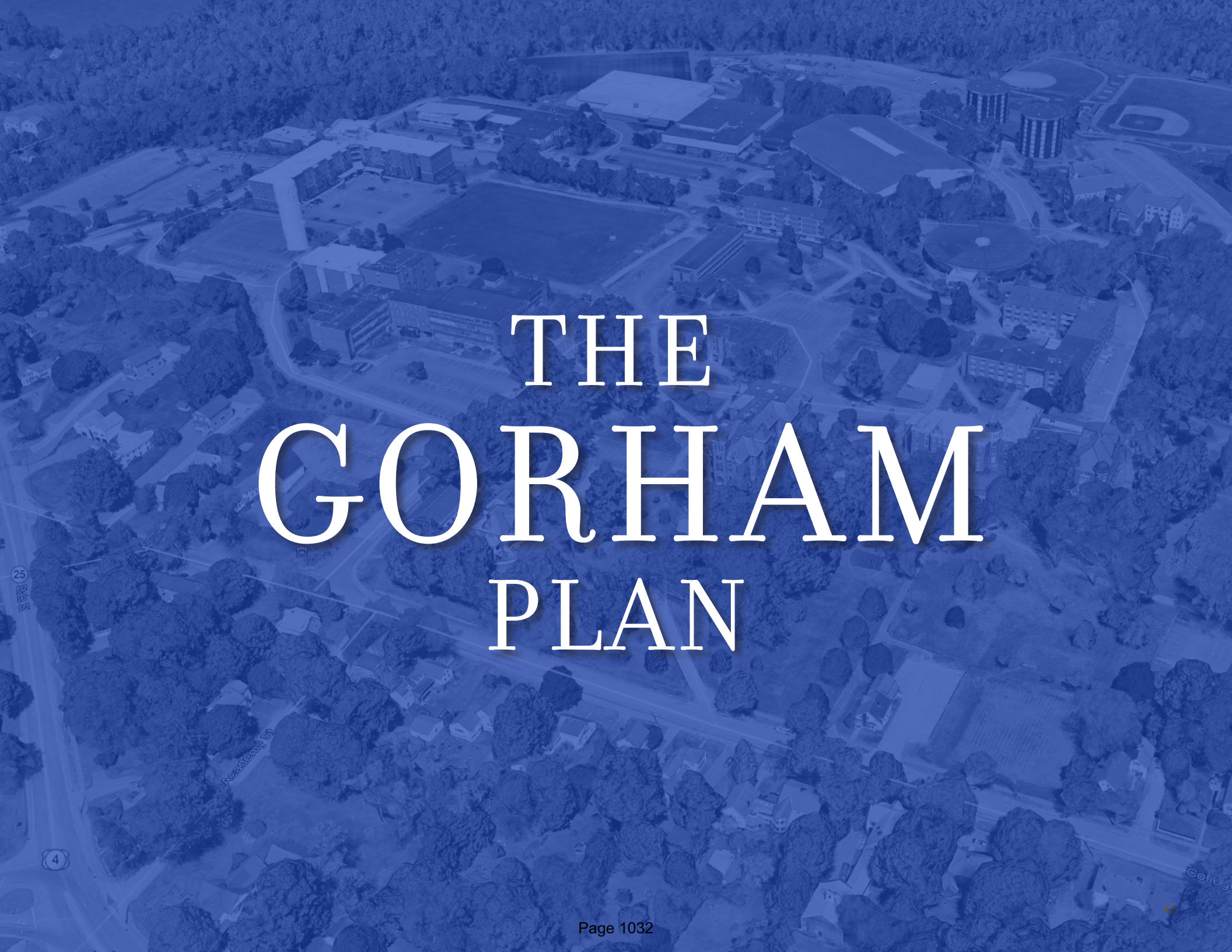
PHASING: SHORT-TERM—COMPLETION OF CORE ELEMENTS



PHASING: LONGER-RANGE—10 YEARS+



400,000 GSF | *Site available for academic, housing, parking or athletic growth beyond current program*

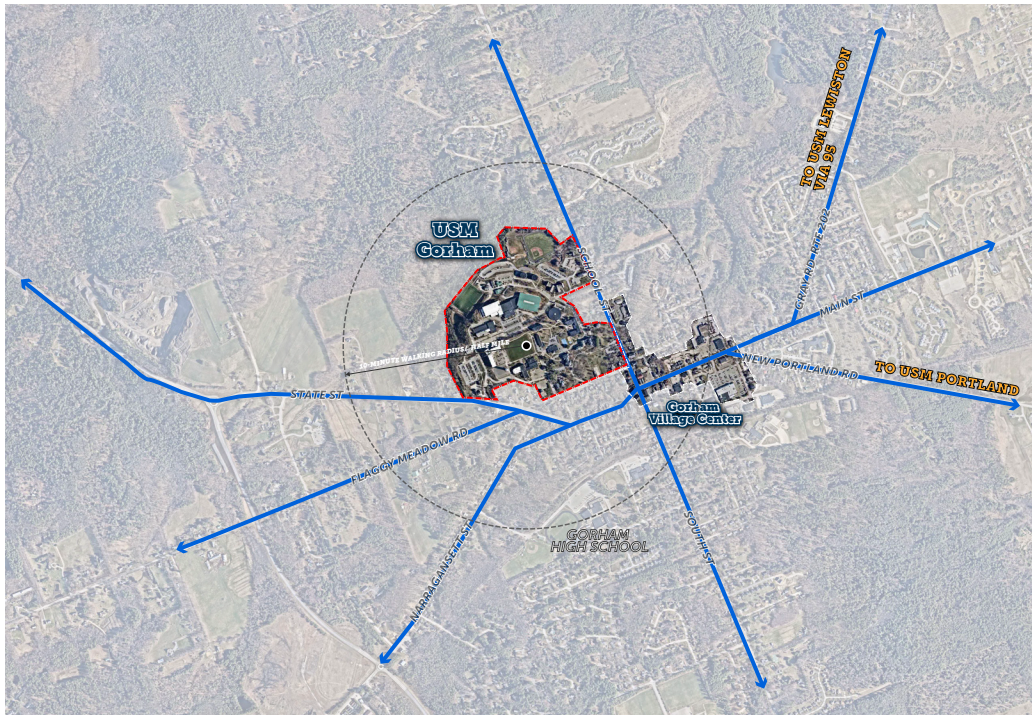


THE GORHAM PLAN

Introduction

The USM Gorham campus has the second largest enrollment of the three campuses with a fall 2017 headcount of 2,570. It is currently the only campus with residence halls, serving approximately 1,200 students.

Encompassing approximately 96 acres at the west edge of the Town of Gorham, the Gorham campus provides the quintessential New England college experience. It is linked to the Portland campus and the City of Portland via frequent bus service and has convenient access from the regional roadway network. State Street is the primary campus gateway, with a second arrival point off School Street. Neither of the locations provides a consistent and positive first image of the campus.

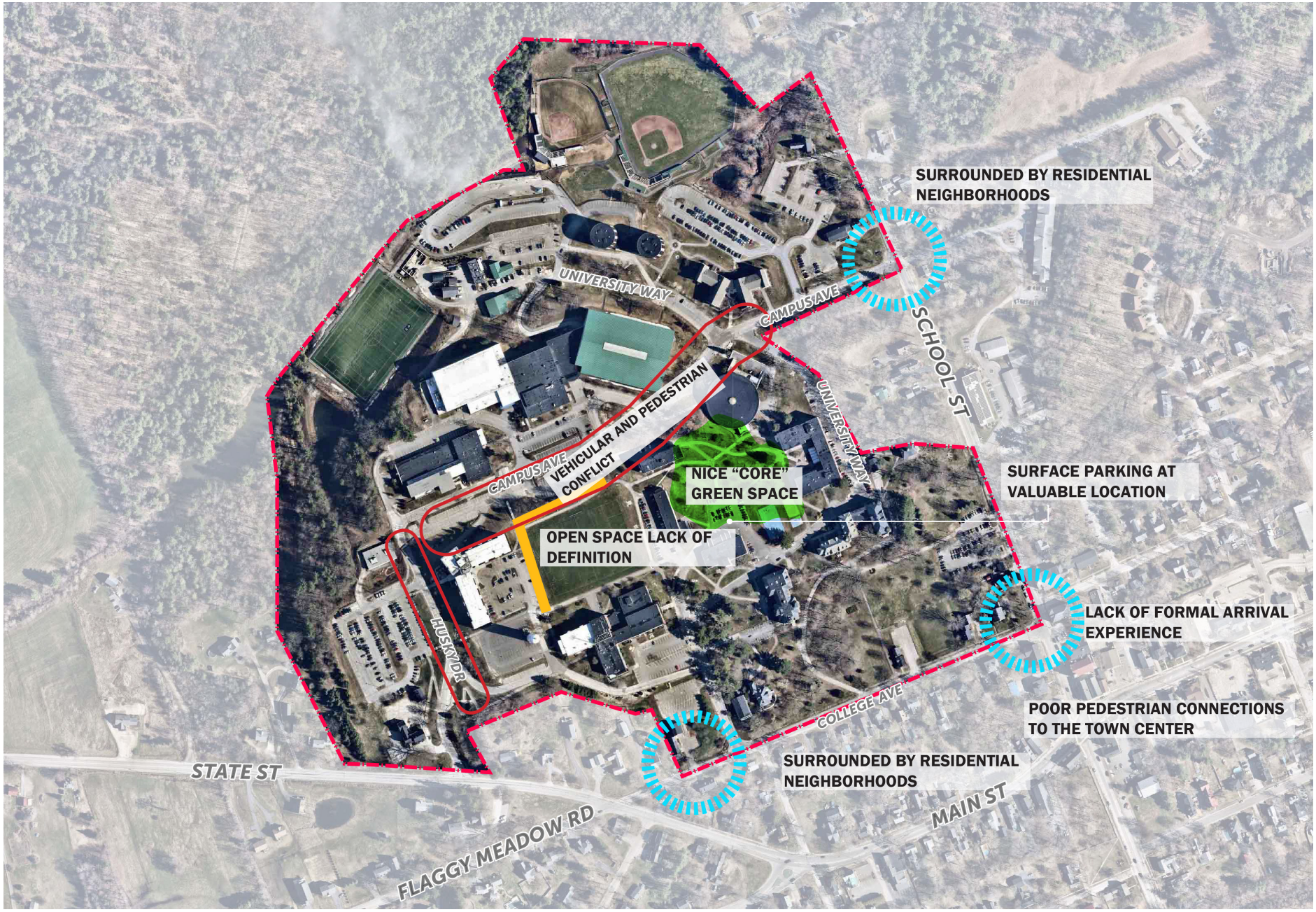


There are 36 buildings comprising 641,997 assignable square feet (ASF). The ASF, excluding residential and unclassified space, is 442,905 ASF. This reflects the core campus space including classroom, laboratory, office, library, special and general use, health care, and central facilities. Dickie-Woods was excluded from this study as it is slated for demolition.

At the top of a ridge, the topography makes it difficult to get views into the campus from the Town of Gorham. It also makes direct pedestrian connection to the town center difficult. The adjacent land uses are predominately single-family residential homes and retail uses along Main and School Street. The western edge of the campus is defined by Tannery Brook.

The campus open space character is inconsistent in quality and design, with the campus pedestrian experience dominated by roadways built to serve numerous parking lots.

There is great potential for the Gorham campus by renewing the campus historic campus landscape. With historic Victorian educational architecture, NCAA athletic venues, and residential halls all located on a wooded hilltop, there are great opportunities to develop a strong campus framework that can have a considerable impact upon student life and success.


SURROUNDED BY RESIDENTIAL NEIGHBORHOODS
UNIVERSITY WAY
CAMPUS AVE
SCHOOL ST
VEHICULAR AND PEDESTRIAN CONFLICT
CAMPUS AVE
UNIVERSITY WAY
NICE "CORE" GREEN SPACE
SURFACE PARKING AT VALUABLE LOCATION
OPEN SPACE LACK OF DEFINITION
HUSKY DR
LACK OF FORMAL ARRIVAL EXPERIENCE
COLLEGE AVE
POOR PEDESTRIAN CONNECTIONS TO THE TOWN CENTER
STATE ST
SURROUNDED BY RESIDENTIAL NEIGHBORHOODS
MAIN ST
FLAGGY MEADOW RD

The Gorham Plan

The following sections describe the master plan recommendations for the Gorham campus.

VISION

The vision for the Gorham campus is grounded in today while being aspirational toward the future.

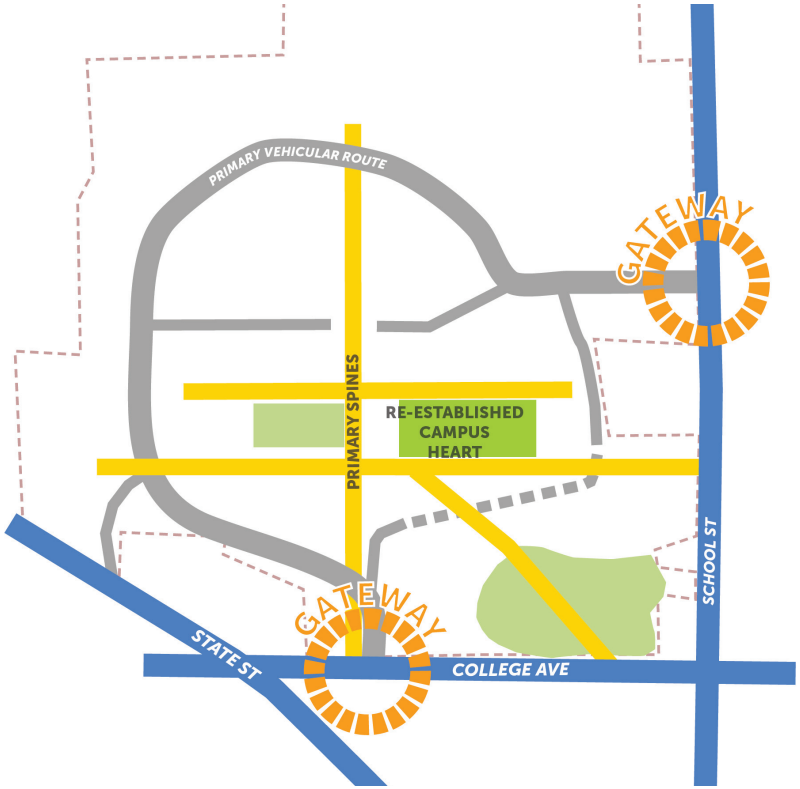
> "To sustainably strengthen an iconic campus focused upon the academic experience with an emphasis on campus life."

SUSTAINABILITY

USM's carbon neutrality goal for Second Nature's Presidents' Carbon Commitment also applies to the Gorham campus. The Campus Sustainability Strategic Plan aims for a 35% reduction in heat and electricity related emissions in existing buildings by the year 2025, as an interim target toward total neutrality by 2040. In order to achieve 35% reductions, significant investment in deferred maintenance is necessary to increase the energy efficiency of older buildings. Such an investment is also necessary to increase the comfort and quality of the spaces students use for learning, studying, eating, and sleeping. True sustainability addresses social, economic, and environmental dimensions of a University, and investing in deferred maintenance is a critical component of all three. To accomplish this, the Committee recommends allocating capital funds toward the Gorham campus' building stock, and additionally using an Energy Savings Performance Contract (ESPC) through an Energy Services Company (ESCO) to leverage private investment. In addition to building energy use, we also strive to increase access to sustainable transportation, reduce material resource waste, and increase hands-on student projects to benefit the Gorham campus.

MASTER PLAN FRAMEWORK

The Gorham campus plan is built upon reestablishing a campus heart, providing a clear pedestrian circulation framework supported by vehicular circulation that does not dominate the campus landscape. The plan, which reestablishes the campus green and connects it to the larger campus and the Town of Gorham, also provides a flexible and bold framework for future development.



DEVELOPMENT PROGRAM

The Gorham development program continues and expands USM's capital renewal program with a focus on the campus life facilities. The program has been categorized into time periods in which the program requirements need to be developed.

Immediate (Now)

- **Continuing Capital Renewal**—This will be a continuation of the program the University has been managing over the past several years in which buildings and spaces in critical deferred maintenance are addressed.

Short-Term (3-5 years)

- **Student Quad Renewal Phase One**—This project relocates the surface parking lot behind Russell Hall and closes University way to emergency and service vehicles only. As part of this project, Dickie-Wood will be demolished, and a surface parking lot will be built on the site. This additional parking will accommodate the parking removed as part of the Student Quad Renewal project.
- **Brooks Student Center**—A critical component of the success of the Gorham Campus will be the renovation of the Student Center.
- **Welcome Center**—The reuse of an appropriately sized and located space as a welcome center is a Gorham Plan recommendation.
- **New/Renewed Student Housing**—There is significant need for much of the housing supply to be renovated or replaced. The occupancy of Spring of 2018 was over capacity. Renovation of housing will require "swing beds" though new development in Portland may be able to accommodate that need.

Long-Range

The plan looks to accommodate additional development in the future that can become sites for a variety of uses, including housing, academic, athletics and fitness.

PROGRAM ELEMENTS

Immediate

- Continuing Capital Renewal

Short-Term

- Student Quad Renewal Phase One
- Brooks Student Center
- Welcome Center
- New/Renewed Student Housing

Long-Range

- Housing
- Academic
- Athletic/Fitness

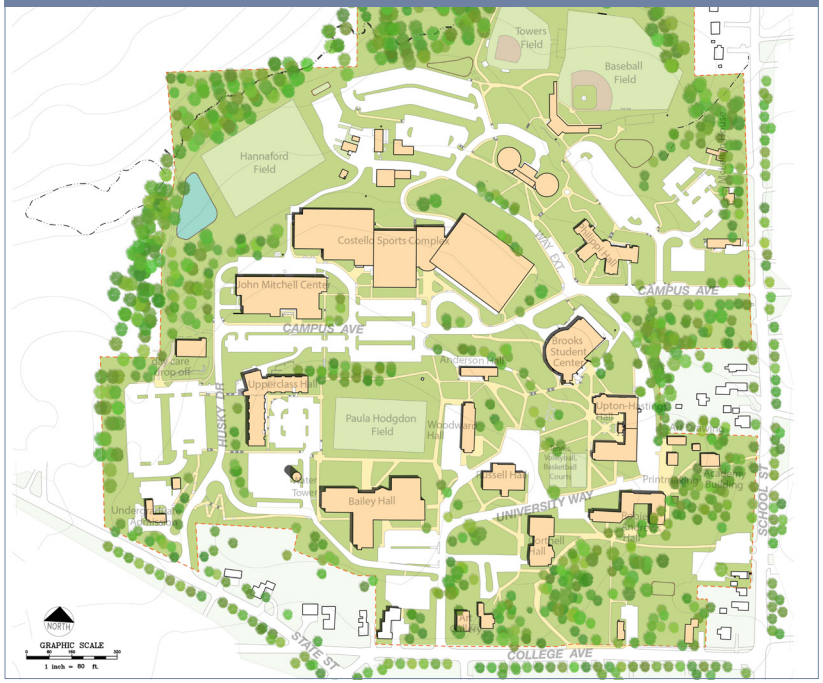
MASTER PLAN RECOMMENDATIONS

To accomplish the vision and create transformational moves that improve the student experience, the master plan recommends renewal of the Gorham campus heart and identifies sites for additional housing and academic sites as they are needed.

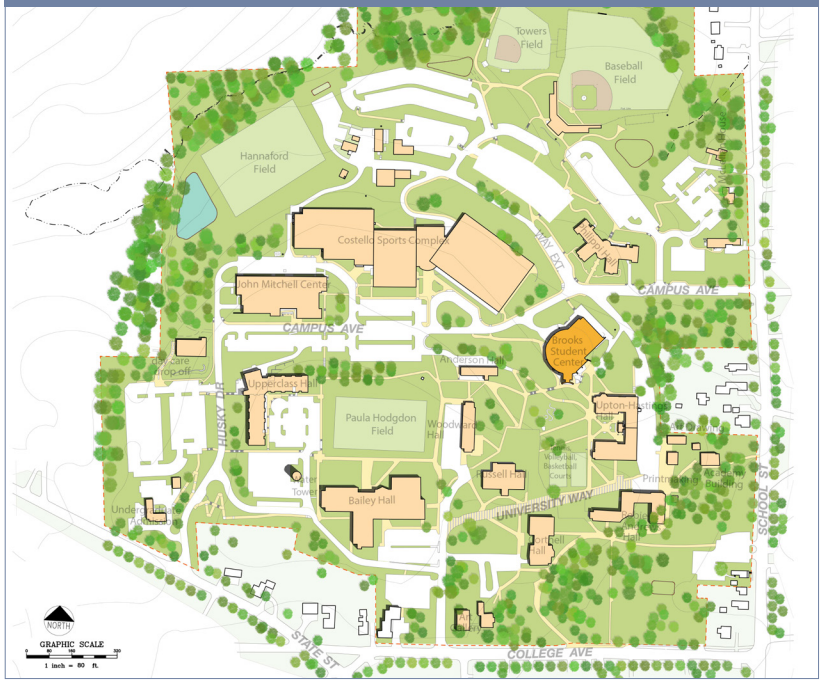
The immediate phase of redevelopment would be to re-establish the campus heart by removing the surface parking behind the Russell Theater and redesigning University Drive to be more pedestrian friendly. In doing so, it will also be less of a barrier between the historic buildings on the crown of the hill. The corridor will continue to accommodate emergency and service vehicles.

The next phase of development at the Gorham Campus is to focus upon the capital renewal of the historic core structures. Russell Hall, Robie-Andrews Hall, and Corthell Hall are all top candidates for investment as funding becomes available. The renovation program started in Bailey Hall should be continued. The renovation of these buildings presents the opportunity through redesign of space to meet some of the office and specialized classroom needs identified in the space needs analysis.

EXISTING CONDITIONS

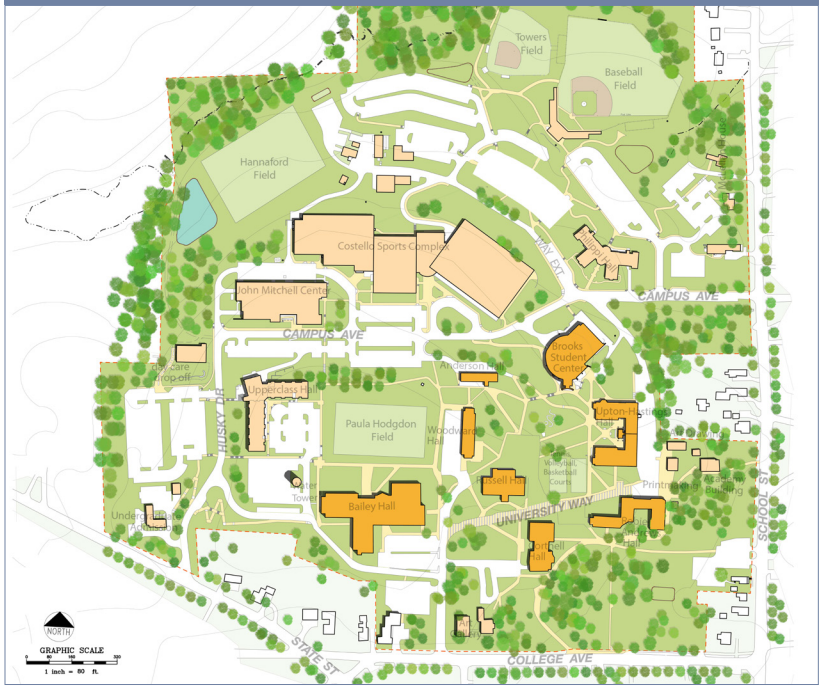


PHASING IMMEDIATE: REESTABLISH A CAMPUS HEART

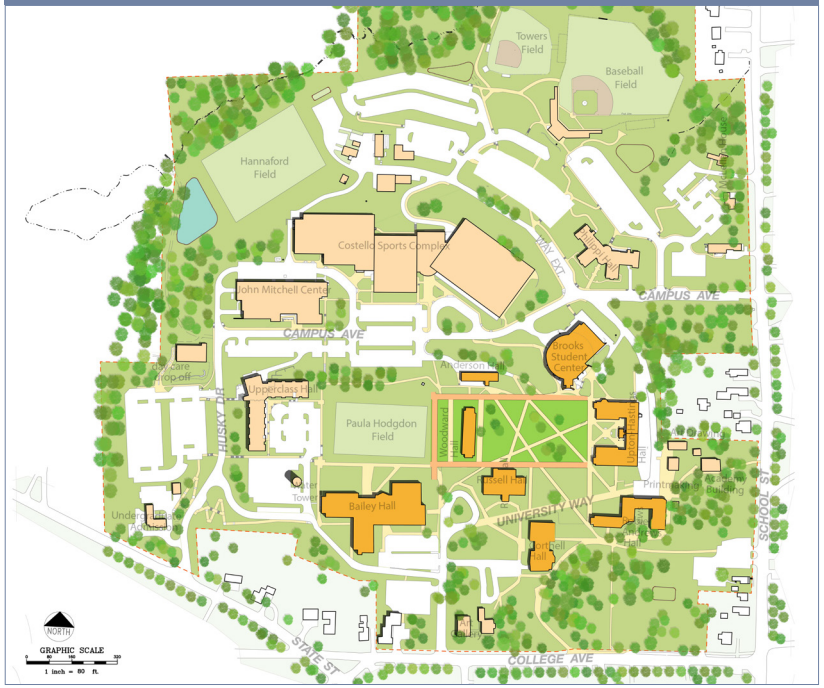



Brooks Student Center
Woodward Hall
Upton-Hastings Hall
Russell Hall
University Way
University Way
Robie-Andrews Hall

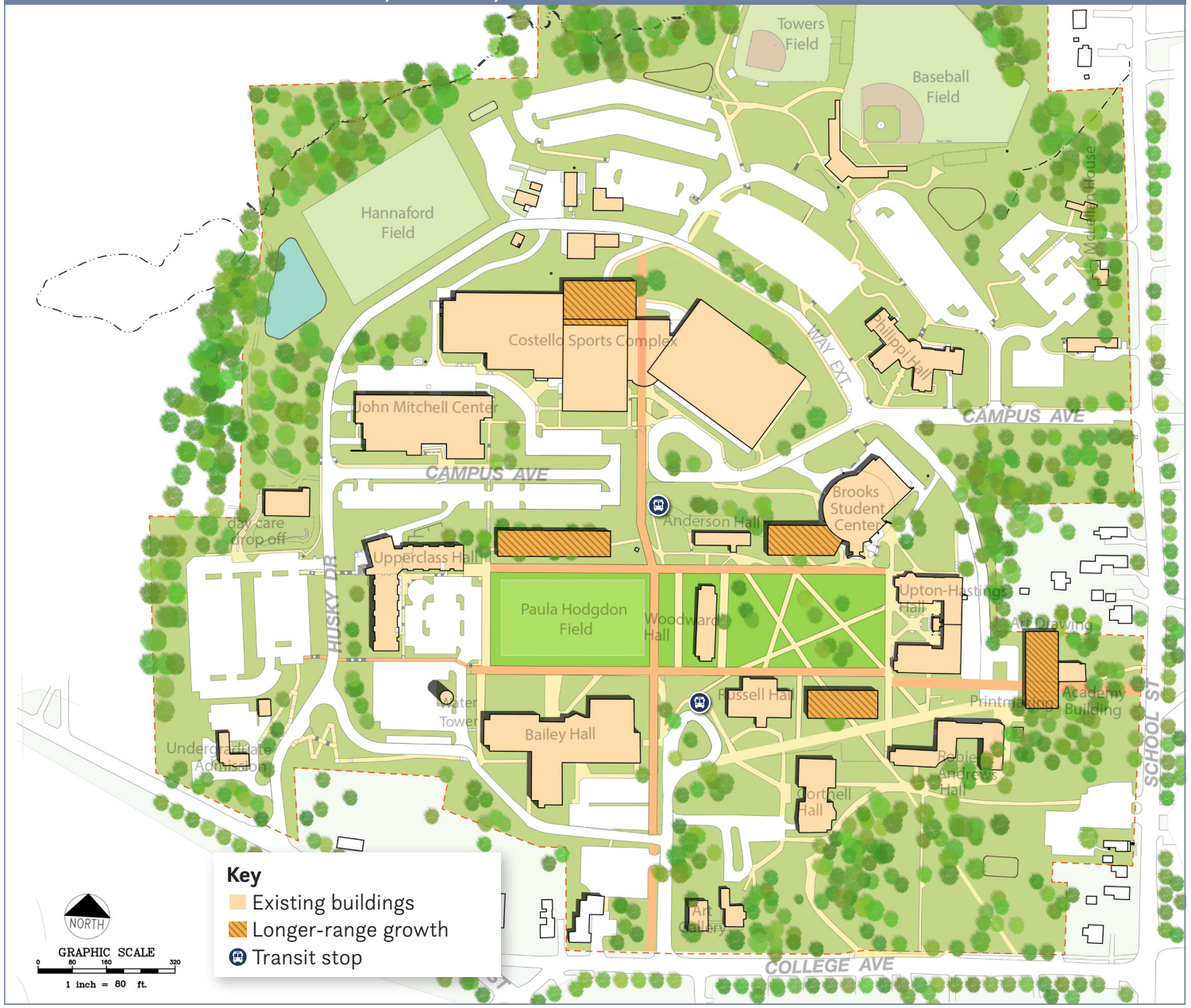
PHASING: IMMEDIATE—ONGOING CAPITAL RENEWAL

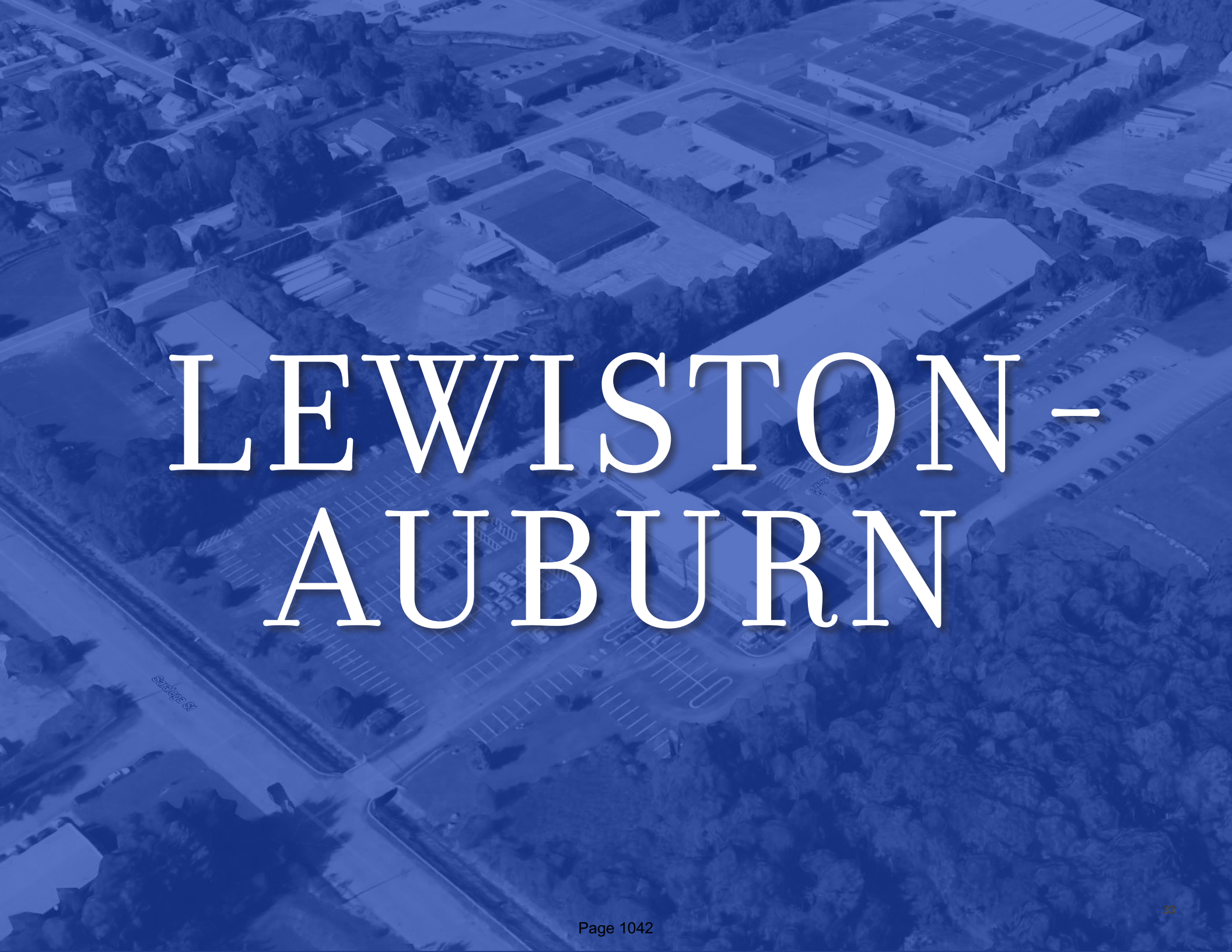


PHASING: SHORT-TERM—CAPITAL RENEWAL CAMPUS LANDSCAPE



PHASING: LONG-RANGE—ACADEMIC, HOUSING, AND ATHLETICS





LEWISTON-AUBURN

Introduction

The Lewiston-Auburn campus has the smallest enrollment of the three campuses with a fall 2017 headcount of 374. The campus encompasses approximately 20 acres and is located at the west edge of the Town of Lewiston. The location and character of the campus is completely determined by its location and development in an industrial park just off the Interstate

There is one campus building comprising 63,531 assignable square feet (ASF). The ASF, excluding unclassified space, is 62,908 ASF. This reflects the core campus space including classroom, laboratory, office, library, special and general use, health care, and central facilities.

Early in the process it was determined the University needed to complete an academic plan for the campus prior to engaging in the facilities master plan process.

APPENDIX

Portland Space Needs Analysis

The space needs analysis for the Portland campus was grounded in institutional strategic drivers of enrollment and personnel, supported by the space inventory, driven by nationally recognized space planning guidelines, and tempered by the specific needs of the University.

PLANNING METHODOLOGY

The outcome of the study is an order-of-magnitude space program organized according to the coding structure of the Facilities Inventory Classification Manual (FICM). A more detailed space needs analysis of instructional space was conducted by the consultant team to inform a finer-grained set of recommendations and is included at the end of this report. Space needs were quantified for Current Calculated, Current Adjusted, and one scenario, Projected Adjusted, using the FTE from the five-year high enrollment. The Current Adjusted, as well as the Projected Adjusted, includes adjustments to the mathematically calculated need. These adjustments are informed by trends in higher education and the interview findings, as well as the culture of the campus, which may not be accounted for in the calculations alone.

INTERVIEWS

From October 18, 2017, through October 30, 2017, the consultant team conducted interviews on the Portland, Gorham and Lewiston-Auburn campuses with senior administrators, faculty members, departmental and unit directors and managers, and administrative and academic staff members. These interviews provided the qualitative data related to the use of and demand for space on the campus; insights into programmatic and spatial relationships between departments; and ideas regarding what facility improvements were needed to meet current and future program and operational requirements.

Overall, the space deficits identified by the interviewees were supported by the quantitative analysis in terms of specialized instructional space, student life/services/club space, meeting and conference space, and athletics space needs, both now and in the future.

The thematic summary of findings is provided at the end of this report.

PORTLAND RECOMMENDATIONS

The space deficit for the campus, identified by FICM, totals 17,800 ASF for Current Adjusted and 61,600 ASF for Projected Adjusted. This finding is based on the proposed enrollment of 3,504.2 FTE, as well as maintaining the currently compressed scheduling window of 29 hours per week. To meet some calculated deficits an optional non-capital suggestion would be to expand the scheduling window from the compressed 29 hours a week, to a more normative 34 hour per week. This would eliminate the need for nine (9) classrooms and approximately 5,000 ASF. These could potentially be repurposed to meet deficits in other space types, such as student study areas. The expanded window would also allow for an opportunity to try new pedagogies and selectively renovate/repurpose low-use rooms.

If the desire is to maintain a compressed scheduling window, an area for more detailed review is the potential availability of the 22,000 ASF of unclassified space, particularly the almost 5,400 of vacant space in the Science B-Wing Basement. While, by the numbers, the ASF could meet select space needs, the existing areas were former animal facilities and may not be able to be re-purposed for teaching laboratory space. As the University continues to implement its Master Plan, care must be taken to critically examine available space and better define, repurpose and refurbish it for more collaborative and efficient use.

The following summarizes the space needs by category and identifies areas that may require specific additional review as the Plan is implemented.

Instructional (100)

At the time of this analysis, there were 44 spaces and 36,294 ASF identified as general-purpose classrooms available for scheduling. There are an additional 23 rooms and 17,833 ASF of classroom space that was dedicated to specific programs. The analysis was conducted on the 44 general-purpose classrooms and 36,294 ASF.

The figure on the following page presents the existing distribution and calculated need for classrooms at both the existing scheduling protocol of 29 hours, as well as applying the 34-hour daytime scheduling window for comparison. For both analyses, the need was calculated based on guidelines of 67 percent average weekly daytime hour utilization and average seat occupancy.

The table aligns the existing distribution of rooms by capacity (seat count) to the need. Using the existing stock of rooms, seat counts, and ASF, a theoretical exercise of "right-sizing" was conducted, which is mathematically calculating the appropriate capacity of the existing rooms.

While right-sizing does not change the total number of classrooms available, it can often bring the distribution of classroom capacities into better alignment with course section sizes. Portland is relatively below target for ASF/seat and so the re-alignment of rooms by capacity could provide some major changes, including providing more 21- to 30-seat classrooms for the campus. By adjusting the current room capacities, the existing rooms can be maintained and meet the necessary space requirement for current enrollment and course offerings. Under the majority of the window calculated and projected scenarios, the needs can be met strategically within the existing footprint of space.

Space Type	Current ASF	Current Adjusted 2,995.8 FTE	Surplus or (Deficit) to Current ASF	Projected Adjusted 3,504.2 FTE	Surplus or (Deficit) to Current ASF
100: Classroom	55,076	55,076	0	55,076	0
210/215: Class Laboratory	28,341	37,493	(9,152)	38,741	(10,400)
220/225: Open Laboratory	15,785	15,785	0	15,785	0
250/255: Research Laboratory	16,140	19,700	(3,560)	19,700	(3,560)
300: Office	144,419	144,419	0	144,419	0
400: Study/Library	66,417	70,984	(4,567)	73,618	(7,201)
500: Special Use, General	2,786	2,786	0	2,786	0
500: Athletics	26,671	26,671	0	26,671	0
600: General Use	42,101	42,101	0	82,101	(40,000)
700: Support*	27,476	27,476	0	27,476	0
800: Health Care	517	1,000	(483)	1,000	(483)
Total	**425,729**	**443,491**	**(17,762)**	**487,373**	**(61,644)**
Other Space (000's)	22,163	22,163	0	22,163	0

** Excludes 372,937 ASF of vehicle parking*

CLASSROOM NEED

CATEGORY	EXIST.	29-HOUR CALC. NEED	29-HOUR PROJ. CALC	34-HOUR CALC. NEED	34-HOUR PROJ. CALC	OPTIMIZE EXISTING SPACE RT.-SIZE EXIST.	OPTIMIZE EXISTING SPACE ADJ.
1 to 20	7	12	11	10	10	6	7
21 to 30	2	8	9	7	8	8	8
31 to 40	8	10	9	8	8	16	18
41 to 50	14	5	6	4	5	8	4
51 to 60	7	2	3	2	2	2	2
61 to 70	2	1	2	2	2	0	1
71 to 80	0	0	0	0	0	0	0
81 to 90	0	0	1	0	1	0	0
91 to 100	1	2	1	1	0	1	1
101+	3	1	2	1	1	3	3
Total	**44**	**41**	**44**	**35**	**37**	**44**	**44**
ASF	36,294	36,190	41,630	31,180	37,080	36,294	36,294
Seats	2,246	1,645	1,910	1,415	1,665	1,872	1,980

Specialized/Research (200/250)

Specialized Instructional

There are 24 spaces and 23,098 ASF assigned to instructional lab space, such as Biology, Art, Nursing, Linguistics, etc. Space needs for specialized instructional space are based on the number of hours by the discipline of the courses, as many courses/programs cannot share space. Where opportunities to continue shared use of the spaces between similar courses were possible, these were maintained. Using the rubrics of 80 percent occupancy, 50 percent utilization, and discipline-specific ASF per station, it is recommended that, beyond maintaining its current complement of SI spaces, Portland add five (5) additional labs, including one (1) Art–Drawing (1,440 ASF), one (1) Art–Studio (1,440 ASF), one (1) Biology–Anatomy and Physiology (1,440 ASF), one (1) Chemistry–General (1,440 ASF), and one (1) Nursing –Fundamentals Lab (1,280 ASF). The 29-hour and 34-hour windows show similar incremental need with the difference that the 34-hour window would eliminate the short-term need for an additional Art–Drawing lab, and the projected need for an additional multipurpose computer lab.

Research

There is a continued desire for this type of student/faculty engagement space on campuses throughout academia. Currently, Portland has 16,140 ASF of faculty research space. The calculated need for Portland is for 19,700 ASF that is then held for the Adjusted need to provide room for future expansion.

INCREMENTAL SI NEEDS

Discipline	29-Hour + Rooms	29-Hour + ASF	34-Hour + Rooms	34-Hour + ASF
INCREMENTAL CURRENT SI NEED (2,995.8 FTE)				
Art–Drawing	1	1,440	0	0
Art–Studio	1	1,440	1	1,440
Biology–Anatomy and Physiology	1	1,440	1	1,440
Chemistry–General	1	1,440	1	1,440
Nursing–Fundamentals	1	1,280	1	1,280
Total	**5**	**7,040**	**4**	**5,600**
INCREMENTAL PROJECTED SI NEED (3,504.2 FTE)				
Art–Drawing			1	1,440
Computer Lab–Multipurpose	1	960	0	0
Total	**1**	**960**	**1**	**1,440**
Grand Total–Current & Projected	**6**	**8,000**	**5**	**7,040**

Qualitative issues need to be identified and addressed.

Office (300)

Portland has 679.5 FTE (723 headcounts) faculty/staff on campus, housed within 144,419 ASF of office and associated support space. Office space ranges from a 30 ASF Political Science office in Payson Smith to a 3,669 ASF office in the Science building used by the Maine Cyber Security Cluster, with an overall average of 143 ASF across faculty, staff, and administrative spaces. The application of appropriate planning multipliers and assumptions that the spaces are properly outfitted and usable, result in the need for 133,000 ASF.

Those spaces that are less than 90 ASF should be reviewed for appropriateness in terms of assignment and use. As the campus moves forward with the master plan, putting office guidelines into effect should be considered to begin standardizing the size of offices across the campus.

Library/Study (400)

The library and study space category encompass almost 66,500 ASF and has an overall space needs deficit of about 4,500 ASF in the study category.

Library space has become the learning commons at many institutions and incorporates coffee bars, some social areas, group study rooms, etc. Portland has undergone numerous renovations that have produced some exemplary learning commons styled facilities.

Special Use (500)

The Special Use FICM space category consists of various space clusters including athletics, field buildings, and greenhouses, among others. These spaces are calculated based on the specialized need for the associated space types.

More often than not, the primary driver for campuses in this category is Athletics/Recreation space, which is the case for Portland. Athletics/Recreation encompasses 26,600 ASF located in Sullivan Gym. The base calculated ASF for athletics at a four-year institution is 50,000 ASF. Portland and Gorham share athletics resources, and as such the existing ASF between the two campuses meets the needs of the University. The challenge for Portland is Sullivan Gym, the main athletics building, no longer physically supports campus needs. The layout is not conducive to functions housed in the building, and there are concerns that space is subpar for the potential addition of residential life.

Two other space types in this category are Media Production and Greenhouses. The campus has a radio station located in Bedford 92, and some additional media support space located within Glickman Library, while the calculated need is for 5,000 ASF, the current 2,342 ASF appears to meet campus needs. The campus also has a greenhouse located in the top floor of Science A-Wing (444 ASF), while the calculated need exceeds the existing, the current space is underutilized.

General Use (600)

The General Use FICM space category consists of various clusters including assembly, exhibition, food service, and meeting rooms (student-centered services). Some of the highlights of this area:

- **Assembly:** Hannaford Hall, part of the Abromson building, is assigned to this category. 40,000 ASF has been incorporated into the Projected Adjusted for the Fine Arts Center that will serve both the Gorham and Portland communities
- **Dining:** Currently, the main dining service is located within the Woodbury Campus Center. Today's students are looking for more inviting and varied dining experiences, featuring specialty food stations, high top tables, booths, comfortable seating, and connectivity—spaces and furnishings that promote easy interaction. Although the overall ASF for dining has been maintained, location, function, and aesthetics may need to be refreshed.
- **Recreation:** This space type is often found in student centers and consists of game rooms, TV lounges, general fitness rooms, etc.

Sullivan Gym, quantitatively, meets the needs of the campus as a whole.

- **Meeting Rooms:** This type of space is generally available to internal and external groups such as study groups, board meetings, community groups, etc. There are multiple spaces and flexible rooms located throughout the campus that meet the calculated need. The challenge for these spaces is the lack of storage areas for tables, chairs, food, etc.

Central Facilities (700)

Central Facilities (27,476 ASF) support overall campus operations and include mail, receiving, general storage, and shop space, among others. The current ASF meets the overall needs of the campus. It should be noted that the unassigned space on campus is, in part, serving an additional role as storage, which will need to be addressed when the spaces are recaptured.

Health Services (800)

Health Services is currently located in Payson Smith, with an upcoming planned move to Sullivan Gym. 1,000 ASF has been held as a placeholder for the planned relocation ASF.

Residential (900)

There are currently no residential facilities on the Portland campus. Further discussion and planning are needed before calculating the impact of the housing on the overall campus space needs. The addition of housing will also impact a number of other space types on campus, including health services, as indicated above, as well as food service, student activities, and the staff and resources to support these functions.

SUMMARY

With competing needs for scarce funds, it is critical for the university to identify and implement a few key renovation and expansion projects for near-term consideration. These projects, however, should be planned and designed with a campus-wide and long-term perspective

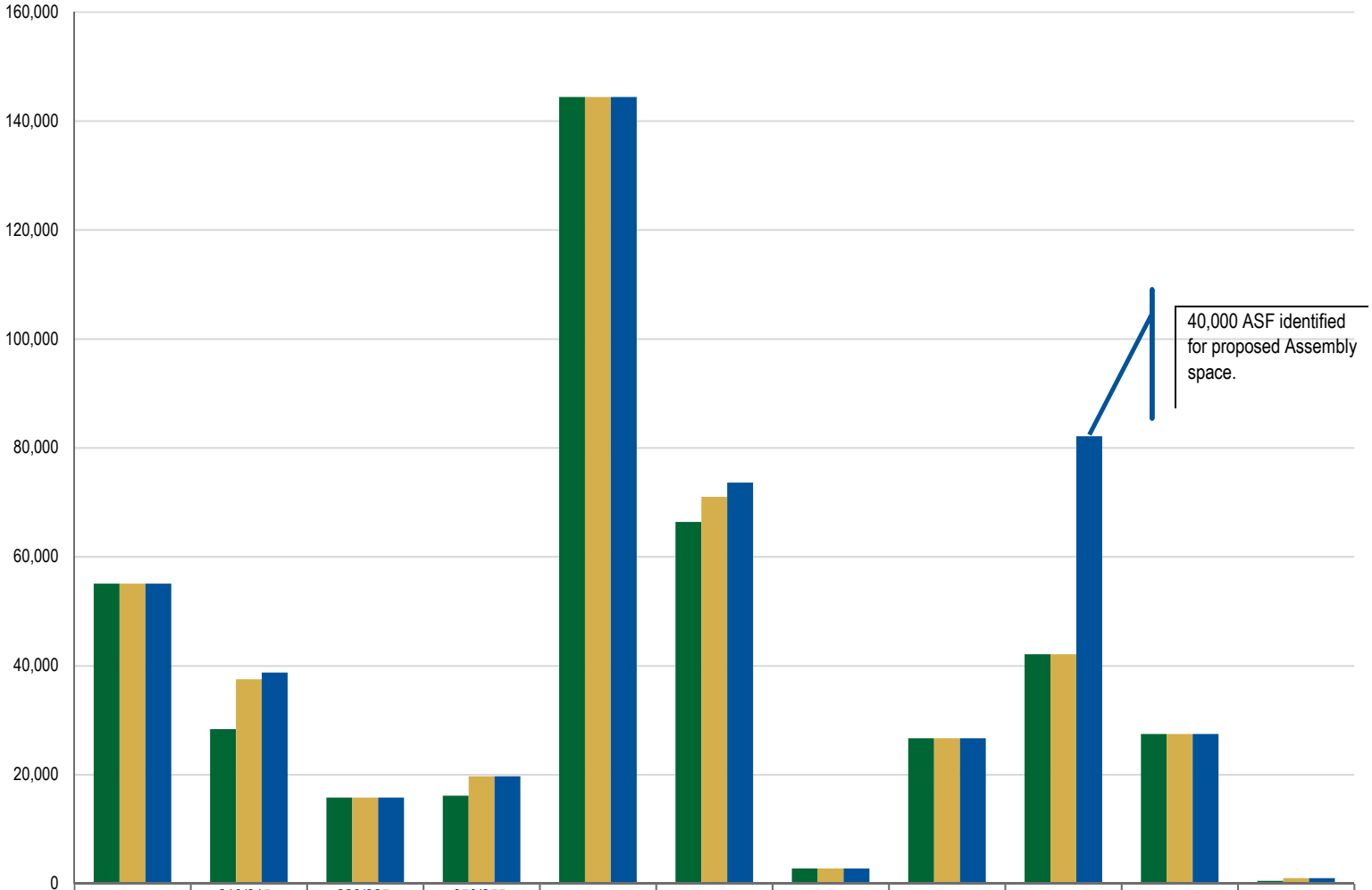
A select group of projects have been identified for capital renewal to set the course. The capital renewal list should includes:

- **Science:** There is currently 5,400 ASF of unassigned space and 2,000 ASF that is unfinished. The unassigned space consists primarily of vacant animal facilities and former space for the sunset Applied Medical Science program. This space will be recapturable to meet the teaching lab needs for the campus.
- **23 Brighton Ave:** This space can be repurposed to support a Welcome Center, swing space, or some other function not yet identified.

Regardless of renovation or new construction, continued thoughtful and purposeful planning is required to make the highest and best use of current facilities. New or renovated spaces should incorporate, where possible, the flexibility needed to accommodate the changes that will inevitably come in the future.

The following graphs summarize space needs by FICM category for Current, Calculated, Current Adjusted, and Projected Adjusted Need, as well as the categories with specific deficits.

SUMMARY OF SPACE NEEDS AND DEFICITS BY CATEGORY



	100: Classroom	210/215: Class Laboratory	220/225: Open Laboratory	250/255: Research Laboratory	300: Office	400: Study / Library	500: Special Use	520/525: Athletics	600: General Use	700: Support	800: Health Care
Current ASF	55,076	28,341	15,785	16,140	144,419	66,417	2,786	26,671	42,101	27,476	517
Current Adjusted	55,076	37,493	15,785	19,700	144,419	70,984	2,786	26,671	42,101	27,476	1,000
Proj. Adjusted 3,504.2 FTE	55,076	38,741	15,785	19,700	144,419	73,618	2,786	26,671	82,101	27,476	1,000

Portland Facilities and Resources

The Portland campus is comprised of 12 principal structures sited on 34 acres. A number of small former residential structures known as the "white houses" have been acquired on the perimeter of the campus. The average age of the primary building stock is 41 years old, half of which are over 50. Building systems have an expected usable life of 20–40 years, beyond which they become inefficient, obsolete or risk failure.

The Portland Plan promotes an overall facility strategy that prioritizes infill and redevelopment in support of a compact and pedestrian-oriented campus. Capital investment should leverage the limited available dollars to address critical building systems and improve the health, safety, function and appearance of existing structures. The Portland Plan suggests priority buildings for investment and identifies buildings that may be better suited to demolition and replacement based on several criteria: do they enhance the character of the campus, are they historically significant, do they require disproportionate investment in deferred maintenance costs, and do they represent the highest, best use of land resources? The following facilities are identified for possible demolition and replacement to make better use of campus land and infrastructure:

- **Woodbury Campus Center** (28,256 SF)
- **Law School Building** (92,824 SF)
- **25 Bedford Street** (9,744 SF)

Facilities Condition

A visual assessment of building facility conditions was conducted as part of the master plan. Buildings and their systems were evaluated on a scale of 0–5. Thirty different building systems were evaluated in eight major categories included the building exterior, interior construction, life safety systems, electrical, lighting, mechanical systems, plumbing, and visible structure.

A resulting building facility condition ranking is based on an average of the individual building system assessments. Buildings are grouped into the following condition categories:

Poor	Fair	Average	Good
0–1.99	2.0–2.99	3.0–3.99	4.0–5.0

This analysis reveals that the majority of the USM facilities are in the average to poor condition. Over half the buildings surveyed (8 out of 15) were in fair or poor condition. Four were in average condition and three were in good condition.

The master plan identifies the following facilities for reinvestment:

- **Luther Bonney Hall** (28,256 SF)
- **Science Buildings A and B**
- **Payson Smith** (52,606 SF)
- **Sullivan Gymnasium** (61,726 SF)

CAMPUS INFRASTRUCTURE

Storm Water

The Portland campus is permitted through the Maine Department of Environmental Protection Agency through the Site Location of Development Act as well as regulated by the Environmental Protection Agency (EPA) under the Phase II Storm Water Rules for a MS4 community. These storm water regulations became effective for the USM campus over the last two decades. As such, any new construction or redevelopment on the campus since the mid-1990's has been designed with formal storm drain collection and storm water quantity and quality control measures, which is recommended for inclusion with all future projects on the campus. All existing sewer systems within the campus appear to have adequate capacity for the extent of development (i.e. percent of impervious area) within each of the existing tributary drainage areas as well as adequate capacity for any potential expansion and development of additional buildings.


Sullivan
2.34
21 Durham
2.81
Central Heating
4.26
25 Bedford
3.30
Science C
3.24
Woodbury
2.27
Osher Addition
3.95
Science B
2.53
Glickman Library
2.76
Science A
2.16
Luther Bonney
2.44
Payson Smith
2.44
Masterton
3.06
Wishcamper
4.00
Abromson
3.63
Law Building
2.23

Domestic Water

The water mains in the streets surrounding the campus are utilized for domestic water, sprinkler systems and fire hydrants. The highest projected continuous draw on the water system at any one time is when it has to meet the design demand for a sprinkler system operation. The water system is capable of the proposed future expansion. Recorded flow hydrant tests indicate over 1,200 gallons per minute flow available with a 40-psi drop from static pressure.

Central Heat Plant

The existing boiler plant consists of two 500 HP boilers and one 150 HP boiler. All boilers are fired on natural gas as the primary fuel source with #2 heating oil as the backup fuel source. The current steam load for the Portland Campus is estimated at 15,100 pounds/hour of steam and can be met by operating one 500 HP boiler. The projected future load for the Portland Campus is estimated at 21,900 pounds/hour of steam which would allow for a net increase of 235,000 square feet of campus growth. This projected future load can be met by operating one 500 HP boiler along with the 150 HP boiler. The configuration of the plant allows for one 500 HP boiler as a backup while still meeting the projected future load.

Primary Power

The campus primary underground electrical distribution system consists of two separate and independent modified radial loop feed systems physically separated by Bedford Street. It is recommended that the northern and southern loops be interconnected to provide redundancy, increase the loop capacity and improve reliability. Based on historical demand growth, the northern radial-loop feed distribution system would have sufficient capacity for future growth. There is minimal space for potential building growth on the southern side of Bedford Street.

Campus Data

The existing fiber plant consists primarily of multi-mode fiber optic cabling between facilities. The Payson Smith Building acts as the central distribution point for the fiber. Most of the campus backbone cabling is installed in conduits with some direct burial cables in the Bedford Avenue and Chamberlain Avenue area. Most of the conduits are 4", equipped with innerduct, with varying space available for future expansion.

SUSTAINABILITY

USM, as a 2007 signatory of the Presidents' Climate Leadership Commitment (formerly the American College and University Presidents' Climate Commitment), is working toward the goal of climate neutrality and resiliency. The commitment requires the University to adopt several actions to reduce emissions of the six greenhouse gases addressed under the Kyoto Protocol, the most significant of which is carbon dioxide (CO_2). The ACUPCC also requires the University to develop a Climate Action Plan, establishing target dates for achieving climate neutrality; identify interim milestones; provide strategies for fulfilling the educational and research including descriptions of current education and research activities related to climate change and sustainability; and set out actions to make climate change and sustainability part of the curriculum. In April of 2017 the Climate Action Plan became part of a broader sustainability plan structured on three content areas:

- **Energy** (energy reduction projects, minimum new construction benchmarks, establish emissions goals)
- **Material Resources** (waste reduction and avoidance, recycling and re-use efforts)
- **Education and Outreach** (marketing, outreach, curriculum, educational and training forums)

Gorham Space Use Analysis

GORHAM RECOMMENDATIONS

The space deficit for the campus, identified by FICM, totals 6,000 ASF for Current Adjusted and 9,000 ASF for Projected Adjusted. This finding is based on the proposed enrollment of 1,502.8 FTE, as well as maintaining the currently compressed scheduling window of 23 hours per week. To meet the calculated deficit is an optional non-capital suggestion to expand the scheduling window from the compressed 23 hours a week, well below the level of a 4-year liberal arts institution, to a more normative 34 hour per week. This would eliminate the need entirely for additional teaching labs and would bring the campus back to alignment with similar institutions related to scheduling windows.

If the desire is to maintain a compressed scheduling window, an area for more detailed review is the potential availability of the 18,000 ASF of unclassified space, particularly the almost 6,000 of vacant space in 62 and 128 School Street. While, by the numbers, the ASF could meet the space needs, the existing areas were designed for office space, and may not be able to be re-purposed for teaching laboratory space.

The following summarizes the space needs by category and identifies areas that may require specific additional review.

Instructional (100)

At the time of this analysis, there were 18 spaces and 17,140 ASF identified as general-purpose classrooms available for scheduling. There are an additional 19 rooms and 15,720 ASF of classroom

Space Type	Current ASF	Current Adjusted 1,250.8 FTE	Surplus or (Deficit) to Current ASF	Projected Adjusted 1,502.8 FTE	Surplus or (Deficit) to Current ASF
100: Classroom	36,464	36,464	0	36,464	0
210/215: Class Laboratory	38,995	45,027	0 to (6,032)	48,147	0 to (9,152)
220/225: Open Laboratory	26,350	26,350	0	26,350	0
250/255: Research Laboratory	11,632	11,632	0	11,632	0
300: Office	77,804	77,804	0	77,804	0
400: Study/Library	22,345	22,345	0	22,345	0
500: Special Use, General	161	161	0	161	0
500: Athletics	123,201	123,201	0	123,201	0
600: General Use	72,270	72,270	0	72,270	0
700: Support	32,562	32,562	0	32,562	0
800: Health Care	1,121	1,121	0	1,121	0
Subtotal	**442,905**	**448,937**	**0 to (6,032)**	**452,057**	**0 to (9,152)**
900: Residential	180,921	180,921	0	180,921	0
Total 100 to 900	**623,826**	**629,858**		**632,978**	
Other Space (000's)	18,171	18,171	0	18,171	18,171

CLASSROOM NEED

CATEGORY	EXIST.	29-HOUR CALC. NEED	29-HOUR PROJ. CALC	34-HOUR CALC. NEED	34-HOUR PROJ. CALC	OPTIMIZE EXISTING SPACE RT.-SIZE EXIST.	OPTIMIZE EXISTING SPACE ADJ.
1 to 20	1	3	4	2	2	0	1
21 to 30	1	6	5	4	3	3	6
31 to 40	5	5	5	3	4	7	5
41 to 50	7	1	1	0	1	7	4
51 to 60	3	1	1	1	0	0	1
61 to 70	0	0	1	0	1	0	0
101+	1	1	1	1	1	1	1
Total	**18**	**17**	**18**	**11**	**12**	**18**	**18**
ASF	17,140	15,070	16,220	10,210	11,520	17,140	17,140
Seats	918	675	735	465	535	850	832

INCREMENTAL SI NEEDS

DISCIPLINE	29-HOUR + ROOMS	29-HOUR + ASF	34-HOUR + ROOMS	34-HOUR + ASF
INCREMENTAL CURRENT SI NEED (1,250.8 FTE)				
Computer Lab–Digital Arts	1	800	0	0
Computer Lab–Engineering	1	960	0	0
Music–Performance	1	1,440	0	0
Sports Medicine	1	1,440	0	0
Total	**4**	**4,650**	**0**	**0**
INCREMENTAL PROJECTED SI NEED (1,502.8 FTE)				
Art–Photography	1	960	0	0
Art–Sculpture	1	960	0	0
Art–Studio	1	960	0	0
Total	**3**	**2,880**	**0**	**0**
Grand Total–Current & Projected	**7**	**7,520**	**0**	**0**

Qualitative issues need to be identified and addressed.

space that was dedicated to specific programs. The analysis was conducted on the 18 general-purpose classrooms and 17,140 ASF. The figure below presents the existing distribution and calculated need for classrooms at both the existing scheduling protocol of 23 hours, as well as applying the 34-hour daytime scheduling window for comparison. For both analyses, the need was calculated based on guidelines of 67 percent average weekly daytime hour utilization and average seat occupancy.

The table aligns the existing distribution of rooms by capacity (seat count) to the need. Using the existing stock of rooms, seat counts, and ASF, a theoretical exercise of "right-sizing" was conducted, which is mathematically calculating the appropriate capacity of the existing rooms. While right-sizing does not change the total number of classrooms available, it can often bring the distribution of classroom capacities into better alignment with course section sizes. Gorham is relatively below target for ASF/seat and so the re-alignment of rooms by capacity could provide some major changes, including providing more 21- to 30-seat classrooms for the campus. By modifying the current room capacities, the existing rooms can be maintained and meet the necessary space requirement for current enrollment and course offerings.

Specialized/Research (200/250)

Specialized Instructional

There are 26 spaces and 32,733 ASF assigned to instructional lab space, such as Music, Theatre, Engineering, Sports Medicine, Art, etc. Space needs for specialized instructional space are based on the number of hours by the discipline of the courses as many courses/programs cannot share space. Where opportunities to continue shared use of the spaces between similar courses were possible, these were maintained. Using the rubrics of 80 percent occupancy, 50 percent utilization, and discipline-specific ASF per station there is a calculated need for up to four (4) additional labs, including one (1) Computer Lab–Digital Arts (800 ASF), one (1) Computer Lab–Engineering (960 ASF), one (1) Music–Performance, and one (1) Sports Medicine (1,440 ASF).

Utilizing the full 34-hour official scheduling window would eliminate any quantitative need for additional teaching labs both currently and in the future based on enrollment goals.

Research

There is a continued desire for this type of student/faculty engagement space on campuses throughout academia. Currently, USM-G has 11,632 ASF of faculty research space. The current ASF meets the needs of the campus as a whole and has been held for the Adjusted need, although, per the interviews, individual rooms should be renovated.

Office (300)

Gorham has 305 FTE (320 headcounts) faculty/staff on campus, housed within 77,804 ASF of office and associated support space. Office space ranges from two 43 ASF offices, one in Corthell Hall, and one in Anderson Hall, to a 1,616 ASF History office in Bailey Hall, with an overall average of 166 ASF across faculty, staff, and administrative spaces. The application of appropriate planning multipliers and assumptions that the spaces are properly outfitted and usable result in no need for additional space.

Those spaces that are less than 90 ASF should be reviewed for appropriateness in terms of assignment and use. As the campus moves forward with the master plan, putting office guidelines into effect should be considered to begin standardizing the size of offices across the campus. It is acknowledged, however, that the Gorham campus is comprised of historical buildings that significantly impact eh ability to apply these metrics.

Library/Study (400)

The library and study space category encompass almost 22,400 ASF and meets the needs of the campus, overall.

Library space has become the learning commons at many institutions and incorporates coffee bars, some social areas, group study rooms, etc. Gorham is undergoing numerous updates to provide a more learning commons centric library space.

Special Use (500)

The Special Use FICM space category consists of various space clusters including athletics, field buildings, greenhouses, among others. These spaces are calculated based on the specialized need for the associated space types. More often than not, the primary driver for campuses in this category is Athletics/Recreation space, which is the case for Gorham, but not in a quantitative manner. Athletics encompasses 123,201 ASF disaggregated between the Field House (62,467 ASF), Warren Hill Gymnasium (27,916 ASF), Ice Arena (25,955 ASF), and the Baseball Stadium (6,863 ASF). The base calculated ASF for athletics at a four-year institution is 50,000 ASF. The challenge for Gorham is that the athletics department feels that it is outgrowing its current space, and there were multiple suggestions to expand their offerings, particularly to add a swimming pool to the campus.

Another space type in this category is the greenhouse. Currently, the campus has a small greenhouse located in Bailey Hall (161 ASF). While the calculated need equates to more than the existing ASF, Gorham has recently renovated the existing area, and have no programmatic plans that would call for additional ASF.

General Use (600)

The General Use FICM space category consists of various clusters including assembly, exhibition, food service, and meeting rooms (student-centered services). Some of the highlights of this area: Assembly: Russell Auditorium is the main space assigned to this category. The ASF is appropriate for a campus of this size and will support a minimal uptick in enrollment.

- **Dining:** Currently, the main dining service is located in the Brooks Student Center. Today's students are looking for more inviting and varied dining experiences, featuring specialty food stations, high top tables, booths, comfortable seating, and connectivity—spaces

and furnishings that promote easy interaction. Although the overall ASF for dining has been maintained, location, function, and aesthetics may need to be refreshed.

- **Recreation:** This space type is often found in student centers and consists of game rooms, TV lounges, general fitness rooms, etc. This type of space, with the exception of the fitness aspect, is generally missing on campus; however, it is presumed that the athletics facilities (collectively referred to as the Costello Sports Complex) fulfill a majority of the student needs.
- **Meeting Rooms:** This type of space is generally available to internal and external groups such as study groups, board meetings, community groups, etc. There are multiple spaces and flexible rooms located throughout the campus that exceed the calculated need. The challenge for these spaces is the overall quality, lack of storage areas for tables, chairs, etc.

Central Facilities (700)

Central Facilities (32,562 ASF) support overall campus operations and include mail, receiving, general storage, and shop space, among others. The current ASF meets the overall needs of the campus. It should be noted that the unassigned space on campus is, in part, serving an additional role as storage, which will need to be addressed when the spaces are recaptured.

Health Services (800)

Health Services is currently located in Upton-Hastings Hall. Space has been held constant as it meets the needs of the campus, and there are nearby medical services.

Residential (900)

Gorham has eight residential buildings on campus: Anderson Hall, Philippi Hall, President's House, Robie-Andrews Hall, Upperclass Hall, Upton-Hastings Hall, and Woodward Hall. The on-campus residences are in need of upgrading. The campus has also planned the demolition of Dickie-Woods Hall for this year, and it is currently experiencing a shortage in available dormitory space.

SUMMARY

With competing needs for scarce funds, the Gorham Plan identifies a few key renovation projects for near-term consideration. These projects, however, should be planned and designed with a campus-wide and long-term perspective. The capital renewal project list should includes:

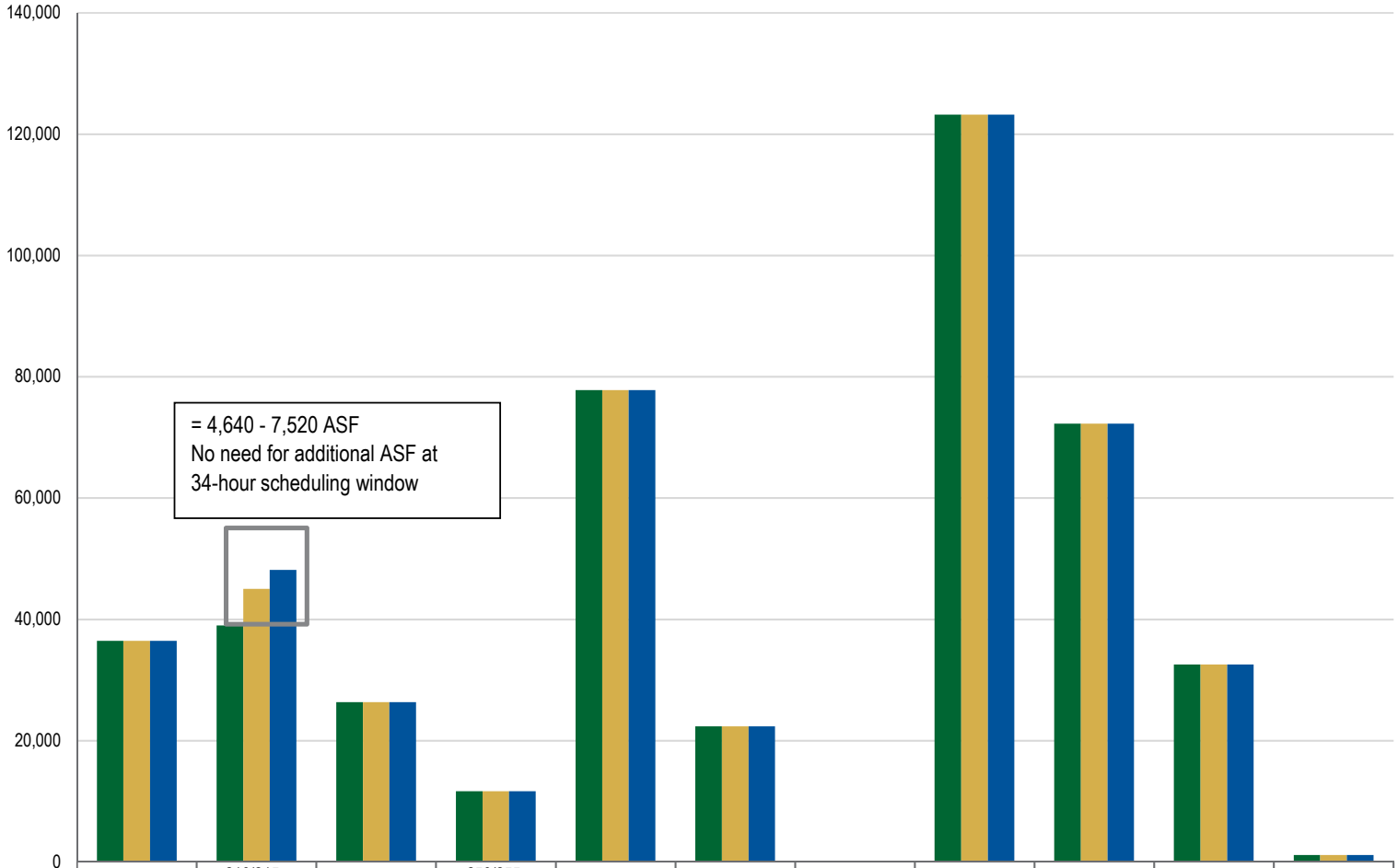
- **Art Facilities (Academy Building, Art Drawing Classroom, Art Gallery, Print Making Studio, Robie-Andrews Hall, and Welding Shop)**: Art is currently dispersed amongst six (6) buildings on the Gorham campus. Consideration was given to the future of the program to facilitate a collocation of the Art department. The department currently occupies 13,200 ASF in Robie-Andrews Hall that was described as "retrofit" and in poor quality for its current use.
- **School Street Houses:** Most of these houses are planned for demolition helping to balance the no new square feet policy.

The recommendations are based on the current culture and environment of the campus during The Gorham Plan process.

Regardless of renovation or new construction, in light of the budgeting climate today and for the foreseeable future, thoughtful and purposeful planning should continue to make the highest and best use of current facilities before advocating for new facilities and to serve the System's construction and sustainability policies. New or renovated spaces should incorporate, where possible, the flexibility needed to accommodate the changes that will inevitably come in the future.

The following graphs summarize space needs by FICM category for Current, Calculated, Current Adjusted, and Projected Adjusted Need, as well as the categories with specific deficits.

SUMMARY OF SPACE NEEDS AND DEFICITS BY CATEGORY



	100: Classroom	210/215: Class Laboratory	220/225: Open Laboratory	250/255: Research Laboratory	300: Office	400: Study / Library	500: Special Use	520/525: Athletics	600: General Use	700: Support	800: Health Care
Current ASF	36,464	38,995	26,350	11,632	77,804	22,345	161	123,201	72,270	32,562	1,121
Current Adjusted	36,464	45,027	26,350	11,632	77,804	22,345	161	123,201	72,270	32,562	1,121
Proj. Adjusted 1,502.8 FTE	36,464	48,147	26,350	11,632	77,804	22,345	161	123,201	72,270	32,562	1,121

Gorham Facilities and Resources

The Gorham campus is in 26 principal structures sited on 96 acres. A number of small former residential structures have been acquired on the perimeter of the campus along College and School Streets. The average age of the primary building stock is 71 years old, sixteen of which are over 50. Building systems have an expected usable life of 20-40 years, beyond which they become inefficient, obsolete or risk failure.

Many of the oldest buildings on the Gorham campus are contributing structures to the Gorham Campus Historic District listed on the National Register of Historic Places in 1978. These date back to the original Academy building constructed in 1806 while Maine was still a part of the Commonwealth of Massachusetts. Considerable diligence should be given when considering maintenance and renovations to ensure compliance with Department of Interior's guidelines for historic structures. The following buildings are part of this district:

- Academy Building (1807)
- Art Gallery (1821)
- Corthell Hall (1878)
- Robie Hall (1898)
- President's Residence (1906)
- Andrews Hall (1916)
- Russell Hall (1931)

The Gorham Plan suggests priority buildings for investment and identifies buildings that may be better suited to demolition, disposition, or replacement based on several criteria: do they enhance the character of the campus, are they historically significant, do they require disproportionate investment in deferred maintenance costs, and do they represent the highest, best use of land resources?

Residential properties acquired on the perimeter of the University provide land for future growth. These buildings front onto and contribute to residential neighborhoods. The following facilities are identified for possible demolition and replacement over the long-term to make better use of campus land and infrastructure:

- Dickey Wood (81,439 SF)
- Printmaking (1,555 SF)
- Drawing Studio (3,696 SF)
- 51 College Street (10,204 SF)
- 62 School Street (3,336 SF)
- 128 School Street (9,005 SF)
- 7 College Street (7,063 SF)
- 134 School Street (4,144 SF)
- 19 College Street (4,109 SF)

Facilities Condition

A visual assessment of building facility conditions was conducted as part of the master plan. Buildings and their systems were evaluated on a scale of 0–55. Thirty different building systems were evaluated in eight major categories included the building exterior, interior construction, life safety systems, electrical, lighting, mechanical systems, plumbing, and visible structure.

A resulting building facility condition ranking is based on an average of the individual building system assessments. Buildings are grouped into the following condition categories:

Poor	Fair	Average	Good
0–1.99	2.0–2.99	3.0–3.99	4.0–5.0

This analysis reveals that the majority of the USM facilities on the Gorham campus are in the average to poor condition. Two-thirds of

the buildings surveyed (21 out of 29) were in fair or poor condition. The remainder were in average to good condition.
The master plan identifies the following facilities for reinvestment in order to address the most acute needs on the Gorham campus.

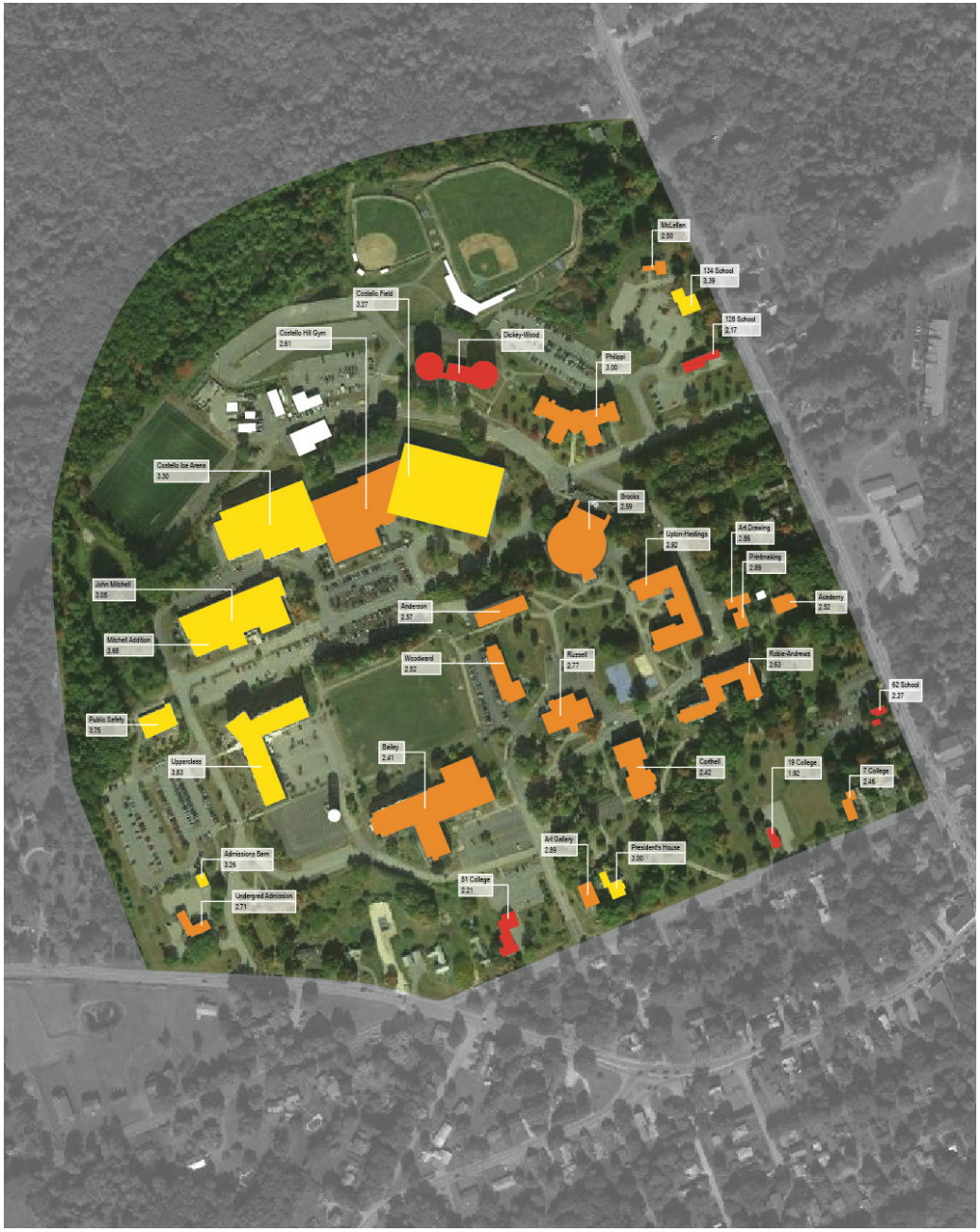
- Bailey Hall (144,374 SF)
- Woodward Hall (20,781 SF)
- Anderson Hall (29,293 SF)
- Brooks Student Center (45,700 SF)
- Corthell Hall (47,971 SF)
- Academy Building (7,126 SF)
- Robie-Andrews (76,859 SF)
- Russell Hall (29,467 SF)
- Upton-Hastings (102,656 SF)

CAMPUS INFRASTRUCTURE

Storm Water

The Gorham Campus is permitted through the Maine Department of Environmental Protection Agency through the Site Location of Development Act as well as regulated by the Environmental Protection Agency (EPA) under the Phase II Storm Water Rules as an institutional user with storm water discharges to a Municipal Separate Storm Sewer System (MS4). Any new construction or redevelopment on the campus since the mid 1990s has been designed with formal storm drain collection and storm water quantity and quality control measures.

Storm water runoff from the entire campus is tributary to a perennial stream known as Tannery Brook, which flows in an easterly direction away from the campus with eventual discharge into the Presumpscot River and Casco Bay. The Gorham campus contains approximately 105 acres of land, which is divided between two major drainage



watersheds. Approximately 82% (86 acres) of the campus is located within the northerly watershed that drains directly to Tannery Brook, which flows along the northeasterly boundary of the campus. The remaining 18% (19 acres) of the campus is located within the southeasterly watershed that discharges to the Town of Gorham municipal storm drain system within College Avenue and School Street.

The overall storm drain system contains approximately 18,200 linear feet of storm drain pipe, approximately 2,700 linear feet of open drainage swales, approximately 180 manhole or catch basin structures, 2 storm water quality dynamic separator units, 3 storm water quality wet ponds, 1 storm water quality bioretention basin, and 1 dry storm water detention basin. Any new or redevelopment that occurs within the older portion of the campus and particularly the southeasterly watershed area will likely require replacement and/or significant upgrade to the system in order to provide suitable storm drain connections as well as provide necessary water quality treatment required to meet the state and federal regulations. Any new or redevelopment that occurs within the newer portions of the campus can likely be supported with minimal upgrade or extension of the storm drain system. Incremental expansion of the existing water quality treatment systems and/or installation of new water quality treatment measures will need to be evaluated on a project-by-project basis.

Sanitary Sewer

The overall sewer system contains approximately 9,350 linear feet of gravity sewer pipe and approximately 49 sewer manhole structures. Sanitary sewer system materials throughout the campus range with the age of the installation. The older portion of the sanitary sewer (predating 1970) consists of brick or barrel block manhole structures with vitrified clay (VC) or asbestos cement (AC) pipe. The overall condition of these pipes is unknown and televised inspection of these lines should be performed to document the condition of these lines and identify any areas in need of repair. The newer portion of the sanitary sewer system (post 1970) consists of precast concrete manhole structures with polyvinyl chloride (PVC) pipe. The overall condition of these pipes is unknown; however, it is generally anticipated that the sanitary sewer system in the newer portions of the campus are in good condition. All existing sanitary sewer mains have adequate capacity to serve the campus and should have adequate capacity for any potential expansion and development of additional buildings.

Domestic Water

The campus water system is shared between domestic water, sprinkler systems and fire hydrants. Over 500,000 gallons of water is stored in the water storage tank on campus. The highest projected continuous draw on the campus water system at any one time is when it has to meet the design demand for a single sprinkler system operation. When the sprinkler system in a building is activated, the highest demand on campus is up to 450 gallons per minute with a fire hydrant allowance of 250 gallons per minute for a total of 700 gallons per minute.

The estimated maximum flow through the domestic water system in any single building may be up to 100 gallons per minute. In most buildings the maximum flow is estimated at 20 gallons per minute or less. The estimated flow of domestic water during a peak time of the day with all campus buildings combined could be up to 600 gallons per minute.

The water distribution system is adequately sized to handle the load of the domestic and sprinkler demands of the campus. 10” and 8” mains loop around the campus to provide good volume and pressure to the buildings. The only large building requiring pressure boosting is the Upperclass Residence Hall because of its building height and proximity on campus. The president’s house also has a small domestic water boosting system located in Corthell Hall, but it is not used due to the installation of a hydropneumatic tank in the president’s house.

The water system is capable of substantial expansion. Recorded hydrant flow tests indicate approximately 1,300 gallons per minute flow capacity with a 20 psi drop from static pressure. Because only one building is considered to flow during a fire event, adding buildings to the system does not increase the fire demand. The domestic water system could accept a 200% increase in domestic water demand and still be sufficient.

Central Heat Plant

The boiler plant consists of boilers #1 and #2—600 boiler horsepower (bhp) each—and #3 which is 200 bhp. The current boiler plant capacity could be retained to provide full redundancy for potential growth on campus pending the continued practice of shedding the domestic loads in an emergency failure mode.

Primary Power

The Campus primary underground electrical distribution system is a modified radial loop feed served from one riser pole by CMP Co. at 12,470 volts with a single primary billing meter. This master plan recommends adding a second Primary Service from CMP along State Street (Rt.25) or College Ave to provide redundancy, increase the loop capacity and improve reliability. The 12.47 kV equipment on campus ranges in age from five to more than 50 years old. Similarly, its condition can be described as excellent to fair. Reliable, expected life of medium voltage equipment and cable is 30 to 40 years. The biggest concern is the six transformer vaults on campus that have exposed live terminations in confined spaces. These cannot be maintained while energized. Also of concern are reports that the expulsion fuses in the Brooks Student Center vault serving Philippi Hall have blown on more than one occasion.

Based on historical demand growth, the campus loop feed distribution system would have sufficient capacity to increase for the foreseeable future.

Campus Data

The campus fiber backbone was installed over multiple phases beginning in the early 1990s and consists of a number of technologies including 50-micron multimode fiber, 62.5-micron multi-mode fiber, and single mode fiber optic cable. 62.5-micron multi-mode fiber optic cable is currently the primary means of inter-building campus connectivity. Corthell Hall acts as the primary distribution point. Most of the campus backbone cabling is installed in conduits. There is little room in the individual facilities with regard to dedicated space for technology closets, IDFs or MDFs. Some of the horizontal cabling is Category 3. The general recommendation is to eventually upgrade the fiber backbone to 50-micron and the horizontal cabling to Category 6 compliance.

Lewiston-Auburn Space Needs Analysis

LEWISTON-AUBURN RECOMMENDATIONS

There is currently no space deficit for the campus. If Lewiston-Auburn reaches the 347.8 FTE achieved in Fall 2013, then there would be a potential need for an additional 7,000 ASF in Class Laboratory space. This finding is based on the proposed enrollment of 347.8 FTE, as well as maintaining the currently compressed scheduling window of 25 hours per week. To meet the calculated deficit is an optional non-capital suggestion to expand the scheduling window from the compressed 25 hours a week to a more normative 34 hour per week. This would eliminate the need entirely for additional teaching labs and would bring the campus back to alignment with similar institutions related to scheduling windows.

If the desire is to maintain a compressed scheduling window, an area for more detailed review is the potential availability of 3,000 ASF of surplus office space. While, by the numbers, the ASF could meet the space needs, the existing areas may not be able to be re-purposed for teaching laboratory space. Before building another space, care must be taken to critically examine available space and better define, repurpose, and refurbish it for more collaborative and efficient use.

The following summarizes the space needs by category and identifies areas that may require specific additional review.

Instructional (100)

At the time of this analysis, there were nine (9) spaces and 6,987 ASF identified as general-purpose classrooms available for scheduling. One classroom was unscheduled in Fall 2017 (Lewiston-Auburn College 110–627 ASF) and has been excluded pending space type confirmation. There are an additional four rooms and 2,222 ASF

Space Type	Current ASF	Current Adjusted 244.6 FTE	Surplus or (Deficit) to Current ASF	Projected Adjusted 347.8 FTE	Surplus or (Deficit) to Current ASF
100: Classroom	9,209	9,209	0	9,209	0
210/215: Class Laboratory	8,900	8,900	0	15,764	0 to (6,864)
220/225: Open Laboratory	1,943	1,943	0	1,943	0
250/255: Research Laboratory	2,480	2,480	0	2,480	0
300: Office	12,517	9,271	3,246	9,271	3,246
400: Study/Library	7,233	7,233	0	7,233	0
500: Special Use, General	3,529	3,529	0	3,529	0
500: Athletics	0	0	0	0	0
600: General Use	10,862	10,862	0	10,862	0
700: Support	6,235	6,235	0	6,235	0
800: Health Care	0	0	0	0	0
Total	**62,908**	**59,662**	**3,246**	**66,526**	**0 to (6,864)**
Other Space (000's)	623	623	623	623	623

of classroom space that was dedicated to specific programs. The analysis was conducted on the eight (8) general-purpose classrooms and 6,360 ASF.

The figure on the following page presents the existing distribution and calculated need for classrooms at both the existing scheduling protocol of 25 hours, as well as applying the 34-hour daytime scheduling window for comparison. For both analyses, the need was calculated based on guidelines of 67 percent average weekly daytime hour utilization, and average seat occupancy.

The table aligns the existing distribution of rooms by capacity (seat count) to the need. Using the existing stock of rooms, seat counts, and ASF, a theoretical exercise of "right-sizing" was conducted, which is mathematically calculating the appropriate capacity of the existing rooms. While right-sizing does not change the total number of classrooms available, it can often bring the distribution of classroom capacities into better alignment with course section sizes.

Lewiston-Auburn is relatively on target for ASF/seat and so the re-alignment of rooms by capacity did not provide any major changes. As such, the existing rooms can be maintained and meet the necessary space requirement for current enrollment and course offerings. While there is a calculated need for a larger space, the largest enrollments are 40 to 42 students for three Occupational Therapy courses. Courses such as these could be taught in the large meeting room, Lewiston-Auburn College 285, vs. building a new space, unless there is a future goal to increase the enrollment in course sections and/or provide more cohort meeting spaces.

CLASSROOM NEED

CATEGORY	EXIST.	29-HOUR		34-HOUR		OPTIMIZE EXISTING SPACE	
		CALC. NEED	PROJ. CALC	CALC. NEED	PROJ. CALC	RT.-SIZE EXIST.	ADJ.
1 to 20	2	2	3	2	3	0	2
21 to 30	4	2	1	1	0	1	4
31 to 40	2	0	1	0	1	6	2
41 to 50	0	0	0	0	0	0	0
51 to 60	0	1	1	1	1	1	0
Total	**8**	**5**	**6**	**4**	**5**	**8**	**8**
ASF	6,360	3,820	4,450	3,070	3,700	6,360	6,360
Seats	219	140	190	130	160	293	219

Specialized/Research (200/250)

Specialized Instructional

There are seven (7) spaces and 7,715 ASF assigned to instructional lab space, such as Biology, Nursing, Occupational Therapy, etc. Space needs for specialized instructional space are based on the number of hours by the discipline of the courses as many courses/programs cannot share space. Where opportunities to continue shared use of the spaces between similar courses were possible, these were maintained. Using the rubrics of 80 percent occupancy, 50 percent utilization, and discipline-specific ASF per station, it is recommended that Lewiston-Auburn maintain its current complement of SI spaces. Specialized instructional space needs are presented in the table on the following page.

At the projected FTE, and compressed window, there would be a need for two additional Biology–Anatomy and Physiology Labs (2,880 ASF), and an additional Occupational Therapy Lab (2,400 ASF).

At the 34-hour window, there would be no need for additional teaching labs.

SPECIALIZED INSTRUCTIONAL SPACE NEED

DISCIPLINE	ADJUSTED				2017 EXISTING				INCREMENTAL			2017 EXISTING + INCREMENTAL			NOTES
	ROOMS	STATIONS PER SPACE	ASF PER STATION	TOTAL ASF	ROOMS	TOTALS STATIONS	ASF	ASF PER STATION	ROOMS	TOTAL STATIONS	ASF	ROOMS	TOTAL STATIONS	ASF	
Biology–Anatomy and Physiology	2	48	60	2,880	1	38	1,534	40.4	0	0	0	1	38	1,534	Maintain existing
Biology–General	1	24	60	1,440	1	25	983	39.3	0	0	0	1	25	983	Maintain existing
Chemistry–General	0	0	0	0	1	26	986	37.9	0	0	0	1	26	986	Unscheduled Fall 2017; Maintain existing for discussion
Nursing	2	16	80	2,560	2	42	1,394	33.2	0	0	0	2	42	1,394	Maintain existing
Occupational Therapy	2	40	60	4,800	2	64	2,818	44.0	0	0	0	2	64	2,818	Maintain existing
Grand Total	**7**	**128**		**11,680**	**7**	**195**	**7,715**	**39.6**	**0**	**0**	**0**	**7**	**195**	**7,715**	

Qualitative issues need to be identified and addressed.

Research

There is a continued desire for this type of student/faculty engagement space on campuses throughout academia. Currently, Lewiston-Auburn has 2,480 ASF of faculty research lab space, shared amongst Natural Sciences faculty. The current ASF meets the needs of the campus as a whole and has been held for the Adjusted need.

Office (300)

Lewiston-Auburn has 48 FTE (49 headcounts) faculty/staff on campus, housed within 12,517 ASF of office and associated support space. Office space ranges from 68 ASF in Lewiston-Auburn College 121A to 809 ASF in Lewiston-Auburn College 119 (both assigned to the Provost), with an overall average of 146 ASF across faculty, staff, and administrative spaces. The application of appropriate planning multipliers and assumptions that the spaces are properly outfitted and usable, result in the need for 9,271 ASF, which is about 3,000 ASF less than the current existing.

Those spaces that are less than 90 ASF should be reviewed for appropriateness in terms of assignment and use. As the campus moves forward with the master plan, putting office guidelines into effect should be considered to begin standardizing the size of offices across the campus. It is acknowledged however that there are some "oversized" spaces that may limit the ability to apply these metrics.

Library/Study (400)

The library and study space category encompasses almost 7,250 ASF and meets the needs of the campus, overall.

Library space has become the learning commons at many institutions and incorporates coffee bars, some social areas, group study rooms, etc. It is understood that many renovations are

underway to incorporate more tutoring space into the Lewiston-Auburn College library.

Special Use (500)

Lewiston-Auburn recently added a 3,203 ASF clinic space for the Masters of Occupational Therapy program. In addition, the campus has a small greenhouse located in LAC 209D (326 ASF). The existing spaces appear to meet campus needs and have been held as Adjusted.

General Use (600)

The General Use FICM space category consists of various clusters including assembly, exhibition, food service, and meeting rooms (student-centered services). Some of the highlights of this area: Assembly: Lewiston-Auburn College 170 is assigned to this category. The ASF is appropriate for a campus of this size and will support a minimal uptick in enrollment.

- **Dining:** Currently, the main dining service is the Lewiston-Auburn College Café located adjacent to the Library. Today's students are looking for more inviting and varied dining experiences, featuring specialty food stations, high top tables, booths, comfortable seating, and connectivity—spaces and furnishings that promote easy interaction. Although the overall ASF for dining has been maintained, location, function, and aesthetics may need to be refreshed.
- **Recreation:** This space type is often found in student centers and consists of game rooms, TV lounges, general fitness rooms, etc. Lewiston-Auburn has recently added a 778 ASF fitness center that meets this need.
- **Meeting Rooms:** This type of space is generally available to internal and external groups such as study groups, board meetings, community groups, etc. There are multiple spaces on campus that meet the calculated need. The challenge for these spaces is the lack of storage areas for food service, tables, chairs, etc.

Central Facilities (700)

Central Facilities (6,235 ASF) support overall campus operations and include mail, receiving, general storage, and shop space, among others. The current ASF, while below the calculated need, meets the requirements for the campus.

Health Services (800)

There are currently no health services facilities on campus and no plans for adding space in the foreseeable future.

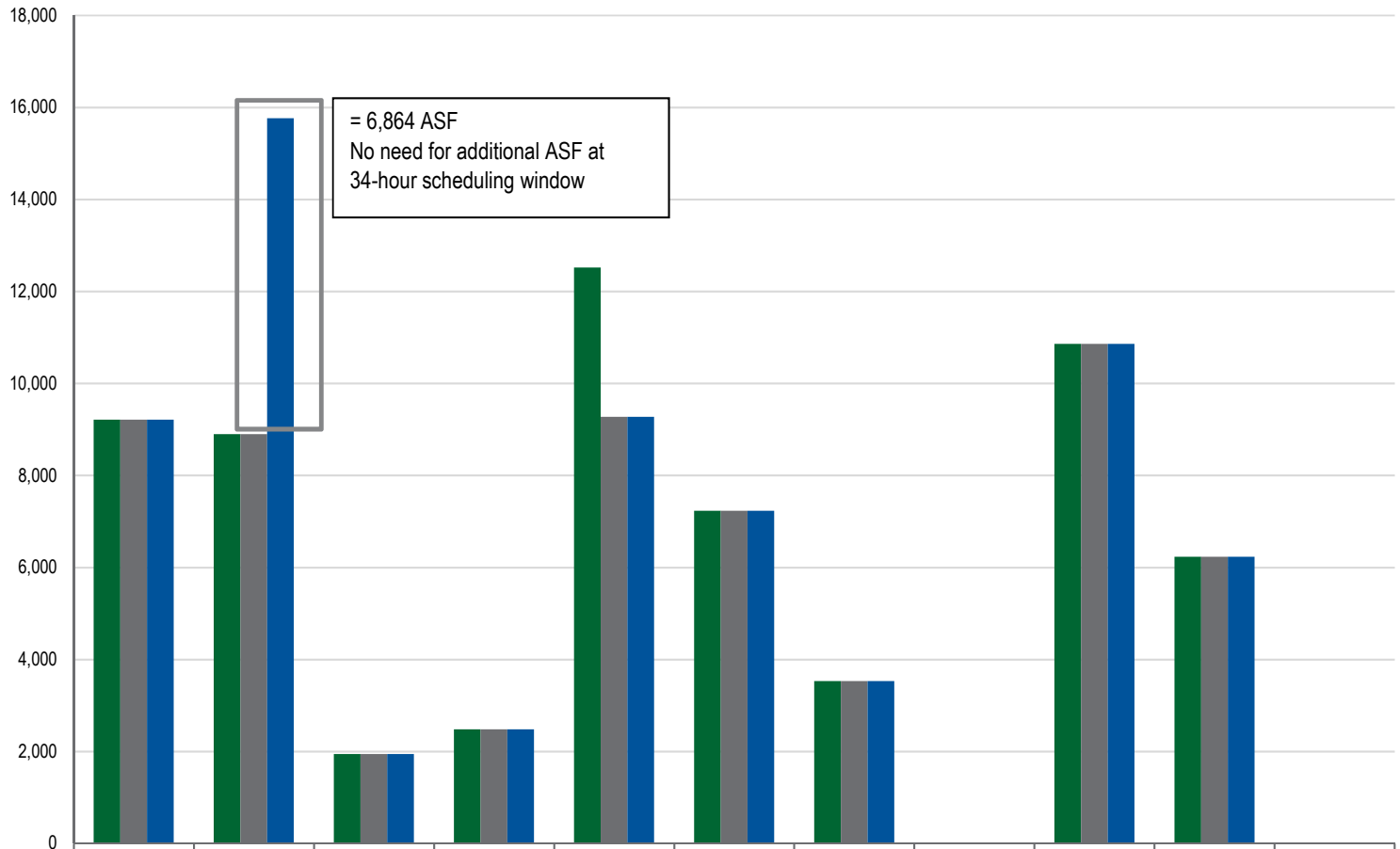
Residential (900)

There are currently no plans for residential facilities in Lewiston-Auburn.

Summary Need

The following graphs summarize space needs by FICM category for Current Adjusted and Projected Adjusted Need.

SUMMARY OF SPACE NEEDS AND DEFICITS BY CATEGORY



	100: Classroom	210/215: Class Laboratory	220/225: Open Laboratory	250/255: Research Laboratory	300: Office	400: Study / Library	500: Special Use	520/525: Athletics	600: General Use	700: Support	800: Health Care
Current ASF	9,209	8,900	1,943	2,480	12,517	7,233	3,529	0	10,862	6,235	0
Current Adjusted	9,209	8,900	1,943	2,480	9,271	7,233	3,529	0	10,862	6,235	0
Proj. Adjusted 347.8 FTE	9,209	15,764	1,943	2,480	9,271	7,233	3,529	0	10,862	6,235	0

Memorandum

To: Aaron Witham
University of Southern Maine

Date: March 5, 2020

Project #: 55325.00

From: Jennifer Conley, PE, PTOE

Re: Traffic Impact Analysis for Residence Hall, Student Center and Parking Garage

---

VHB has conducted a Traffic Impact Study (TIS) for the proposed development of a Residential Hall and Student Center at the University of Southern Maine (USM). Although a parking garage is not the subject of the current permit application, for the purposes of the traffic analysis, the proposed parking garage was included because in the long term, trips to and from the residences will also be traveling to the new parking garage. The 580-bed residence hall will be located on the corner of Bedford Street and Durham Street. The new Student Center will be located to the west of the residence hall, set back from Bedford Street. Vehicular access for loading will be provided to the sites via a lot off of Durham Street. Pedestrian access to the dormitory will be via a front entrance on Bedford Street, an entrance on Durham Street and an entrance across from the Student Center. The main entrances to the student center will face the lawn towards Bedford Street with an additional entrance to the rear of the building.

Although the parking garage is not included as a part of the initial permitting effort, the permitting for the parking garage is expected to closely follow the application for the dormitory and student center. In addition, a number of the residents of the proposed dormitory are expected to be students who may bring cars to campus, the parking supply is anticipated to soon become necessary. As such, it made sense for the traffic impacts of the parking garage to be included in this traffic analysis. The parking garage will be located on the site of the existing Sullivan Gym lot (between the Sullivan Gym and the Science Building), between the Student Center and Falmouth Street. For the purpose of this analysis, the parking garage is anticipated to supply between 400 and 500 spaces accessed via Falmouth Street. The garage is intended to primarily serve the new dormitory with excess supply to be distributed to either staff, visitors, or commuter students, as needed.

The Traffic Impact Study is summarized within this document, which contains:

- a description of the site and existing transportation network in the study area;
- a description development program for the site;
- a trip generation and distribution estimate for the proposed development;
- an evaluation of traffic operations at key nearby intersections; and,
- a set of conclusions and recommendations to support the project.

Existing Conditions

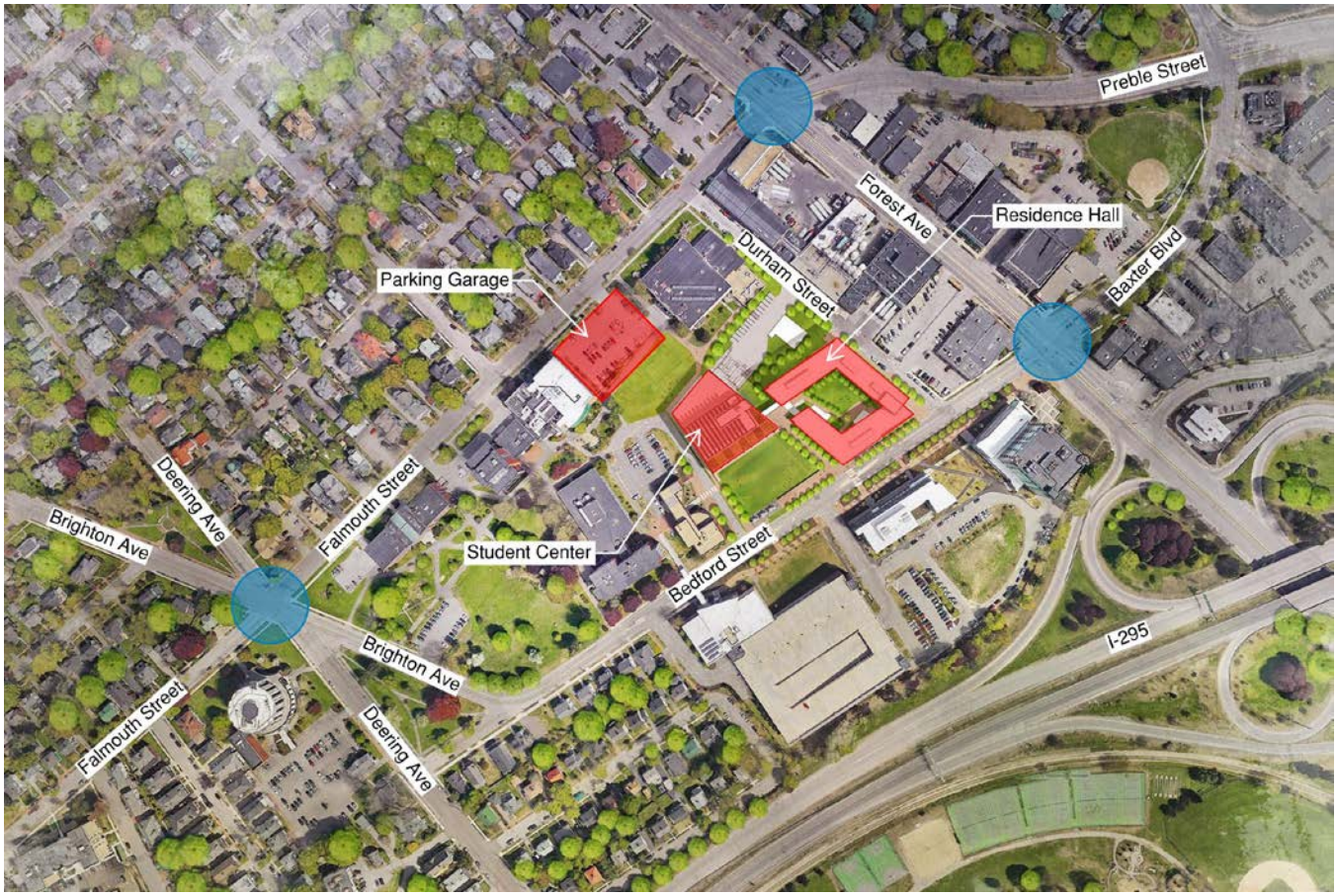
The existing conditions in the vicinity of the proposed development as outlined above were reviewed. As indicated, the proposed development is expected to occur on the northwest corner of the intersection of Bedford and Durham Streets and the proposed parking garage is to be located on Falmouth Street between Brighton Avenue/Deering Avenue and Forest Avenue. As such, likely points of vehicular access will be via either end of Falmouth Street. The intersections of Falmouth Street at Forest Avenue (signalized) and Falmouth Street at Brighton Avenue/Deering

500 Southborough Drive
Suite 105B
South Portland, Maine 04106

Avenue (signalized, but soon to become a roundabout) were studied. In addition, because the existing parking garage is located on Bedford and until the proposed garage is opened, access will likely be via Bedford Street, the intersection of Forest Avenue at Bedford Street was also studied.

A review of existing conditions focused on the project site and transportation network access to and from the site as depicted in **Figure 1**.

Figure 1: Study Area



Existing Roadway Characteristics

The proposed development will be located on the USM campus on the block located between Bedford Street, Forest Avenue, Falmouth Street, and Brighton Avenue. Forest Avenue is an arterial running northwest to southeast through Portland. In the vicinity of the project site, Forest Avenue (numbered Routes 302 and 100) consists of two through lanes in each direction in addition to turn lanes at some of the signalized intersections. Despite already providing some pedestrian, bicyclists and transit accommodation, Forest Avenue has recently been the focus of a corridor study to determine how to allocate the right of way in order to better serve all users.

Bedford Street intersects with Forest Avenue just north of the I-295 ramps at a four-way signalized intersection with Baxter Boulevard and extends less than 1700 feet to its end at Deering Street. Bedford Street is serves two-way traffic in a single lane in each direction with turn lanes when needed. The roadway is punctuated by pedestrian crossing locations providing access to USM buildings on both sides of the street. The proposed dormitory will abut Bedford Street and the student center will face it over a green area. Bedford Street also provides access to the existing parking garage.

Brighton Ave extends west and north from where it intersects with Bedford Street at an unsignalized intersection and continues 15 miles (under different names) until it intersects with Route 302 in North Windham, providing access to the campus from a number of communities to the west and north. Although Brighton Avenue currently forms the end of this block, future plans will reconfigure this area. Brighton Avenue consists of a single travel lane in each direction along with bicycle accommodation in both directions as well as parking in the eastbound direction. West of Brighton Avenue, Bedford Street consists of a single travel lane towards Brighton avenue and operates under Stop control.

The intersection of Brighton Avenue at Falmouth Street and Deering Avenue is a six-way signalized intersection that is scheduled to be converted into a roundabout, with construction beginning in the spring of 2020. This intersection is currently accessed by six two-way roadways and experiences congestion, confusion, and safety issues. The intersection experiences high pedestrian volumes and has sidewalks and crosswalks on all legs.

Falmouth Street, while primarily residential, is one of the few continuous east-west streets connecting Saint John street and Forest Avenue. Between the intersections of Brighton Avenue/Deering Street and Forest Avenue, Falmouth Street consists of a single travel lane in each direction with parking and sidewalks provided on both sides of the street. Falmouth Street will ultimately provide access to the proposed garage anticipated to serve primarily residential students.

Falmouth Street intersects Forest Avenue and Preble Street to form a four-way signalized intersection. This intersection was also considered for improvements in the previously mentioned corridor study that included Forest Avenue.

Existing Traffic Volume Data

Turning movement count data was collected at the study area intersections of Forest Avenue at Bedford Street; Forest Avenue at Falmouth Street and at Falmouth Street, Brighton Avenue and Deering Avenue. Traffic data was collected on Tuesday February 25, 2020 when both USM and local Portland schools were in session. The weather was cloudy and approximately 40-degrees. Data was collected during the typical peak commuter peak periods, 7:00 to 9:00 AM and 4:00 to 6:00 PM. The peak hour occurred from 7:30 to 8:30 AM and 4:30 to 5:30 PM at the three study area

intersections. Data adjustments were researched to determine the design hourly volumes at these locations. Traffic count data from MaineDOT was reviewed and a weekly mean factor of 1.02 and the highest volume week adjustment of 0.89 were applied to the volumes to result in design hourly volumes. All traffic volume data is provided in the appendix.

Existing Campus Parking Demand and Commuter Trip Patterns

USM conducted a parking study in October 2019 and found that the parking demand is at or above 80 percent of the parking supply from 10:00 AM to 4:00 PM and peaks at over 90 percent from 1:00 to 3:00 PM on weekdays. Outside of those hours, there is little parking demand on-campus.

The majority of the commuting students park in the existing campus garage. The number of trips entering and exiting the existing USM garage were obtained for a typical school week in October 2019. A review of the data collected between Tuesday, October 21, 2019 and Thursday, October 23, 2019 has revealed that the commuter student trips peak from 11:00 AM to 12:00 PM when the trips entering the garage are almost equal to the numbers leaving the garage. 10.5 percent of the day's trips typically occur between this time period. The hours of 8:00 to 9:00 AM, 12:00 to 1:00 PM, 2:00 to 3:00 PM and 4:00 to 5:00 PM generate a similar number of trips with differing directional splits. In the morning, most students are entering. Midday there are some students entering while others exiting and, in the afternoon, most students are exiting the garage. Approximately 10 percent of the daily trips to and from the garage occur during each of these hours. This data suggests that not all students are on-campus at the same time. There are a number of students that leave in the midday peak hour while others arrive at that time.

Future Conditions

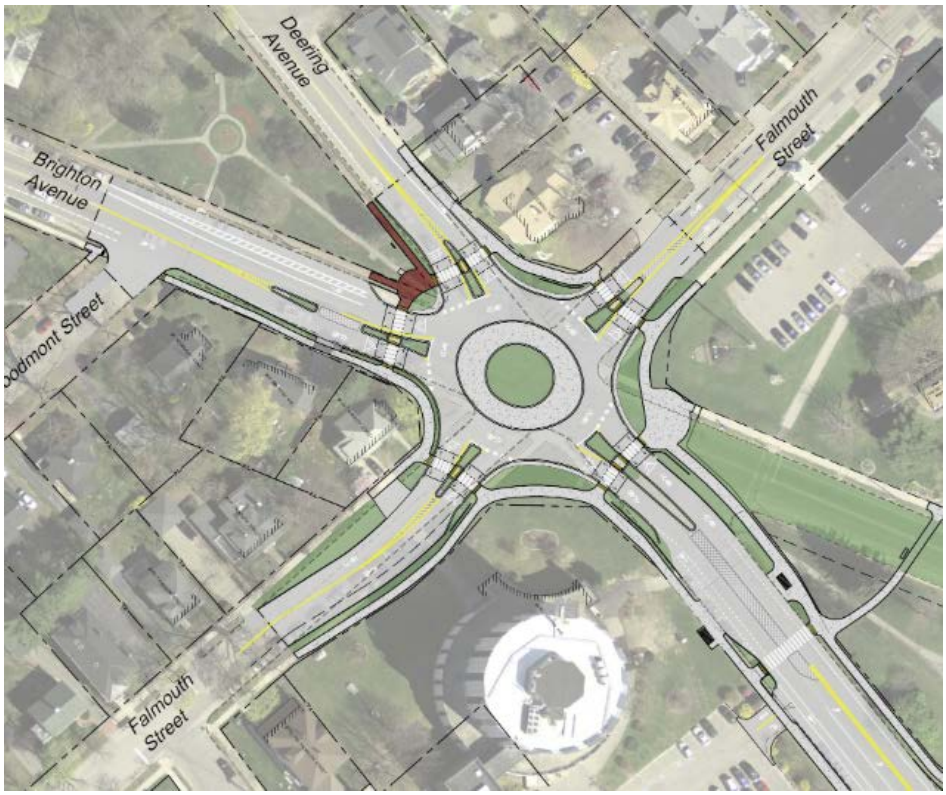
The future conditions in the study area were analyzed both with and without the proposed project. The future traffic volumes and intersection operations for both the project opening year of 2022 and the future horizon year of 2027.

Infrastructure Improvements

The future conditions for the study area include a significant infrastructure change at the intersection of Falmouth Street, Brighton Avenue and Deering Avenue. Beginning in Spring 2020, construction will begin at this signalized intersection to create a roundabout. As shown in Figure 2 from the City of Portland website, the eastern leg of Brighton Avenue will be discontinued, and the traffic redirected to the southeast Deering Avenue leg of the intersection. The remaining five legs of the intersection will form the new roundabout. With constructed starting shortly, this intersection will be analyzed as a roundabout in all scenarios.

The traffic volume data collected at the intersection of Falmouth Street, Brighton Avenue and Deering Avenue was redistributed to represent the volumes that will exist at the five-leg roundabout in the future, rather than the current six-leg condition. The proposed roundabout design is presented in **Figure 2**.

Figure 2: Proposed Roundabout at Falmouth Street, Brighton Avenue and Deering Avenue ***(City of Portland)***

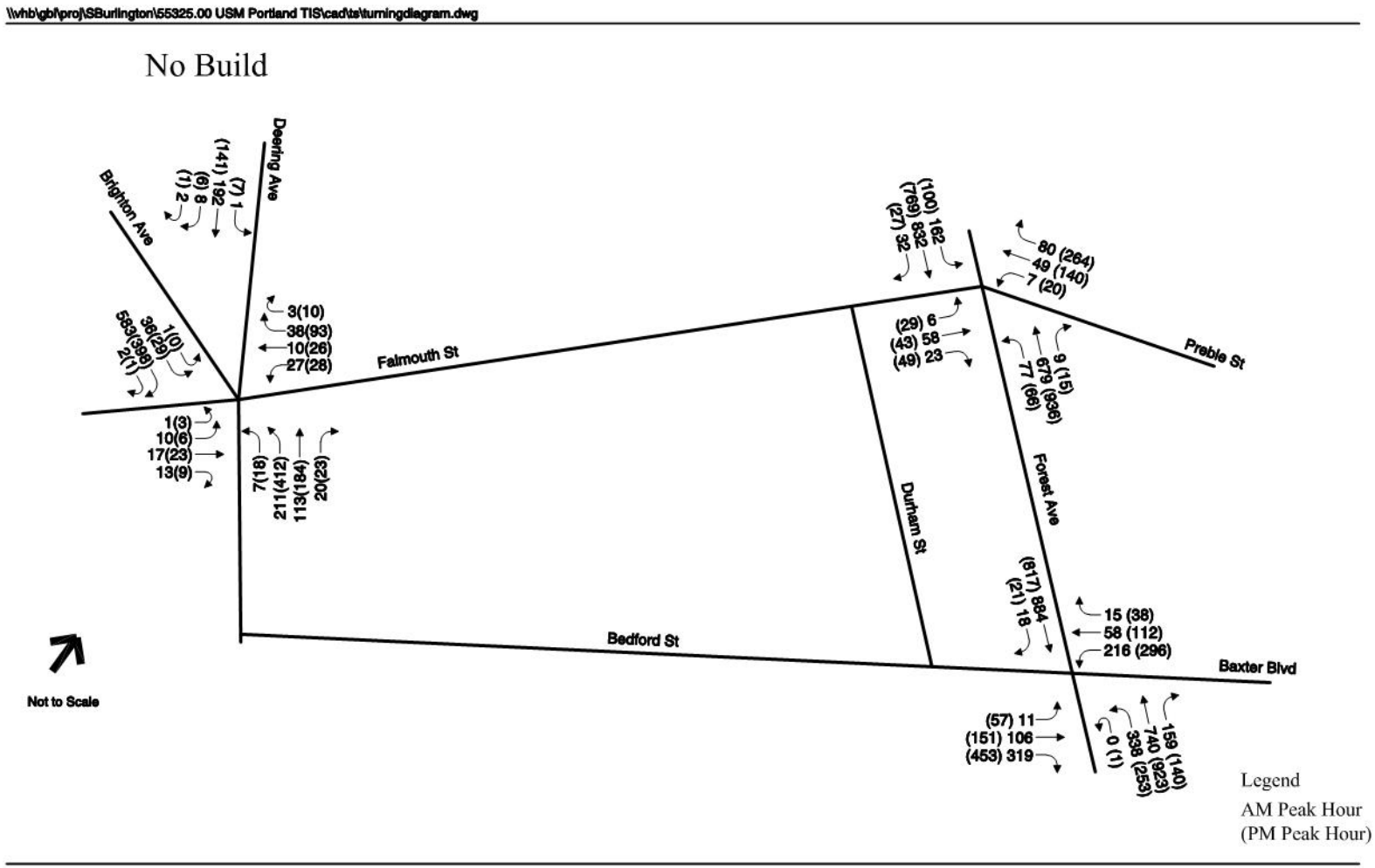


In addition to the impending improvements at Falmouth Street, Brighton Avenue and Deering Avenue, the *Portland-South Portland Smart Corridor Plan* evaluated alternatives for improving traffic operations along Forest Avenue. As a part of a DPW water resources project, the striping changes have been incorporated to better serve cyclists at these intersections. Adaptive traffic signal control will be in place at these signals shortly. This technology will allow for a more responsive signal system that, for example, ends green time for approaches that do not have traffic on them and lengthens green time for approaches with additional demand. For the purposes of the analysis, the signal timings from the *Portland-South Portland Smart Corridor Plan* were field checked in used as a baseline operation.

Background Traffic Volume Adjustments

The *Portland-South Portland Smart Corridor Plan* identified sites along the corridor where potential large developments could occur and included projections for those developments in the Planning Study (each of which was outside of this immediate study area). With a seven-year time horizon and no defined plans for those sites, that approach is not appropriate for this traffic analysis. Instead, a one percent per year background growth rate was applied to the traffic volumes to account for any smaller projects that are contemplated in the area and could affect traffic volumes at the study area intersections. This annual growth rate is consistent with the growth rate used for the roundabout analysis. **Figure 3** illustrates the 2027 No Build traffic volumes.

Figure 3: 2027 No Build Traffic Volumes



Trip Generation

VHB has evaluated the trip generation of the proposed campus developments. Although only the 580-bed residential hall and new Student Center is currently proposed, the University understands that based on their student profile, it is likely that a number of the dorm beds will be occupied by upperclassmen who will want to bring a car to campus. Therefore, this analysis considers not only the residence space and Student Center, but also the provision of an additional parking facility on-campus.

Approximately 68 percent of residential students at the Gorham campus currently have a parking pass. That percentage is high due in part to the policy that the parking fee is coupled with other fees and not a separate chosen fee. The University is incorporating changes to that program to ensure that bringing a car to campus would be an additional cost and a choice made by students. In addition, the location of the Portland campus is more likely to work with a car free lifestyle as there are transit opportunities and destinations nearby for walking and biking.

Adding residential beds to a campus typically will reduce vehicle trips if enrollment is expected to remain the same. A portion of the student body who were previously commuting to and from the campus each day, now will reside on-campus and walk to classes. The students with cars will occasionally use them to drive to recreation or commercial establishments and others may get vehicular deliveries or visitors, but the reduction in the typical peak hour trips is usually significant.

The proposed Student Center is not expected to generate a significant number of trips as it is an expansion of an existing use on the campus and is expected to continue to serve the student population. With the improved facility, it is possible that additional special events could occur that would generate additional trips, but if they were to occur, the traffic would be intermittent and not generate a typical trip generation.

The most significant generator of trips on a college campus is typically increases in enrollment. Enrollment has been slowly growing in recent years, but may have been limited due to a lack of on-campus housing. Recently, demand has been high for on-campus housing at the Gorham campus, resulting in 210 students being housed in triples (rooms with two other students). This indicates that there is already demand for 210 additional beds. In addition, based on surveys, the University has identified that 296 additional undergraduate students and 106 existing graduate students currently are living off-campus that would like to be in on-campus housing. It is also likely that a number of students have opted to attend other Universities that could accommodate them in on-campus housing (in less than a triple room).

Short-Term Trip Generation

In the short term, based on the needs of the existing students, it is likely that a number of commuter students to the Portland Campus (either from Gorham or from off-campus housing) will convert to on-campus residential students. Based on the existing known demand, as many as 210 Gorham residents who are living in triples and up to 402 students who are living off-campus (296 undergrad students and 106 grad students) who currently commute would likely convert to residential students. This would fill the 580 beds on the Portland campus. Of these students, many of them will not generate even one vehicle trip on a typical day. Others will have classes on the Gorham campus and become a commuter in the opposite direction. A few other trips will be generated for eating, shopping, part time jobs

and recreation in the area. Portland commuters who will no longer be commuting as they become on-campus residents.

The University conducted a survey that found that students at the Portland campus currently commute by the rounded percentages listed below.

Portland Campus Mode Shares:

- 70% drive alone
- 10% use transit
- 10% walk or bike
- 10% carpool

As such, if 580 commuter students were removed from the campus, that would result in approximately 858 fewer vehicle trips per day (400 people driving alone is 800 trips and 58 people in 29 carpools is 58 trips). However, as indicated above, a percentage of the new residential students will originate from the existing residential facilities in Gorham. For trips just between the two schools, the transit percent is significantly higher.

Mode share between Portland and Gorham campuses:

- 40% drive alone
- 40% use transit
- 20% carpool

If all of the 580 Portland residential students had been previously coming from Gorham moved on-campus, the trip reduction would be 580 trips (232 people driving alone is 464 trips and 116 people in 58 carpools is 116 trips).

With 210 of the new residential students coming from the Gorham campus and the remainder coming from the general commuting population, the number of trips to the campus will be reduced by 680 trips.

Portland on-campus residents who may commute

However, a number of these new on-campus residents may have classes at the Gorham campus. If one half of the Portland campus residents have courses at the Gorham campus, and the mode share is consistent with the students coming from Gorham to Portland, then there would be 116 students driving alone to the other campus and 58 in carpools resulting in 290 new vehicle trips related to the residents commuting to that campus.

Other Trips

As indicated above, on any given day, it is likely that 10 percent of the residential student population will make a trip off-campus. Based on the urban location of the campus, it is likely that a number of these trips will be made via alternate modes like walking and biking. The *Walkscore* website lists USM at a Bikescore of 93 out of 100, the equivalent of a "Biker's Paradise" As the entire Portland peninsula can be accessed within 2 miles of USM. Within 5 miles, one can reach South Portland to the south, Westbrook to the west, and the border of Falmouth to the north.

However, to be conservative, it was estimated that each of these trips would occur via personal vehicle. This would result in a trip increase of 100 vehicle trips per day.

Total Short-Term Trips

Combining the trip reduction associated with commuters converting to residents with the reverse commuter trips and other trips results in a total trip reduction of 290 vehicle trips per day, a large percentage of them being removed during the campus peak hours. Although the number of trips would decrease significantly, the total parking demand would likely remain constant as vehicles that are currently parked elsewhere the majority of the time (overnight, non-class hours) will now be stored on-campus for a longer portion of the day. In some cases, vehicles may be used to travel to other campuses during the day creating an available space for a student coming to the Portland campus. However, instead of the peak parking demand occurring for just a few hours midday, these vehicles would be parked on-campus most of the time.

Long-Term Trip Generation

As indicated above, the off-campus trip generation of the Student Center is expected to be minimal with the exception of special events. Similar to the short-term trip generation, the dorm beds are expected to result in a net loss of trips. Even the parking garage itself will not generate traffic unless demand is anticipated to increase to serve a new traffic generator.

The driver of long-term trip generation will be an increase in the student population. USM is projecting that the student body will increase by 972 students (or 706 full time equivalents) between now and 2027, the five-year time horizon after completion of the student housing and Student Center. Of that increase, 580 are expected to be housed in the residence hall, leaving an increase of approximately 390 students that will commute (whether from another campus or from off-campus) to the Portland campus.

New commuter trips

As noted above, surveys indicate that of the students that commute to the Portland campus, 70 percent of them drive alone and 10 percent of them carpool. Applying these rates to the 390 students results in 273 students driving alone (273 entering and 273 exiting) and 40 students in carpool (20 entering and 20 exiting) for a total of approximately 590 daily commuter vehicle trips to and from the campus. Applying the trip characteristics observed over the course of the day at the existing garage results in a peak trip generation of 58 vehicle trips from 8:00 to 9:00 AM, 62 vehicle trips from 11:00 AM to 12:00 PM, 60 vehicle trips from 2:00 to 3:00 PM and 52 trips from 4:00 to 5:00 PM.

New residential trips

As outlined above, there are expected to be a number of trips associated with the new residences. Unlike in the opening year when those trips are in place of commuter trips, with the growth of enrollment expected in the five years after opening, the residential students will be above the current enrollment levels. Therefore, the 290 reverse commuting residential students and the 100 miscellaneous trips per day would be increased trips as well. The miscellaneous trips would primarily occur during the off-peak hours in the evenings with few occurring during class time. To be conservative, the 290 reverse commuting trips were estimated to occur at the same times as the

commuting peak on the Portland campus, resulting in a peak hour trip generation of 29 trips from 8:00 to 9:00 AM, 30 trips from 11:00 AM to 12:00 PM, 29 trips from 2:00 to 3:00 PM, and 26 trips from 4:00 to 5:00 PM.

New other trips associated with long term increase in enrollment

With increases in student enrollment, there will be an increase in faculty, staff and other services (most significantly deliveries of all types). A review of the ratio of the number of enrolled students to the number of faculty and staff reveals an anticipated increase of approximately 270 person trips per day (135 entering and 135 exiting). Because most of the existing faculty and staff currently travel by personal auto, it was assumed that the future staff would as well. Faculty and staff are not anticipated to generate many trips during the peak hours of student travel, however, to be conservative, 30 trips were anticipated during each of the student peak hours. It was also estimated that an additional five trips were made during each of the peak hours to account for deliveries, service, maintenance, etc. associated with the increase in enrollment.

Total Long-Term Trip Generation based on USM data

The total long-term trip generation based on USM data indicates that the campus will generate an additional 122 vehicle trips during the weekday AM peak hour and 113 vehicle trips during the weekday PM peak hour.

Table 1: Long-Term Trip Generation Based on USM Information

		Commuter Students[1]	Residential Students[2]	Faculty/Staff/ Other[3]	Parking Garage[4]	**Total Trips**
Weekday AM Peak Hour	Enter	57	0	30	-	***87***
	Exit	1	29	5	-	***35***
	Total	58	29	35	-	**122**
Weekday PM Peak Hour	Enter	10	22	5	-	***37***
	Exit	42	4	30	-	***76***
	Total	52	26	35	-	**113**

[1]Based on anticipated enrollment of 970 additional students, 390 new commuter students anticipated, commuter mode splits and hourly trip pattern at existing garage

[2]Based on 580 dormitory beds, trips to other campuses, mode splits between campuses and other recreational etc trips

[3]Estimates for faculty, staff and other trips

[4] parking garage – trips assigned to generators

Long-Term Trip Generation Comparison

For comparison purposes, an industry standard trip generation estimate for the proposed future enrollment increases was calculated based on rates published by the Institute of Transportation Engineers (ITE) in the 7th edition of the Trip Generation Manual (as per MaineDOT Traffic Management Permit Requirements) and checked against the 10th edition (most recent edition) for any more recent updates. The trip rates were calculated for the weekday AM and PM peak hours using the Land Use Code (LUC) for University/College (LUC 550). These time periods are typically the highest volume times on the adjacent roadway network. One of the USM school peak hours does overlap somewhat with the roadway peak period.

The ITE 7th edition data indicates that the total AM peak hour trip generation of the campus would be 204 trips (163 in and 41 out) and the PM peak hour trip generation of the campus would be 233 trips (70 in and 163 out) without any adjustment for the trip patterns noted as this urban/suburban campus. The more recent ITE data (10th edition) indicates that the campus would generate 126 trips (101 in and 25 out) in the highest AM peak hour and 136 trips (43 and 93 out) in the highest PM peak hour.

The mode shares for the campus (70% drove alone and 10% carpool) were applied to the trip estimates per ITE. The results are illustrated in **Table 2** below as well as the information determined based on the trip patterns at the existing campus garage and other existing campus data.

Table 2: Long-Term Trip Generation – Industry Standards (adjusted for mode share) compared to Local Data

		ITE 7th Edition[1]	ITE 10th Edition[2]	Local Data[3]
Weekday AM Peak Hour	Enter	122	76	87
	Exit	31	19	35
	Total	153	95	122
Weekday PM Peak Hour	Enter	52	43	37
	Exit	122	92	76
	Total	174	135	113

[1]Based on Institute of Transportation Engineers *Trip Generation*, 7th Edition
[2]Based on Institute of Transportation Engineers *Trip Generation*, 10th Edition
[3]Based on data outlined in Table 1 for increased commuter and residential students

Any project which generates 100 or more passenger car equivalents (PCE) trips during the peak hour of traffic generation, must file a Traffic Movement Permit application with Maine Department of Transportation. As outlined above, the project is anticipated to generate between approximately 100 and 200 passenger car equivalents during the peak hours. While the Maine Traffic Movement Permit requires use of the 7th edition of ITE, those rates have been

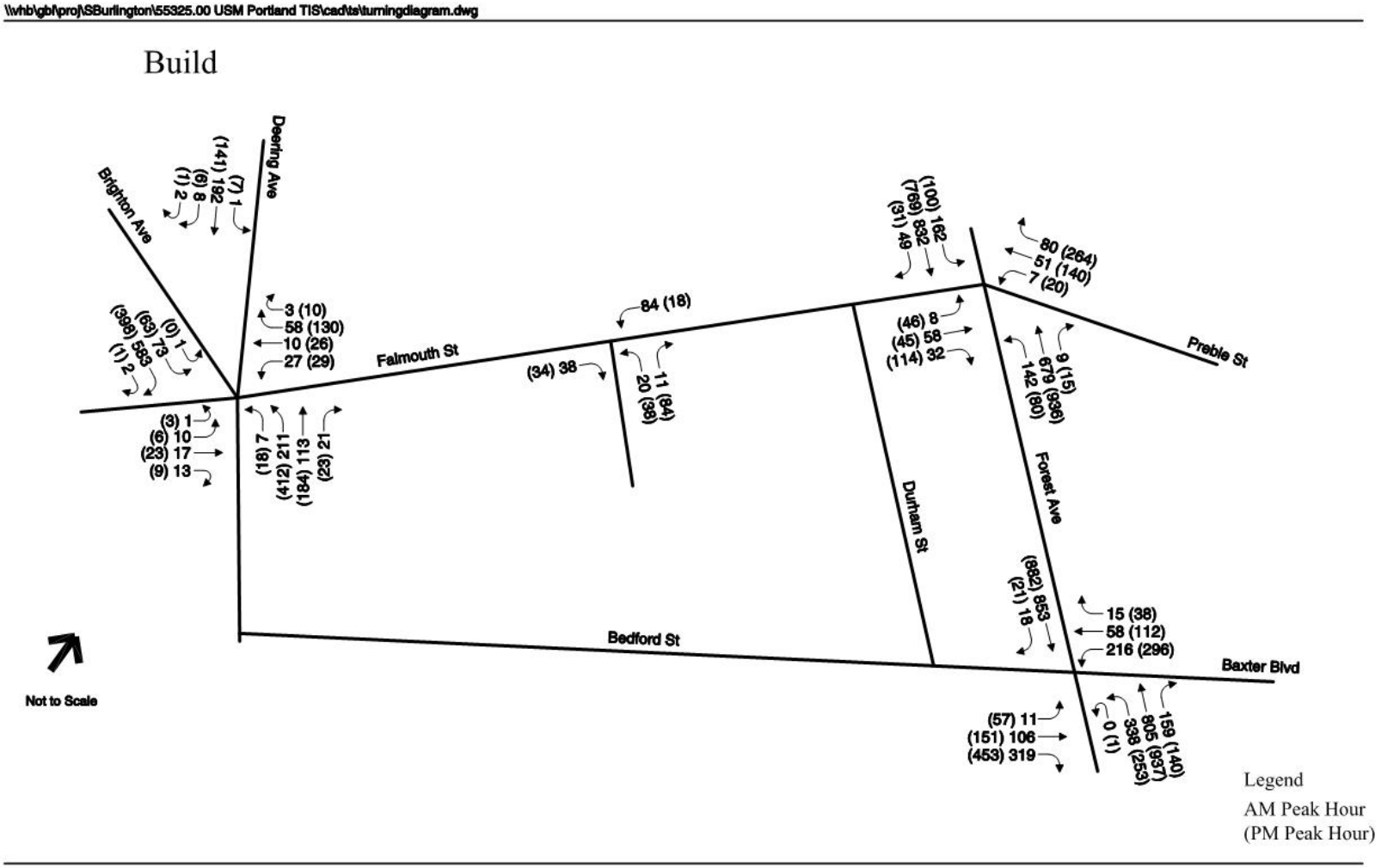
significantly updated in the more recent version and result in data that is more in line with what is expected based on actual campus information. To be conservative and in line with the requirements of the Maine Traffic Movement Permit Data, the ITE 7th edition data was used for the following analysis, however, it was assumed those trips were made up of the components expected on this campus and were distributed accordingly.

TRIP DISTRIBUTION

The various trips generated by the site will distribute in different ways. The residential trips attending classes in Gorham will travel to and from the west on Brighton Avenue. The commuter site-generated trips were distributed onto the adjacent street network based on zip code data for the existing student body, assuming the University will continue to draw from similar geographic areas. Most site trips are anticipated to be generated to and from the south on Forest Avenue with 46 percent of traffic oriented to and from I-295 and another seven percent oriented to and from downtown Portland and parts of South Portland. The next sources of trips are 30 percent to and from Brighton Avenue and 14 percent to and from points north via Forest Avenue. Minor percentages access USM from Deering Avenue points south and Baxter Boulevard. The remaining trips will likely distribute in a similar fashion, with the majority of trips into and out of Portland or onto I-295 and remaining trips to the north and west.

Based on the expected trip distribution, the site-generated trips were added to the 2027 No Build peak hour traffic volumes to establish the 2027 Build networks. The Build networks are shown in **Figure 4**. The trip generation figure is included in the Appendix.

Figure 4: 2027 Build Traffic Volumes



TRAFFIC ANALYSES

Intersection Capacity Analyses

Intersection capacity analyses were performed for the study area intersections. Levels of service (LOS) were calculated based on the criteria published in the *2000 Highway Capacity Manual*.[1] Level of service is the term that defines the conditions that may occur on a given roadway or at an intersection when accommodating various traffic volume loads. Levels of service range from A to F with LOS A representing generally free flowing operating conditions and LOS F representing generally congested conditions. Synchro 9 was used to determine the LOS at signalized intersections and Sidra Intersection 8 was used to determine the LOS at the proposed roundabout. Copies of the LOS calculations are provided in the Appendix.

Table 4 summarizes the operational analysis at the signalized study area intersections during the 2027 weekday AM and PM peak hours under No Build and Build conditions. As shown, the intersection of Forest Avenue at Falmouth Street is expected to operate at LOS B in 2027. Because the operation was borderline B/C, with the project in place, the operation will become LOS C with only a two second project related delay increase. Even the heavy increase of the Forest Avenue northbound left turns onto Falmouth Street in the morning can be accommodated in the storage length available.

The signalized intersection of Forest Avenue at Bedford Street is expected to operate at LOS D in 2027 both without and with the project. Project related delays are expected to be three seconds or less per vehicle. Even in the No Build condition, without project traffic, a number of movements at this intersection are currently operating at LOS E. The installation of adaptive signal control will ensure that the intersection operates at optimal conditions throughout the day.

Table 4: 2027 Signalized Intersection Operation

Intersection	No Build			Build		
Peak Hour	v/c⁺	Delay*	LOS **	v/c⁺	Delay*	LOS **
Forest Avenue at Falmouth/Preble						
AM Peak Hour	0.48	18.3	B	0.53	20.3	C
PM Peak Hour	0.52	18.7	B	0.54	20.5	C
Forest Avenue at Bedford/Baxter						
AM Peak Hour	0.79	39.0	D	0.79	39.2	D
PM Peak Hour	0.90	45.7	D	0.93	48.8	D

⁺ *Volume to capacity ratio*
** Delay expressed in seconds per vehicle*
*** Level of Service*

[1] Highway Capacity Manual, Federal Highway Administration, Transportation Research Board, 2000.

Table 5 summarizes the operational analysis at the Brighton Avenue, Deering Avenue and Falmouth Street roundabout during the 2027 weekday AM and PM peak hours under No Build and Build conditions. As shown, even with anticipated growth and project related traffic, the proposed infrastructure will result in a LOS B or better condition during the peak hours at the roundabout in 2027.

Table 5: Roundabout Levels of Service

Peak Hour	No Build			Build		
Movement	v/c*	Delay**	LOS ***	v/c	Delay	LOS
AM peak hour						
Deering Ave southeast	0.36	4.0	A	0.39	4.3	A
Falmouth Street northeast	0.13	5.5	A	0.16	5.3	A
Deering Ave northwest	0.38	4.8	A	0.39	5.1	A
Brighton Ave east	0.79	9.5	B	0.83	11.5	B
Falmouth Street southwest	0.15	11.4	B	0.16	12.3	B
PM peak hour						
Deering Ave southeast	0.63	4.5	A	0.68	5.1	A
Falmouth Street northeast	0.37	9.4	A	0.48	11.4	B
Deering Ave northwest	0.40	9.7	A	0.43	11.1	B
Brighton Ave east	0.54	4.2	A	0.58	5.0	A
Falmouth Street southwest	0.10	7.2	A	0.10	7.7	A

** Volume to Capacity Ratio*
*** Delay expressed in seconds per vehicle*
**** Level of Service*

The driveway approach of the garage proposed on Falmouth Street is anticipated to operate at LOS B with 12 to 13 seconds of delay during both the AM and PM peak hours.

Transportation Demand Management (TDM)

The University of Southern Maine (USM) has recently developed a Transportation Demand Management (TDM) plan that provides a cohesive strategy for establishing and implementing a successful TDM program for the Portland campus. The TDM plan seeks to enhance multimodal accessibility, ensure the use of non-vehicular modes, and discourage the use of driving through parking management, to achieve and build upon the university's parking demand reduction goals for the campus. The TDM Plan presents a suite of strategies and timeframe for when USM intends to implement the various strategies. The strategies aim at promoting walking and bicycling, improving transit service to promote ridership, promoting carpooling, changing time-of-day travel demands to eliminate or reduce

vehicle trips, and managing parking demand via changes to USM's pricing and permit policies. The implementation of TDM will reduce the vehicle trips to the site and reduce delays at area intersections.

Conclusions

The addition of the dormitory beds to the campus is anticipated to reduce vehicle trips as commuters convert to on-campus residences. The student center is expected to better serve the existing student population and is not expected to increase trips to the campus except perhaps for special events. In the future, with optimistic enrollment increases, and conservative methodology, vehicular trips are anticipated to increase between 163 and 174 during the weekday AM and PM peak hours. With these trips added to the roadway network, delay increases will be minimal at the signalized intersections along Forest Avenue and at the proposed roundabout at Falmouth Street and Brighton and Deering Avenues. Overall, this proposed project is not intended to adversely impact traffic operations in the vicinity of the USM campus.

UNIVERSITY OF SOUTHERN MAINE

PORTLAND • GORHAM • LEWISTON • ONLINE

To: Matthew Grooms, Senior Planner, City of Portland **Date:** 7/17/2020

From: Aaron Witham, Asst. Dir. Facilities Management, University of Southern Maine

Project: PL-001040-2020, 25 Bedford St. (USM Career & Student Success Center and Residential Hall)

Re: University of Southern Maine Impact on Street Parking Adjacent to Portland Campus

---

As a follow-up to previous conversations between the City of Portland and the University of Southern Maine on May 13th and June 3rd, 2020, City officials asked the University to estimate its total maximum impact of parking on public streets adjacent to the Portland campus. This memo summarizes that analysis.

Summary:

- From Monday, June 8th through Wednesday, June 10th, the University's Office of Sustainability collected street occupancy data between the hours of 12:30-1:30 pm, corresponding to the peak parking demand in campus lots.
- Occupancy of existing spaces averaged 31% in June, compared to the previous inventory done by VHB in October of 2019, which yielded a 62% occupancy.
- Since the October data set did not include detail about who was parking on the streets, an alternative method for estimating USM's total potential impact had to be employed.
- USM's total potential impact was estimated by subtracting the June data set (when campus was closed) from the October data set (when campus was open and classes were in session) during the 12:30-1:30 pm time slot.
- The estimation of USM's total potential impact is 62 vehicles.
- See attachment #1 for a street-by-street comparison and a list of the assumptions made.
- According to VHB, there were 202 parking spaces on the streets adjacent to campus under Fall, 2019 conditions. Seventy-seven of the spaces on these streets were open during peak parking demand when classes were in session.

Long-term Implications of University's Impact on Public Streets:

- At the completion of the roundabout project in September of 2021, there will be a minimum of between 159-173 [1]spaces on public streets adjacent to campus (depending on whether the City maintains existing parking on Bedford Street). This leaves between 34-48 open spaces during USM's peak parking demand time.
- On campus, total parking available will be between 1,977-2,052 spaces (depending on how big the new garage is). Total demand is anticipated to be 1,952 maximum (not including the effect of USM's

[1] These space counts are lower than before construction not only because of the loss of parking adjacent to Bedford park, but also because of the anticipated loss of six public parking spaces on Falmouth St. and six on Durham St. in order to create adequate sightline distances for safety surrounding the Falmouth street parking garage driveway and the Durham street Career & Student Success Center driveway, respectively. Exactly how many spaces will be lost will need to be determined by the City.

Transportation Demand Management Plan). This leaves between 25-100 open spaces during USM's peak parking demand time.

- Therefore, the University lots could accommodate the University's portion of public street parking by building an appropriately sized garage and/or by employing modest TDM (Transportation Demand Management) measures.

Short-term Implications of University's Impact on Public Streets:

- Parking availability will be lower than it is now due to the roundabout construction and University construction between March of 2021 and June of 2023.
- At the lowest point for street parking, availability goes from 202 to 182 spaces between March 2021 and September 2021. Fifty-seven spaces will still be available, according to the survey analysis.
- For most of the University's construction period, availability on campus goes from 1,701 to 1,537[2] spaces between September of 2021 and February of 2023 due to a combination of the roundabout project and the University's own construction projects. This leaves a 50 fewer spaces than Fall 2019 demand at the peak parking demand hour.
- From March of 2021 through early May of 2021, availability on campus will be 1,422. This amounts to 165 fewer spaces than Fall 2019 demand at the peak parking demand hour. Supply then drops to 1,331 over the summer, but demand for parking is extremely low over the summer and can be fully accommodated by the existing parking garage.
- The University does not expect these temporary parking capacity reductions on campus to be actual deficits given significant reductions in expected demand due to Covid, such as less in-person classes and a high number of telecommuting staff.
- If the number of in-person classes rebound in the Spring to levels comparable to last Fall, the University will manage demand for parking through initiatives that are already underway, such as a major course schedule revision. Prior to the outbreak of Covid-19, USM introduced a new time block schedule for Academic Year 2020-2021 to spread classes more significantly across days and time periods.
- Under a post-Covid "return-to-normal" scenario, the University's traffic consultant VHB believes that the University's TDM initiatives to expand offerings for telecommuting and efforts to spread out the course schedule can not only accommodate the reduced capacity in campus lots, but can also theoretically absorb USM's impact on on-street parking. Moreover, they estimate that the collective impact of the University's TDM plan can reduce parking demand by up to 12% (i.e. 234 spaces).

[2] Original projections submitted to the City within VHB's parking analysis totaled 1,552. Since then, the Wishcamper lot expansion was approved by the City with five less spaces than proposed in the permit application, and the central heat plant lot is now contemplated to possibly be turned into a temporary delivery area for a temporary kitchen location for Sodexo in Sullivan Gym; however, the University is more likely to find an off-campus location for Sodexo's operations. Regardless, when the new Career & Student Success Center opens, 15 spaces in the heat plant lot will be available.

UNIVERSITY OF SOUTHERN MAINE

PORTLAND • GORHAM • LEWISTON • ONLINE

TDM Initiative #1- Promotion of Telework & Flexwork Policies:

- The University's TDM plan includes the promotion of telework & flexwork policies.
- Due to the Covid-19 outbreak, the University has had the opportunity experiment with telework & flexwork at a much higher volume than any time in the past and has found it to be successful in many cases.
- Telecommuting for many of these employees will continue through this December. The extent of telecommuting into the future is yet to be determined, but will be planned strategically to accomplish parking reduction, utility reduction, and Covid mitigation goals, as these factors evolve.

TDM Initiative #2- Course Schedule Revision:

- Before the pandemic, the USM Registrar revised the overall architecture of the course schedule to begin this Fall.
- The revision will lengthen the daily course schedule with a 45-minute earlier start for the first block in the morning.
- It will also spread out classes throughout the day by offering one additional daytime block and one additional evening block.
- The spreading out will result in more classes being held in off-peak hours when demand for parking is less.
- Additionally, the new structure will align the schedules more effectively between Portland and Gorham campuses, so that students can more easily use the METRO to travel between campuses and not have to cause congestion and parking issues by getting in their cars.

In the event that in-person classes resume to full capacity next Spring, then the University can take additional measures if necessary beyond telecommuting and course schedule revision to ensure that demand for parking doesn't exceed supply over the critical months of March, April, and May of 2021. Such measures could include:

- Working with METRO to increase frequency of bus routes and using the Gorham campus as a park & ride for employees
- Employing a private shuttle service to utilize remote lots
- Other initiatives outlined in USM's Transportation Demand Management Plan

Please let us know if you have any follow-up questions.

Sincerely,



Aaron Witham
Assistant Director of Facilities Management for Sustainability

UNIVERSITY OF SOUTHERN MAINE

PORTLAND • GORHAM • LEWISTON • ONLINE

Attachment #1

Average Occupancy on Streets Adjacent to Campus on Monday-Wednesday between 12:30-1:30 pm

Street Name	Total Spaces	October 2019 Average Occupancy	June 2020 Average Occupancy	**Average Occupancy Difference**
Durham Street (Campus Side)	25	21	16	**5**
Falmouth Street (Forest to Brighton)	69	44	9	**35**
Falmouth Street (Brighton to Exeter)	9	7	3	**4**
Oakdale Street (Falmouth to Fessenden)	6	3	4	**-1**
Deering Ave (Brighton to 295)	21	16	6	**11**
Brighton Ave (adj to Bedford Park)	17	4	3	**2**
Exeter Street (Falmouth to Granite)	14	13	9	**4**
Bedford Street (adj to Bedford Park)	14	6	1	**5**
Chamberlain Ave	14	5	9	**-4**
Surrenden Street	13	4	3	**1**
All Streets	202	125	63	**62**

Notes:

*October data were collected as part of the VHB parking inventory at the same time the campus data were collected.

*Counts were taken between 8:30 am-4:30 pm, from Monday Oct. 21st- Wednesday October 23rd, 2019, and between 12:30-1:30pm from Monday June 8- Wednesday June 10.

*Occupancy shown here is just for the 12:30-1:30 pm time slot, as that is when peak parking demand occurs on campus.

*Peak parking demand was determined by when parking lots on the USM campus are the most full, according to an inventory done by VHB.

*The previously shared May data set only included a few streets and thus has been omitted from this table comparing average occupancy across all streets. Data for the same streets were comparable between the May and June data sets.

*The summary of data offered here was compiled by the Office of Sustainability at USM.

*Some construction vehicles were observed in June due to construction around the Brighton/Deering intersection; these have been included in the counts, assuming that the spots they were taking could have been otherwise occupied.

*Some blocks were closed to non-local traffic in June due to roundabout construction, thus limiting parking; however, occupancy here was retained in the analysis since it likely skews the University impact number higher (to be conservative) and excluding it would underrepresent the University's impact.

*The average occupancy difference columns were created by subtracting the June data from the October data, creating a difference that is assumed to be the parking burden on the community by University-affiliated vehicles.

* Brighton Ave and Bedford St were left in the analysis even though those parking spaces will be lost due to the roundabout project. Leaving them in allows for the University's impact on space counts to be reflected, while avoiding an arbitration inflation of the University's impact due to the roundabout project if their space counts were excluded from one or both data sets.

University of Southern Maine

Residence Hall and Career Student Success Center

Design Narrative

Capstone Development Partners
SMRT Architects and Engineers
Elkus Manfredi Architects

4 June 2020

The University of Southern Maine is a fast growing and increasingly influential educational institution in the City of Portland, as well as the state of Maine. The 2019 Facilities Master Plan outlined a series of important planning and building initiatives to better prepare the university to attract and retain highly qualified students and faculty thereby transforming the local and state economies through scholarship, civic and cultural engagement, and innovation. The addition of 580 new residential beds and a student center focused on career counseling and graduate success, both framing a new central quad, are the cornerstones of that master plan.

Today, the core campus is bounded by Bedford Street, Durham Street, Falmouth Street and Deering Avenue and characterized by ad hoc buildings and landscapes that are indicative of incremental growth and expedient design. There is no predominant architectural language and the open spaces of the campus are largely comprised of the negative space left over when buildings were sited as objects in the landscape. Seeking to create a legible hierarchy of both open space and building form, the proposed design for these two important new buildings grows directly from the aspirations of that Master Plan.

Campus Plan, Circulation and Open Space

The proposed residence hall anchors the corner of Durham and Bedford Streets, providing a strong corner to mark the arrival to the center of the campus moving west on Bedford Street, the primary urban arterial that moves through the campus. Reflecting the geometry of the Durham and Bedford intersection, the four wings of the residential building form a parallelogram that encloses a ½ acre semi private courtyard for the residents. The building has a large perimeter, which is mitigated by creating a five story lower portion that frames Bedford Street and the new Central Quad and a higher, eight story portion that frames Durham Street and the northern edge of the courtyard against the existing campus utility plant. The height of the lower Bedford Street wing is approximately the same height of the Wishcamper Center and Osher Map Library directly across the street. Together these buildings serve to define the street walls that mark the entrance to this part of the campus.

The lower Bedford Street wing of the residence hall turns to run parallel to Durham Street, forming the eastern edge of a new large, one acre Central Quad. This quad is an open, gently sloping green lawn that

will become the signature open space for the University, framed by Masterton Hall on the west, the new residence hall on the east, and set back almost 200' from the road, the new Career and Student Success Center ("CSSC") on the north.

The CSSC serves as a fulcrum in the overall campus plan, reconciling the non-parallel geometries of Bedford and Falmouth Streets. The façade facing Bedford Street terminates the Central Quad and offers a south facing grand portico, providing comfortable shade in the spring, summer and fall while providing weather protection in the winter. The west façade parallels the east façade of Masterton Hall and defines an important north – south cross-campus connector. The north or rear façade roughly parallels Falmouth street and creates the possibility that the future parking garage will work with the CSSC to frame and further extend the series of open spaces that loosely form an east – west green connector from Deering Avenue all the way to the Sullivan fitness center. The east façade, facing the utility plant, is parallel to Durham Street and serves as a loading dock for the CSSC.

Building Design

The buildings are designed to be a visual and tactile manifestation of the University's desire to "to build a sustainable, iconic academic campus in the heart of Portland enhancing the commuter experience while creating a welcoming residential community." Creating buildings that are didactically sustainable, welcoming, and tied directly to visual language of the nearby campus buildings have become the imperatives for our design. The residential building aspires to weave itself into the fabric of the campus in both its footprint and its fenestration while the Student Success Center seeks to become the iconic center of the campus. The buildings draw their material palette and fenestration patterns both from the immediate context of the campus and the "heart of Portland" – the downtown and the waterfront.

Residence Hall

The lower volume of the residence hall is characterized by essentially complete transparency all along the Bedford Street façade. The first floor behind this glass houses all of the public functions of the residence hall – the community kitchen, the living room, two seminar / classrooms, the bike room and the building's entry lobby. These spaces activate the sidewalk throughout the day and late into the evening, spilling light onto the sidewalk and making the campus a more welcoming, attractive and safe place. A long horizontal canopy leads pedestrians from the Wishcamper crosswalk and the corner of the Central Quad along Bedford Street to the bike and pedestrian lobbies, which form the primary entry to the residence hall. This canopy separates the public, transparent base of the building from the more private residences above, which are characterized by a regular grid of large windows punched into a panelized façade and five vertical bay windows, which mark the living rooms of select apartments. The canopy forms a protruding shelf to hold the freestanding letters that name the building and signify the entry. Like other buildings on campus and throughout the city, the lowest story of the residence hall is made of hand laid standard modular brick. The light and dark gray bricks accent the color palette of the recent Wishcamper and Osher buildings directly across Bedford street and give the residence hall a visually strong, durable base to rest upon.

Up above, along Durham Street and the edge of the existing Physical Plant the taller, 8-story volume of the residence hall is comprised of lighter materials, both in weight and color. The upper ranges of all the facades are a combination of large widows with passive house compliant frames, cement fiber panels and metal panels, creating a basket weave of windows and metal panels that alternate within bands of fiber-cement panels. These volumes are clad in the lighter panel colors to lessen their visual weight and tie them to the lighter modern architecture of the Wishcamper and Osher upper stories. The ratio of windows to walls within these facades reveal their residential use, which is a new building type on this campus. Incidentally, the lighter colors and materials of these two taller wings also serve to reflect more light into the residential courtyard, making it more enjoyable in all seasons.

The intersection of the taller and lower volumes at the corner of Durham and Bedford Streets provides an opportunity to mark this as a prominent corner for the University. The lower volume frames Bedford Street, but the taller volume sets back and places student lounges at the southern edge of the wing to create visual permeability into the building as well as a beacon of light emanating from the building in the evening and nighttime. The intersection of the two plan geometries gives the building a prow shape, with the point of the prow pointed to Downtown. Wrapping the floor to ceiling glass around this angular corner above the lower Bedford Street wing creates drama in the building form and allows unparalleled views of the peninsula skyline and Back Cove.

The residence hall employs myriad strategies to embrace the overarching objective of didactic sustainability. These strategies are highlighted within the building to educate the residents about their choices and the effects of those choices on all aspects of sustainability: environmental stewardship, social justice, and economic equity. One of the most aggressive sustainable features of the building is that it is designed to Passive House (PHIUS) standards. When completed, this building will use very little energy while providing residents with year-round comfort.

Career and Student Success Center

If the residence hall seeks to reinforce the structure of the city blocks and weave itself into the immediate context of the campus, the Career and Student Success Center seeks to stand apart, to become that iconic center of student life that welcomes both resident students and commuter students, as well as the public of Portland and beyond. Its place on the campus, its geometry, and its architectural language collectively seek to make this building the heart of social life for the campus. Like the residence hall, it is designed to be both didactically sustainable and welcoming, but unlike the residence hall, it has a larger, more civic scale that seeks to signify the importance and prominence of the University of Southern Maine in the state. The large scale begins with the soaring south facing portico. A broad gesture roughly 30’ tall, 20’ deep, and 200’ long, this portico forms a front porch to the campus, city, and state. It becomes the “band shell” at the top of the lawn, hosting events like graduations, concerts and the like. The columns of the portico are diagonal mass timber, making a clear statement that this university is invested in furthering the timber industry in the state, embracing sustainable and renewable low-carbon building technologies, and welcoming all in an informal, universally accessible manner. In short, it is a counterpoint to the formal, intimidating, large scale porticos of many other major universities’ iconic campus buildings.

Furthering the goal of being welcoming and promoting accessibility, the porch covers a two story mass timber framed lobby. Enclosed entirely in a transparent curtainwall, this dramatic lobby is anchored by a monumental stone fireplace and a soaring open stair, inviting all up to the second floor. On the ground floor, the lobby is adjacent to a large dining commons with a seating capacity of about 300. Serving a wide variety of locally sourced and sustainable foods, this dining commons uses food to attract both residential and commuting students to mix with faculty and staff from all around the campus. It becomes the indoor “town square” for the University.

The second floor is home to the Career Center and a 3,500 square foot multi-purpose room. This grand room also overlooks the Central Quad with a large glazed wall facing south under the overhang of the portico. It can be used for events ranging from career fairs, to large dinners, to dances and other celebratory events for both the campus and the community.

The materials that make up the CSSC are selected to tie the building to the essence of the state of Maine and the City of Portland. Materials are authentic, natural, and rugged. The mass timber framing of the public spaces speaks to the forestry industry in the state and the long history of the maritime industry in the Port. Dark mullions forming multi-paned windows in the large curtainwall expanses draw their visual characteristics from many of the historic wharf and commercial buildings in the City as well. The solid areas of the angular volume of the CSSC are clad in corrugated metal and natural stained wood in large planks – both selected for their prevalence in the industrial nature of both the historic and contemporary waterfront. Dark metal railings, light fixtures, and site furnishings also invoke the nobly utilitarian character of the waterfront and downtown buildings.

To maximize energy efficiency, the building is sited to take advantage of passive solar heating through the large glass openings facing south in the wintertime when the sun is low, while shading the glass with the portico overhang in the summer. The west, east, and north sides have fewer glazed openings and more solid walls to raise the energy efficiency of the entire building while still allowing daylight to penetrate deep into the interior spaces. The corrugated metal and wood cladding materials are relatively low carbon in their manufacture and shipping and can be recycled at the end of their long lifecycle. Above, on the roof, we are proposing a solar array that serves dual purposes: to provide shade for the roof membrane below (thus reducing heat gain through the roof in the summer), and to produce renewable energy for the electrical grid.

These and other sustainable strategies will enable the University and the development team to pursue a Silver level of LEED Certification for the CSSC, with an aspiration to push the certification even higher.

The Residence Hall and Career Student Success Center will be transformative projects for the University of Southern Maine in Portland. Designed with the imperatives of sustainability, accessibility, and legibility, these buildings tell the story of a University dedicated to the education and practice of living a sustainable lifestyle; welcoming people of all cultures and abilities; and being an iconic, innovative engine that drives the State’s economy.

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

July 27, 2020

Matthew Grooms, Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine
Career & Student Success Center and Residence Hall (Portland Commons)
Response to Staff Comments

Dear Matthew:

Thank you for coordinating the review of the proposed Career & Student Success Center (CSSC) and Residence Hall (Portland Commons) at 25 Bedford Street. We want to especially thank City staff for meeting with us over the last several months and providing the opportunity for an open dialogue as the designs have evolved.

The following letter compiles responses to comments received from the City, including the following:

- Email correspondence from Caitlin Cameron, Urban Designer, dated April 10, 2020;
- Email correspondence from Jeff Tarling, Urban Forester, dated April 10, 2020;
- Email correspondence from Mike Tremblay, Senior Engineer, dated April 10, 2020;
- Email correspondence from Tom Errico, Traffic Engineer (TY Lin), dated April 10, 2020;
- Email correspondence from Ben Pearson, Compliance Coordinator, dated April 10, 2020;
- Email correspondence from Michael Guethle, Stormwater Review Engineer (Wright-Pierce), dated April 23, 2020.

By-and-large, these comments have been addressed and reviewed with City staff in our meetings over the last several months. We have compiled them, here, to formalize our responses for the record.

In addition, we have made other updates to the drawings and offer supplemental Application materials; those updates and materials are described herein and attached for your use.

Comments from City

The comments received to-date are provided below for your reference and our response follows each comment in italics:

Email from Caitlin Cameron, Urban Designer, dated April 10, 2020

- Purpose: The USM overlay zone is especially concerned with new construction that creates visual connection with existing campus buildings and has the goal of a cohesive campus appearance. This has not been addressed so far in the submission. Staff do not find the proposed student center form, articulation, or materiality contribute to campus cohesion.

  The campus is defined by buildings with generally consistent material treatments of typically two materials (brick, warm-tone concrete or masonry/veneer, or grey metal/curtain wall) applied to the building. Curtain wall and large windows are found in many buildings. The buildings are generally contemporary with expressive roof forms, curtain wall/high transparency, typical institutional characteristics. More explanation is needed on what visual connections with existing buildings are being created and how these buildings are contributing to a cohesive campus appearance.

- *See attached Design Narrative dated June 29, 2020 and updated renderings dated July 23,2020.*

- A: Campus Design: More explanation is needed on how these buildings are integrated into the coherent whole of the campus.

  Campus Edges, Building Orientation are well designed to place the most active portions of the buildings towards the main streets and paths of the campus. The proposal is removed from and should not be expected to relate to the residential neighborhood.

  Pedestrian Environment: Please clarify the intended uses and circulation through the new quad and the edge treatments.

  Gateways, View and Landmarks: This location is not considered a gateway. However, the view of the residence hall on Bedford from Forest Avenue approach is visible corner and should be considered for the overall corner treatment and appearance. The current rendering of this corner shows some emphasis provided by the stair tower/shading devices.

  However, there are many materials and treatments happening within one building and this view of the building. The corner view doesn't visually connect to the existing buildings.

  - *See attached Design Narrative dated June 29, 2020 and updated renderings dated July 23,2020.*

- B: Access and Circulation: The project maintains the connectivity and circulation patterns already established on the ground and in the master plan. If the architecture of the student center building is going to be less visually cohesive with the existing campus buildings, then urban design and landscape components become even more important in creating the campus cohesion.

  Sidewalks: The standard requires brick sidewalks at least 8 feet in width. This is especially critical on Bedford Street where there is existing sidewalk design across the street that includes wide brick sidewalks, lighting, and landscape esplanades. This side of the street should have a cohesive design as the main street of the campus.

  Lighting: Please confirm that the proposed lighting conforms to what is already installed around campus or on the existing streets.

  - *Sidewalks: The USM Design Guidelines indicate 8' wide brick sidewalks, those guidelines were completed in May of 2006, and Wishcamper was built shortly after that. Subsequently, the City Sidewalk Material policy from the Technical Manual was adopted in October 2016 and shows the USM campus with concrete sidewalks. USM preference is not to use brick, and we believe we are in compliance with the Sidewalk Materials policy.*

    Lighting: The project goal is to be consistent with existing lighting on campus if available and meet energy and dark skies compliance, as well as, provide a safe and secure pathways to campus buildings and public ways. However, there is not a consistent campus standard. The fixtures proposed have a similar style and a similar height to what is existing around the Wishcamper portion of the campus. The maintenance parking lot has a few taller pole lights but do match the proposed fixtures and mounting height of the new lighting that will be installed as part of the new Wishcamper parking lot project.

- C: Parking, Loading, Service Areas: Project appropriately places the loading, service areas, utilities away from the active street frontage. No new parking is associated with this proposal. Active uses are appropriately oriented towards Bedford Street.

  - *Acknowledged.*

- D: Architectural Design:

  Height, setbacks, stepbacks, and massing are considered appropriate in scale and placement for this location on campus.

  Entrances: The entrances appropriately face Bedford Street, however, the residence hall entrance is not proportionately scaled and emphasized compared to the overall scale of the building.

  Materials: The residence hall uses far more materials within one building than is characteristic of the existing buildings. Many of the materials selected for this building could be considered to relate to the campus materials, however, the existing buildings generally apply only one or two materials. The use of brick may be more appropriate for the rear massing of the building adjacent to existing structures that use brick and warm-tone concrete materials. The grey tones better relate to the buildings found on Bedford Street. Use of natural wood finishes is not contextual to Portland or the USM campus. Treatment of rooftop mechanicals should conform to the standard regarding screening and integration with the overall design form.

    - *See attached Design Narrative dated June 29, 2020 and updated renderings dated July 23,2020.*

Email from Jeff Tarling, Urban Forester, dated April 10, 2020

- The main landscape features of the project are the Quad open space turf area, which will become perhaps the main focal point of the University once the project has been completed. It is a really large space without the number of trees one might see on the typical college campus... this is likely due to the multi use purpose of having a large open area. The proposed tree alley on the right side consists of only 4 shade trees with 3 on the West, opposing side. Recommendations or suggestions might include increasing the tree numbers to 5 on each side, one suggestion on the tree type use would be to consider a New England native tree that has Fall color as it can help create a sense of place vs using the European Linden. While they can grow stately, here in Portland we receive more complaints from the public about 'Sooty Mold' issues with Linden than almost all others. Suggestions might include Sugar Maple, European Beech (noticing the nearby campus has some great heritage Beech examples), Red Maple, Honeylocust, perhaps American Elm. This would be a University choice vs a condition.

  - *We welcome suggestion of alternative species to the Lindens such as European Beech, Red or Sugar Maple, or new (with proven resistance to Dutch Elm Disease) American Elm varieties and will review with USM.*

- Street-trees - the project plans a densely spaced planting of 'Adirondack' Crabapple which should do well along Bedford Street. The density is closer than our 'City' standard, it is likely USM will be caring for these trees if so the density is acceptable, if the trees are to be maintained by the city we would look at reducing them by 50%. Overall, the proposed USM project will increase the green space percentage by removing the parking lot and creating the Quad area. It would be hopeful that the tree numbers in the Quad could be increased to at least 5 shade trees on each side of the Quad and selecting a tree other than the European Linden only since we have seen many issues.

  - *The proposed flowering crabapples along Bedford Street directly mirror those on the opposite side and will be maintained in similar fashion by the USM. See above for Quad tree species.*

Email from Mike Tremblay, Senior Engineer, dated April 10, 2020

- DPW suggests that parking be provided along the new residents hall on Bedford Street. This can likely be provided in the currently proposed 12-foot esplanade. The remaining space should be wide enough for a viable esplanade, or could be reallocated to wider sidewalks along this segment of Bedford Street.

- *Parallel parking spaces are commonly 9' wide and 20' long, so the esplanade area would be adequate for about 8 parking spaces (160' along dorm frontage). The suggestion to use the esplanade for parking is not consistent with review comments by Urban Design reviewer to match the easterly side of Bedford, which has an esplanade with street trees.*

- The sidewalk on Durham Street should be widened to the edge of the City ROW. It is likely that Durham Street will see significantly more pedestrian traffic once the residence hall is occupied.
  - *The Durham sidewalk is presently shown at 6' wide which is adequate for two-way pedestrian traffic. This end of the campus has limited destinations for students.*
- A maintenance agreement will be required as the Bedford Street sidewalk is located within USM's property.
  - *Acknowledged.*
- The ADA ramp at the corner of Durham Street and Bedford Street should be reconsidered. Its alignment suggests there may be a crosswalk across Bedford Street where none is provided.
  - *The ADA ramp has been modified to reflect that there is not a crosswalk across Bedford Street and will align to allow for access across Durham St.*
- Proposed spot grades should be provided for all new sidewalks, ramps, and driveways.
  - *Additional spot grade information will be included in the construction documents.*
- A move-in/move-out traffic management plan should be provided. This plan should include, but not necessarily be limited to, the day(s) of the week that such activity will take place; where loading and unloading will take place; how vehicles will be routed to and from the loading zone(s); what, if any, changes to roadway regulations may be necessary (e.g. converting a roadway to one-way to allow for street parking where none would otherwise exists); etc.
  - *Please see the attached "Preliminary Plan for Summer/Fall Move-In" prepared by USM.*

Email from Tom Errico, Traffic Engineer (TY Lin) , dated April 10, 2020

- According to the Traffic Impact Analysis prepared by VHB dated March 5, 2020 the project would generate new peak hour traffic levels that would require a Traffic Movement Permit (TMP). The trip generation estimate was based upon the residence hall and student center facilities and increases in student enrollment in 2027. The applicant shall submit a Traffic Movement Permit application so that a scoping meeting can be scheduled.
  - *An application for a Traffic Movement Permit was submitted on 07/22/2020, and we anticipate the scoping meeting to be scheduled within the next few weeks.*
- The Applicant should provide documentation if USM has an existing Traffic Movement Permit. The TMP Application should also include trips associated with site changes implemented over the last 10-years.
  - *Evidence of an existing Traffic Movement Permit (issued with the Site Plan approval of the University Commons project in 2007) was provided to City staff under separate cover. As mentioned in the previous response, an application for a new Traffic Movement Permit has been submitted.*
- According to the analysis, USM will experience an increase of between 95 and 153 trips during the Weekday AM peak hour and between 113 and 174 vehicles during the Weekday PM peak hour. The study compared ITE Trip Generation estimates and local/site specific trip estimates. I have not fully reviewed the trip generation estimate methodology but will provide direction/approval during the TMP process. For the purposes of submitting a TMP Application, I

would suggest the applicant use the 7th Edition of the ITE Trip Generation Manual (or the 10th Edition if the pending TMP modified regulations are adopted prior to submitting the application).

  - *We used the 7th edition (and referred to the 10th as well).*

- For the purposes of assigning the new vehicle trips to the roadway network, the traffic impact analysis assumed a new parking garage would be constructed on Falmouth Street. The parking garage will not generate new traffic to the USM campus but will likely result in redistribution of vehicles arriving and departing the campus. This will be discussed at the TMP scoping meeting but would likely be required for the traffic study.

  - *The redistribution of traffic was incorporated into the traffic analysis, which was submitted to the City. The analysis was also incorporated into the Traffic Movement Permit application.*

- I briefly reviewed the Parking Assessment: Existing and Future Conditions prepared by VHB dated January 17, 2020. The assessment documents existing demand in USM parking facilities but does not appear to account for USM generated parking demand on public streets. The applicant should note if this information has been estimated or included in the assessment.

  - *The original parking analysis by VHB did cover public streets, but it was not included in the report submitted to the City because the focus of the report was campus parking. Since then, two memos have been submitted to the City that include analysis of street parking data. The second memo, dated 7/17/2020, includes an estimate of USM's contribution to street parking occupancy.*

Email from Ben Pearson, Compliance Coordinator, dated April 10, 2020

- A kitchen and pub are proposed but I did not see any grease control equipment planned. A schier great-basin 250 or equivalent high capacity grease interceptor is required to capture all dishwashing fixtures from the proposed food service facilities. There must be a junction manhole with independent channels at the location where the outlet of the grease interceptor connects to the sanitary sewer.

  - *A grease interceptor has been incorporated into the plans/design with appropriate manhole connections.*

Email from Michael Guethle, Stormwater Review Engineer (Wright-Pierce), dated April 23, 2020

- 1) Basic Standard: Per the City's Technical Manual Portland Stormwater Management Standards And Maine Dep Chapter 500 Stormwater Management, an Erosion & Sediment Control management plan, notes, and details per the Chapter 500 Rules must be provided to meet the Basic Standard.

  - *Acknowledged.*

  Erosion and Sedimentation Control best practices were observed on the Erosion and Sediment Control Plan and associated Details. An Inspection, Maintenance, and Housekeeping Plan has been provided with the erosion details and notes.

  a. In general, application of erosion and sedimentation control devices is appropriate. The following items need revision or review:

  i. Catch basin inlet protection should include catch basin throat inlet protection where necessary.

    - *Inlet protection will be included.*

  ii. Construction Entrance appears to be located in a low area of the site, near or in a catch basin area. Construction Entrances should ideally not be located in stormwater treatment areas or adjacent to catch basins. It is understood that this entrance is likely located at a

critical point for vehicle turning movements, and if the construction entrance cannot be moved, additional detailing on sediment transport mitigation in this location should be included in the construction management plan.

- *The construction entrance has been located at existing curb cut on Bedford St. Additional detailing pertaining to sedimentation transport mitigation will be provided.*

iii. Construction fence/limit of work appears to not be inclusive of some grading and pavement activities at the western boundary. Perimeter erosion control is recommended on this border as well.

- *The construction fence location has been modified to include all work areas.*

iv. Check dams should be provided on the southwestern boundary swale.

- *Check dams will be added to swale.*

- 2) General Standard: The applicant has provided information regarding the size and scope of the project, and has indicated the project is subject to the General Standard under the requirements of the Site Location of Development Act (SLODA). The project is being reviewed under the redevelopment guidelines and requirements.

  a. The applicant has provided an impact analysis to compare pre-development and post-development land use pollutant rankings under MaineDEP redevelopment guidelines. The written analysis indicated that the proposed development had a lower pollutant ranking than the existing site and is therefore required to treat 50% of the proposed site's disturbed surface area.

  A summary of pollutant rankings was provided. However, it is not clear which land use is being allocated which pollutant ranking. A visual or written description of site improvements and their allocated pollutant rankings should be provided.

  - *The stormwater report has been updated.*

  Please elaborate on the pollutant ranking selected for the roof areas. It is our understanding that the roof areas are flat, which is typically assigned a pollutant ranking of 3.

  - *The stormwater report has been updated.*

  Please also describe the general use of existing and proposed parking areas to better define their use as low-, medium-, or high- turnover parking areas.

  - *The stormwater report has been updated.*

  b. High-pollutant surface areas should be prioritized for stormwater treatment under the redevelopment standard. Please provide written or visual understanding of how priority for treatment has been assigned to high-ranking pollutants.

  - *The stormwater report has been updated.*

  c. One stormwater treatment system is provided as a "quad of lawn area". If the area is meant to be accessed by pedestrians as part of the site, it is suggested that the applicant provide a hardened access location to the basin, and review the proposed grasses to be suitable to both foot traffic, as well as submerged conditions.

  - *Stormwater treatment areas have been modified on the site. See revised plans.*

  d. An executed maintenance contract for the BMP systems is required. Given the difficulty in providing maintenance to courtyard-type stormwater treatment systems, please provide the executed maintenance agreement for this system as part of the application. Maintenance agreements for other treatment systems may be provided as a condition of approval.

  - *The stormwater report has been updated.*

- 3) Grassed Underdrained Soil Filter (GUSF) Design:

  a. A bioretention cell detail was provided. Please confirm if this detail is incorporated into the design.

    - *The detail has been adjusted to reflect proposed condition.*

  b. Additional design information in the stormwater management report is needed showing the following characteristics:

    The amount of impervious and developed area conveyed to the GUSF;

    Confirmation on the BMP sizing being a minimum of 5% of the impervious surface area and 2% of the developed surface area;

    Confirmation of basin areas, depth, media layers, and sizing;

    Maintenance access to the courtyard basin in accordance with Chapter 7.1 of the BMP manual;

    Sizing for sediment pretreatment for walkways and other sanded areas.

      - *The stormwater report has been updated.*

  c. Additional questions were developed from the HydroCAD calculation submission:

  GUSF outlets should be reviewed. GUSF outlets should include exfiltration rates in accordance with MaineDEP Chapter 500; underdrains conveying to the outlet control structure; and design for the outlet control structure inlets.

    - *The stormwater report has been updated.*

  Currently, exfiltration is modeled as a discarded value at 0.01 CFS, and outlets include a 20-foot overflow spillway which was not observed on the plans. Please revise.

    - *The stormwater report has been updated.*

  The filter basin should drain dry in no less than 24-hours and no more than 48-hours. The applicant has indicated that the filter basin drains 24-hours following the beginning of a rain event, but not that the system drains 24- hours following the basin filling, or following a water quality rain event.

    - *The stormwater report has been updated.*

  Please provide calculations indicating the basin draining 24-hours to 48-hours following either the basin filling to the ponding level, or following a 24-hour, 1-inch water quality rain event.

    - *The stormwater report has been updated.*

  Typically, this will require a reducer to the underdrain orifice, which will be adjusted in the field following construction. Please indicate that any reducer will be field-verified and adjusted in accordance with Chapter 7.1 of the BMP manual.

    - *The stormwater report has been updated.*

- 4) Flooding Standard: The applicant has submitted HydroCAD files indicating the post-development do not exceed the pre-development runoff rates for the facility. However, these calculations will need to be revised based on the above review comments for the GUSF designs.

    - *The stormwater report has been updated.*

- 5) Grading and Drainage:

  a. A Maine Construction General Permit will likely be required for the project due to the extent of grading.

- *Acknowledged.*

b. Typical details should show a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances.

- *Details and plans have been modified.*

c. Locations of level landings, and maximum slopes for regulated maximum distances, should be provided on the plans for ADA access locations.

- *Details and plans have been modified.*

d. For catch basin grates and frames to be re-set in the roadway, please provide a standard "dishpan" detail in accordance with the City Technical Manual.

- *Details and plans have been modified.*

e. Type F basins did not have a sump identified. The City Technical Manual includes a 3-foot sump for basins.

- *Details and plans have been modified.*

f. Not all pipes have inverts or rim elevations at this time, and were not able to be reviewed.

- *Details and plans have been modified.*

- 6) Utility Connections:

a. Ability to serve letters have not been provided for utilities impacted by the proposed project, but have been requested by the applicant for applicable utilities. The applicant has indicated that ability to serve letters will be submitted to Planning upon receipt.

- *Pending. SMRT is coordinating with Utilities.*

b. It is understood that grease trap sizing is being reviewed by Department of Public Works. Applicant shall defer to comments from Department of Public Works on this item.

- *Details and plans have been modified.*

i. A sewer cleanout should be provided at the intersection between the grease It is understood that grease trap sizing is being reviewed by Department of Public Works.

- *Details and plans have been modified.*

ii. An oil-water separator detail was provided, please confirm if this is the detail for the grease trap. If an oil-water separator is proposed, please confirm its location on the plan.

- *Details and plans have been modified.*

c. Standard design for the water and fire system has been provided. Adherence to PWD standards is typically provided by the water utility for water connections, and would be addressed in an ability to serve letter and acceptance through PWD.

- *Pending. SMRT is coordinating with PWD.*

d. Standard design for the electrical and gas utilities has been provided.

i. An existing gas line is located near CB 2235. Please confirm if the gas in this location is to be abandoned or removed, and if the GUSF adjacent to the gas line will have a liner.

- *Details and plans have been modified.*

e. Connection to Existing Stormwater Systems: E-mail, or otherwise written, confirmation from the Department of Public Works accepting this connection is requested to confirm that this connection is appropriate under Land Use section 14- 526 (b) 3 a. (iv); and 14-526 (c) 3 a.

- *Pending – SMRT is coordinating with the Department of Public Works.*

f. Planting impacts to utilities:

i. Several plantings are located over underground utilities, or beneath overhead wires. Please confirm how the design incorporates mitigation or prevention for roots impacting underground utilities, or canopy expansion impacting overhead wires.

- *Planting is being coordinated with utilities. Some overhead utilities are likely to be removed.*

ii. For installation adjacent to stormwater BMPs, please confirm how stormwater BMP liners (if any) are incorporated into the design.

- *Liners are not being utilized.*

Updates to Application Materials

Since submitting the Site Plan Application, the following updates and additional materials are provided in support:

- A virtual neighborhood meeting was held on July 15, 2020, at 6:00 pm regarding the Level III Site Plan Submittal for the proposed project; enclosed is a letter certifying that the neighborhood meeting was held, in addition to copies of the meeting invitation, attendance list, and meeting notes.
- The Site Plans have been revised as follows:
  - The CSSC building size has been reduced from 60,000 square feet to 43,000 square feet, and the location on the site has been adjusted slightly. Accordingly, the service yard and loading dock have been modified. All access points from perimeter streets remain the same. Minor modifications to internal sidewalks have been made to align with building modifications.
  - Stormwater management areas have been adjusted on site based on building location changes and client requests. Stormwater management has been designed in accordance with Chapter 500 regulations.
  - Curb cuts and proposed on-street parking along Durham Street have been reviewed with adjacent neighbor Oakhurst Dairy to coordinate with their truck movement.
- The building renderings and elevations have been revised as described in the attached Design Narrative.
- The Logistics Plan that accompanies the Construction Management Plan has been updated to reflect the site changes.
- USM has completed additional on-street parking analyses at staff's request. The analyses are summarized in the attached "On Street Parking Adjacent to Portland Campus" memo dated July 17, 2020.

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3662 or by email at dstairs@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Darrin Stairs, PE
Project Manager

cc: Alexander Porteous, University of Southern Maine
Craig Piper, SMRT Architects
Mary Costigan, Bernstein Shur

Enclosures: Design Narrative, June 4, 2020
Neighborhood Meeting Materials, July 15, 2020
Revised Renderings, July 23, 2020
Revised Site Plans, July 24, 2020
Stormwater Report, Revised July 24, 2020
Updated Lighting Cut Sheets
Construction Logistics Plan June 30, 2020
Portland Commons Residence Hall - Preliminary Plan for Summer/Fall Move-In Plan
USM On Street Parking Adjacent to Portland Campus July 17, 2020

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

September 29, 2020

Matthew Grooms, Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine
Career & Student Success Center and Residence Hall (Portland Commons)
Supplemental and Updated Application Materials

Dear Matthew:

Thank you for your continued efforts reviewing the application materials for the proposed Career & Student Success Center (CSSC) and Residence Hall (Portland Commons) at 25 Bedford Street. This letter compiles supplemental application materials to be entered into the record in advance of the Planning Board Workshop scheduled for October 13, 2020. The additional materials are detailed below.

1. Supplemental Narrative regarding Off-Street Parking

Pursuant to the Site Plan standards, the Planning Board shall determine the off-street parking requirement, based upon the applicant's parking study and a recommendation from the City Transportation Engineer, for projects in the USM Overlay zone. USM's parking study anticipates a total need of 394 off-street parking spaces generated by the project. That number is generated by the following components:

1. 392 parking spaces for Portland Commons. The number was derived by a review of the parking rate for the residential students on USM's Gorham campus which is 68%. Although students on the Portland campus may be less likely to have a car than on the Gorham campus, Portland Commons will be occupied by upper class and graduate students who are more likely to have a vehicle and an off-campus job. Therefore, USM found that the 68% rate is a reliable formula for the Portland Commons.
2. 66 parking spaces is the net number of spaces displaced by the project.
    - 130 spaces will be displaced from the Woodbury surface lot (P2) for the quad.
    - 41 spaces will be displaced from the Facilities Building lot (P7) for Portland Commons.
    - 6 spaces will be displaced in the Physical Plant lot (P8) for the loading dock.
    - 4 spaces will be displaced in the Law School lot (P6) for the relocation of the salt shed.
    - The expanded Wishcamper surface lot will add 115 spaces.
    - The net result is a total of 66 displaced spaces.
3. The revised TDM anticipates up to a 14% reduction in parking demand at the peak demand hour. 392 + 66 – 14% = 394

As discussed with City staff and as mentioned in the application, USM is actively looking at on campus solutions to meet the parking demand, including a new structured parking facility. The parking demand will be satisfied prior to occupancy of Portland Commons. We therefore request the following condition of approval: "Prior to obtaining a certificate of occupancy for Portland Commons, the applicant shall demonstrate to the satisfaction of City staff that the applicant has provided a minimum of 403 new off-street parking spaces. Such requirement may be met through various means

or a combination thereof, including but not limited to structured parking, surface parking, joint parking, and payment of a fee in lieu (if made available off peninsula)."

2. **Supplemental Application Materials (uploaded to Eplan)**

   The following supplemental application materials are provided:

   - *Landscape Design Concept Memo*, prepared by SMRT, dated August 20, 2020. This memo describes the design intent of the proposed landscaping, including the envisioned uses for the spaces and the types of plantings selected.
   - *Portland Commons Window to Wall Ratio Memo,* prepared by SMRT, dated August 28, 2020. This memo reviews the window to wall requirements of the USM Design Guidelines and provides the glazing calculation for Portland Commons.

3. **Updated Application Materials (uploaded to Eplan)**

   The following application materials have been updated:

   - *Transportation Demand Management (TDM) Plan,* prepared by VHB, updated September 29, 2020. The TDM has been updated to address comments and questions from City staff and the Planning Board.

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3662 or by email at dstairs@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Darrin Stairs, PE
Project Manager

cc: Alexander Porteous, Aaron Witham - University of Southern Maine
Craig Piper - SMRT Architects
Mary Costigan - Bernstein Shur

Enclosures: *Landscape Design Concept Memo*, August 20, 2020
Portland Commons Window to Wall Ratio Memo, dated August 28, 2020.
Transportation Demand Management (TDM) Plan, dated September 29, 2020

Memo

SMRT Architects and Engineers
877.700.7678
smrtinc.com

To	City of Portland	**Date**	08/28/2020
From	Kristen Damuth	**Project No.**	19206
Subject	Glazing Calculation	**Project Name**	Portland Commons

Glazing Criteria

Window to wall requirements

Per Standard D-6 of the USM Design guidelines, Appendix 3 of the City of Portland Design Guidelines.

- First Floor along Public Streets 50% of the wall area between 2 and 9 feet.
- Upper floors 15% to 40%
  - If it can be demonstrated that the building program precludes transparent windows along first floor street frontages, the other surface details shall be used (see Standard D-4)

The proposed Portland Commons building has been developed to place the most active and transparent functions along Bedford Street. This is including the primary entrance to the building, Student Kitchen Space, Student Living Room, Meeting Rooms, Bicycle Storage and Work room, and Administration space.

The location of these programs allow us to meet the 50% transparency requirements along the ground floor of Bedford Street as shown in the attached Drawings. This includes two set back portions of the building that are comprised primarily of opaque façade. The Eastern set back portion of this façade is a residential bedroom and programmatically does not want an increased transparency. The Western Opaque assembly helps define the massing of the buildings as it returns northward up the quad. If these two areas were to be omitted and only what is directly situated on Bedford Street is calculated, we achieve a higher percentage of transparency; 60%.

The upper Floors along Bedford Street achieve a 21% window to wall ratio and is within the 15%-40% requirement.

The Durham Street Ground floor is comprised of entirely residential units and is setback from the sidewalk to create privacy for these units. The window to wall ratio does not meet the 50% requirement as shown. The combination of the residential program and Passive House requirements within these units precludes any increase in glazing. The overall design approach as previously discussed has adopted the Standards set forth in Standard D-4 and has broken the massing down into components scaled to the context of the adjacent buildings and has established a clearly defined base to the building.

The upper Floors along Durham Street achieve a 28% window to wall ratio and is within the 15%-40% requirement.

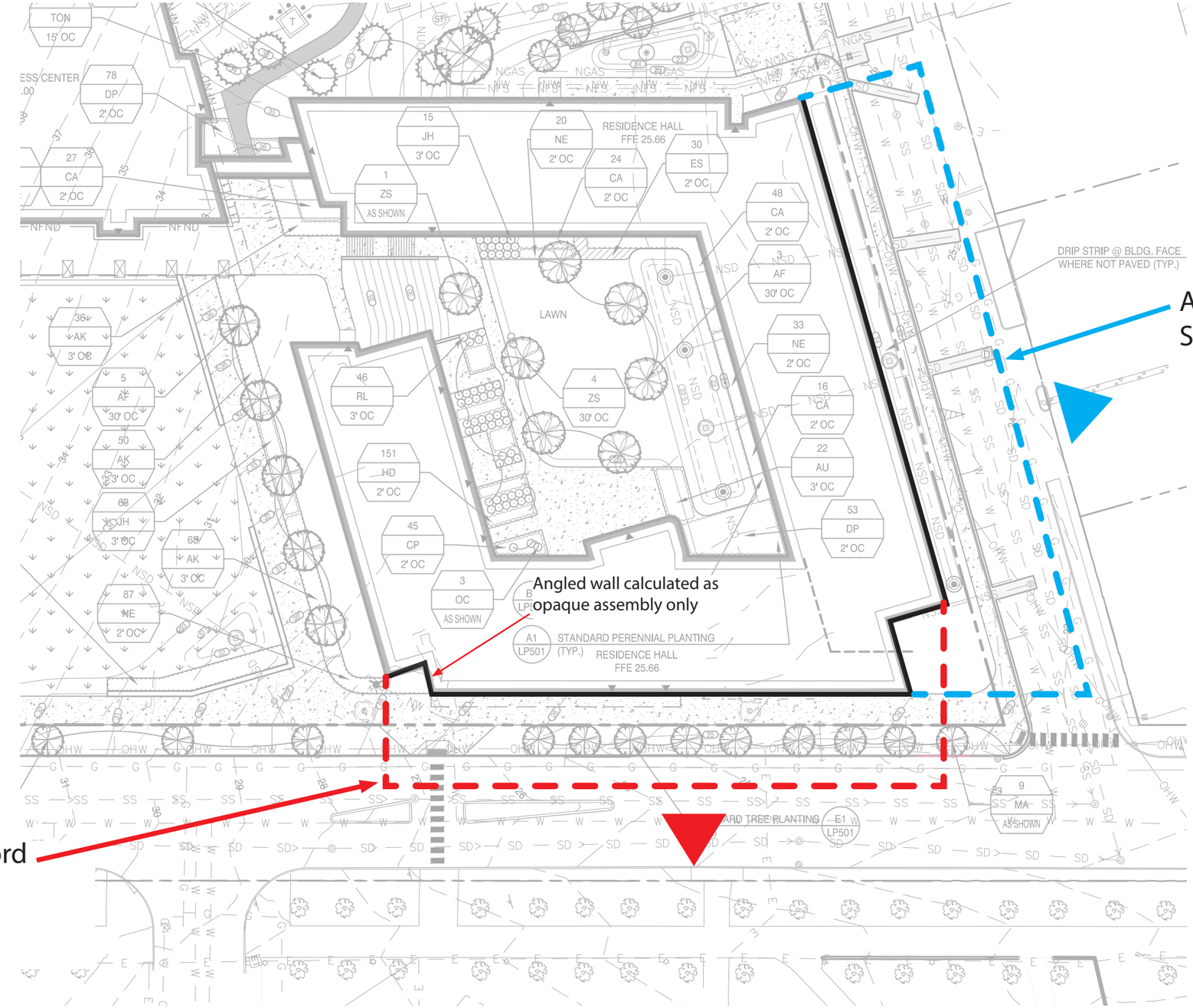
UNIVERSITY OF
SOUTHERN MAINE

Residence Hall & Career & Student Success Center

GLAZING CALCULATIONS

AUGUST 27, 2020

Percentage of Glazing: Street Facades



Percentage of Glazing: Bedford Street



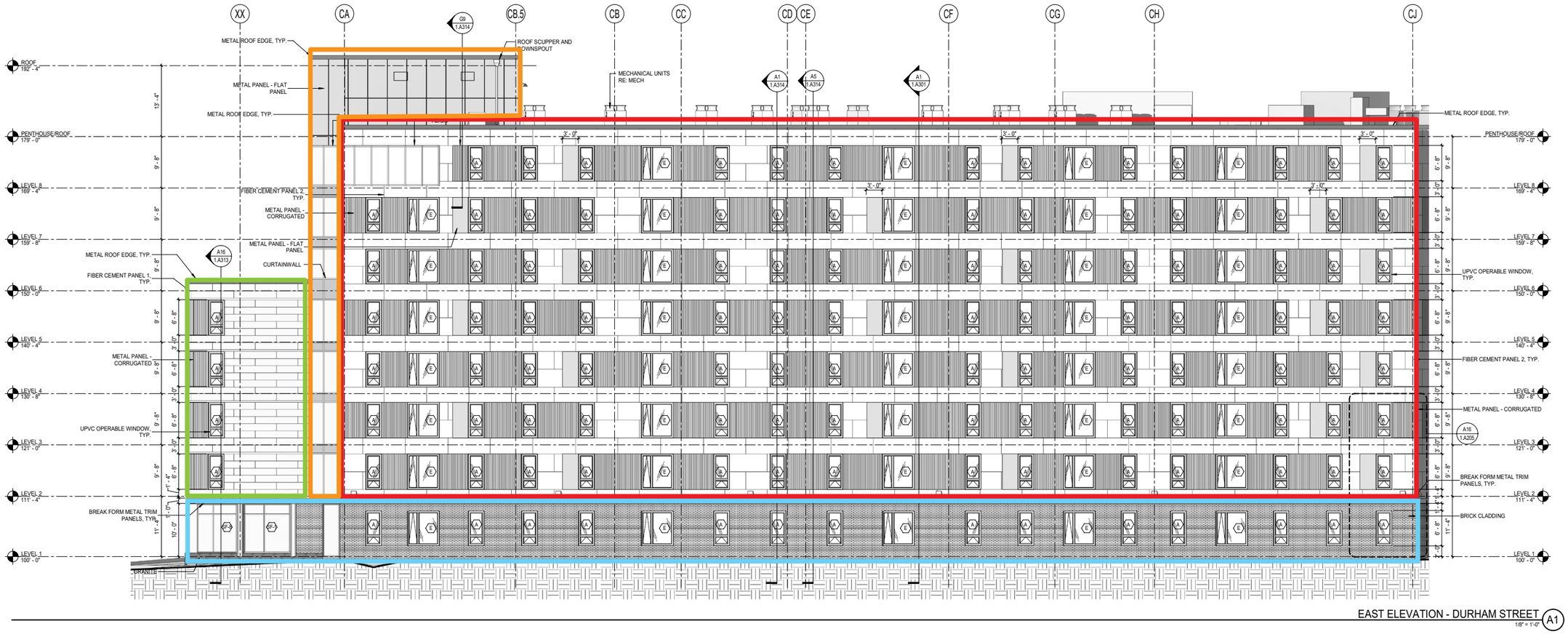
Note: Total Area taken from orthogonal view as outlined. Glazed openings that are not orthogonal to view have not been included in these calculations.

SOUTH ELEVATION - BEDFORD STREET J6
1/8" = 1'-0"

SOUTH ELEVATION - PARTIAL J1
1/8" = 1'-0"

		Total Area	Subtotal	Glazed Area	Subtotal	Calculation	
Upper Floors		8,310 sf	11,210 sf	1,840 sf	2,385sf	2,385/11,210=.212	Upper Floors: 21% Glazing Standard D-6 requires 15%-40% Glazing atUpper floors, This conforms as required.
		1,334 sf		425 sf			
		1,566 sf		120 sf			
Ground Floor		2,524sf	2,524sf	1,273 sf		1,273/2,524=.504	Ground Floor: 50% Glazing Standard D-6 requires 50% Glazing at Ground Floors. This conforms as required.

Percentage of Glazing: Durham Street



		Total Area	Subtotal	Glazed Area	Subtotal	Calculation	
Upper Floors		14,141 sf	16,019 sf	3,968 sf	4,444 sf	4,444/16019=.277	Upper Floors: 28% Glazing Standard D-6 requires 15%-40% Glazing at Upper floors, This conforms as required.
		930 sf		396 sf			
		948 sf		80 sf			
Ground Floor		2,700 sf	2,700 sf	668 sf	668 sf	668/2,700=.247	Ground Floor: 25% Glazing

Standard D-6 requires 50% Glazing at Ground Floors. This Area does not comply, however the residential program precludes an increase percentage of glazing.

Memo

SMRT Architects and Engineers
877.700.7678
smrtinc.com

To	Portland Planning Department	**Date**	August 20, 2020
From	Kenneth D. Costello	**Project No.**	19206
Subject	Site Landscape Narrative	**Project Name**	USM SSC and Portland Commons Residence Hall

Site and landscape design

The landscape/site design for the new USMC SSC and Portland Commons Residence Hall is intended to enhance the USM Portland campus while maintaining and bettering pedestrian connections within the eastern portion of the campus.

The design intent for the CSSC quad and Portland Commons courtyard is to allow these spaces to be utilized dynamically for any needs the university has, including passive and active recreation, special events and community/university gatherings.
The CSSC quad will be the heart of the campus in regard to student activity and an entrance feature as visitors arrive at the Campus. As such, the University intends to utilize the quad and adjacent front porch of the CSSC for student gatherings, special events/performances and community uses. In addition, the open quad will allow for active uses such as frisbee and ball throwing along with more passive student uses such as studying, eating and small group gathering. The quad is intended to be irrigated to maintain the lawn in good condition for visual and use purposes.

Landscaping around the quad is intended to meet many uses. Trees along Bedford mimic the ornamental trees on the south side of Bedford Street to emphasize a cohesive campus but spacing is modified directly in front of the quad to allow for better views to the quad and CSSC. Trees on either side of the quad provide shade for students who are lingering at the quad and also provide visual focus from Bedford St. to the CSSC. Landscaping and stormwater management along the east side of the quad also separate the active uses of the quad from the residential units to provide buffers and privacy.

Where the CSSC quad is the heart of the campus, the Portland Commons Residence Hall courtyard is the backyard for the building tenants. The courtyard also will function as a gathering and event space with a large patio and adjacent lawn area for building events, general recreation, and social gatherings. Landscaping in the courtyard is intended to bring the space down to human scale, provide shade for small gatherings and buffer active spaces from the residential units. The perimeter of the courtyard is planted to provide an appropriate buffer from residential uses and provide the most flexibility with larger open spaces in the middle. Planting within the courtyard has been selected to withstand the more sheltered, shady environment while minimizing maintenance.

UNIVERSITY OF SOUTHERN MAINE

Student Housing Advisory Services

BRIEFING DOCUMENT // AUGUST 2019



BRAILSFORD & DUNLAVEY

INSPIRE. EMPOWER. ADVANCE.

PREFACE

In January 2019, the University of Maine System ("UMS") engaged Brailsford & Dunlavey, Inc. ("B&D") to provide development advisory services related to new student housing at the University of Southern Maine ("USM", the "University"). As part of this initiative, B&D assessed current and future student housing needs at USM and quantified demand for a new student housing project on USM's Portland Campus. In addition, B&D advised USM on a range of possible implementation strategies to enhance its student housing inventory in accordance with the University's Facilities Master Plan.

The following document summarizes the key market findings and strategic considerations that resulted from the assessment. The findings contained herein represent the professional opinions of B&D's personnel based on the assumptions and conditions detailed in this assessment.

The methodologies employed as a part of this assessment included the following:

- A ***Strategic Asset Value ("SAV") work session*** was conducted with University leadership to identify and prioritize the strategic objectives that the Student Housing Project must address in order to advance the University's broader mission and vision. The SAV served to guide all subsequent research and the results from this advanced planning effort.

- An ***off-campus housing market analysis*** was performed to better understand cost, amenities, competition, and other key metrics of the off-campus housing market proximate to USM's Portland campus. Understanding the dynamic rental market in the Portland area determined how the University must proceed to differentiate its housing from the private sector to better meet the needs of its upper-division (third- and fourth-year) undergraduate, graduate, and law students.

- An ***Internet-based survey*** was administered to USM's entire student population to assess their current housing patterns and future demand preferences. In total, 895 students, or 11% of the population, responded to the survey, which provided statistically reliable data with a 95% confidence interval and a 3.3% margin of error. B&D sorted survey responses by various demographic characteristics, including classification, primary campus, etc. to better understand the unique aspects of USM's Portland campus housing demand at a sub-demographic level. Insights generated by the student survey allowed the Project Team to identify a primary target market for the initiative as well as characterize the programmatic nature of the resulting demand projections.

- A ***student housing demand assessment*** was performed using B&D's proprietary demand-based programming ("DBP") methodology, which determined demand utilizing statistically significant survey responses and enrollment assumptions provided by the University. Demand figures for housing on USM's Portland campus were projected based on the target market's preferences for various unit types, bedroom occupancy arrangements, and room rates, which were all tested as a part of the survey. The room rates associated with the unit types tested in the survey were generated using market-based rent assumptions that would result in the delivery of a financially self-sufficient project.

- ***A project-specific programming effort and financial analysis*** were performed to identify the optimal project concept to advance the University's strategic objectives within the existing market context. The resulting project concept established a road map for how the University could most effectively address the housing needs of its students in a manner that responded to the target market's demonstrated rental rate sensitivity. This synthesis of strategic objectives, market

opportunities, and contextual realities also served as a way to communicate the University's expectations to potential third-party development partners in the form of required project outcomes.

B&D would like to thank the following administrators at UMS and USM for their leadership and support throughout the project process *(sorted alphabetically)*:

- Glenn Cummings, President
- Tracy Elliott, Director of Finance and Controller
- Rudy Gabrielson, Chief Procurement Officer
- Nancy Griffin, VP Enrollment Management and Student Affairs
- Christina Lowery, Director of Housing and Residential Life
- Carolyn McDonough, Director of Capital Planning and Project Management
- Alexander Porteous, CFO
- David Roussel, Interim VP of Student Affairs
- John Souther, Executive Director of Facilities Management
- Justin Swift, Senior Finance Business Partner
- Adam Thibodeau, Assistant Director of Capital Planning and Project Management
- Aaron Witham, Assistant Director for Sustainable Programs

The B&D team responsible for developing this assessment comprised the following individuals:

- Brad Noyes, Executive Vice President
- Alan Resnick, Vice President
- Meg Green, Associate
- Javaneh Jabbari, Senior Analyst

TABLE OF CONTENTS

1. **PROJECT INTRODUCTION**

2. **KEY FINDINGS**

3. **MARKET ANALYSIS**
    a. Introduction
    b. Strategic Priorities & Required Outcomes
    c. Existing Conditions
    d. Off-Campus Housing Market Context
    e. Student Housing Demand

4. **CONCLUSION**

EXHIBITS

A. Off-Campus Market Data
B. Student Housing Survey Data

PROJECT INTRODUCTION

USM is one of the seven public universities which comprise the University of Maine System. USM has three campuses, located in Gorham, Portland and Lewiston-Auburn. The University enrolled 8,140 students across all three campuses in the fall of 2018 and anticipates future enrollment growth to reach 10,000 in the near future. While USM experienced an overall decline in enrollment over the last decade, enrollment has recently rebounded, increasing from 7,739 in fall 2015 to 8,140 by fall 2018.

USM's Portland campus is located in the heart of Portland, Maine, the state's largest city and economic and cultural center. Most USM students (64%) take the majority of their academic classes at the Portland campus. The Portland campus does not currently offer any student housing. USM envisions expanding its on-campus housing portfolio on this campus to support students' academic and career aspirations as well as ensure a robust student life experience. Located 11 miles away from the Portland campus, USM's Gorham campus is the only residential campus at the University. In fall 2018, the Gorham campus' housing inventory comprised 1,180 beds, available to all degree-seeking USM students. The housing portfolio is occupied beyond its design capacity, with fall 2018 occupancy at 112% of current capacity.

USM completed a Facilities Master Plan in January 2019. The Master Plan's vision for the Portland campus is "to build sustainable, iconic academic campus in the heart of Portland, enhancing the commuter experience while creating a welcoming residential community". Therefore, USM has been strategically focusing on providing student housing on its Portland campus for upper-division (third- and fourth-year) undergraduate, graduate, and law students.

KEY FINDINGS

B&D developed the following key findings, synthesized from the results of the aforementioned analyses, to characterize the market opportunity that exists for student housing to advance USM's identified strategic objectives for its Portland campus.

- Portland is a desirable place for students to live, but competitive market conditions have created a barrier to entry for many students. The private housing market is very tight and rental rates are above what students can afford to pay. In B&D's student survey, 71% of USM students who live off campus indicted finding and securing housing accommodations to be at least somewhat difficult.

- B&D's survey indicated that 64% of USM students considered affordability to be the primary factor in their current housing decision. As housing prices tend to be less expensive outside of downtown Portland, many students are widely dispersed throughout the city as well as outside of it. According to the student survey, 63% of USM students who live off campus live outside of Portland and have an average one-way commute to campus of 28 minutes.

- B&D surveyed 7,083 rental housing units in the Portland market, the majority of which were not student-focused units. The reported average rent per unit was $1,296 per month, without utilities, whereas 70% of USM students who live off campus indicated paying less than $700 per month for their housing accommodations, excluding utilities. As 58% of these students don't share a bedroom with another person, this further indicates students rely on the market outside the Portland area to find affordable living accommodations that offer the privacy they desire.

- Proximity to campus was also identified as a critical housing preference for upper-division, graduate, and law students. Forty-six percent (46%) of these students selected proximity to campus and on-campus resources as the second greatest factor which contributed to their decision where to live during the 2018-19 academic year. As these students are more likely to have the majority of classes on the Portland campus, this suggests a strong likelihood that students will prioritize any potential new on-campus housing offered on the Portland campus.

- B&D's survey of USM students tested a variety of unit types at varying rental rates. The survey specifically tested unit types at the rental rates that are comparable to the housing market in the city of Portland. B&D's proprietary demand-based programming model focused on the demand from upper-division, graduate and law students most likely to choose on-campus housing. B&D identified approximately 674 beds of demand for housing at the Portland campus for the current academic year (2018-19).

- Based on the demand analysis, B&D found that USM students seek the most affordable housing options while maintaining their privacy. This was demonstrated through students' unit-type preferences, in which they prioritized private (single bedroom) options with the least cost. Thirty-five percent (35%) of the demand for on-campus housing on the Portland campus was for the single bedroom with en-suite bathroom unit (the cheapest available option), and 40% of the demand was for a single bedroom in a two- or four-bedroom apartment.

- It is clear that USM students desire to maintain their privacy while maximizing affordability. Therefore, minimizing the size of residential units and out-of-unit programming space is paramount to ensuring affordability. As a result, residential support spaces must be limited, and alternative methods of fostering a vibrant, community-oriented atmosphere should be explored.

KEY FINDINGS

INTRODUCTION

Established in 1970, USM comprises three campus locations in central and southern Maine, a region that is viewed nationally as among the most livable and desirable in the country. The three campuses, located in Portland, Gorham, and Lewiston-Auburn, have substantially different physical features and dynamics, and each offers a variety of educational, cultural, and recreational opportunities for USM students.



Figure 1 - USM Campus Locations, Captured from the USM Facilities Master Plan.

USM's Portland campus is located at the heart of city of Portland, nationally known for its arts and culture, outdoor recreation, and dynamic food scene. Portland is the largest city in Maine and the economic center of the state. Approximately 64% of USM students take the majority of their courses at the Portland campus. The Portland campus offers a variety of programs to its students including business, law, nursing, biology, history, psychology, sociology, economics, political sciences, etc.

Located eleven (11) miles away from the city of Portland, the Gorham campus is located in a small town with a suburban setting. The Gorham campus is USM's only residential campus and the center of undergraduate life at USM. The primary academic areas residing in Gorham are industrial technologies, engineering, art, music, theater, counseling and education, anthropology, geography, environmental sciences, and geosciences.

The Lewiston-Auburn College (LAC) is located in Maine's second largest city which is known for its diversity, low cost of living, and substantial access to medical care. The LAC offers a small college atmosphere and provides programs that are responsive to workplace demand in the state of Maine, such as arts and humanities, leadership and organizational studies, natural and applied sciences, social and behavioral sciences, and occupational therapy.

EXISTING CONDITIONS

In fall 2018, USM enrolled 8,140 students, including 6,390 (79%) undergraduate students, 1,497 (18%) graduate students and 253 (3%) law students. Since fall 2016, the annual enrollment trend has improved,

and USM's enrollment has grown approximately 2% annually. According to the USM Facilities Master Plan, the University's goal is to increase headcount enrollment to 10,000 students in the short term. To achieve these goals, USM is pursuing the following strategies:

- Providing a variety of financial-aid packages including merit scholarships, loans, and stipends for graduate student to attract more students
- Enrolling students with high academic achievements and increasing Presidential Scholars to admit students who are more adequate for higher education
- Staying focused on keeping tuition affordable for all students, specifically students form New Hampshire and Massachusetts with the NEBHE out of state tuition program
- Increasing out-of-state and international student population
- Adding additional academic programs on the Portland campus

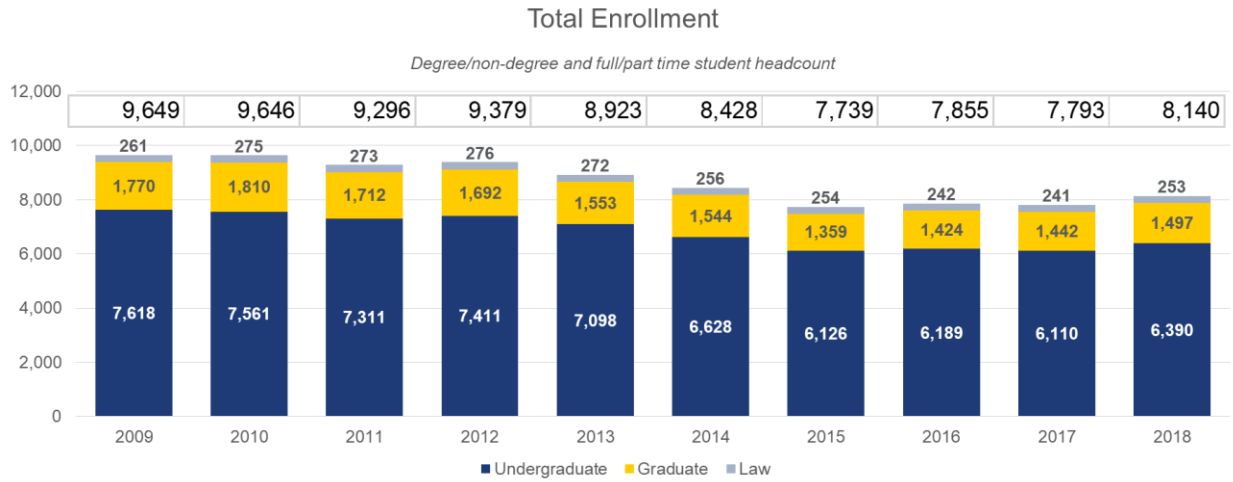


Figure 2 - USM Historical Enrollment, Fall 2009 to Fall 2018.

Since fall 2009, the percentage of out-of-state students has grown an average of 1% each year. USM has been committed to continue to grow this population of students through various initiatives including adding on-campus housing on the Portland campus.

USM currently offers student housing only on its Gorham campus. USM's 10 residence halls at Gorham primarily accommodate undergraduate students, though apartment beds in the Upperclass Hall also accommodate graduate and professional students. In fall 2018, 21% of USM's undergraduate students resided in residence halls on the Gorham campus. Almost all graduate and law students are accommodated in the off-campus market, with many living in the Portland area. In fall 2018, less than 1% of graduate students lived on the Gorham campus. The design capacity of the Gorham campus housing portfolio is 1,180 beds as of fall 2018. The housing portfolio is occupied beyond design capacity, with fall 2018 occupancy at 112% of capacity.

Residence Halls	Room Type	Room Occupancy	Specialty	Capacity	Year Built
Anderson Hall	Traditional	Double	First year	100	1963
Philippi Hall	Traditional, 3-/4-person suites	Single, double	Upperclass	200	2001
Robie Andrews Hall	Traditional	Single, double	Upperclass	200	1916; reno 1977
Upton Hastings Hall	Traditional	Double	First year	300	1960
Woodward Hall	Traditional	Double	First year	80	1955
Upperclass Hall	4-person suite, 4-person apt	Single (apt), double (suite)	Upperclass and graduate	300	2007
TOTAL RESIDENCE HALL CAPACITY				**1,180**	

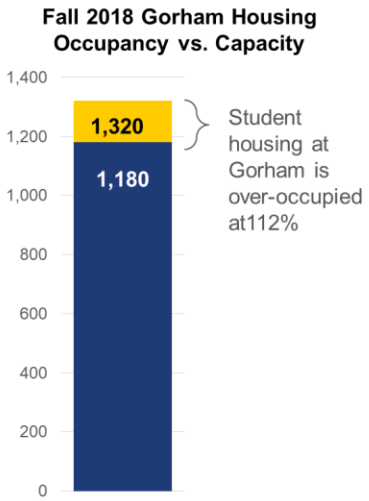


Figure 3 - USM Housing Inventory by Room Type and Occupancy.

USM's on-campus housing rental rate structure offers a variety of rates and options for students. Rental rates differ based on unit type and occupancy. In fall 2018, rental rates ranged from $555 per month ($2,500 per semester) for a double-occupancy traditional unit to $777 per month ($3,500 per semester) for a single-occupancy apartment in the newest housing available on campus. All students who are not living in apartments in Upperclass Hall, are required to have a meal plan. The least expensive meal plan, which provides 10 meals per week and $300 meal plan dollars per semester, cost approximately $2,300 per semester in fall 2018.

Despite aging conditions and maintenance issues facing several Gorham residence halls, students indicated relatively strong levels of satisfaction for the facilities, with apartment-style units driving the highest levels of satisfaction. USM students highly value the on-campus residential experience. According to student survey responses, 84% of USM undergraduate students and 80% of USM Graduate and Law students believe that on-campus housing is important in building a sense of community and culture on USM's campuses. This is further demonstrated by the housing inventory being over-subscribed at Gorham Campus.

STRATEGIC PRIORITIES & REQUIRED OUTCOMES

Providing student housing at USM's Portland campus is a mission-driven initiative to develop a robust collegiate environment within the larger Portland community. According to the Facilities Master Plan, USM's vision for the Portland campus is *"To build a sustainable, iconic academic campus in the heart of Portland, enhancing the commuter experience while creating a welcoming residential community".*

USM believes that this vision is critical to both supporting its students as well as the development of expanded professional relationships with the Portland community. The strategic drivers that support this vision were identified through a Strategic Asset Value ("SAV") work session with key University stakeholders representing a diverse range of campus functions and interests. The session developed a series of values that the on campus housing initiative must achieve.

Specifically, student housing at USM's Portland campus must:

- Provide a safe, high quality, and affordable student life environment that supports the well-being of USM's diverse student community;
- Create residences for upper-division (third- and fourth-year) undergraduate, graduate, and law students that is highly proximate to Portland campus academic resources and support;
- Construct housing that maintains affordability while assuring USM's continued financial sustainability;
- Design an iconic community that serves as a campus gateway, welcoming off-campus visitors while maintaining safety and security on the USM Portland campus;
- Create a development that not only elevates the presence of USM in the surrounding Portland community but also serves as a catalyst for community development and collaboration/connection between USM and Portland;
- Create a vibrant, connected student center environment that serves on- and off-campus student populations while maximizing efficiency through shared facilities infrastructure with student housing; and
- Demonstrate fiscal and environmental responsibility by striving towards sustainability goals outlined in USM's Facilities Master Plan.

In summary, the goal is creation of an affordable residential experience that meets these criteria will attract students to a dedicated gathering place that is proximate to on-campus activities and resources. Housing upper-division, graduate and law students closer to campus and to each other will create a dynamic, interdisciplinary residential atmosphere that will serve to comprehensively enhance collaboration, academic achievement, and the overall student experience at USM.

OFF-CAMPUS HOUSING MARKET CONTEXT

USM does not currently offer housing to its students on the Portland campus. Therefore, students who take the majority of their courses on the Portland campus either live on the Gorham campus or satisfy their housing needs by living off campus in Portland and its surrounding areas. Affordability is the top priority for USM students and the primary driver of their housing decisions. An analysis of survey responses found that 64% of USM students considered rental rate affordability to be the primary factor behind their current housing decision. Proximity to campus was also identified by students as a critical housing preference. Forty-six percent (46%) of USM students selected proximity to campus and on-campus resources as the second greatest factor which contributed to their decision of where to live during the 2018-19 academic year.

The Portland housing market is extremely dynamic and rapidly expanding. As an example, rental rates have become more expensive than what USM students feel they can afford. High rental rates have pushed students outside of downtown Portland to more affordable neighborhoods outside of the city. According to the student survey, 63% of USM students who live off campus live outside the Portland area and commute approximately 28 minutes to campus one way.

Based on the results of the survey, B&D analyzed USM students within three unique sub-demographic groups. The first group comprises on-campus students, who prioritize proximity to campus, student life and campus resources. Their strong desire to live near campus resources results in their decision to live on campus at Gorham campus. The second group consists of students who live off campus and in the Portland area. These students prioritize affordability as well as proximity to campus resources in deciding where to live off campus. Eighty-four percent (84%) of this sub-group take the majority of their courses on the

Portland campus. As a result, they seek housing options close to the Portland campus and in the Portland area. The third group are those students living outside the Portland area, who prioritize combined privacy and affordability. Proximity to campus is not their top priority in deciding where to live off campus. These students seem to care slightly more about unit-type configuration and they therefore seek accommodations outside of the Portland area to find their preferred unit types at a lower rental rate.

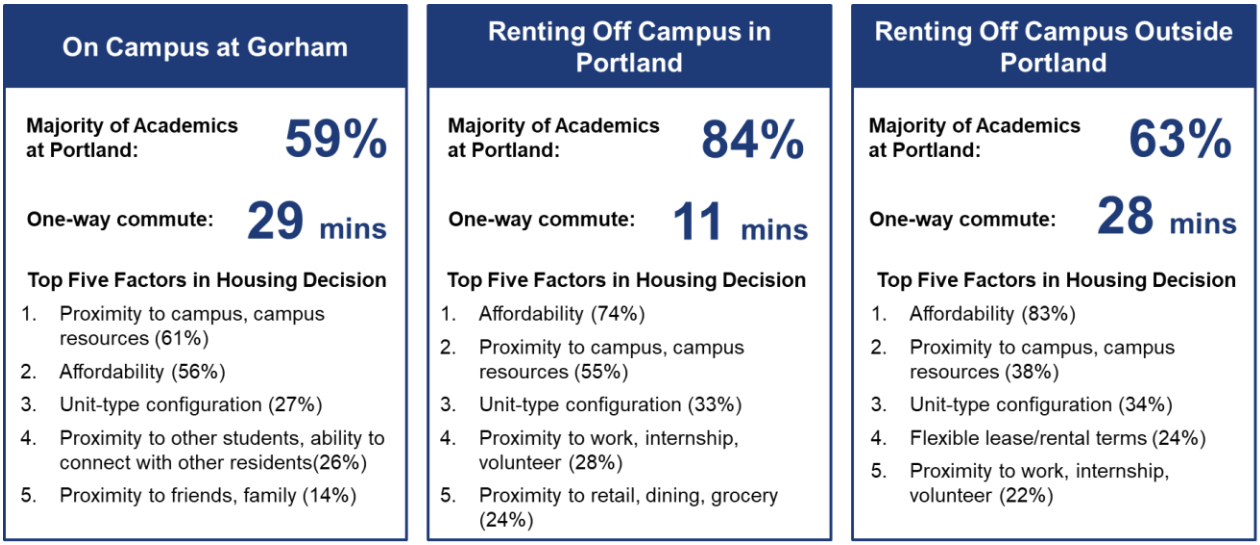


Figure 4 - USM Sub-Demographic Groups and Their Top Five Housing Decision Factors.

B&D conducted an analysis of the Portland multifamily rental market to quantitatively evaluate the options available to USM students. B&D surveyed 7,083 units in the Portland area. All data and rental rates are based on information provided by CoStar Group, Inc. and were evaluated using February 2019 data. In February 2019, the vacancy rate in Portland was 1.6% and had been decreasing consistently for the previous three months. There were zero properties under construction in the areas surveyed. There were two properties proposed (though not approved by the time of this analysis) to be built in the Downtown area, however, none of those units will be student focused.

B&D further identified Portland neighborhoods where students reported living based on the student survey. Approximately 40% of students who live in Portland reported living in neighborhoods located north of the 295 highway. An additional 4% of students were spread out between the East End, West End, Downtown, and Parkside neighborhoods. The other 12% lived among other Portland neighborhoods.

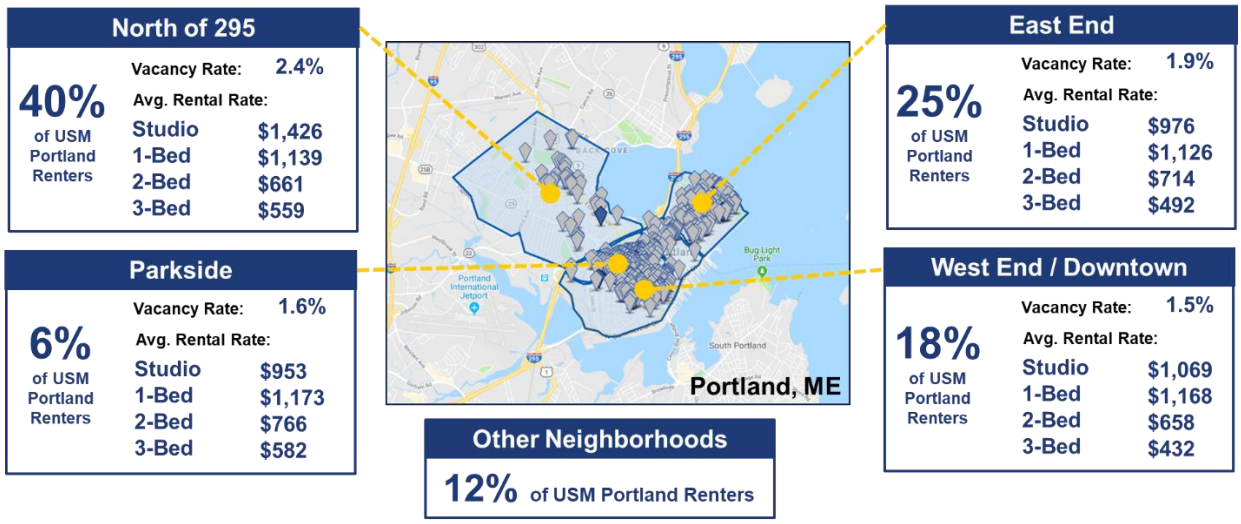


Figure 5 - Portland market average rental rates per person per month

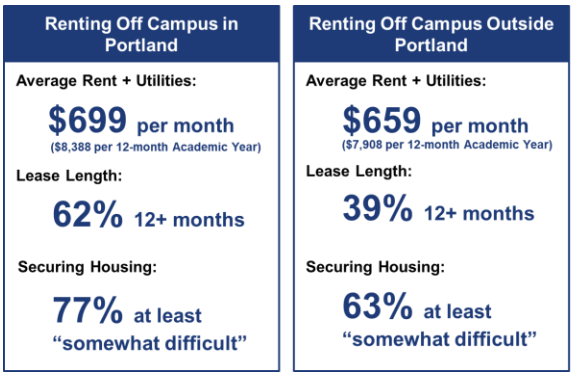
The average per-person rental rate in these neighborhoods varied by unit type. Excluding utilities, the average per-person monthly rent of each unit type is listed below:

- Studio apartment: $953 to $1,426
- One-bedroom apartment: $1,126 to $1,173
- Two-bedroom apartment: $658 to $766
- Three-bedroom apartment: $432 to $559

The overall average monthly rental rate per person as found through market research was $857 per month, excluding utilities.

In the survey, USM students reported paying $629 per person per month in rent (excluding utilities), over $200 less per month than the average found in the market. This suggests that students are finding units priced at the lower end of the market and are sharing bedrooms or units with roommates to further reduce costs. Additionally, students are relying on the market outside of the Portland area to find more affordable living accommodations.

B&D's analysis found significant differences between student renters that lived within Portland and those that lived outside of Portland. Those living in Portland were much more likely to rent a single bedroom (20%) and an apartment unit (76%) instead of a home (5%). They also were more likely to share spaces with non-family members; 74% shared a kitchen with a roommate and 70% shared a bathroom with a roommate. In addition, 3% shared a bedroom with a roommate. Those living outside of Portland prioritized affordability and unit type configuration over proximity to campus and campus resources. They were much more likely to rent a house (24%) instead of a bedroom (17%) or an apartment (59%). No student renters living outside of Portland indicated that they shared a bedroom with a non-family member, though 68% shared a kitchen and 53% shared a bathroom.



The survey also revealed a difference between the lease length and rental rates of students living within or outside of Portland. Sixty-two percent (62%) of students who rent in Portland were committed to 12-month or longer leases. Students renting off campus within Portland reported paying, on average, $622 in rent per month and $77 in utilities per month. Only 39% of students renting off campus outside of Portland reported a lease of 12 months or longer. Students outside of Portland paid a slightly lower average monthly cost of $588 in rent and $71 in utilities.

Figure 6 - Off-Campus Students' Housing Information by Location.

HOUSING DEMAND

Brailsford & Dunlavey developed a student housing demand model to quantify market demand for student housing at USM. The model derives demand from electronic survey responses as well as current and projected enrollment figures provided by the University.

By utilizing unit type (traditional, suite, and apartment) and occupancy (single room versus double room) preferences submitted by students in the electronic survey, B&D's demand-based programming model projects demand onto USM's 2018 as well as projected student enrollment. Enrollment was held flat in the model throughout the 10-year projection period.

Survey respondents were provided with a narrative description of hypothetical on-campus housing units that included sample floor plans along with their respective rental rates at the Gorham and Portland campuses. Students were informed that sample floor plans were for illustrative purposes only and were not drawn to scale. Estimated rental rates and unit floor plans based on market economics were provided in the survey. The survey rental rents were determined by assessing existing on-campus rates, rental rates in the off-campus market by unit type and identifying rates needed to support the potential cost of new construction at the Portland campus.

Following their review of the narrative, respondents were asked to indicate which unit type and occupancy option they would have selected to live in had it been available at the beginning of the current academic year (Fall 2018). In addition, a response option was provided to allow students to indicate whether they would have preferred off-campus housing over the proposed unit types.

The units and associated rental rates for the Portland Campus that were tested in the survey are illustrated below:



Figure 7 - Unit Types and Rental Rates Tested for the Portland Campus

Target Market

To project a realistic demand number, B&D developed a specific target market consisting of survey respondents who would likely be interested in leasing student housing on the Portland campus. A combination of survey data and B&D's expertise were used to develop the target market criteria. Only students satisfying the following criteria were included in projected demand:

- Were of degree-seeking status;
- Currently single with no dependents;
- Currently living on the Gorham campus OR;
- Contributing $500+/month to rent and not living with their spouse, dependent, or family members

All students who did not meet the aforementioned criteria were excluded from the demand analysis.

Demand Findings

This target market demand provided a baseline demand for additional filters, including USM policy, to be applied. With a few exceptions, USM prefers to accommodate all freshmen and sophomore students on the Gorham campus and reserve on-campus housing on the Portland campus for upper-division undergraduate (junior and senior) students, graduate students, and law students. B&D applied this policy overlay to determine housing demand on the Portland campus.

Total unmet demand for housing on the Portland campus during the 2018-2019 academic year at the rates for the target market above was 674 beds.

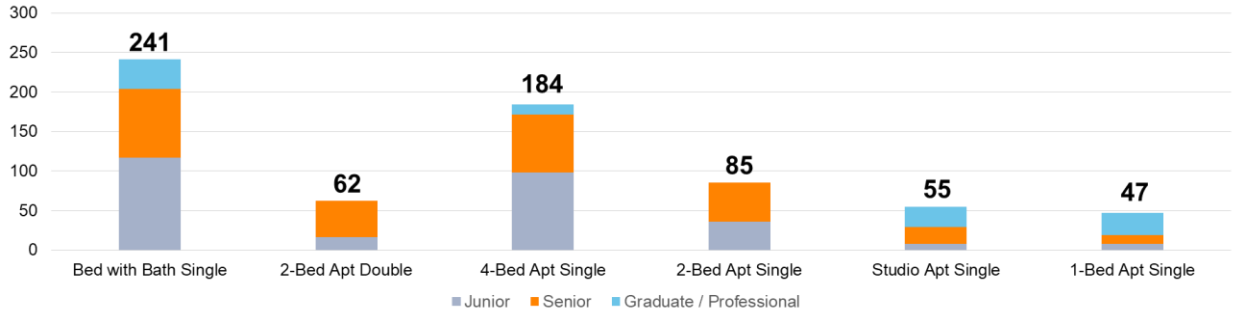


Figure 8 - Student Housing Demand for the Portland Campus

Market-driven demand determined by the results of the student survey demonstrated that students prioritized private options (single bedrooms) across the board, with only 10% of the students selecting a double-occupancy bedroom in a two-bedroom apartment. Furthermore, students mostly chose the least expensive option while maintaining privacy. Thirty-five percent (35%) of demand is for single bedrooms with en-suite bathrooms and 40% of the demand is for a single bedroom in a two- or four-bedroom apartment, all of which are among the less expensive single-occupancy housing options.

Future Housing Preferences

In the student survey, target market respondents indicated the most important building features/characteristics that should be considered in any new housing development, including overall affordability (92%), an in-building laundry facility (54%), parking (44%), desired unit-type configuration (41%), and a pet-friendly living arrangement (32%).

Further, the target market indicated a preference to be able to select their own roommate, retain the same unit from year to year, stay in their unit during breaks, and flexible lease terms. Factors that were less important included roommate matching service and fewer rules and regulations.

Five Most Important Building Features for Future On-Campus Housing	
1. Affordability	92%
2. In-Building Laundry	54%
3. Parking	44%
4. Desires Unit-Type Configuration	41%
5. Pet-Friendly Living Arrangement	32%

Figure 9 - Target Market Preferences for On-Campus Housing.

CONCLUSION

A dedicated Portland campus housing solution must be pursued in order for USM to effectively support the needs of its upper-division undergraduate, graduate, and law student community on the Portland campus. Maximizing participation from the target market, which is consistent with the USM's established strategic objectives, will require a development strategy that responds to the price sensitivity of these students, as highlighted above by the results of the analysis.

Creating an affordable housing solution that aligns with the USM's strategic objectives and responds to the associated market findings will help USM attract future students, as well as improve their access to the Portland community and its available resources.

Balancing demand for rental rate affordability and proximity to campus will limit the project's ability to include out-of-unit programmatic spaces that are deployed to build community within residence halls (i.e., lounges, game rooms, indoor recreation space, etc.). Choosing to include these kinds of dedicated programming spaces would result in additional square footage and therefore higher construction and operating costs that would ultimately be passed along to residents in the form of higher rental rates. Because maximizing affordability is paramount, programming spaces must be limited given the additional costs associated with these spaces, but yet identify creative ways to facilitate a dynamic, and interdisciplinary residential atmosphere taking advantage of co-location with the student center project that creatively advances USM towards its identified goals and vision.

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
Bayside Village	132 Marginal Way	Portland	2008	0.99	101	$2,636					101	1,200					$2,636
	17-25 Portland St	Portland	1900		9												
	8 Alder St	Portland	1949		10			10									
	10 Alder St	Portland	1910		2						2						
	38 Alder St	Portland			14												
89 Anderson	89 Anderson St	Portland	2016	1.89	53	$1,612	9	35	9			645	$1,430	$1,534	$2,097		
	131-139 Anderson St	Portland			5												
	55 Ashmont St	Portland			6												
Bayside Terrace	1 Bayside Ter	Portland	1980		24	$1,389			12	12		1,100			$1,299	$1,479	
	47 Boyd St	Portland	1915		9			3	6								
	14 Boynton St	Portland	1875		3	$803		2	1					$712	$985		
	55-57 Brackett St	Portland			6												
	59 Brackett St	Portland	1920		3												
	73 Brackett St	Portland			10												
	122-124 Brackett St	Portland			6												
	149 Brackett St	Portland			6			4	2								
West End Place	183 Brackett St	Portland	2015		39	$1,918		22	17			824		$1,652	$2,261		
	203 Brackett St	Portland	1889		6		2	4									
	262 Brackett St	Portland			6												
	285 Brackett St	Portland			14				14			1,000					
	299 Brackett St	Portland			6				4	2							
	303 Brackett St	Portland			5												
	311 Brackett St	Portland	1910		5			5									
	59 Bramhall St	Portland			9			9									
	25 Brattle St	Portland	1860		3					3							
PRINCETON VILLAGE APARTMENTS	220 Brighton Ave	Portland	1944	5.00	80	$1,044		80				466		$1,044			
	22 Carleton St	Portland			10												
	50-52 Carleton St	Portland			5		5										
	89-91 Carleton St	Portland	1900		6	$903		6						$903			
Shepley Apartments	18 Casco St	Portland	1900	1.61	62	$1,157	1	60	1			750	$1,004	$1,155	$1,458		
Ambassador Apartments	37 Casco St	Portland	1981	1.15	87	$875	87					503	$875				
	129-137 Chadwick St	Portland	1900	2.78	36												
	41 Chestnut St	Portland	1900		16			16				400					
	54 Chestnut St	Portland			11												
	92 Clark St	Portland	1864		4	$825		2	1	1				$716	$737	$1,133	
	146-148 Clark St	Portland			6												
	170-172 Clark St	Portland	1910		6	$963			6						$963		
Baxter Place	305 Commercial St	Portland	1903		62	$1,836		28	34			1,000		$2,282	$1,469		
	439 Congress St	Portland	1900	3.70	81	$1,094	41	40				644	$1,049	$1,140			
Congress Square	571-581 Congress St	Portland	1924		160	$1,253	7	136	17			656	$957	$1,249	$1,414		
Burnham Arms	633 Congress St	Portland	1900	2.22	45			45									
Lafayette Square	638-652 Congress St	Portland	1907	3.60	111			51	60			943					
645 Congress Apartments	643-649 Congress St	Portland	1963		56	$1,424	28	28				675	$1,244	$1,605			
Trelawny Building	655 Congress St	Portland		1.00	100	$1,082	40	30	30			732	$928	$1,128	$1,242		
Hiawatha	667 Congress St	Portland	2017	0.72	139	$1,651	34	97	8			588	$1,350	$1,690	$2,349		
	699 Congress St	Portland	1900		6			6									
	727 Congress St	Portland			8			2	6								
	773 Congress St	Portland	1910		5												
	775 Congress St	Portland			5												
	779 Congress St	Portland	1910		10			10									
	807 Congress St	Portland			6												
	817 Congress St	Portland			6												
	823 Congress St	Portland			6												
	829-831 Congress St	Portland	1910		6												
	835 Congress St	Portland			6												
	861 Congress St	Portland	1900		10	$728	1	7	2				$576	$704	$888		
	871-873 Congress St	Portland	1920		9				9								
	5 Crescent St	Portland			5												
Crescent Heights	25 Crescent St	Portland	2010		20					20		1,050					

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
	223-225 Cumberland Ave	Portland			8												
	227-229 Cumberland Ave	Portland			3												
	235 Cumberland Ave	Portland			11												
	251 Cumberland Ave	Portland	1915		10			10				1,000					
	255 Cumberland Ave	Portland			10												
	263 Cumberland Ave	Portland			6												
	273 Cumberland Ave	Portland	1910		29												
	289-291 Cumberland Ave	Portland			5			4	1								
Earl Apartments	341 Cumberland Ave	Portland	1939		29	$1,061	5	23	1			729	$1,051	$1,051	$1,365		
	361 Cumberland Ave	Portland			7			7									
	363 Cumberland Ave	Portland	1910														
	367 Cumberland Ave	Portland	1915														
	385 Cumberland Ave	Portland	1900		6			6									
Back Bay Tower	401 Cumberland Ave	Portland	1989		116	$1,907		6	93	17		1,053		$1,500	$1,926	$1,946	
	409 Cumberland Ave	Portland	2015	1.75	57	$727	21	32	4			524	$691	$735	$848		
Burnham Towers Apartments	419 Cumberland Ave	Portland	1907	3.13	32												
	446-448 Cumberland Ave	Portland			6												
Cumberland Park Place	447 Cumberland Ave	Portland	1988	2.33	43			43				788					
	469 Cumberland Ave	Portland			6			6									
	471 Cumberland Ave	Portland	1900		13												
	477 Cumberland Ave	Portland	1889		10	$840		10						$840			
	484 Cumberland Ave	Portland			10												
Copeley Apartments	485 Cumberland Ave	Portland	1900		25	$742	12	13				547	$735	$747			
	486-488 Cumberland Ave	Portland			5												
	493 Cumberland Ave	Portland			6												
	497 Cumberland Ave	Portland			12												
	503 Cumberland Ave	Portland	1900		9	$867	1	8					$770	$867			
Park, Cumberland & Woodford	507 Cumberland Ave	Portland	1910		14					14		1,100					
Deering Place	510 Cumberland Ave	Portland	2020		75		11	40	11	13							
	515 Cumberland Ave	Portland	1910		6												
	523 Cumberland Ave	Portland			6												
	528 Cumberland Ave	Portland			5	$734	2	2	1				$669	$759	$814		
	531 Cumberland Ave	Portland			5												
	535 Cumberland Ave	Portland			7												
	541 Cumberland Ave	Portland	1900		6	$909		4	2			817		$820	$1,088		
	546 Cumberland Ave	Portland			2												
	549 Cumberland Ave	Portland		12.50	8	$906	6	1	1			669	$852	$995	$1,138		
	553 Cumberland Ave	Portland	1910		27	$998		24	3			622		$978	$1,164		
	556 Cumberland Ave	Portland			8												
	563 Cumberland Ave	Portland			11												
	571 Cumberland Ave	Portland			12												
	28-30 Cushman St	Portland			4			4									
53 Danforth Street	53 Danforth St	Portland	2009		43	$1,398		21	22			772		$1,239	$1,549		
	63 Danforth St	Portland			7			4	3			857					
	67-69 Danforth St	Portland			7		1	2	2	2		914					
	71-73 Danforth St	Portland			7												
	77 Danforth St	Portland			9												
	78 Danforth St	Portland			8			7	1			781					
Danforth on High	81 Danforth St	Portland	2014		30	$678	6	24				580	$645	$686			
	92 Danforth St	Portland			12												
	130-132 Danforth St	Portland			6												
	156 Danforth St	Portland			4												
	158 Danforth St	Portland			5												
	171 Danforth St	Portland			7												
	180 Danforth St	Portland			6												
	206-208 Danforth St	Portland			6												
	214-216 Danforth St	Portland	1900		6	$965			6						$965		
William and Dartmouth	202 Dartmouth St	Portland	1910		22	$1,409	2	14	6			826	$1,056	$1,299	$1,785		
	9 Deering Ave	Portland			7												

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
	37 Deering Ave	Portland			5												
	46-48 Deering Ave	Portland			12			12									
	57 Deering Ave	Portland			6												
	514 Deering Ave	Portland			9			9									
	522 Deering Ave	Portland			5												
	528 Deering Ave	Portland			7												
	1-3 Deering St	Portland	1947		5												
	5-7 Deering St	Portland			6												
	9 Deering St	Portland			7												
	17 Deering St	Portland	1900		19												
	19 Deering St	Portland			5												
	26 Deering St	Portland			6												
	31 Deering St	Portland			7												
	33 Deering St	Portland			5												
	39 Deering St	Portland			5												
	44-46 Deering St	Portland	1900		5												
	47-49 Deering St	Portland			6												
	59 Deering St	Portland			6												
	64-66 Deering St	Portland			5												
	72-74 Deering St	Portland			7												
	9 Dow St	Portland			6												
	13 Dow St	Portland			8												
	17 Dow St	Portland			9												
	21 Dow St	Portland			6												
	25 Dow St	Portland			5												
	26 Dow St	Portland	1900		4	$684		2	1	1				$547	$711	$930	
	23 Ellsworth St	Portland			6												
	87 Emery St	Portland			6												
	91 Emery St	Portland			4												
	124 Emery St	Portland	1910		8			8									
	49 Falmouth St	Portland	1900														
Congress Square Plaza	12-18 Forest Ave	Portland	1900	1.25	160		7	136	17			566					
	100 Forest Ave	Portland	1910		5	$744	1	4					$649	$768			
Bayview Court Apartments	331-337 Forest Ave	Portland	1948		62	$909	30	30	2			685	$802	$978	$1,467		
	535 Forest Ave W	Portland			5												
Princeton on Back Cove	100 Forest Park	Portland	1944	5.00	220	$1,375		71	147	2		641		$1,200	$1,450	$2,027	
	12 Forest St	Portland			12												
	31-33 Frederic St	Portland	1910		5			4		1							
	10 Gilman St	Portland	1900		4			4									
	113 Gilman St	Portland			6												
	124 Glenwood Ave	Portland	1920														
	10-12 Grant St	Portland			11												
	11-13 Grant St	Portland	1900	9.09	11												
	17 Grant St	Portland			6												
	21 Grant St	Portland			6												
	24 Grant St	Portland			6												
	25 Grant St	Portland			7												
	27 Grant St	Portland			6												
	33 Grant St	Portland	1868		3					2	1						
	55 Grant St	Portland	1910		6			2	4								
	60 Grant St	Portland	1910		9		4	5				661					
	61-65 Grant St	Portland			9												
	69 Grant St	Portland			6												
	72 Grant St	Portland			6												
	72 A Grant St	Portland			12												
Prop Family Housing	77 Grant St	Portland	2005		16												
	80 Grant St	Portland	1910		13												
	84 Grant St	Portland	1998		6												
	85 Grant St	Portland	2005		16												

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
	111-113 Grant St	Portland			6												
	122 Grant St	Portland			3												
	125 Grant St	Portland	1924		13			7	6			924					
	129 Grant St	Portland			6												
	133 Grant St	Portland	1900		19			15	4								
	141-143 Grant St	Portland	1910		22		2	10	10			673					
	142 Grant St	Portland			7												
	157-159 Grant St	Portland	1920	3.85	26	$993	10	8	8			769	$887	$901	$1,217		
	63-65 Gray St	Portland			10			10									
	11-15 Hanover St	Portland	1915		4			3		1							
	12 Hanover St	Portland			6												
	24 High St	Portland			14		14										
	28-30 High St	Portland	1910		7			7				1,464					
	40 High St	Portland			5												
	48 High St	Portland			10			10									
	51 High St	Portland			13		13										
	65 High St	Portland			9			7	2								
Elm Terrace	68 High St	Portland	1900		38	$755	6	22	10			695	$677	$723	$871		
	69 High St	Portland			11			11									
	78 High St	Portland			8												
	90 High St	Portland	1997		10												
	192 High St	Portland	1910		9			9									
	208-210 High St	Portland	1910		6	$1,078		2	4					$962	$1,136		
	212-214 High St	Portland	1900	10.00	10	$1,140		5	3	2		915		$1,007	$1,199	$1,381	
Ymca Apts	231 High St	Portland	2005	3.13	32												
	232 High St	Portland			6												
	236 High St	Portland	1915		6												
	237 High St	Portland	1850		11			6	2	3							
	241 High St	Portland			8		2	6									
	243-245 High St	Portland	1910		16			16									
	250 High St	Portland			11												
	138 Highland St	Portland	1910		6												
	4 Hill St	Portland	1900		16												
	7 Huntress St	Portland			10												
Kennedy Park	1 Kennedy Park	Portland	1971		178	$1,757			36	36	36	1,338			$1,287	$1,471	$1,698
	41 Mayo St	Portland															
Bayside Anchor	44 Mayo St	Portland	2017	2.08	48		48										
	24 Mellen St	Portland			8												
	30 Mellen St	Portland			7												
	83 Mellen St	Portland			6												
	90 Mellen St	Portland			6												
	44 Myrtle St	Portland			9												
	52 Myrtle St	Portland			6												
	53-55 Myrtle St	Portland	1947		5												
	137-139 Neal St	Portland	1910		17												
	161 Neal St	Portland			6												
Oak Street Lofts	70-82 Oak St	Portland	2012	2.70	37		37					400					
Bay View Apartments	104 Oak St	Portland	1940		20												
	255 Oxford St	Portland	1910		17	$615		15		2				$567		$974	
	22 Park Ave	Portland			8												
	76 Park Ave	Portland			6												
	82 Park Ave	Portland			6												
	84 Park Ave	Portland	1910		6				3	3		1,100					
Burnham Parkside Apartments	88 Park Ave	Portland			6	$1,306			6						$1,306		
Burnham Parkside Apartments	94 Park Ave	Portland	1900		16	$1,347		8	8					$1,208	$1,487		
	120 Park Ave	Portland	1914		21			18	3			629					
	122-124 Park Ave	Portland	1914		20			10	10			915					
	128 Park Ave	Portland	1900	5.00	20	$816	10	10				600	$809	$823			
	130 Park Ave	Portland			6												

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
	138 Park Ave	Portland	1910		6					6							
Parkside Portland Apartments	142 Park Ave	Portland	1900		12				12			650					
	196 Park Ave	Portland	1874		11				11								
Iris Park	198 Park Ave	Portland	2006	3.33	30												
	198 Park Ave	Portland	1910		8	$772		2	6			800		$991	$699		
	200 Park Ave	Portland			6												
	208 Park Ave	Portland			4												
	216-218 Park Ave	Portland			14												
	274 Park Ave	Portland			6			6									
	278-280 Park Ave	Portland			6	$981			6			950			$981		
	22 Park St	Portland			7												
	51 Park St	Portland			12												
	85 Park St	Portland			5												
	100 Park St	Portland			8												
	112 Park St	Portland			5	$2,799		2	3			900		$2,512	$2,990		
	114 Park St	Portland			5												
	129-131 Park St	Portland	1900	1.82	55		20	35				590					
	140 Park St	Portland	1900		19												
	158 Pearl St	Portland			10												
	180 Pearl St	Portland	2007		60			20	25	15							
Pearl Place II	184 Pearl St	Portland	2013	1.85	54	$831		26	17	11		831		$729	$874	$1,006	
	20 Pine St	Portland			6												
	35 Pine St	Portland			3												
	59 Pine St	Portland	1915		12			12									
	68 Pine St	Portland	1905		6												
Butler Payson Apartments	77 Pine St	Portland	1900		39			19	20								
	114 Pine St	Portland			12												
	119 Pine St	Portland	1908		4			3		1							
	130 Pine St	Portland			6												
	138-140 Pine St	Portland			5												
	12 Pitt St	Portland	1910		12	$1,229			12			950			$1,229		
	35 Pleasant St	Portland	1910		8			4	4								
The Wadsworth	28-30 Preble St	Portland	1900	3.13	64	$992	30	34				419	$895	$1,079			
117 Lofts	117 Preble St	Portland		1.82	55	$1,192	55					420	$1,179	$1,560			
	479-481 Saint Johns St	Portland	1925		3												
	8 Salem St	Portland			9												
Danforth Heights	48 Salem St	Portland	1973		166	$1,173		25	111	20	10	761		$933	$1,134	$1,489	$1,565
	23 Saunders St	Portland	1910		5			5									
Shepley Street Housing	15 Shepley St	Portland	1910		20		10		10								
	1-3 Sherman St	Portland			10												
	8-10 Sherman St	Portland			5												
	11 Sherman St	Portland			10			10									
	22-24 Sherman St	Portland	1910		6			6									
	27 Sherman St	Portland			6												
	31 Sherman St	Portland			6												
	52 Sherman St	Portland		33.33	6	$1,097		4	2			782		$1,002	$1,287		
	55 Sherman St	Portland			5												
	56 Sherman St	Portland			7			7									
	60 Sherman St	Portland			6			6									
	66 Sherman St	Portland			5												
	69 Sherman St	Portland			12												
	75 Sherman St	Portland			9			7	2								
	77-79 Sherman St	Portland			6												
	108 Sherman St	Portland	1900		8			2	6								
	111 Sherman St	Portland	1900		25	$1,184		25				600		$1,184			
	115 Sherman St	Portland			6												
	119 Sherman St	Portland			13												
	123 Sherman St	Portland			13												
	131 Sherman St	Portland			6												

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
	141 Sherman St	Portland			6												
Midtown	105 Somerset St	Portland	2021		450												
	120 Spring St	Portland	1910		3	$831			3						$831		
Carleton Court	145 Spring St	Portland	1900		21			5	10	6		999					
	197 Spring St	Portland			8												
	204 Spring St	Portland			4												
	257 Spring St	Portland			11												
	262 Spring St	Portland			7												
	265-267 Spring St	Portland			8												
	271 Spring St	Portland	1885		5	$831		5						$831			
	277 Spring St	Portland			5												
	291 Spring St	Portland			9												
	295 Spring St	Portland	1977		6												
Spring Street Apartments	314 Spring St	Portland	1900		19												
76 Spruce St, Portland, ME	76 Spruce St	Portland			6			6									
	460 St John St	Portland			6												
	463 St John St	Portland			5												
	548-550 St John St	Portland			1												
	21 State St	Portland	1923		7												
	27-29 State St	Portland	1800		10												
	31-35 State St	Portland	1920		10			10									
	32 State St	Portland	1900		8												
Casco Terrace	41 State St	Portland	2003		27	$1,653		18	9			397		$1,291	$2,375		
	45-47 State St	Portland	1900		7				7			1,041					
	51 State St	Portland	1900		15		8	7				618					
	54 State St	Portland			7												
	59 State St	Portland	1920	1.79	56	$1,360		56				800		$1,360			
	62 State St	Portland	1900		25		8	12	5			608					
	91 State St	Portland	1910		7		1	6									
100 State Street Apartments	100 State St	Portland	1978		169	$1,117		148	21			653		$1,095	$1,275		
	125 State St	Portland			9												
	131 State St	Portland			9												
	169-171 State St	Portland	1900		10				10								
	173 State St	Portland			10												
	177 State St	Portland			7												
	201 State St	Portland			6												
Longfellow Commons	206 State St	Portland	1970		20			10	10			915					
John W. Munger Block	207-209 State St	Portland			6												
	218 State St	Portland	1900		17			9	8			868					
Northgate Apartments	231 State St	Portland	1931		31	$969		31				600		$969			
	235 State St	Portland			6												
	261 State St	Portland	1910		7			7									
Charles Tobin House	264 State St	Portland	1887		13			13									
	272 State St	Portland			8												
	279 State St	Portland			7												
	286-288 State St	Portland	1908	3.85	26	$1,404		5	21			631		$1,272	$1,435		
	287-289 State St	Portland			6												
Unity Village at Bayside	6 Stone St	Portland	2000		23												
	210 Valley St	Portland	1899		4			4									
	5 Weymouth St	Portland			8												
	8 Weymouth St	Portland			7												
	12 Weymouth St	Portland	1910		26												
	16 Weymouth St	Portland			6												
	19 William St	Portland	1915		3				1	2							
	24 William St	Portland			5												
	48 Wilmot St	Portland			10		10										
	82 Winter St	Portland	1840		4	$888		3	1					$777	$1,221		
	86 Winter St	Portland			4			3	1								
	94 Winter St	Portland	1900		10			8	2								

University of Southern Maine
Student Housing Advisory Services
Exhibit A - Off-campus Market Data

Property Name	Property Address	City	Year Built	Vacancy %	Number Of Units	Avg Asking/Unit	Number Of Studios	Number Of 1 Bedrooms	Number Of 2 Bedrooms	Number Of 3 Bedrooms	Number Of 4 Bedrooms	Avg Unit SF	Studio Asking Rent/Unit	One Bedroom Asking Rent/Unit	Two Bedroom Asking Rent/Unit	Three Bedroom Asking Rent/Unit	Four Bedroom Asking Rent/Unit
	117 Winter St	Portland			5												
	119 Winter St	Portland			5												
	102-106 Woodford St	Portland	1930		7	$1,043			6	1		1,077			$1,015	$1,213	
	165 Woodford St	Portland	1910		8					8		1,100					
	167 Woodford St	Portland	1910		6			6									
	168-170 Woodford St	Portland			9												
	180 Woodford St	Portland			8												
	221 Woodford St	Portland			9			9									
Plymouth Court Apartments	244 Woodford St	Portland	1920	5.26	19			19				750					
	252 Woodford St	Portland			7		4	3				664					
	278 Woodford St	Portland		7.14	14												
	286 Woodford St	Portland			3												
	296 Woodford St	Portland			3												
	127 York St	Portland			12												
	153-155 York St	Portland			4												
	191-193 York St	Portland			12		1	7	4								

University of Southern Maine - Spring 2019 - Student Housing Advisory Services

Description:
Date Created: 3/18/2019 9:25:02 AM
Date Range: 4/1/2019 12:00:00 AM - 4/21/2019 11:59:00 PM
Total Respondents: 895

Q1. What is your current enrollment status?

Count	Percent	
785	87.71%	Full time matriculated (taking 12 or more credit hours for undergrad students / 9 or more hours for grad students)
110	12.29%	Part time matriculated (fewer than 12 credit hours for undergrad students / fewer than 9 credit hours for grad students)
0	0.00%	Non-matriculated (a non-degree student; taking classes but not formally admitted to USM)
895	Respondents	

Q2. What degree are you pursuing?

Count	Percent	
747	83.46%	Bachelor
102	11.40%	Master/professional
35	3.91%	Law
5	0.56%	PhD
1	0.11%	Certificate
0	0.00%	I am not currently pursuing a degree
5	0.56%	Other (please specify)

Count	Percent	
1	20.00%	Accelerated Law Degree
1	20.00%	Associate
1	20.00%	Linguistics
1	20.00%	Tourism and Hospitality

895 Respondents

Q3. What is your current class standing?

Count	Percent	
161	22.33%	Freshman year of undergraduate program (completed fewer than 24 credit hours)
162	22.47%	Sophomore year of undergraduate program (completed 24 to 53 credit hours)
183	25.38%	Junior year of undergraduate program (completed 54 to 83 credit hours)
215	29.82%	Senior or fifth year of undergraduate program (completed 84 or more credit hours)
721	Respondents	

Q4. What is your current class standing?

Count	Percent	
60	43.48%	First year of graduate/professional/law/doctorate program
42	30.43%	Second year of graduate/professional/law/doctorate program
21	15.22%	Third year of graduate/professional/law/doctorate program
10	7.25%	Fourth year or beyond of graduate/professional/law/doctorate program
5	3.62%	Other (please specify)

Count	Percent	
1	20.00%	1L

1	20.00%	3rd year of bachelor
1	20.00%	ETEP 1 year intern
1	20.00%	Sophomore
1	20.00%	Third year of SBS undergraduate on the MOT track, starting graduate studies in the fall

138 Respondents

Q5. In which of the following colleges or schools are you enrolled?

Count	Respondent %	Response %	
84	9.88%	9.07%	College of Arts, Humanities, and Social Sciences - Fine Arts
68	8.00%	7.34%	College of Arts, Humanities, and Social Sciences -Humanities
97	11.41%	10.48%	College of Arts, Humanities, and Social Sciences -Social Sciences
8	0.94%	0.86%	College of Arts, Humanities, and Social Sciences - Interdisciplinary
94	11.06%	10.15%	College of Management and Human Service - Business
55	6.47%	5.94%	College of Management and Human Service - Education and Human Development
25	2.94%	2.70%	College of Management and Human Service - Muskie Public Service
39	4.59%	4.21%	College of Management and Human Service - Social Work
2	0.24%	0.22%	College of Management and Human Service - Interdisciplinary
97	11.41%	10.48%	College of Science, Technology, and Health - Life Sciences
108	12.71%	11.66%	College of Science, Technology, and Health - School of Nursing
80	9.41%	8.64%	College of Science, Technology, and Health - Physical Sciences
19	2.24%	2.05%	Lewiston-Auburn College - Lewiston-Auburn College
34	4.00%	3.67%	University of Maine School of Law - Law Degree Program
3	0.35%	0.32%	Women's Studies - Women's Studies Program
1	0.12%	0.11%	GO Program - GO Program
28	3.29%	3.02%	Undeclared - Undeclared Program
1	0.12%	0.11%	Non-Degree (excluding certificate programs) - Non-Degree
83	9.76%	8.96%	Other (please specify)

Count	Percent	
1	1.20%	Biology degree
1	1.20%	business administration
1	1.20%	CMS
1	1.20%	college of art, but in process of moving to exercise science
1	1.20%	College of Arts, Humanities, and Social Sciences - Criminology
1	1.20%	College of Business
1	1.20%	College of Music- Musical theater program
1	1.20%	College of Science, Technology and Health - Computer Science
1	1.20%	College of Science, Technology, and Health - Cyber Security
1	1.20%	Communication Major
1	1.20%	communications
3	3.61%	Communications
4	4.82%	Computer Science
1	1.20%	Department of Biological Sciences
1	1.20%	Don’t know
1	1.20%	Double major psych nursing and minor in bio

1	1.20%	Economics
1	1.20%	engineering
2	2.41%	Engineering
1	1.20%	Environmental policy
1	1.20%	ETEP
1	1.20%	Finance
1	1.20%	Health Sciences (Pre-Professional)
1	1.20%	IT
1	1.20%	IT program
2	2.41%	Leadership Studies
6	7.23%	Linguistics
1	1.20%	Media Communications
1	1.20%	MPPM
2	2.41%	Music Education
1	1.20%	Muskie School of Business
1	1.20%	occupational therapy
1	1.20%	Political science
1	1.20%	Political Science,
1	1.20%	psychology
4	4.82%	Psychology
1	1.20%	Public health
1	1.20%	Public Health
1	1.20%	Recreation and leisure studies
1	1.20%	School of Business - Accounting Major
4	4.82%	School of Music
1	1.20%	Social work
1	1.20%	STEM Self - Design K-8
2	2.41%	Stonecoast MFA
1	1.20%	TAH
1	1.20%	Technical Management in Precision Machining Technology
1	1.20%	Technology
1	1.20%	Undergraduate elementary education
2	2.41%	University of Southern Maine
1	1.20%	University of southern Maine
1	1.20%	Unsure which linguistics falls under
2	2.41%	USM
1	1.20%	USM- Matsters program in Leadership Studies
1	1.20%	USM- Media Studies
1	1.20%	USM School of Music
1	1.20%	USM special education Masters degree.

850 Respondents

926 Responses

Q6. Do you consider yourself a transfer student?

Count Percent

616	71.54%	No, I started pursuing my current degree at USM
109	12.66%	Yes, I started pursuing my current degree at a community or technical college
122	14.17%	Yes, I started pursuing my current degree at a 4-year college or university
14	1.63%	Other (please specify)

Count	Percent	
1	7.14%	2nd degree
1	7.14%	Both 4-year university & community college experience.
1	7.14%	Dual enrollment
1	7.14%	I finished a degree at a 4 yr university, this is my 2nd
1	7.14%	I have block credit from a degre at a 4-year college
1	7.14%	Military
1	7.14%	This is my second bachelors degree, I attended a private university previously
1	7.14%	Transfer back into the USM School
1	7.14%	undecided
1	7.14%	Went to UMaine, did first year of Law in Charleston, SC.
1	7.14%	Working professional w/ degrees from other universities, seeking another at USM.
1	7.14%	Yes, I started pursuing a different degree at a different university
1	7.14%	Yes, pursuing a second Bachelor's Degree
1	7.14%	Yes-transfer from USM to USM, I have one degree from USM that transferred into another 4-year degree at USM

861 Respondents

Q7. Which best describes your permanent residence prior to attending USM?

Count	Percent	
148	17.15%	Portland metropolitan area
240	27.81%	Elsewhere in Cumberland or York County (excluding Portland metro area)
271	31.40%	Elsewhere in Maine (excluding Cumberland and York County)
50	5.79%	New Hampshire
88	10.20%	Elsewhere in New England (excluding Maine and New Hampshire)
47	5.45%	Elsewhere in the United States (excluding New England)
19	2.20%	International

863 Respondents

Q8. What were the primary factors in your decision to attend USM?

Count	Percent	
206	24.73%	USM offered courses or programs specific to my academic interest(s)
84	10.08%	USM is close to where my family/parent(s) lives
72	8.64%	USM's proximity to my family/parent(s)'s home allows me to commute to campus and save money on housing
30	3.60%	USM is close to my work and allows me to take classes around my work schedule
50	6.00%	USM's proximity to the Portland metropolitan area
28	3.36%	USM was recommended to me by friends/family
19	2.28%	USM/my program/my academic advisor has a strong reputation
254	30.49%	The overall affordability of USM (including stipend/scholarships/grants)
9	1.08%	The residential and/or student life experience at USM
20	2.40%	The networking, internship, and job opportunities afforded by USM's location, faculty, and/or alumni

12	1.44%		I did not want to go to USM and anticipate transferring to another institution
49	5.88%		Other (please specify)

Count	Percent		
1	2.04%		Cheap
1	2.04%		"What were" specifies that you can select multiple choices. Either rephrase or change selection
1	2.04%		Affordability and close proximity to home.
1	2.04%		affordability plus radio station
1	2.04%		Army ROTC Program and Nursing Program
1	2.04%		Athletic
3	6.12%		Athletics
1	2.04%		because of sports
2	4.08%		Cheap
1	2.04%		Cheaper cost than the other schools I got accepted to
1	2.04%		close to home, affordable, and offered the degree that I'm pursuing
1	2.04%		close to my significant other
1	2.04%		Friends also go here
1	2.04%		Had my program and was somewhat affordable
1	2.04%		Had tennis team and I like snow
1	2.04%		Heidi's immense kindness and the general positivity I incurred when I visited the campus.
1	2.04%		home, in state tuition & specific degree, also accepted nearly all of my transfer credits from other institutions
1	2.04%		I am from Maine originally
1	2.04%		I just decided too
1	2.04%		Ice Hockey
2	4.08%		It was the cheapest
1	2.04%		Military transfer, closest available with degree offered
1	2.04%		Money
1	2.04%		My employer pays for my degree and my classes meet near my empoyer's district.
1	2.04%		My family has come to usm for 2/3 generations
1	2.04%		my wife was an employee of the UMaine system.
1	2.04%		NCAA
1	2.04%		Only law school in Maine
1	2.04%		Open Admissions
1	2.04%		opportunity to play a sport
1	2.04%		proximity to home, affordability and excellent degree program
1	2.04%		Rotc
1	2.04%		Small
3	6.12%		Sports
1	2.04%		Sports team
1	2.04%		strong military presence
1	2.04%		There are many, but this survey tool does not allow for multiple response entry.
1	2.04%		Tuition & Enrollment
1	2.04%		unable to get into the nursing program at a community college
1	2.04%		USM Athletics

1	2.04%	USM had the only law school in the state.
833	Respondents	

Q9. How important was the availability of on-campus housing in your decision to attend USM?

Count	Percent	
377	45.15%	Very important
131	15.69%	Important
186	22.28%	Unimportant
141	16.89%	Very unimportant
835	Respondents	

Q10. In the 2018-19 academic year, were you a student-athlete on any USM athletics teams?

Count	Percent	
704	85.85%	No
116	14.15%	Yes
820	Respondents	

Q11. Where were the majority of your academic activities (classes, labs, etc.) located during the 2018-19 academic year?

Count	Percent	
527	63.96%	USM Portland campus
196	23.79%	USM Gorham campus
14	1.70%	USM Lewiston-Auburn campus
57	6.92%	Primarily blended (at least 50% online as well as on-campus instruction)
30	3.64%	Primarily on-line
824	Respondents	

Q12. Where do you currently live?

Count	Percent	
343	43.09%	Student housing on USM's Gorham campus
453	56.91%	Off campus
796	Respondents	

Q13. Which of the following factors had the greatest influence on your decision of where to live during the 2018-19 academic year? (Select up to five responses)

Count	Respondent %	Response %	
509	64.35%	23.02%	Affordability (including the cost of rent, utilities, parking, and other housing-related expenses)
196	24.78%	8.86%	Availability of the unit-type configuration I desire (suite-style, studio apartment, 1-bed apartment, 2-bed apartment, etc.)
360	45.51%	16.28%	Proximity to campus and on-campus resources
87	11.00%	3.93%	Proximity to retail, dining, and grocery options
103	13.02%	4.66%	Proximity to other students/ability to informally connect with other residents
38	4.80%	1.72%	Proximity to local nightlife/entertainment
143	18.08%	6.47%	Proximity to my work/internship/volunteer position
149	18.84%	6.74%	Proximity to my friends or family
18	2.28%	0.81%	Availability of a child-friendly living arrangement
79	9.99%	3.57%	Availability of a pet-friendly living arrangement
39	4.93%	1.76%	Quality of community amenities (e.g. fitness center, parking garage, building

				laundry facilities, etc.)
74	9.36%	3.35%		Quality of unit amenities (e.g. in-unit laundry, walk-in closets, spacious layout, etc.)
45	5.69%	2.04%		Flexible lease/rental terms
98	12.39%	4.43%		Availability of a quiet place to study
75	9.48%	3.39%		Access to dedicated resident parking adjacent to my unit
39	4.93%	1.76%		Availability of safety and security features in my unit/building
28	3.54%	1.27%		Aesthetic architectural features (look or feel of interior and exterior spaces, newer building, historical building, etc.)
6	0.76%	0.27%		ADA accessibility
53	6.70%	2.40%		Desirability of the neighborhood/location
72	9.10%	3.26%		Other (please specify)

Count	Percent		
1	1.39%		Academic
1	1.39%		Already established at current residence
1	1.39%		already lived in Portland
1	1.39%		Already own a home in area
1	1.39%		Already own a home in topsham
1	1.39%		being a student athlete
1	1.39%		Being able to get a room. It was not a matter of any of these things the most influential thing for my living situation was being able to have a room and having options. It was a lot of stress to not be guarenteed a dorm room on-campus.
1	1.39%		Cheaper than living on campus
1	1.39%		Close to classes
1	1.39%		Close to my current home
1	1.39%		Close to my internship site
1	1.39%		Did not need campus housing due to owning home in Portland.
1	1.39%		Family
1	1.39%		Freshman housing, I didn’t have a choice where I ended up
1	1.39%		Honestly its all about balancing the price and the type of space students need. It's so sad to see students who are juniors and upperclassman being placed into triples and or not having the options to spaces. Triples are not good for mental health and its sad that many students go into triples to save money because housing on campus should be somewhat more desirable due to the fees payed etc. It would be nice to see the tripled rooms stop like apartments or and more spaces set up like suites put in. This would allow students a since of private space and the ability to prepare for later on renting experiences while being provided the affordability they should on campus. Its hard to see USM more looking into a name change then care about the mental health and idea from CURRENT students. We are the ones paying now yet we won't get to see the changes until we are gone.
1	1.39%		housing that accommodates my relationship
1	1.39%		I already own a home
1	1.39%		I am a non-traditional student. I live in my home that I purchased and continue to teach in my district.
1	1.39%		I didn’t apply in time to live on campus.
1	1.39%		I didn’t choose
1	1.39%		I have two kids and as far as I am aware that leaves me no option other thqn to live off-campus
1	1.39%		i live in Portland already, I'm a grad student
1	1.39%		I own a home
1	1.39%		I own a home and have a child. I am a nontraditional adult student
1	1.39%		I own a home and the location of school isn't out of the way

1	1.39%		I own a home, so that's where I had to live with my family
1	1.39%		I own a home.
1	1.39%		I own a house
1	1.39%		I own my home
1	1.39%		I own my home and don't want to sell.
1	1.39%		I owned a home
1	1.39%		I was unable to find my own apartment at the beginning of the 18-19 school year. Three months after the semester started, I was growing increasingly upset with the housing situation. I quickly moved out and found my own apartment.
1	1.39%		I'm from Colorado, so living on campus was a very good option
1	1.39%		I'm living on campus
1	1.39%		It was an emergency type situation: my previous roommate decided they didn’t want to live with me.
1	1.39%		It's a waste of time and money to be at the dorms in gorham when all my classes are in portland.
1	1.39%		It's my home, I went to USM so I didn't have to move
1	1.39%		It's my mother's house
1	1.39%		Limited housing on campus
1	1.39%		Live with parents, can't move out until I graduate due to affordability
1	1.39%		Living on campus was my ONLY option
1	1.39%		Married and already permanently housed
1	1.39%		money
1	1.39%		On campus does not offer Summer months so I dont wanted to move twice a year!!!
1	1.39%		On campus housing allows me to use financial aid for housing which is the only way that I could possibly afford it
1	1.39%		Only option
1	1.39%		Out of State
1	1.39%		Own a house, with kids that do and have attended a particular school system
1	1.39%		own home
1	1.39%		Own my home
1	1.39%		own my home nearby
1	1.39%		Owned home and did not want to move for a 15 month program
1	1.39%		RA
1	1.39%		Ra job
1	1.39%		RA role
1	1.39%		Restricted dining hall (I have celiacs, and the dorms are dated and communal showers gross me out
1	1.39%		Space away from home
1	1.39%		Sports
1	1.39%		Student Employee - LRA
1	1.39%		There were no available housing except another freshman dorm which I did not want to be in again
1	1.39%		Too far from home
1	1.39%		Transportation (Husky bus)
1	1.39%		USM doesn't offer graduate housing.
1	1.39%		USM was too crowded so I moved off campus. It was awful
1	1.39%		wanted to live with my partner

1	1.39%		wasn't many options
1	1.39%		Wasn't excited to live on campus but couldn't afford an apartment and wasn't close enough to home to commute.
1	1.39%		Working professional, bought a house in a neighborhood I liked.
1	1.39%		Your housing is really bad though.

791 Respondents

2211 Responses

Q14. Which years have you lived on campus? (Select all that apply, including partial years)

Count	Respondent %	Response %		
307	39.26%	26.79%		None
392	50.13%	34.21%		Freshman year of undergraduate program (completed fewer than 24 credit hours)
257	32.86%	22.43%		Sophomore year of undergraduate program (completed 24 to 53 credit hours)
128	16.37%	11.17%		Junior year of undergraduate program (completed 54 to 83 credit hours)
50	6.39%	4.36%		Senior or fifth year of undergraduate program (completed 84 or more credit hours)
4	0.51%	0.35%		First year of graduate/professional/law/doctorate program
3	0.38%	0.26%		Second year of graduate/professional/law/doctorate program
2	0.26%	0.17%		Third year of graduate/professional/law/doctorate program
3	0.38%	0.26%		Fourth year or beyond of graduate/professional/law/doctorate program

782 Respondents

1146 Responses

Q15. Do you currently have a USM Meal Plan?

Count	Percent		
473	60.33%		No, I do not have a meal plan
159	20.28%		Yes, 10 Meal/$300 Husky Bucks Plan
125	15.94%		Yes, 14 Meal/$175 Husky Bucks Plan
27	3.44%		Yes, 19 Meal/$50 Husky Bucks Plan

784 Respondents

Q16. Where do you live on campus?

Count	Percent		
52	15.81%		Anderson Hall
64	19.45%		Philippi Hall
38	11.55%		Robie Andrews Hall
70	21.28%		Upton Hastings Hall
28	8.51%		Woodward Hall
77	23.40%		Upperclass Hall

329 Respondents

Q17. In what kind of housing configuration do you live?

Count	Percent	
211	63.17%	Traditional unit (combined bedroom and living area in one unit, shared floor bathroom - available in Anderson Hall, Philippi Hall, Robe Andrews Hall, Upton Hastings Hall, and Woodward Hall)
89	26.65%	Suite-style unit (one unit with two to four bedrooms and private living area and bathroom - available in Philippi Hall and Upperclass Hall)
34	10.18%	Apartment-style unit (one unit with four bedrooms, two private bathrooms, a living area, and a kitchen - available in Upperclass Hall)
334	Respondents	

Q18. What is your bedroom occupancy?

Count	Percent	
92	27.30%	Single (private bedroom)
165	48.96%	Double (bedroom shared with one other person)
80	23.74%	Triple (bedroom shared with two other people)
337	Respondents	

Q19. Please provide the zip code of your current residence while attending USM:

Count	Percent
420	100.00%

Count	Percent	
2	0.48%	03801
1	0.24%	03827
1	0.24%	03851
1	0.24%	03867
1	0.24%	03870
1	0.24%	03885
1	0.24%	03901
1	0.24%	03903
1	0.24%	03904
1	0.24%	03905
1	0.24%	03906
3	0.71%	04002
15	3.57%	04005
2	0.48%	04009
2	0.48%	04010
4	0.95%	04011
1	0.24%	04013
2	0.48%	04015
1	0.24%	04017
2	0.48%	04021
2	0.48%	04027
2	0.48%	04029
2	0.48%	04030
4	0.95%	04032
1	0.24%	04037

16	3.81%	04038
1	0.24%	04039
1	0.24%	04042
4	0.95%	04043
2	0.48%	04049
2	0.48%	04055
1	0.24%	04061
1	0.24%	04061-4733
6	1.43%	04062
1	0.24%	04063
13	3.10%	04064
1	0.24%	04068
3	0.71%	04071
17	4.05%	04072
1	0.24%	04073
23	5.48%	04074
1	0.24%	04074-8407
1	0.24%	04079
10	2.38%	04084
1	0.24%	04085
2	0.48%	04086
1	0.24%	04090
20	4.76%	04092
11	2.62%	04093
4	0.95%	04096
2	0.48%	04097
42	10.00%	04101
27	6.43%	04102
57	13.57%	04103
1	0.24%	04104
8	1.90%	04105
25	5.95%	04106
5	1.19%	04107
2	0.48%	04110
3	0.71%	04210
1	0.24%	04222
2	0.48%	04236
1	0.24%	04239
11	2.62%	04240
2	0.48%	04250
2	0.48%	04252
1	0.24%	04253
1	0.24%	04256
3	0.71%	04260

1	0.24%	04261
1	0.24%	04268
3	0.71%	04274
1	0.24%	04276
2	0.48%	04280
1	0.24%	04282
1	0.24%	04294
1	0.24%	04330
2	0.48%	04345
1	0.24%	04364
2	0.48%	04543
1	0.24%	04555
2	0.48%	04579
1	0.24%	04605
1	0.24%	04679
2	0.48%	04901
1	0.24%	04963
1	0.24%	12077

420 Respondents

Q20. Using the map provided below, which area of Portland best describes the location of your current housing situation?

Count	Percent	
276	62.73%	I live outside of the City of Portland boundary
11	2.50%	Back Cove
15	3.41%	Deering Center
6	1.36%	Downtown
7	1.59%	East Deering
6	1.36%	East Bayside
14	3.18%	East End
1	0.23%	India St.
5	1.14%	Libbytown
3	0.68%	Nason's Corner
13	2.95%	North Deering
13	2.95%	Oakdale
12	2.73%	Parkside
8	1.82%	Riverton
3	0.68%	Rosemont
3	0.68%	Stroudwater
2	0.45%	Valley St.
3	0.68%	West Bayside
13	2.95%	West End
26	5.91%	Other neighborhood within the boundary of the City of Portland (please specify)

Count	Percent	
1	3.85%	Biddeford

1	3.85%	Gardiner
1	3.85%	Gorham
1	3.85%	GORHAM
1	3.85%	I do not live in Ptld
1	3.85%	I don’t live in Portland.
1	3.85%	Naples
1	3.85%	Near Falmouth
1	3.85%	Old Orchard Beach
1	3.85%	poland
1	3.85%	Portsmouth
4	15.38%	Scarborough
1	3.85%	South Portland
1	3.85%	south portland- knightsville
1	3.85%	westbrook
4	15.38%	Westbrook
1	3.85%	Willard square area
1	3.85%	Windham
1	3.85%	Woodford Corner

440 Respondents

Q21. With whom do you currently live?

Count	Percent	
41	9.30%	I live alone
124	28.12%	I live with my parent(s) or other relative(s)
115	26.08%	I live with my spouse/partner
17	3.85%	I live with my child(ren)/dependent(s)
22	4.99%	I live with my spouse/partner and child(ren)/dependent(s)
55	12.47%	I live with other USM student(s)
43	9.75%	I live with roommate(s) who do not attend USM
19	4.31%	I live with both USM students and roommate(s) that do not attend USM
5	1.13%	Other (please specify)

Count	Percent	
1	20.00%	I live with my spouse and child
1	20.00%	My mother and girlfriend
1	20.00%	my sister
1	20.00%	rent a room out of a house
1	20.00%	spouse/usm student

441 Respondents

Q22. Which best describes your current housing situation?

Count	Percent	
44	10.00%	Rent individual bedroom within a house
182	41.36%	Rent apartment/condo unit within a house or complex
30	6.82%	Rent an entire house
6	1.36%	Don't pay rent for an apartment/condo unit owned by myself or spouse

16	3.64%	Don't pay rent for an apartment/condo unit owned by another person
36	8.18%	Don't pay rent for an entire house owned by myself or spouse/partner
82	18.64%	Don't pay rent for an entire house owned by another person
44	10.00%	Other (please specify)

Count	Percent	
1	2.27%	Contribute to mortgage for entire house owned by partner
1	2.27%	Do not pay rent, family lake house
1	2.27%	Don’t pay rent for apartment owned by parents
1	2.27%	Help my mom pay rent
1	2.27%	house with a mortgage
1	2.27%	I don't pay rent/live with parents
1	2.27%	i live in a room with my grandmother
1	2.27%	I live in a winter rental because its all I can afford and have to move out for the summer to my parents house.
1	2.27%	I own a home
1	2.27%	I own my own home
1	2.27%	I own my own house
1	2.27%	Live at home with parents
1	2.27%	Live at Saint Joseph’s Rehabilitation and Residence through their inter generational program
1	2.27%	live in owned home
1	2.27%	living with my parents
1	2.27%	mortgage
1	2.27%	Own
2	4.55%	Own a home
1	2.27%	Own a home with my spouse
1	2.27%	Own entire house
1	2.27%	own home
1	2.27%	Own home
1	2.27%	Own Home
1	2.27%	own house
1	2.27%	Own House
1	2.27%	Own my home
1	2.27%	Own my house
1	2.27%	Own my own home- mortgage free!
1	2.27%	own pay a mortgage
1	2.27%	owner-occupied three unit
1	2.27%	Pay a mortgage on a house loan
1	2.27%	Pay low rent to my aunt to live in her condo
1	2.27%	pay mortgage for our home
1	2.27%	Pay mortgage for the house
1	2.27%	Pay to live at home
1	2.27%	rent a room in a condo
1	2.27%	Rent an efficiency
1	2.27%	Rent apartment

1	2.27%		Share costs with family in single family house
1	2.27%		Spilit apartment rent w/ gf, techincally
1	2.27%		We pay a mortgage

440 Respondents

Q23. How do you think your current living experience compares to living on the Gorham campus?

Count	Percent		
234	53.18%		My off-campus experience is much better
64	14.55%		My off-campus experience is somewhat better
18	4.09%		My off-campus experience is about the same
13	2.95%		My off-campus experience is somewhat worse
5	1.14%		My off-campus experience is much worse
106	24.09%		Unsure
440	Respondents		

Q24. With how many people do you share your living unit?

Count	Percent		
120	48.58%		One person
62	25.10%		Two people
42	17.00%		Three people
23	9.31%		Four or more people
247	Respondents		

Q25. Do you share your bedroom with any other people?

Count	Percent		
149	58.20%		No
4	1.56%		Yes, with one or more non-familial people (roommate)
103	40.23%		Yes, with one or more members of my family and/or my significant other
256	Respondents		

Q26. Do you share your bathroom with any other people?

Count	Percent		
47	18.36%		No
97	37.89%		Yes, with one or more non-familial people (roommate)
112	43.75%		Yes, with one or more members of my family and/or my significant other
256	Respondents		

Q27. Do you share a kitchen with any other people?

Count	Percent		
29	11.42%		No
107	42.13%		Yes, with one or more non-familial people (roommate)
118	46.46%		Yes, with one or more members of my family and/or my significant other
254	Respondents		

Q28. What is your personal share of monthly rent/housing costs excluding utilities?		
Count	Percent	
6	2.34%	Not applicable; I do not pay rent
6	2.34%	Less than $200
10	3.91%	$200 - $299
19	7.42%	$300 - $399
45	17.58%	$400 - $499
53	20.70%	$500 - $599
47	18.36%	$600 - $699
25	9.77%	$700 - $799
15	5.86%	$800 - $899
8	3.13%	$900 - $999
5	1.95%	$1,000 - $1,099
4	1.56%	$1,100 - $1,199
4	1.56%	$1,200 - $1,299
2	0.78%	$1,300 - $1,399
1	0.39%	$1,400 - $1,499
2	0.78%	$1,500 - $1,599
2	0.78%	$1,600 - $1,699
1	0.39%	$1,700 - $1,799
0	0.00%	$1,800 - $1,899
0	0.00%	$1,900 - $1,999
0	0.00%	$2,000 or more
1	0.39%	I don't know
256	Respondents	

Q29. In addition to your rent, for which of the following utilities do you currently pay? (Select all that apply)			
Count	Respondent %	Response %	
0	0.00%	0.00%	Not applicable; I do not pay rent
39	15.42%	5.82%	None, utilities are included in the rent
66	26.09%	9.85%	Cable/satellite television
175	69.17%	26.12%	Electric
79	31.23%	11.79%	Gas
178	70.36%	26.57%	Internet
18	7.11%	2.69%	Parking
17	6.72%	2.54%	Sewer
61	24.11%	9.10%	Telephone
37	14.62%	5.52%	Water
253	Respondents		
670	Responses		

Q30. How much is your individual monthly cost for all the utilities selected in the previous question

Count	Percent	
15	6.88%	Less than $25
27	12.39%	$25 - $49
70	32.11%	$50 - $99
53	24.31%	$100 - $149
23	10.55%	$150 - $199
26	11.93%	$200 or more
4	1.83%	I don't know
218	Respondents	

Q31. Which best describes your current lease length?

Count	Percent	
43	17.06%	Not applicable; I have no lease
22	8.73%	More than 12 months
134	53.17%	12 months
19	7.54%	Academic year (approximately 9 months)
5	1.98%	Academic semester (approximately 4.5 months)
27	10.71%	Monthly
2	0.79%	Other (please specify)

Count	Percent	
1	50.00%	6 months
1	50.00%	Lease ended ext month to month

252 Respondents

Q32. How difficult was it for you to find and secure your current housing accommodations?

Count	Percent	
49	19.44%	Very difficult
54	21.43%	Difficult
77	30.56%	Somewhat difficult
72	28.57%	Not difficult
252	Respondents	

Q33. How would you describe your current living situation?

Count	Percent	
236	30.65%	Very satisfactory
375	48.70%	Satisfactory
120	15.58%	Unsatisfactory
39	5.06%	Very unsatisfactory
770	Respondents	

Q34. If you described your living conditions as "unsatisfactory" or "very unsatisfactory", please indicate why: (Select all that apply)

Count	Respondent %	Response %	
51	32.90%	5.84%	High total cost of housing
57	36.77%	6.52%	Meal plan cost/requirement
14	9.03%	1.60%	Lack of safety and security

39	25.16%	4.46%	Too many restrictive rules and regulations
36	23.23%	4.12%	Too loud
66	42.58%	7.55%	Poor physical condition of building/unit
71	45.81%	8.12%	Dislike unit type/room layout
63	40.65%	7.21%	Lack of private bathroom
54	34.84%	6.18%	Lack of private bedroom
85	54.84%	9.73%	Not enough living space
53	34.19%	6.06%	Lack of kitchen
27	17.42%	3.09%	Lack of convenient laundry facilities
17	10.97%	1.95%	Lack of community spaces
43	27.74%	4.92%	Dislike roommates
4	2.58%	0.46%	Lease length doesn't accommodate needs
41	26.45%	4.69%	Too far from classes/academic activities
19	12.26%	2.17%	Too far from job/internship/volunteer positions
13	8.39%	1.49%	Too far from other students
66	42.58%	7.55%	Lack of convenient parking or public transportation
13	8.39%	1.49%	Too far from student life facilities
22	14.19%	2.52%	Too far from off-campus resources
20	12.90%	2.29%	Other (please specify)

Count	Percent	
1	5.00%	6 people in a suite meant for 4 people is too many
1	5.00%	All of the above
1	5.00%	Always too hot in the dorms
1	5.00%	Bus could stop twice on campus to accommodate students who live farther away. In the winter its hard to know how much time it takes when the sidewalks are all ice.
1	5.00%	enhanced occupancy
1	5.00%	ferry schedule does not work with clinical schedule
1	5.00%	FLOODING BATHROOMS
1	5.00%	Forced tripple, Too little discount, ned more housing on campus, theres not enough room for what USM is trying to bring in!!
1	5.00%	I’ve lived here my whole live so I want a break from it.
1	5.00%	Just don’t want to be living at home but can’t afford to move out while in school.
1	5.00%	Kitchen is nasty and not stocked with anything useful! Parking in the rear but having to walk around is a huge pain, especially the hours of it. Our room is not insulated well cold air comes in through the window and floors, even the vent filter cleaners were surprised with how cold our floors are. The cold air doesn’t work and it’s heat at full blast or nothing. We fill out how we like to live every year but it is not used because we either pick our roommates or 2 people randomly pick the same room.
1	5.00%	lease terminated
1	5.00%	my family is incredibly stressful so so is the house. Also, living off campus has made it nearly impossible to make any friends
1	5.00%	No roommate got put in
1	5.00%	Rarely have hot water, and there are always bugs everywhere
1	5.00%	Rats and bugs in ceiling
1	5.00%	RD is neglectful to her duties and picks and chooses what to do she would rather get someone in trouble than aid them
1	5.00%	Still live with parents
1	5.00%	Too expensive per month

1	5.00%		Unclean, dirty
155	Respondents		
874	Responses		

Q35. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live as a: - Freshman

Count	Percent	
340	56.29%	Gorham Campus
109	18.05%	Portland Campus
88	14.57%	I would have chosen to live off campus
67	11.09%	Not applicable; I did not attend USM (or do not plan to attend USM) during this year
604	Respondents	

Q36. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live as a: - Sophomore

Count	Percent	
239	40.99%	Gorham Campus
180	30.87%	Portland Campus
116	19.90%	I would have chosen to live off campus
48	8.23%	Not applicable; I did not attend USM (or do not plan to attend USM) during this year
583	Respondents	

Q37. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live as a: - Junior

Count	Percent	
109	19.36%	Gorham Campus
249	44.23%	Portland Campus
178	31.62%	I would have chosen to live off campus
27	4.80%	Not applicable; I did not attend USM (or do not plan to attend USM) during this year
563	Respondents	

Q38. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live as a: - Senior or Fifth Year

Count	Percent	
85	14.99%	Gorham Campus
224	39.51%	Portland Campus
243	42.86%	I would have chosen to live off campus
15	2.65%	Not applicable; I did not attend USM (or do not plan to attend USM) during this year
567	Respondents	

Q39. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a FRESHMAN STUDENT?

Count	Percent	
52	16.20%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
133	41.43%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
62	19.31%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
31	9.66%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
39	12.15%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
4	1.25%	I would not have chosen to live in any of the above unit types on the Gorham campus for my first year.
321	Respondents	

Q40. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a SOPHOMORE STUDENT?

Count	Percent	
34	14.98%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
33	14.54%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
60	26.43%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
45	19.82%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
50	22.03%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
5	2.20%	I would not have chosen to live in any of the above unit types on the Gorham campus for my first year.
227	Respondents	

Q41. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a JUNIOR STUDENT?

Count	Percent	
14	13.59%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
10	9.71%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
24	23.30%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
19	18.45%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
34	33.01%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
2	1.94%	I would not have chosen to live in any of the above unit types on the Gorham campus for my first year.
103	Respondents	

Q42. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a SENIOR STUDENT?		
Count	Percent	
14	16.87%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
5	6.02%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
16	19.28%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
11	13.25%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
34	40.96%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
3	3.61%	I would not have chosen to live in any of the above unit types on the Gorham campus for my first year.
83	Respondents	

Q43. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a FIRST-YEAR STUDENT?		
Count	Percent	
29	27.88%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
6	5.77%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
2	1.92%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
14	13.46%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
22	21.15%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
16	15.38%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
15	14.42%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
104	Respondents	

Q44. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a SOPHOMORE STUDENT?

Count	Percent	
29	18.01%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
17	10.56%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
8	4.97%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
34	21.12%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
33	20.50%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
34	21.12%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
6	3.73%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
161	Respondents	

Q45. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a JUNIOR STUDENT?

Count	Percent	
44	19.64%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
21	9.38%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
12	5.36%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
41	18.30%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
40	17.86%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
55	24.55%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
11	4.91%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
224	Respondents	

Q46. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a SENIOR STUDENT?

Count	Percent	
35	17.33%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
30	14.85%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
19	9.41%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
34	16.83%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
32	15.84%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
41	20.30%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
11	5.45%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
202	Respondents	

Q47. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a FIRST-YEAR STUDENT?

Count	Percent	
14	13.73%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
20	19.61%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
5	4.90%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
15	14.71%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
22	21.57%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
14	13.73%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
12	11.76%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
102	Respondents	

Q48. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a SOPHOMORE STUDENT?

Count	Percent	
22	14.01%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
23	14.65%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
21	13.38%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
33	21.02%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
21	13.38%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
29	18.47%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
8	5.10%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
157	Respondents	

Q49. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a JUNIOR STUDENT?

Count	Percent	
33	15.07%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
29	13.24%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
20	9.13%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
48	21.92%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
24	10.96%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
46	21.00%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
19	8.68%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
219	Respondents	

Q50. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a SENIOR STUDENT?

Count	Percent	
24	12.18%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
36	18.27%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
23	11.68%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
35	17.77%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
21	10.66%	Unit Type G2: Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
44	22.34%	Unit Type H1: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
14	7.11%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
197	Respondents	

Q51. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live during your: - First year of graduate / professional / law / doctorate program

Count	Percent	
18	15.52%	Gorham Campus
39	33.62%	Portland Campus
59	50.86%	I would have chosen to live off campus
0	0.00%	Not applicable; my program does not include this year
116	Respondents	

Q52. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live during your: - Second year of graduate / professional / law / doctorate program

Count	Percent	
12	10.53%	Gorham Campus
37	32.46%	Portland Campus
59	51.75%	I would have chosen to live off campus
6	5.26%	Not applicable; my program does not include this year
114	Respondents	

Q53. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live during your: - Third year of graduate / professional / law / doctorate program

Count	Percent	
6	5.41%	Gorham Campus
27	24.32%	Portland Campus
51	45.95%	I would have chosen to live off campus
27	24.32%	Not applicable; my program does not include this year
111	Respondents	

Q54. Based on the above summary of available housing options and associated rates, on which campus would you have preferred to live during your: - Fourth year and beyond of graduate / professional / law / doctorate program

Count	Percent	
3	2.78%	Gorham Campus
15	13.89%	Portland Campus
39	36.11%	I would have chosen to live off campus
51	47.22%	Not applicable; my program does not include this year
108	Respondents	

Q55. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a FIRST-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
1	5.88%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
3	17.65%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
5	29.41%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
3	17.65%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
4	23.53%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
1	5.88%	I would not have chosen to live in any of the above unit types on the Gorham campus for my first year.
17	Respondents	

Q56. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a SECOND-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
0	0.00%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
4	40.00%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
1	10.00%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
2	20.00%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
2	20.00%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
1	10.00%	I would not have chosen to live in any of the above unit types on the Gorham campus for my second year.
10	Respondents	

Q57. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a THIRD-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
0	0.00%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
2	40.00%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
0	0.00%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
0	0.00%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
2	40.00%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
1	20.00%	I would not have chosen to live in any of the above unit types on the Gorham campus for my third year.
5	Respondents	

Q58. If all the unit types described above were available on the Gorham campus at the assigned rental rates provided, what would have been your preferred housing choice as a FOURTH-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
0	0.00%	Unit Type A1: Single-Occupancy Bedroom in a Traditional Unit for $667 per month/$3,000 per semester/$6,000 per academic year
1	50.00%	Unit Type A2: Double-Occupancy Bedroom in a Traditional Unit for $556 per month/$2,500 per semester/$5,000 per academic year
0	0.00%	Unit Type B1: Single-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
0	0.00%	Unit Type B2: Double-Occupancy Bedroom in a Two-Bedroom Suite-Style Unit for $667 per month/$3,000 per semester/$6,000 per academic year
1	50.00%	Unit Type C: Single-Occupancy Bedroom in a Four-Bedroom Apartment for $778 per month/$3,500 per semester/$7,000 per academic year
0	0.00%	I would not have chosen to live in any of the above unit types on the Gorham campus for my fourth year and beyond.
2	Respondents	

Q59. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a FIRST-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
10	26.32%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
3	7.89%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
6	15.79%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
2	5.26%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
5	13.16%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
4	10.53%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
8	21.05%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
38	Respondents	

Q60. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a SECOND-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
8	23.53%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
3	8.82%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
4	11.76%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
3	8.82%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
5	14.71%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
4	11.76%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
7	20.59%	I would not have chosen to live in any of the above unit types on the Portland campus for my second year.
34	Respondents	

Q61. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a THIRD-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
3	11.54%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
1	3.85%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
6	23.08%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
2	7.69%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
4	15.38%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
4	15.38%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
6	23.08%	I would not have chosen to live in any of the above unit types on the Portland campus for my third year.
26	Respondents	

Q62. If all the unit types described above were available on the Portland campus at the assigned rental rates provided, what would have been your preferred housing choice as a FOURTH-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
0	0.00%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
0	0.00%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
1	7.14%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
2	14.29%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
4	28.57%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
4	28.57%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
3	21.43%	I would not have chosen to live in any of the above unit types on the Portland campus for my fourth year.
14	Respondents	

Q63. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a FIRST-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
7	18.92%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
8	21.62%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
1	2.70%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
5	13.51%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
3	8.11%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
5	13.51%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
8	21.62%	I would not have chosen to live in any of the above unit types on the Portland campus for my first year.
37	Respondents	

Q64. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a SECOND-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
7	20.00%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
5	14.29%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
3	8.57%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
4	11.43%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
6	17.14%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
2	5.71%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
8	22.86%	I would not have chosen to live in any of the above unit types on the Portland campus for my second year.
35	Respondents	

Q65. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a THIRD-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
3	11.54%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
4	15.38%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
3	11.54%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
5	19.23%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
3	11.54%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
2	7.69%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
6	23.08%	I would not have chosen to live in any of the above unit types on the Portland campus for my third year.
26	Respondents	

Q66. If your preferred housing choice WAS NOT AVAILABLE on the Portland campus, what would have been your SECOND housing choice as a FOURTH-YEAR GRADUATE / LAW / PROFESSIONAL / DOCTORATE STUDENT?

Count	Percent	
2	14.29%	Unit Type D: Single-Occupancy Bedroom in a Suite-Style Unit for $800 - $850 per month/$7,200 - $7,650 per academic year (9 months)/$9,600 - $10,200 per calendar year (12 months)
4	28.57%	Unit Type E: Single-Occupancy Bedroom in a Studio Apartment Unit for $1,200 - $1,300 per month/$11,250 - $11,700 per academic year (9 months)/$15,000 - $15,600 per calendar year (12 months)
1	7.14%	Unit Type F: Single-Occupancy Bedroom in a One-Bedroom Apartment Unit for $1,350 - $1,400 per month/$12,150 - $12,600 per academic year (9 months)/$16,200 - $16,800 per calendar year (12 months)
2	14.29%	Unit Type G1: Single-Occupancy Bedroom in a Two-Bedroom Apartment Unit for $1,120 - $1,170 per month/$10,080 - $10,530 per academic year (9 months)/$13,440 - $14,040 per calendar year (12 months)
2	14.29%	Unit Type G2:Double -Occupancy Bedroom in a Two-Bedroom Apartment Unit for $900 - $950 per month/$8,100 - $8,550 per academic year (9 months)/$10,800 - $11,400 per calendar year (12 months)
0	0.00%	Unit Type H: Single-Occupancy Bedroom in a Four-Bedroom Apartment Unit for $1,050 - $1,100 per month/$9,450 - $9,900 per academic year (9 months)/$12,600 - $13,200 per calendar year (12 months)
3	21.43%	I would not have chosen to live in any of the above unit types on the Portland campus for my fourth year.
14	Respondents	

Q67. Would you be willing to share living space with upperclass (junior and senior) undergraduate students?

Count	Percent	
12	10.08%	Yes, I would be willing to share my bedroom with an undergraduate student
25	21.01%	Yes, I would be willing to share my floor with undergraduate students if they did not share my unit
12	10.08%	Yes, I would be willing to share my building with undergraduate students if they did not live on the same floor
70	58.82%	No
119	Respondents	

Q68. If new housing is offered on the any USM campus, which building features/characteristics from the list provided below would be the most important to you? (Select up to five)

Count	Respondent %	Response %	
601	87.48%	21.85%	Overall affordability (including the cost of rent, utilities, parking, and other housing-related expenses)
333	48.47%	12.11%	Availability of the unit-type configuration I desire (suite-style, studio apartment, 1-bed apartment, 2-bed apartment, etc.)
32	4.66%	1.16%	Availability of a child-friendly living arrangement
190	27.66%	6.91%	Availability of a pet-friendly living arrangement
137	19.94%	4.98%	Availability of community-building/activity spaces (lounges, multipurpose rooms, meeting spaces, game rooms, fitness center, etc.)
188	27.37%	6.84%	Availability of a quiet place to study
131	19.07%	4.76%	Availability of dining/food service within the building
170	24.75%	6.18%	Quality of unit amenities (walk-in closets, spacious layout, etc.)
366	53.28%	13.31%	Availability of in-building laundry facilities
308	44.83%	11.20%	Access to dedicated resident parking adjacent to my unit
73	10.63%	2.65%	Access to public transportation/ride sharing stops
119	17.32%	4.33%	Availability of safety and security features in my unit/building
65	9.46%	2.36%	Aesthetic architectural features (look or feel of interior and exterior spaces, new building, historical building, etc.)

13	1.89%	0.47%	ADA accessibility
24	3.49%	0.87%	Other (please specify)

Count	Percent	
1	4.17%	Ability to live with my partner who is not a USM student
1	4.17%	Ability to make my own food, in a non-shared space
1	4.17%	AVAILABILITY good god
1	4.17%	Being older, I would not live on campus, so I do not want to mess up data by answering.
1	4.17%	boobs
1	4.17%	housing for students who have a spouse/partner who is not a USM student; graduate student housing;
1	4.17%	I can find more affordable rent off-campus, than housing describing in the previous spreadsheet.
1	4.17%	I own a house, I'm not going to use any housing at USM, regardless of its amenities
1	4.17%	I would just like to re-iterate how important it is that the proposed new housing would be affordable. Some of the prices per month offered before are strikingly similar to what you would find in off campus housing. I feel that the biggest draw to on campus housing in Portland would be the prospect of living in a desirable location with reasonable amenities without the typical city of Portland price-tag. If I can share a whole apartment with a friend off Campus for $1200 a month or $600 each, why would I pay more to live on campus?
1	4.17%	I would not live on campus
1	4.17%	I wouldn't live on campus.
1	4.17%	In room kitchen
1	4.17%	n/a
1	4.17%	N/A
1	4.17%	na
1	4.17%	None. I like my own home.
1	4.17%	Non-student must be able to reside with me (my partner who does not attend USM)
1	4.17%	not applicable
1	4.17%	Personal bathroom and kitchen space
1	4.17%	Pet Friendly, Transportation
1	4.17%	proximity to portland center
1	4.17%	Safety

687 Respondents

2750 Responses

Q69. If new housing is offered on the any USM campus, which of the following services/programs/policies would be the most important to you? (Select up to three)

Count	Respondent %	Response %	
148	21.70%	7.99%	Roommate matching service
470	68.91%	25.38%	The ability to choose my own roommates
289	42.38%	15.60%	Flexible lease/rental terms
155	22.73%	8.37%	As few rules and regulations as possible
340	49.85%	18.36%	Ability to stay in my unit during breaks
420	61.58%	22.68%	Ability to retain the same unit from year to year
30	4.40%	1.62%	Other

682 Respondents

1852 Responses

Q70. If your housing preferences were met for each year, for how many years would you choose to live on any USM campus?

Count	Percent	
18	2.61%	For the first year of my program only
64	9.28%	Through the second year of my program
109	15.80%	Through the third year of my program
275	39.86%	Through the fourth year of my program
78	11.30%	Beyond the fourth year of my program
126	18.26%	I would not choose to live in housing on the Portland campus
20	2.90%	Other (please specify)

Count	Percent	
1	5.00%	Again, I'm an older law student who would not live on campus, so I'm not going to participate here.
1	5.00%	As long as it was most convenient
1	5.00%	as long as needed until completion of degree
1	5.00%	For financial reasons I would still live at home
1	5.00%	For my entire undergrad career
1	5.00%	I like having my own house
1	5.00%	I own a house
1	5.00%	I would consider living on campus if it was affordable. At this point in time, and with the proposed prices, it is much more reasonable to live off campus.
1	5.00%	I would not live on campus
1	5.00%	it would depend
1	5.00%	It's way too expensive. Off campus living is around $550 a month and you don't have to deal with parking and getting tickets from USM every night due to the lack of parking spots.
1	5.00%	Likely as long as necessary
2	10.00%	N/A
1	5.00%	na
1	5.00%	None - it's cheaper to live at home
1	5.00%	None. I like living in my own home.
1	5.00%	Unsure

690 Respondents

Q71. How important is on-campus housing in building a sense of community and culture on USM's campuses?

Count	Percent	
341	49.14%	Very important
263	37.90%	Important
60	8.65%	Unimportant
30	4.32%	Very unimportant

694 Respondents

Q72. Do you have regular access to a vehicle during the academic year?

Count	Percent	
572	82.90%	Yes, my personal car
9	1.30%	Yes, via car sharing (e.g. Zip Car)
109	15.80%	No

690 Respondents

Q73. How important in the proximity of available parking in your housing decision?

Count	Percent	
295	42.82%	Available parking must be immediately adjacent to my living facility in order for me to consider living there
292	42.38%	Available parking must within a 5-minute walk to my living facility in order for me to consider living there
22	3.19%	Available parking must be within a 10-minute walk to my living facility in order for me to consider living there
5	0.73%	Available parking must be within a 15-minute walk to my living facility in order for me to consider living there
75	10.89%	Parking does not play a significant role in my housing decision
689	Respondents	

Q74. How do you typically get to and from your primary academic campus?

Count	Percent	
78	11.30%	Walk
121	17.54%	Ride the METRO Husky Line
388	56.23%	Drive alone
83	12.03%	Drive/ride with others
5	0.72%	Take a taxi or rideshare
4	0.58%	Ride a bicycle
1	0.14%	Ride a motorcycle/moped/scooter
3	0.43%	Ride public transportation
7	1.01%	Other (please specify)

Count	Percent	
1	14.29%	I live there
1	14.29%	i ride the bus some, and drive some
1	14.29%	Is witch back and forth from my own vehicle and the METRO
1	14.29%	On line
1	14.29%	Online
1	14.29%	Online student
1	14.29%	Take online classes

690 Respondents

Q75. How long is your typical one-way commute to your primary academic campus?

Count	Percent	
90	13.04%	Less than 5 minutes
70	10.14%	5-10 minutes
106	15.36%	11-20 minutes
215	31.16%	21-30 minutes
116	16.81%	31-40 minutes
54	7.83%	41-50 minutes
39	5.65%	More than 50 minutes
690	Respondents	

Q76. How difficult is it for you to travel from where you live to your primary academic campus?

Count	Percent	
21	3.14%	Very difficult
46	6.89%	Difficult
217	32.49%	Somewhat difficult
384	57.49%	Not difficult
668	Respondents	

Q77. What is difficult about traveling between your residence and primary academic campus? (Select all that apply)

Count	Respondent %	Response %	
174	61.70%	25.93%	Cost of transportation/gas
37	13.12%	5.51%	Inaccurate transportation schedule
49	17.38%	7.30%	Infrequent or limited transportation schedule
196	69.50%	29.21%	Length of travel
31	10.99%	4.62%	Safety and security concerns
141	50.00%	21.01%	Inability to find available parking
17	6.03%	2.53%	Lack of transportation infrastructure
26	9.22%	3.87%	Other (please specify)

Count	Percent	
1	3.85%	bridge goes up causing delays
1	3.85%	Bus drivers are so slow and stop in Westbrook instead of using the highway
1	3.85%	Commuting in winter conditions
1	3.85%	I live on campus right now because I live almost 2 hours away. I'm not sure if you were asking for "permanent" residence or not.
1	3.85%	Lack of campus maintenance, mainly in the winter
1	3.85%	Lack of space on the bus and buses that leave earlier than scheduled
1	3.85%	mad potholes
1	3.85%	No bus
1	3.85%	Over crowded busses !!! Some students are not even able to get on the bus at certain times and it has not been fixed within the two years that I have been here.
1	3.85%	The buses are late, then late to the campus, theres a lot of general public (i.e middle schoolers/ high schoolers who ride the bus limiting seats for us and most of us try to eat our meals on the go due to schedules hence not wanting to ride the bus) its not good in the winter either. With custom coach they were there early and we were able to get a seat on the bus and relax until scheduled leaving time versus now we have to wait in the cold weather conditions in order to get a seat or not miss the bus.
1	3.85%	Time wasted by driving every day
1	3.85%	TOLLS
3	11.54%	traffic
2	7.69%	Traffic
1	3.85%	TRAFFIC
1	3.85%	Traffic in Portland
1	3.85%	Traffic!!!
1	3.85%	Unbelievably shitty roads and terrible drivers
1	3.85%	use of ferry
1	3.85%	weather
1	3.85%	Weather dangers in the winter
1	3.85%	Weather in the winter

1	3.85%		Where I live, I get a lot more snow than Portland and it is often difficult to and unsafe to travel to class. They should really take into consideration commuting students when determining if classes should be canceled.

282 Respondents

671 Responses

Q78. What is your perception of safety and security on the Gorham campus?

Count	Percent	
300	44.91%	The Gorham campus feels very safe and secure
280	41.92%	The Gorham campus feels mostly safe and secure
73	10.93%	The Gorham campus feels somewhat safe and secure
15	2.25%	The Gorham campus does not feel safe and secure
668	Respondents	

Q79. How safe do you feel on the Portland campus?

Count	Percent	
185	27.09%	The Portland campus feels very safe and secure
337	49.34%	The Portland campus feels mostly safe and secure
137	20.06%	The Portland campus feels somewhat safe and secure
24	3.51%	The Portland campus does not feel safe and secure
683	Respondents	

Q80. Where do you plan to live next year?

Count	Percent	
193	28.01%	On campus at the Gorham campus
30	4.35%	Off campus in or near Gorham
118	17.13%	Off campus in or near Portland
197	28.59%	In my existing housing situation
58	8.42%	Undecided
93	13.50%	Not applicable; I will not be attending USM next year
689	Respondents	

Q81. What are your primary reasons for not attending USM next year? (Select all that apply)

Count	Respondent %	Response %	
83	89.25%	74.77%	I will have graduated from my program
9	9.68%	8.11%	I will be transferring to another institution
1	1.08%	0.90%	I will be studying abroad
3	3.23%	2.70%	I will be leaving to pursue other endeavors
4	4.30%	3.60%	Cost of tuition
5	5.38%	4.50%	Cost of living expenses
4	4.30%	3.60%	Campus/student life reasons
2	2.15%	1.80%	Other
93	Respondents		
111	Responses		

Q82. What is your current employment status, including internships and volunteer positions? (Select all that apply)

Count	Respondent %	Response %	
123	17.93%	15.61%	I work/intern at part time at the Gorham campus or in Gorham
134	19.53%	17.01%	I work/intern part time at the Portland campus or in Portland
243	35.42%	30.84%	I work/intern part time elsewhere
8	1.17%	1.02%	I work/intern full time at the Gorham campus or in Gorham
27	3.94%	3.43%	I work/intern full time at the Portland campus or in Portland
133	19.39%	16.88%	I work/intern full time elsewhere
120	17.49%	15.23%	I do not currently have a job or paid internship
686	Respondents		
788	Responses		

Q83. What are the primary sources of funding for your academic (tuition, fees, books) and living expenses (housing, meals, etc.)? (Select all that apply)

Count	Respondent %	Response %	
379	55.01%	18.29%	Personal income
264	38.32%	12.74%	Personal savings
253	36.72%	12.21%	Family/spousal/parental support
430	62.41%	20.75%	Financial aid
371	53.85%	17.91%	Academic scholarship or stipend
343	49.78%	16.55%	Student loan(s)
32	4.64%	1.54%	Other (please specify)

Count	Percent	
1	3.13%	CH.35 VA benefits
1	3.13%	chapter 33, gi bill
1	3.13%	Credit card
1	3.13%	Disability income
1	3.13%	Employee Waiver
1	3.13%	employee waivers
1	3.13%	employer
1	3.13%	Employer
1	3.13%	Employer- MSAD44
1	3.13%	Employer payments
1	3.13%	For clarification, I get very very little financial aid. I struggle to pay out of pocket what is left after government loans. Family members will help me out as best they can.
1	3.13%	Full-Time Job
1	3.13%	G.I. Bill
1	3.13%	Gi Bill
3	9.38%	GI Bill
1	3.13%	Its hard to even afford in state tuition with scholarships due to them being very limited. I wish there were other ways to get higher level scholarships to help afford living on Gorham Campus.
1	3.13%	Military G.I. Bill
1	3.13%	Post 9-11 G.I. Bill
1	3.13%	Residential Assistant stipend
1	3.13%	some employer assistance

1	3.13%	special grant program
1	3.13%	Tuition Waiver
1	3.13%	tuition waiver/self
1	3.13%	Unemployment
1	3.13%	va
1	3.13%	VA
1	3.13%	VA benefits
1	3.13%	VA-Chap 31
1	3.13%	Work Reimbursement
1	3.13%	Work tuition reimbursement

689 Respondents

2072 Responses

Q84. What is your age?

Count	Percent	
3	0.44%	17 or under
190	27.66%	18 - 19
204	29.69%	20 - 21
120	17.47%	22 - 24
73	10.63%	25 - 29
66	9.61%	30 - 44
31	4.51%	45 and over

687 Respondents

Q85. What is your gender?

Count	Percent	
169	24.64%	Male
508	74.05%	Female
9	1.31%	Other

686 Respondents

Q86. What is your marital/family status?

Count	Percent	
553	80.73%	Single with no dependent(s)
29	4.23%	Single with dependent(s)
71	10.36%	Partnered/married with no dependent(s)
32	4.67%	Partnered/married with dependent(s)

685 Respondents

Q87. Which best describes your residency status?

Count	Percent	
527	76.71%	Domestic/U.S. citizen
129	18.78%	Permanent U.S. resident
17	2.47%	International
1	0.15%	Other (please specify)

Count	Percent

1	100.00%		Canadian
13	1.89%		Prefer not to answer
687	Respondents		

Q88. What is your ethnicity?

Count	Percent	
30	4.39%	Two or more races
5	0.73%	American Indian/Alaska Native
16	2.34%	Asian
15	2.19%	Black/African American
16	2.34%	Hispanic/Latino
0	0.00%	Native Hawaiian/Pacific Islander
0	0.00%	Nonresident Alien
594	86.84%	White
8	1.17%	Other
684	Respondents	

Q89. Are you a veteran?

Count	Percent	
27	3.93%	Yes
660	96.07%	No
687	Respondents	

Q90. Please feel free to provide additional comments and suggestions regarding future housing on USM's Portland campus.

Count	Percent
195	100.00%

Count	Percent	
1	0.51%	its a bad idea focus on what students we have now. Also building in Gorham would be much smarter, and cheaper. No name change
1	0.51%	$800 a month is a lot compared to other places in portland
1	0.51%	.
1	0.51%	Additional housing on the gorham campus for the current residents are more important than providing housing on the portland campus. Gorham is primarily a residential campus anyway and increasing the residency halls on the gorham campus would bring more people to the town and area. If Portland housing is to come about it needs to be done quickly and be affordable to students and can be used in conjunction with their current financial aid. Transportation between ALL THREE campuses would benefit the housing shortage in gorham and potential increased housing in portland in order for students to get back and forth freely between campuses. Portland housing should not be more than the apartment cost in an Upperclass apartment in gorham if the amenities are the same.
1	0.51%	Affordability is a big part of living on campus. Right now Gorham campus is too expensive for many when they are forced to have a meal plan as well. If the price stayed roughly the same, minus the forced meal plan, students would be able to willing to live on campus again. I remember living on campus having to pay $2400 a semester for food , when right now I pay about $500 for food for the whole semester by living off campus. Make backing out of a meal plan an option for Portland Campus students.
1	0.51%	Affordability is important.
1	0.51%	Affordable and enough housing to fit many individuals. DOES NOT need to get a food plan.
1	0.51%	Affordable student housing in Portland is a great idea, please do it
1	0.51%	Affordable studio, Can choose own roommate...,like wife/husband or girlfriend or one family member
1	0.51%	As a nursing major, all of my classes are on the Portland campus starting in my sophomore

			year. I would really like to be able to live on the Portland campus. Also for the prices listed monthly to actually live in one of the Portland campus apartments, it would be cheaper to get a single bedroom apartment with my boyfriend somewhere in Portland. If possible I would recommend any decrease in prices of those units.
1	0.51%		As it is student housing, making the apartments not as expensive as outside housing by even a small amount would be a real driver into whether a student, such as myself, would choose USM housing rather than outside housing.
1	0.51%		as nice as this would be, we also need housing on the Gorham campus.
1	0.51%		As someone who transferred into USM from a traditional, private 4-year college, I was not intending to attend USM for the "college experience." And I certainly did not have it--I describe my experience at USM more as "taking classes" than "going to college." That being said, I loved my experience living and working in Portland during my time at USM, and was able to create a network of both friends and professional connections within the Portland community. Going to school in a more urban environment, with more of an "open campus" being the city itself, there are lots of perks that you don't find at a traditional school situation. I believe that the addition of apartment-style housing on the USM Portland campus would certainly attract students from out of state, as well as foster a stronger sense of community that the Portland campus currently lacks (it's certainly a "commuter school"). I think that so long as the housing doesn't reflect traditional dorm-type living, it would be a successful and popular addition; I do not think dorm-style, shared room housing would be as popular as many USM students are not attending USM in search of a traditional college experience.
1	0.51%		Bayside Housing is a scam and not something USM should associate with
1	0.51%		Before I got my current job, I had to live at home in West Paris, Maine in order to make ends meet while attending USM/avoid racking up extreme student loan debt. During that time, I worked 41 hours per week in addition to attending school full time. Living in Portland or Gorham was not a reality for me as I would be paying too much to live on campus (plus I have pets) and it is way, way too expensive for students to live off campus with pets. Something that I really love about USM is the flexibility that it offers for students with their education. The blend of online classes versus on campus classes offered at a variety of times to meet everyone's schedules is fantastic and it has allowed me to continue to work and support myself while still attending school full time. For many Maine students, student loan debt and affordability of simple living is a severe burden that impacts both their education and their mental health/overall wellness. Offering more affordable, apartment style living in the heart of Portland would be great for such students, and everyone who is struggling to transition from student life to adulthood. Portland has an immense amount of part-time and full-time work opportunities for students allowing them to have less of an overall financial burden, and is in extreme proximity to a variety of entertainment options that help students relax. However, offering housing at the expenses of around $10,000 per year per student to those who already have trouble affording to attend college much less live, this would be either an added burden to their already existing troubles, or would single out students who don't have the same financial opportunities as others. So overall, I think the idea of adding more housing options in Portland would be fantastic for USM, but I think the price-tag is far too high for the average student.
1	0.51%		Build more housing. and making parking better.
1	0.51%		College is already expensive enough, no one is going to live in those Portland campus housing plans with the cost being that high when though the cost of living is high in Portland, there are plenty of apartments that are 600-800 a month, a rate of 1300 is absolutely ridiculous. People would rather have a smaller closet than pay that much.
1	0.51%		Definitely have options including regular dorms and suit style. And make sure you have enough room for incoming and current students.
1	0.51%		Definitely wanted
1	0.51%		Despite not living on campus due to my program being based out of LAC, I think on-campus housing is important for building the USM community.
1	0.51%		Do housing in Portland
1	0.51%		Doesn't matter where housing is, you need more housing period. Its terrible that there is no housing and people need to go off campus.
1	0.51%		Don't "enhance" it
1	0.51%		Don't make it super expensive, no ones going to want to live there when they could get housing in Gorham. Make sure there is off street parking.
1	0.51%		Due to the poor quality of Sodexo’s food on the Gorham campus alongside mislabeling of food that has led to allergic reactions and food poisoning, no student should be required to pay for a meal plan regardless of their living situation. As a student forced to pay for a meal plan myself, I hardly use it due to the lackluster food quality and mislabeling issues, often getting food elsewhere or making it myself utilizing the microwave in my suite as well as the hall’s kitchen. Forcing students to pay for poor dining services that they don’t use is a gross waste of money. No student should be forced to spend hundreds of dollars on a service they have no desire to use.

1	0.51%		For the possible Portland housing, $800 lowest price is too much. It's all fine and dandy that administration wants to "keep young people in Maine/attract more young people" but at this rate I will not be able to afford living in the Portland area even when I graduate with my MSW in 2020 from USM. I Don't want to leave Maine, but there are great places elsewhere that I can afford to live.
1	0.51%		Gender-inclusiveness should be a considered factor :)
1	0.51%		Get it, fast. I was told Gorham housing would be convienient and a great way to bond with students. I absolutely dislike almost everything about the way housing was handled this year. It's ridiculous that I was forced to chose between two of my best friends even though I'll be a junior next year living in Robbie Andrews. The worst dorm on campus. The facilities are always broken. Bathroom doors on 3rd Anderson were still broken from the previous academic year. I think it's ridiculous that because I couldn't find some way to apply to housing early, I had no option to live in upperclass housing or in any setting that I had hoped for. Now I am moving off campus and have to pay rent because housing has made me fee so hopeless that it's hurting my academics.
1	0.51%		Get Portland housing. Will attract a lot more students as Portland has a lot more than Gorham.
1	0.51%		Girls are too caddy I wouldn't want to live with them even if we had a suite of singles. A lot of my friends end up hating their roommate and it's awkward. Living with my boyfriend and our pets is more comfortable for sure.
1	0.51%		Given how expensive rent is becoming in Portland, it would be nice if there were affordable 1 bedroom apartment/studio style options for adult students who are too old to live in a dorm
1	0.51%		Good proximity to campus
1	0.51%		Had I known during my tour that housing will not be guaranteed, and especially on campus apartments for my sophomore year like I was told would be, I would've had more time to plan ahead for living off campus. Unfortunately, we have to move off campus.
1	0.51%		Have housing for current students rather than over accepting and forcing current students to not have living on campus.There is not enough room for all of us and many currents did not get a room for next year.
1	0.51%		Honestly I would really like to have housing on the Portland Campus; if it happens while I'm still attending USM I would definitely use it!
1	0.51%		Housing in Portland is key to building a stronger USM community. I think, however, it should be STRICTLY students only, no kids or families. I think that general "college experience" is more attainable in Gorham because that's where the athletic field is..I but as a 22 year old a dorm closer to the OldPort would be ideal for my 3rd and 4th year.
1	0.51%		Housing in Portland would encourage students to take part in more extracurriculars because most clubs are held late in Portland, meaning students now have to wait a while in Portland unless they want to make the trip back to Gorham, then to Portland again, then back. I think it would also increase admissions numbers, and at the very least reduce student upset over overcrowding in the dorms. For people who need to take late night classes, they wouldn't need to wait for the bus, since busses run less frequently the later it gets, and they could go directly home and get more sleep.
1	0.51%		Housing needs to be affordable.
1	0.51%		Housing on the Portland campus is a great idea for the students and the university and I think it definitely should be done
1	0.51%		Housing on the Portland campus is a necessity. As a freshman I take all of my classes in Portland until late at night and have to commute back to Gorham. The bus does not run frequently enough at night to be useful so I have to drive and spend money on gas. Living in Portland would make my life easier, as I would have no need to go to Gorham at all due to the fact I don't have a class there at all.
1	0.51%		Housing on the Portland Campus needs to happen - especially if the name change is happening. Kids don't want to come here thinking they are living in Portland and then being stuck in Gorham. Prioritize housing before the name change (nobody wants that anyways). I moved off campus because it was so crowded, and each year it only gets worse. IT'S A MESS, USM!
1	0.51%		Housing really doesn't seem to be an important factor for students deciding to pursue my program.
1	0.51%		Housing should be made available as soon as possible. Due to the lack of housing I have been forced into a housing situation that I am uncomfortable with and unhappy with. This is the third time that I will be in a room that will affect my ability to get my school work done, the ability to have my own schedule, the ability to have healthy food, and a safe space for myself and others. Housing at usm is extremely lacking in basic needs for students and I have been extremely disappointed. I have been forced into being required to live on campus as part of a scholarship and living like this has severely affected my schooling and my health both physically and mentally.

1	0.51%		I am a non traditional student so I really do not have an opinion. However, location and expenses are an issue from what I have heard from other students.
1	0.51%		I am appalled at the fact that USM is accepting so many students with the false pretenses that they will have a secured spot with on-campus housing the years following their first. Clearly this is not the case. I think more housing needs to exist immediately.
1	0.51%		I am really hoping for housing to come to Portland! It would be great for upperclass students to enjoy more of a city life in a new building! Housing in Portland would be great!
1	0.51%		I am worried about the impact on the intersection of Brighton/Falmouth/Bedford Streets and the surrounding park & residential areas. If a change is to be made at that intersection (i.e. roundabout) I hope it is thoroughly thought out and compared to other intersections so that it can operate successfully. I also don't find it aesthetically pleasing to build a large dorm on the Portland campus. I don't think adding housing is going to increase enrollment enough to offset the expenses. I also don't think the student housing will be any more affordable than local apartments. In my personal cost benefit analysis I don't think Portland campus student housing is a good idea. What about partnering with an already existing establishment to work on student housing? i.e. Bayside Village or similar
1	0.51%		I could see this feeling helpful to many students, though I personally am not interested in it. One of the main reasons I chose USM is because I could be a commuter student and in some ways separate my school, work, and home life.
1	0.51%		I dislike that I was put on a waiting list for housing before my day to apply even came, I wish I could live with the people I would have chosen to live with instead of forcing enhanced occupancy on people I don't know, and I feel like this could have been handled better
1	0.51%		I feel that the addition of on-campus housing on the Portland campus would have a very positive influence on the culture of USM. Although I do not want to live on campus, I would have strongly considered staying on campus during my undergraduate if there were housing options in Portland.
1	0.51%		I feel that USM needs to have more housing sooner rather than later. USM already has run out of housing availability for many students and is soon expecting a higher rate of applicants/acceptance while not having enough housing to live comfortably. I know there are many tripples and higher occupancy rooms on campus. I know that these situations are not ideal from personal experience and could not imagine having to stay in one of this rooms for more than a couple of month.
1	0.51%		I has to be cheaper then the cost of housing out side of the campus and closer to campus
1	0.51%		I have a unique and cheap housing situation that makes my studies possible. If it were not for that and my personal savings, I would need to have loans. Having a building for grad students might make more people try to go full-time though!
1	0.51%		I know some graduate students have a hard time looking for accommodations while attending grad school at USM. It didn't affect me, I already live here.
1	0.51%		I love the idea of having graduate student housing on the Portland campus. However, I understand that there may not be as much demand for graduate student housing, and that undergraduate housing is most likely a bit higher of a priority.
1	0.51%		I love the idea of Portland housing, and while it may be good for those who already live in Portland, the prices are just so much higher than Gorham it's not worth it to me to live there.
1	0.51%		I really enjoyed this survey!
1	0.51%		I think before we start worrying about having housing at the Portland campus let better Gorham dorms and cafeteria first. Thank you
1	0.51%		I think having housing in Portland is really important and helpful for the students. I personally choose to live at home because it saves money, but if I had to live on campus I would want the option to live on either campus
1	0.51%		I think having housing options in Portland would be good for students who are traditional age and their programs are based in Portland. If I had gone to school as a traditional age I might have lived on campus, but I have only ever had class in Gotham once. Traveling between would have been a huge annoyance. However, our Portland community seems to be mostly commuters, I'm not sure enough students would use on campus housing to be worth building expenses.
1	0.51%		I think housing on the Portland campus is a great idea, though I would not take advantage of this service (I own a home in Lewiston). By offering housing in Portland, you will attract new students to the area as well as help support the economy in the Portland area.
1	0.51%		I think it would be a good idea but I would choose to stay where I am and would not take advantage of the on campus housing in portland.
1	0.51%		I think it would be a great option!
1	0.51%		I think it would be good for people who have to take the bus everyday and have most classes in Portland. I also believe it would free up space in gorham for those who never go

			to Portland, like me.
1	0.51%		I think it would be great for USM to provide housing on the Portland campus. I think people would really like that option.
1	0.51%		I think it would be great if there would be housing on the USM Portland campus
1	0.51%		I think it's too expensive
1	0.51%		I think more singles should be available
1	0.51%		I think remodeling the housing at USM would make the school more attractive and desirable to go there for future students. It would build the community. It would also decrease the amount of students who commute and make them more involved if they spent more time on campus.
1	0.51%		I think that creating housing on the Portland Campus is a terrible idea. It will further clog an already overflowing area.
1	0.51%		I think that it is going to be way overpriced and it is much cheaper to live off campus. I also think parking is a huge deal because currently at the gorham campus they ticket non stop but there isn't enought spots to park and when you have a ton of stuff to carry you can't park down by the athletic fields and walk all the way to Woodward hall.
1	0.51%		I think that students would be mosh interested in the type of layout described in the meeting. For example living in a "pod" the highest values to students seem to be having their own bedroom and a space to cook food as to not require a meal plan. Other than that I do nothing think students would mind sharing a living space with others. The cost needs to be lowered as these rates are NOT competitive with other housing options in Portland. Most students would not be willing to pay much more than they would, for the same style on the gorham campus.
1	0.51%		I think that the hardest part is as a girl I don't like walking from all the way down the hill to my dorm. I work off campus and sometimes I would get back to campus at 11pm and it's veey creepy having to walk that far
1	0.51%		I think that the suggested rate for living in a dorm on Portland is way too expensive. I think you will run into trouble with too many people wanting to live in Gorham because it's cheaper. Let face it, we are broke, we can't afford and $1,000 rent. I see that as a huge deterrent. And I also think it is rediculous to have different prices for campuses. That in itself creates a segregation by how much money you have which is unfair. We already have community issues at USM and I feel that could separate us even more.
1	0.51%		I think that we should fix housing in Gorham, before we spend money to add more housing in Portland. Because the dorms in Gorham need fixing.
1	0.51%		I think the ideas you guys have for apartment layouts are great!
1	0.51%		I think the option of housing in Portland for upper class students is important, but parking in Portland is already an issue that needs to be addressed. I feel part of the parking issue on both campuses would be solved with a return to a no-car policy for first year students.
1	0.51%		I think there should also be a place for food in Upperclass Hall in Gorham. I know that has nothing to do with Portland housing but on days when the weather is awful (a.k.a all winter) and for those of us who have a meal plan because we're in a suite, it would be nice to not have to walk across campus to eat real food. Not all of us have money to stalk up on groceries either, that money goes to the school or towards textbooks etc.
1	0.51%		I think there should be a housing option for older returning students separate from regular dorms. As a returning/older student, I felt uneasy about relocating to Maine, I did not have connections or resources to live off campus when I first transferred. It would have been nice to have a housing complex dedicated to older people who are serious about their education coming to Maine for a specific degree program. Maybe a housing complex for people where if they have a young child there could also be an option. Maybe including a minimum age requirement of at least 23 years old to be considered for this type of housing. I was 27 when I moved into my double with my roommate who was 21 creating an unsafe and unstable environment for me to participate and learn fully... there were also many older students (not as old as I was) who lived in the building creating a strange environment for the children (17-20) who were fresh out of high school. IT was so strange that these interactions would happen in a dorm situation where we are supposed to be PROTECTING these kids. Also when I was accepted to USM I did not know I would be living in Gorham what a pain that was having my classes, work, internships and community in Portland but I am confined to Gorham campus with a terrible bus scheduale it felt very disempowering. I also know older students who lived at Bayside and took that as an option because of the awkwardness of being an older student in a dorm... their living situation was also terrible because they were not matched with other students and instead we're stuck in a year-long lease with terrible random roommates. I think if you want people to pursue a degree here and be taken seriously in the New England area than housing needs to accommodate all students not just the babies who are right out of high school. USM has more of a commuter school feel why not change the way you receive older students and maybe see a change in the community and don't promise people Portland if you are going to force them to live in another town 30 mins west.

1	0.51%		I think USM should do everything in its power to make the cost and quality of housing comparable between campuses. Charging more to live on the Portland campus could segregate the student population by class, rather than make it possible for students to live wherever is most convenient to their life and program of study.
1	0.51%		I think you need a better filter to your surveys. I attend school at a satellite site located in the MSAD17 central office. None of your questions applied to me and none of my answers were helpful to you.
1	0.51%		I want to live on campus, but I have to stress about being on the waitlist this year, which is ridiculous considering I'm a freshman who can't drive, and I couldn't even pick my dorm on my lottery date this year without all the available spaces being filled up already. It's ridiculous that I'm picked to go to this school, but then I might be possible kicked out of the dorms and have nowhere to live the next semester. Paying for a rented apartment is out of the question, my house is hours away, and my major is the only one offered at this college in Maine. There needs to be more housing if USM is really concerned with changing our name to UMP to bring in more students. More students means more housing, and we are already backed up, so please build more dorms STAT.
1	0.51%		I will be returning as a graduate student eventually and would look into living in the Portland area. The cost of tuition and the projected housing costs in Portland and the options outlined in this survey were VERY high, and would put myself (and other students) in significant debt with student loans.
1	0.51%		I wish there was access to more affordable housing and that you didn't have to pay a deposit if you don't end up living on campus, but still wanted to apply and have the option
1	0.51%		I wish USM had offered housing on the Portland campus in the first years of my career here. One of the biggest reasons I decided to attend USM was to get to know the city of Portland more, which I found very hard to do with the living situation being restricted to Gorham. I think students will have a chance to curate a community within USM as well as within the Portland area more efficiently if USM had housing in Portland.
1	0.51%		I would like to be in a single. I need my personal space to study, relax and be able to to have alone time. I found it difficult to always be around someone..
1	0.51%		I would LOVE to live on the portland campus, however, the rates provided are much to high and I do not want to be locked into a years contract when im in school for only 2/3 of that time. If there were apartments just like upperclass, i believe the rates should match as well as how long you have to pay for
1	0.51%		I would say to make sure there is a dining area where students can get food and parking for the students as well.
1	0.51%		I would very much like there to be Portland housing. I would however want laundry services to be available as it is much much more convenient and much less expensive if you don't have a car to drive to a laundromat. Having a kitchen is also very important to lots of people since it gives them much more control over their diet than they get relying on the school's food. I think that it is very important to have more housing. I believe that it is unacceptable for the school to displace current students who rely on on campus housing in favor of freshman simply to try to increase student enrollment. I would not be able to attend school if I were to be displaced.
1	0.51%		I'm not your typical student
1	0.51%		I'm glad that this survey is coming up because many of my friends did not receive housing and many live in different states and do not have a car and seem to be homeless for next year. If there was more housing and more options for the ones everyone wants then a lot of problems would be solved.
1	0.51%		If I had had the opportunity to live on campus in Portland I likely would have come to USM during my freshman/sophomore year(s). When applying to college during high school I didn't find living in gorham and commuting to the portland campus appealing, so I went elsewhere. I decided to transfer after moving back to maine and getting a job. Housing is incredibly difficult to find in the portland area, so I think dorms or affordable apartments is a great idea. Definitely a better use of money than changing the name of USM (again).
1	0.51%		If Portland will have a residence hall: Allow older students (21+) to choose into Portland residence with priority.
1	0.51%		If the university is going to try and sell "The University of Maine - Portland", instead of USM, then on-campus housing will be important, otherwise the name change is a fraud to increase possible enrollment of undergrads.
1	0.51%		If there were an option initially my first year, 2014, I would've lived on campus if there was housing on the portland campus but only if it was dorms right on campus. I personally don't think having apartments would be smart, it should be something like philipi or upperclass
1	0.51%		If this is really where you think money will be best spent, I do not know enough about the school to say otherwise. However, I would look to assure that you are making sure funds stay allocated to the law school, as the loss of professors as a result of not giving them tenure was a massive loss.

1	0.51%		If USM Nursing is going to limit spots in program for Portland campus it would be nice for them to offer us bus transportation between Portland and Lewiston campus
1	0.51%		If you are considering putting more housing anywhere, not just Portland, make sure there is parking, and that it is only for students living there. The Portland campus parking is THE WORST when someone decides to have an event and those people take up all of the parking. I have been late to multiple classes just because I had to spend 30 min searching for a parking spot that I didn't have to pay for. I already pay for parking here, I shouldn't have to pay for meter parking just because someone is having an event on my campus. The same is for Gorham. If more students keep being accepted, you really need to add both more housing as well as more parking. I was lucky enough to avoid the enhanced occupancy rooms my 4 years here, but I have moved multiple students into those rooms for the past 3 years, and none of those students were very happy about it.
1	0.51%		If you had graduate housing, specifically graduate apartments, I would seriously consider utilizing campus housing. Likewise, if the meal plan was a bit more commuter-friendly, I would use on-campus dining more, and I would definitely use it if I had on-campus (or near campus) graduate housing. I am in the process of selling my house because I couch-surf with friends to make it to my clinicals for my program since I cannot get to them from my island home. Graduate housing would be a HUGE benefit for me! In fact, I am looking at other schools to complete my DNP after my MSN where graduate apartments are an option.
1	0.51%		If you're going to change the USM name you need to provide Portland housing. It's deceiving and wrong that you're trying to market and brand a school that is mostly in Gorham. Name the school University of Maine in Gorham if you're going to change the name since that is where students will actually be living. This school has given lots of false hope about Portland housing over the past 4 years I've been involved with this school. The school seems to have their priorities mixed up. Forcing people into triples in the dorms is so messed up. I will never return to on campus housing. Over priced, over barring staff, and uncomfortable living space.
1	0.51%		Improvements in the cafe would have kept me on campus longer as well as better parking by the dorm you lived in. I also think having housing on portland campus would be ideal because most upperclassmen have classes in portland
1	0.51%		In the Gorham campus housing the bathrooms need SO much attention to create useful restrooms. The showers are so outdated that it is uncomfortable to take a shower. In Anderson Hall there is no changing room just a curtain, it can be uncomfortable for residents to use these showers if they feel self conscious or awkward. Please work on having efficient bathrooms for years to come! The space of the showers are so tiny very hard to shave legs with little room in a single standing stall! If there will be community bathrooms in Portland make sure to consider the future and how much the bathrooms would be used from people living on the floors. Make enough parking available for new residents in Portland, possibly making another parking garage would be great!
1	0.51%		Increase availability, stop accepting residential students when you can barely house the unreasonable amount you have now. Current returning students are considering dropping out because they cant get housing again for this fall.
1	0.51%		It seems the cheapest rent for the potential housing for Portland is still decently expensive. I live on East End and even when it was me and one other roommate, I payed less than what would potentially be offered through USM.
1	0.51%		It should be upperclassmen and be the same payment arrangements as gorham.
1	0.51%		It would be really good for there to be Portland housing. If there was housing in Portland, I would never have to be in gorham which would save me money on gas. I am only ever in gorham to sleep, because all of my classes are in Portland and have been since my first semester.
1	0.51%		It would have made life a lot easier if there was housing on the Portland campus. It really was a pain driving from Gorham everyday.
1	0.51%		It’s important to make it financially accessible, this is still a college and students are still poor. With occupancy rates in Gorham in their current state, it would suck for a student to have to pay more for a dorm/apartment in Portland just because there isn’t room in Gorham for them. Alternatively, people may flood Portland dorms and then picking who lives where could get tricky. Also, parking is one of the biggest reasons I moved off campus, please please give more parking options with these new dorms.
1	0.51%		LEED certified
1	0.51%		Looking forward to it.
1	0.51%		More housing on Gorham too
1	0.51%		More quiet study locations would a large plus!
1	0.51%		More single rooms! I am an adult and would prefer to have my own bedroom
1	0.51%		My apartment in downtown Portland is $650 per month, much cheaper than any of the housing options provided in this survey.

1	0.51%		My fiancé is not a USM student yet and we have a dog, so living on campus is not an option for me. Pet friendly rentals and the ability to have non usm students would be great for people in similar situations as we're currently paying way too much for rent. Portland is an expensive area and housing in Gorham is very limited
5	2.56%		N/A
1	0.51%		Na
2	1.03%		NA
1	0.51%		Native American tuition waiver specific housing/dorm floor
1	0.51%		Need more parking on Portland campus, and people like single apartments or studios
1	0.51%		Not all survey questions are applicable. For example, I have never taken a class on the Gorham campus and have never been to that campus. Also I own my home as opposed to renting and I know a number of others in my MBA program who work full-time also own their own homes..
1	0.51%		On campus housing would be fantastic for newer students coming into the school, but older students likely would like to try living on their own. I don't believe that living at the Gorham campus is necessarily the best option, academically - most of my resources are on the Portland campus, and I don't think that more limited access would have been conducive to success. That said, I have practically no experience with the Gorham campus (I've taken one class there during my three years here), and so I'm not entirely sure which additional resources are available over there. I'm talking about access to my professors, academic advisors, and the various departmental offices at USM, all of which are on the Portland campus.
1	0.51%		Opening up any type of housing in Portland would solve the housing crisis existing right now. Please make it happen.
1	0.51%		Parking is pretty much the thing that needs the most improvment. That can make or break my day every day I come home to campus.
1	0.51%		Please allow undergraduates to reside in Portland. Please build dorms on Portland!
1	0.51%		Please don't take away the entire availability of parking for off-campus/commuter students.
1	0.51%		Please fix parking. Thanks.
1	0.51%		Please get it built as soon as possible. You should see the amount of people from Freshman classes who don't come back. The "enhanced occupancy" is actively driving people away from USM, as is the asinine policy of admitting more students than USM has housing capacity for.
1	0.51%		Please get this housing. We need it!!
1	0.51%		Please keep campus green space in mind whenever new construction begins. It's already pretty lacking in Portland.
1	0.51%		Please make it more affordable!
1	0.51%		please please please consider an on campus bar! only if the direction is for upper class-graduate students. There used to be one, other campuses have them, and there are more benefits than disadvantages for them.
1	0.51%		Please take care of the mess USM has created for rooming in the past two years. USM is a good school but many current students are beginning to resent it because we didn't sign up for the Rooming Selection: Hunger Games edition. We are accepting a lot of students and its crammed in here already.
1	0.51%		Please, please, please provide more than enough parking for residents of you choose to add housing on the Portland campus. My current form is surrounded by teacher and computer parking and the woodward lot, which is very small. There isn't enough parking for the students who live in Anderson.
1	0.51%		Portland Housing is a great idea. I would have preferred living in Portland for the first 3 years of my time at USM
1	0.51%		Portland is not affordable at this point, especially if you have children or pets. I'm going to be forced to keep moving farther and farther away to be able to afford rent. Makes it so difficult when you're working full time 40hrs a week, have a part time internship of 20hrs/week, and then classes and school work too. How is there time to wast 2 hours a day driving too and from Portland campus to your home 20-40 miles from campus.
1	0.51%		portland's proposed housing costs seem to be quite expensive, apartments off campus are pretty comparable. if they want to attract more students, they should consider this
1	0.51%		Price should be the same as Gorham dorms
1	0.51%		Provide covered areas with places to lock a bike both on campus and near housing (Masterton breezeway?)

1	0.51%		Provide enough housing for every current student without over accepting more students. Give students housing on the campus that has there primary classes (music students on Gorham campus). DONT RUN OUT OF HOUSING FOR CURRENT STUDENTS.
1	0.51%		PROVIDE MORE PARKING!1
1	0.51%		Put more or even fix the housing on the Gorham campus before putting it on the Portland campus. It shouldn't be mixed up in two different places
1	0.51%		Put the Freshman there so we can actually have enough housing for the students who are already going.
1	0.51%		Since the majority of classes are in Portland, having housing options in Portland makes sense. Since Portland is a metro area there are a lot of opportunities for community building activities for Portland campus residents. I've found that the Gorham campus doesn't have a lot going on as far as activities and events, it's very boring and far away from where all of my classes and events are located.
1	0.51%		Something needs to be changed with housing. It is not fair to have returning students (who pay and have been paying to go here!) put on a wait list for housing. That's a great way to lose business, especially from out-of-state students. Also, if the amount of students is going to continue to increase, something needs to be done about the amount of parking on both campuses. There is simply not enough space for all of the students that have been accepted to this school.
1	0.51%		Stop offering housing when you dont have any. There is no room. Also the name change sucks. I really love upperclass but having overcapacity rooms is not okay.
1	0.51%		Students need their own bathrooms room and bedrooms; a studio with these two things is a must . Rent should not exceed 600$ per month; the aim of such projects should be helping students not raising funds Summer should be offered with lower rent; students should feel stability the whole year; they should not be expected to move under breaks and be homeless!!!
1	0.51%		Suggestion: apartments for 1 or two people, "efficiently" sized.
1	0.51%		Sure, let's solve our lack of housing by admitting even more students we can't house past freshman year and then eventually splitting up the campus community entirely between campuses
1	0.51%		The bathrooms in Anderson are great with one exception. The shower heads are angled (and unable to move) extremely close to the wall so you basically have to hug the wall to shower, and only 2/6 (one in each bathroom I've learned) is actually a good water pressure. Please, fix this for incoming students.
1	0.51%		The current configurations don't really meet the affordability needs of students. I understand that in order to build housing the prices need to go up but on-campus housing should be more affordable than off-campus housing. The configurations shown are the same price, if not more, than current off-campus housing.
1	0.51%		The fact that this school is trying to bring on more students BEFORE they fix the housing issue they have with their current students feels reckless, and quite frankly irresponsible. Myself, as well as many others I know, tell all prospective students about the terrible housing situation, the terrible parking situations, and how there are juniors on campus who still won't have housing next year because of the system you have in place. If the school wants to bring on more students, great. The school needs to be more appropriately driven in fixing these problems. As a member of the student body, I can tell you for certain we are all very agitated with how administration is handling the overcapacity. Your current students feel abandoned, forgotten, and that our voices do not matter. And this is all just about housing. Let's not get into how the majority of Gorham residents feel about the name change (which, was to bring on more students, right? How is the school going to handle even more when it can't appropriately handle what they have now?)
1	0.51%		The fact that this school, is asking us how the living situation is on campus, is honestly appalling to me. The lack of knowledge and observations that have been made by those in charge, especially the president, is shocking. At the beginning of this school year, Glenn Cummings sent out an email, happily proclaiming that we were at "127% capacity!" as if it was a great thing. It may be for him, and the staff, and all the money they rake in, but not for the students. People have been crammed into forced triples, quadruples, and MORE. Having situations where people need to be tripled up is common in college, but to this extent is insane, and honestly, unhealthy. Not to mention that the housing on the Gotham campus is sub-par at best, with outbreaks of bed bugs, uncleaned shower spaces, a lack of supervision (young adults attending college need that too!!) and just an overall untimely lay out. Housing in Portland is a good idea. It is. As a nursing student, all of my classes are in Portland, and it would be ideal- that being said for a lot of students. But we also need housing in Gorham, as well. How about we take away the idea of changing the name (which is only going to cause confusion. We have 3 campuses. The campus that is so important to be put into the title, doesn't even have rooms for students to live. Sounds poorly thought out, poorly budgeted, and honestly, irresponsible.) and put that money into restoring the two, perfectly good buildings that stand beside Philippi, and make them into more dorms? Doesn't that seem more practical. Lastly, I would like to point out that I, along with witnessing several other current students, persuaded prospective students that attended on

			Accepted Student's Day, to not come here. I wish someone had told me, sometimes. The housing is poorly managed, dirty, and unsustainable for the community already living there. I told them how we ran out of dorms for the students who already lived here, which is not only atrocious but embarrassing. I sincerely hope my comments, and the comments of other students, are taken to heart. This school claims to be the University of Everyone, yet a majority of the student body's thoughts and suggestions are ignored.
1	0.51%		The housing at USM is horrendous. Why the fuck would you accept more students than you have room for? I am a freshman and was looking forward to living in an upperclass hall, but before I was even able to access the lottery, housing was all filled up. I am now forced to live in an apartment next year, if I had known I wouldn't have a place to live, I would have transferred from USM.
1	0.51%		The housing at USM should at least be affordable to students of all races. Right now, oncampus housing is more relaiable to students living in states.
1	0.51%		The housing is nice on the Gorham campus, I just wish a lot of it was cheaper and it was available more. I barely got into Philippi for next year because so many students were trying to get in. It's so important to have enough housing for everyone.
1	0.51%		The housing USM has now is not sustainable, students resent the Maine School system, they resent Res Life and they resent President Cummings. The comments and complaints are not a joke, the memes are not harmless, students feel mistreated and robbed by the housing conditions and I agree. As a student and RA I can say with certainty that the housing crisis is pushing residents away, it's forcing students to settle for unacceptable living conditions that are in no way compensated with reduced costs.
1	0.51%		The majority of students that attend usm are commuters. Additionally, the majority of students that commute use Portland as their primary campus. If these individuals needed housing, they would currently live in a dorm. However, these students choose to commute- probably to save money and they live near by anyways. The students who primarily need housing are those who either live far away, play sports and need access to Costello, or both. So, a if a campus were to get housing, it should 100% be Gorham. Everyone who needs housing next year would agree, and they are upset that receiving a room next year has been extremely difficult with the influx of new students.
1	0.51%		The only deterrent from living on campus my junior and senior years (aside from financials) was the constant interference from USM residential life. I'm sure some students appreciated the regular checkups (husky huddles) and RA inspections and quiet-time, but for me it felt almost oppressive. As adults making important life decisions, we should have the option to live a more solitary lifestyle if we so choose. I understand the need to check for drugs and underage drinking, that was fine. But the mandatory floor meetings and the like became annoying. Even though it was less convenient and ultimately more expensive, living off campus became the only way to assume a social life without interference from Reslife. My apologies for sounding rude, I am just explaining my decision.
1	0.51%		The option for student housing on or near USM Portland campus is very appealing and would be easier than commuting from Gorham because most of my classes are on USM Portland campus. I can anticipate the lack of parking nearby bearing an issue as Portland is more limited in this sense.
1	0.51%		The prices mentioned earlier for Portland housing are pretty high.
1	0.51%		The rental prices are WAY too high. I am from Portland and I know that a four bedroom two bath with a tiny kitchen and living room does not cost 950-1050 per month per person unless you are in the east or west end. the oakland area near usm is probably 600-700 per month per person after utilities and Libbytown is cheaper. If you charge 950-1050 per month per person for anything other than a one bedroom in the Portland USM area, you will be ripping off your students.
1	0.51%		There has to be more housing available for students. As of right now there are students who will not have housing because the school over books and they plan to bring more students in by changing the name... lets spend that money on making more housing and parking for the students who are already here. Stop over booking, there isn't room for them. Also the meal plans... have a no meal plan option, and have a meal plan that actually allows students to have a meal three times a day for seven days. your max is 19... add two more meals, why wouldn't you.
1	0.51%		There need to be more housing and returning students should have priority over new students.
1	0.51%		There needs o be more Gorham housing and priority needs to be for freshman and sophomores not juniors and and seniors
1	0.51%		There needs to be more affordable housing and parking on both campuses
1	0.51%		There needs to be more parking available on the Portland campus. Or housing available to limit the amount of traffic in the area.
1	0.51%		There should also be a focus on renovating the current living quarters on the Gorham Campus.
1	0.51%		There should be more apartment style living options.

1	0.51%		Think it’s a good idea, and a good way to spend resources instead of changing a name that’s working fine.
1	0.51%		This is the most important thing USM could do to provide a better experience to students. The current over population in Gorham housing leads to more people moving off campus, more people not choosing to return to USM and not rproblems for reslife staff
1	0.51%		This survey was set up terribly. There is no reason to have 20 possible answers to a single question; it’s sloppy and inefficient. Add to that at least one question where “choose all that apply” only allowed for a single response. I do truly think that having housing on or near the Portland campus is important, but maybe instead of paying this consulting firm whatever fee they’re extracting from USM, the money could be used to build this needed facility - or better yet, maintain and update the existing academic buildings where the people who pay the administration’s paychecks earn their degrees.
1	0.51%		This survey was very long!
1	0.51%		This will be important especially for those who only have class in Portland.
1	0.51%		Tripples were awful and dorms were not worth the money. RAs were rude and too many rules. Also the parking is not good at all and required meal plans are annoying and a waste of money. There is not enough housing for returning students to get the housing on campus they want.
1	0.51%		USM lacks graduate living spaces. This really hurts USM compared to other universities.
1	0.51%		USM must have more housing. I know many people who do not have the ability to attend next year due to lack of housing, so they must change schools or drop out. Maybe fix the esbestos dorms until you can get portland housing if you have to, because this is not okay. This is bad for our school. Portland housing is a MUST, even if it costs more.
1	0.51%		USM needs GORHAM housing on the GORHAM campus. Portland is overpriced, not enough parking, and full of unsafe factors. The primary campus people spend the most at is GORHAM. The fact that the university is tripling students and/or kicking them out of the dorms because there isn’t any room left is absurd. And here we are changing our name for like a huge sum of money when USM can’t even focus on its students living. How are we to invite more people into USM when we can’t even provide housing for the current students? Thank GOD I didn’t have the deal with the bullshit housing system at USM or else I wouldn’t have gone there. Living off campus was the best and only choice for me but for others that’s not possible. GET MORE DORMS. GET MORE HOUSING IN GORHAM. That’s literally the the STUDENTS want at USM, and that is dorm rooms that aren’t packed in like section 8 housing.
1	0.51%		We need it.
1	0.51%		WE NEED MORE PARKIN EVERYWHERE!
1	0.51%		WE NEED PARKING CLOSER TO ANDERSON I GET BACK LATE FROM CLASSES AND FEEL UNSAFE WALKING FROM MY CAR THAT I HAVE TO PARK ACROSS CAMPUS. Also, I’m allergic to dust and mold and had a major asthma attack from being in Robie Andrews for a very short time, so that should probably be looked at. Not sure if this is the right place to put this but I’m gluten and dairy free and there’s no breakfast options on the Portland campus for me at all and that’s not okay either.
1	0.51%		Well considering I need on campus housing and I can’t get it for next year because of lack of housing I believe it is a good idea to have more housing
1	0.51%		When considering housing in Portland I think it should be important to consider teaching young people progressive ways to live in a city. There should be an intentional theme incorporated into the housing options. The building should manage waste in the most conservative way possible, ie recycling, composting, etc. There should be renewable energies utilized and highlighted as a means of teaching undergrad or grad. The building should incorporate public transportation, ride shares, and bike share models. There should be parking for only those with needs like commuting to jobs outside of walking distance.
1	0.51%		When is it coming?
1	0.51%		While I have no desire at my age to live on a college campus ever again. I will say that during my undergraduate studies I would not have gone to college that didn't provide on-campus living. At 17 years old I was not ready to live in an apartment, and couldn't afford a car to live off campus anyways. That being said, I was pretty surprised to find out that USM doesn't offer on-campus living at the Portland Campus. I wouldn't have been happy to commute from Gorham either. Half the fun of being a 17/18 year old is living on the campus where you go to school. Especially in downtown Portland area. I feel confident in saying that if you had Portland campus living available, the school would see an increase in students wanting to attend.
1	0.51%		While I selected two and four bedroom apartments as my preferred housing options for the second and third year of my program, the prices for those are just as high as other apartments I can't afford to rent in Portland. I realize there's a need to match market rates, but market rates in Portland have moved out of the price ranges of many students and working adults. $1100-1200 for a bedroom in an apartment is just too much for me, regardless of where it's located. If that is the total cost split between all roommates, that

			would be considerably more affordable, but it wasn't clear in the survey...
1	0.51%		Would be fantastic to have more student housing. Off campus housing is very scarce and expensive.
1	0.51%		would prefer commuter housing options as I don’t need on campus housing all the time just on an as needed basis or in emergencies when there are storms. I commute 2 hours 1 way from Winslow to gorham 2 days a week. There aren’t any hotels in Gorham that Im aware of, maybe there is air bnb.
1	0.51%		Wow, that was a lot of questions to get to this point of the survey. I'm going to be as candid as I can with my opinion. USM especially the Portland campus has a ton of commuter students. Some are older, some are straight from high school, heck I have had high schoolers in a few classes of mine! I originally attended USM immediately after graduation from high school. I commuted to the Portland campus 4 days a week for the first semester. This survey and proposed housing in Portland makes it seem like commuter students are undervalued. We pay tuition, we do our part, and then we leave campus so we don't need any RAs or extras. Setting up additional housing for students is going to cost a lot of start up money, and tie up a lot of money in housing long term. I don't think tuition rising much more will help the UMaine system. Most students I talk to come here because it is a good blend of affordable, a good education, and a good reputation. I can't imagine USM setting up housing near the USM campus and it going well in the short term, however if the school could wait until another downturn in the housing market perhaps they could capitalize on a bit cheaper of real estate in the area. Living in Portland is very expensive, and the dorms if they were built shouldn't be unreasonably priced. This survey must not be anonymous due to the "prizes", regardless I'm open to discussing possible ramifications, ideas, and solutions about this idea. (Ronald.Murray@maine.edu)
1	0.51%		You should fix Gorham living situations/ the buildings before attempting this mess

195 Respondents

USM Parking Assessment: Existing and Future Conditions

Presented by
LOURENÇO DANTAS, AICP
FEDERICO TALLIS, AICP

January 17, 2020

Contents

- Study Purpose
- Current Parking Supply
- Future Parking Supply
- Current Parking Demand
- Enrollment and Parking Demand Forecasts
- Future Parking Supply vs. Demand
- Key Takeaways
- Appendix
  - Parking Demand by Lot/Facility
  - Proposed USM TDM Strategies

Study Purpose

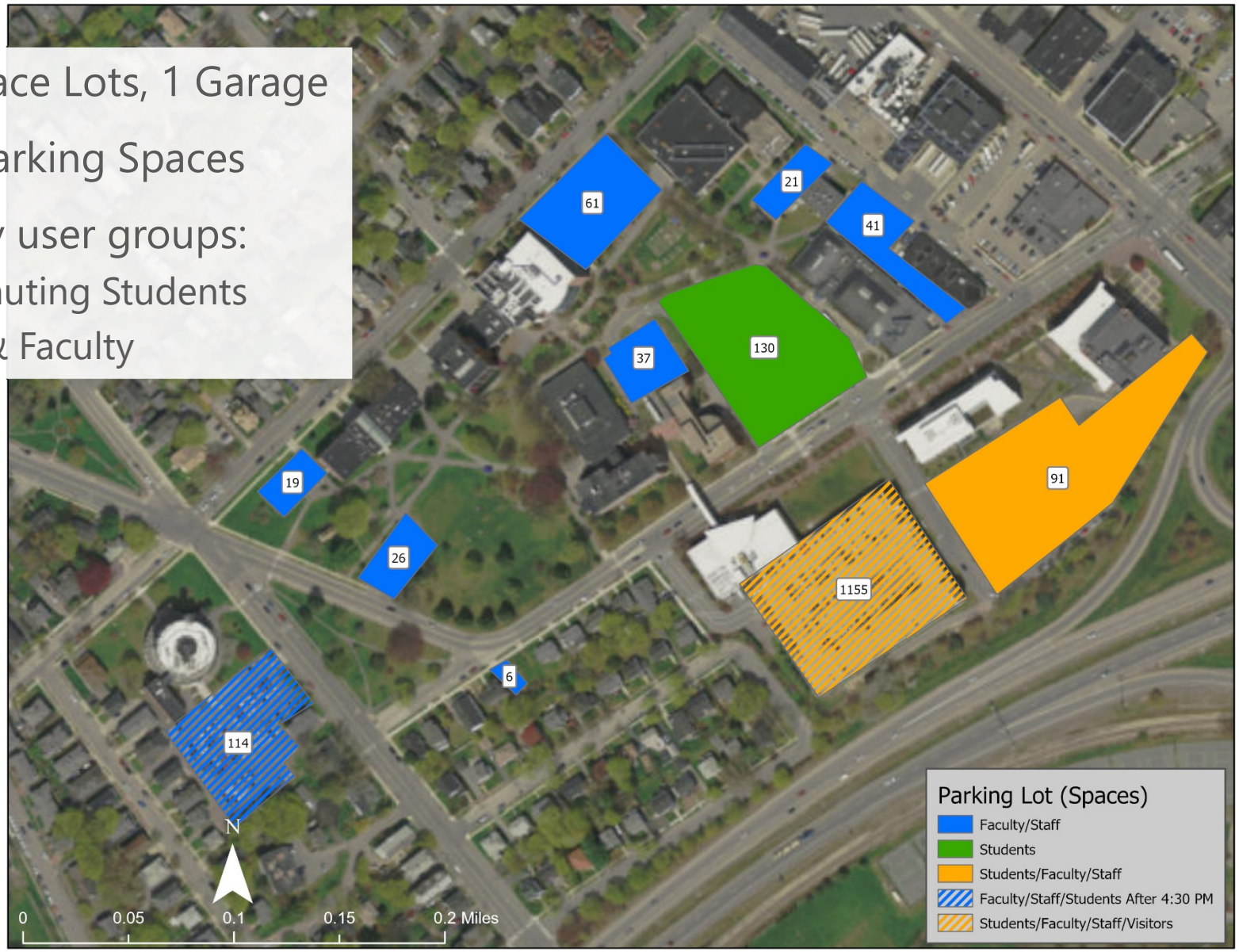
To develop a comprehensive profile of current on-campus parking conditions and to estimate future parking demand levels based upon projections of student enrollment, employment growth, and changes to campus activities.

Key milestones include:

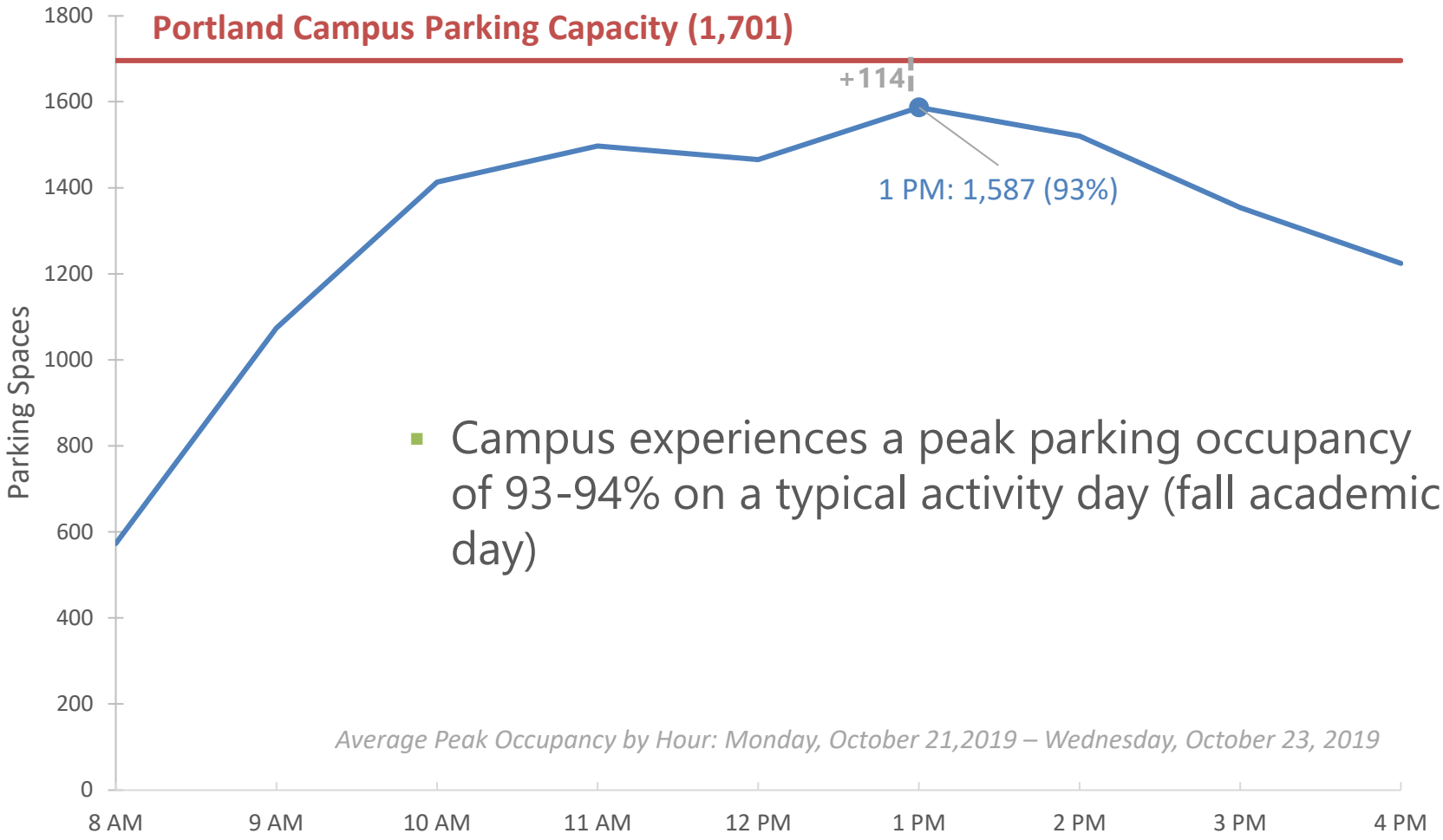
- 2022 – completion of student center & residence hall, including loss of Woodbury parking lot (P2)
- 2025 & 2030

Current Parking Supply

- 10 Surface Lots, 1 Garage
- 1,701 Parking Spaces
- Two key user groups:
  - Commuting Students
  - Staff & Faculty



Current Parking Demand

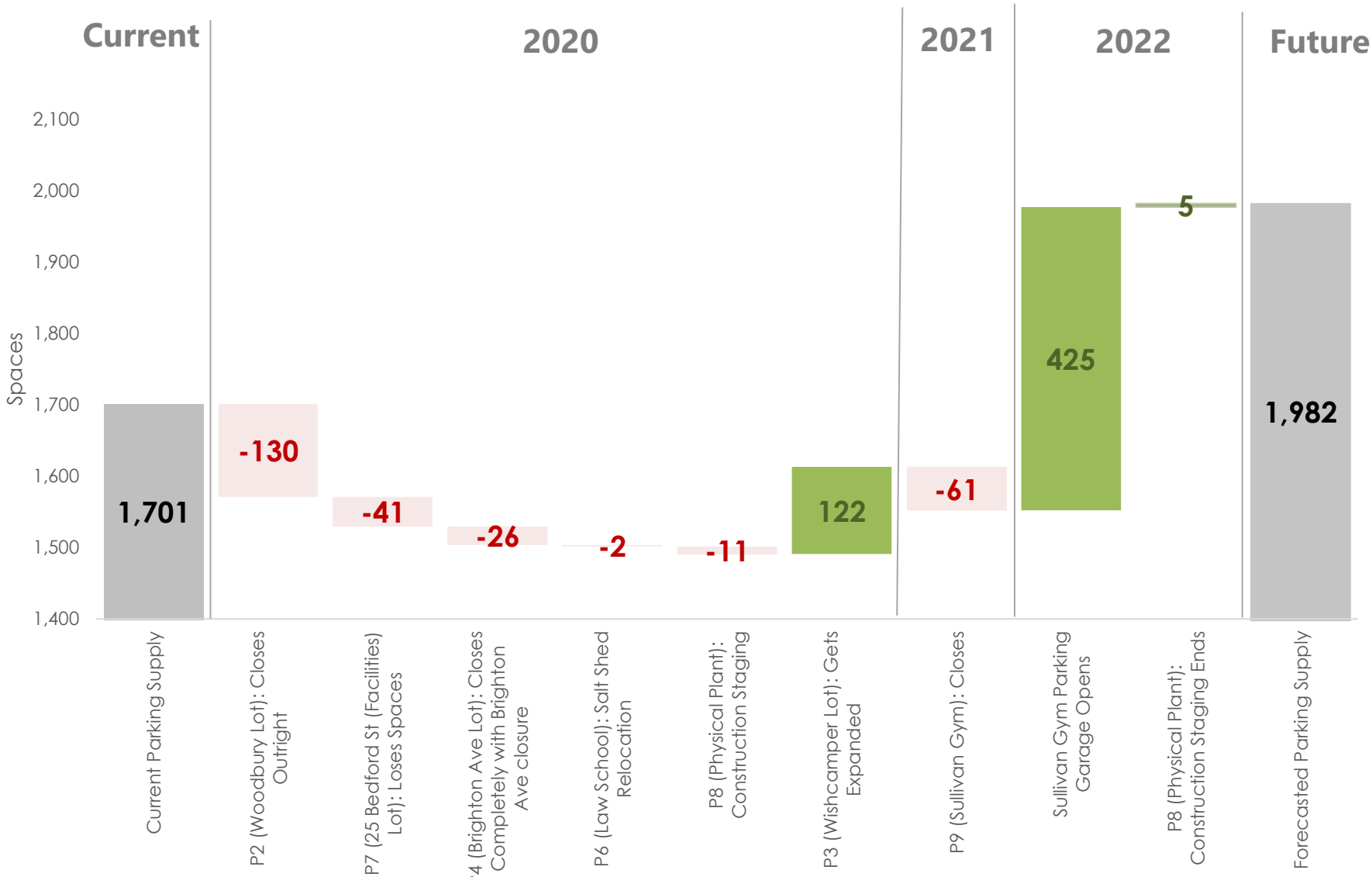


- Campus experiences a peak parking occupancy of 93-94% on a typical activity day (fall academic day)

Current Parking Demand

- Current Parking Peak Hour occurs at 1 PM
- Campus is currently at 93% occupancy during peak, typical activity day
- 5 of 11 lots noted occupancy beyond capacity (see details in appendix) including:
  - P2 Campus Center (Woodbury Parking Lot)
  - P3 Wishcamper Center/Library
  - P4 Off Brighton Ave
  - P5 92-120 Bedford
  - P10 Payson Smith

Future Parking Supply



Future Parking Supply

On-Campus	2019	2020	2021	2022	Milestone Notes (from USM)
Parking Garage	1155	1155	1155	1155	
P1 Luther Bonney & Masterton Halls	37	37	37	37	
P2 Campus Center (Woodbury Parking Lot)	130	0	0	0	Lose all of Woodbury parking lot permanently
P3 Wishcamper Center/Library	91	213	213	213	Wishcamper parking lot will be temporarily lost for the summer 2020 Gain 122 spots in new Wishcamper surface lot by September 2020
P4 Off Brighton Ave	26	0	0	0	Lose Brighton Ave extension parking lot by May 2020
P5 92-120 Bedford	6	6	6	6	
P6 Law Building	114	112	112	112	Salt shed being relocated to this lot to make way for construction of new buildings
P7 Facilities Building	41	0	0	0	Lose all of this lot, except access to oil fill in June of 2020
P8 Physical Plant	21	10	10	15	Lose half of this lot in 2020 and 2021 for use as a laydown/staging area for construction of new buildings and creation of service area
P9 Sullivan Recreation	61	61	0	0	Lose lot to construction zone for new parking garage
P10 Payson Smith	19	19	19	19	
USM Sullivan Lot Garage	0	0	0	425	Parking garage with 425 spaces
Total	**1,701**	**1,613**	**1,552**	**1,982**	

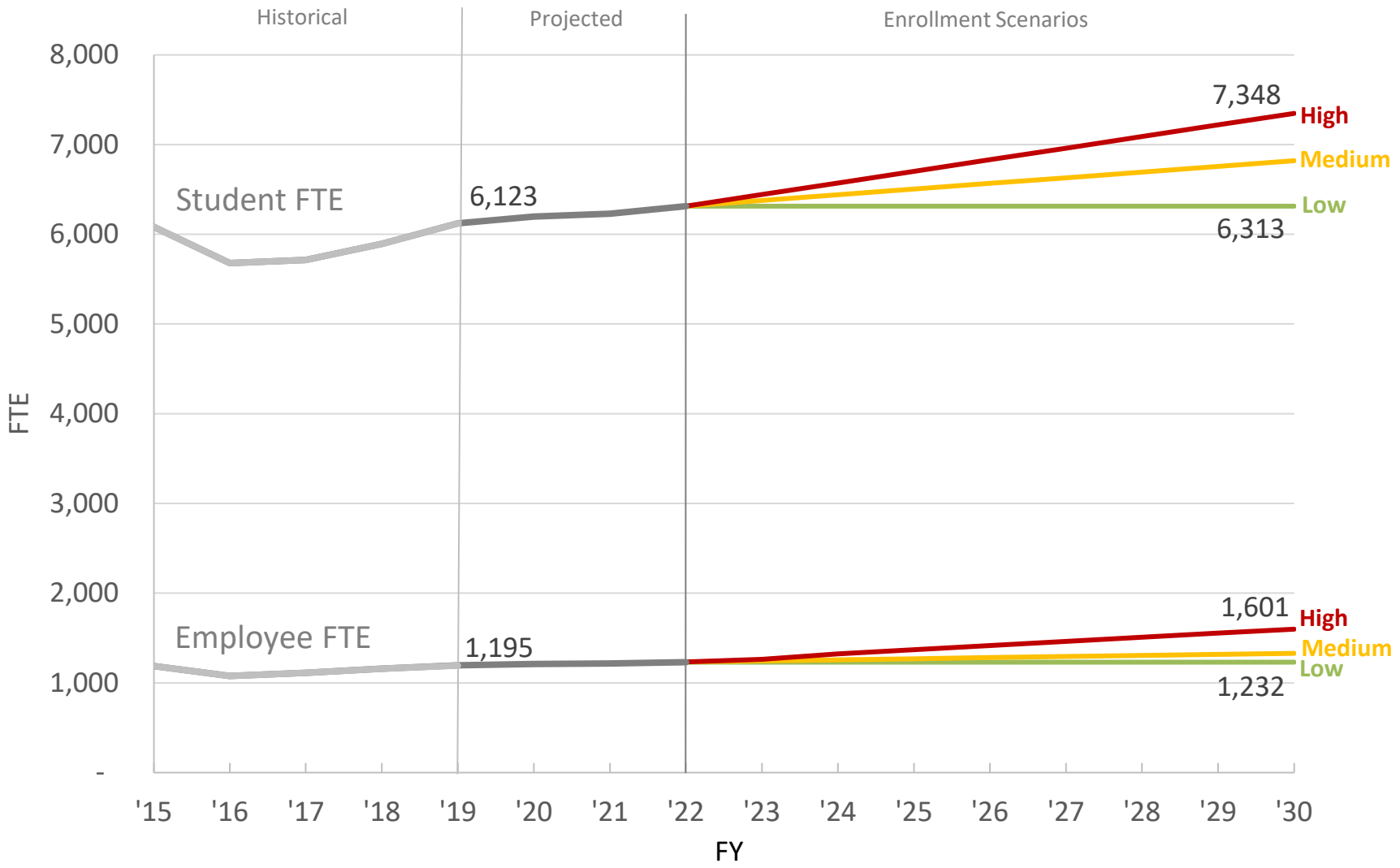
Enrollment Forecast Methodology

- What we know:
  - 2019 Student and Employee FTE
    - Student FTE: 6,123
    - Employee FTE: 1,195
  - Projected Student Growth Through 2022
    - 2020 Student FTE: 6,199
    - 2021 Student FTE: 6,230
    - 2022 Student FTE: 6,313
- What we don't know:
  - 2020 – 2022 Employee FTE
    - Employee FTE was grown proportionally to student enrollment using 2019 ratios for 2020 – 2022; could have a different growth rate
  - How USM will grow beyond 2022

Enrollment Forecast Methodology

- To determine demand beyond 2022 three scenarios were determined:
  - **Low:** Student enrollment and employment remains flat beyond 2022
    - Average Annual Growth Rate: 0%
  - **Mid:** Student enrollment continues to grow steadily based on growth from 2019 to 2022. Employment grows proportionally to student enrollment.
    - Average Annual Growth Rate: 1%
  - **High:** Student enrollment and employment grows back to peak enrollment, 2006 levels.
    - Average Annual Growth Rate: 2%

Student and Employee FTE Projections



Translating Enrollment to Parking Demand

- What we know:
  - Portland Campus Parking Demand
    - Peak hour demand: 1,587 (93%)
  - USM Portland Campus Headcount vs Total USM Enrollment
    - From Master Plan: Portland has 64% of total USM student headcount
  - Employee vs. Student Parking Demand
    - From parking count, 44% of Portland campus permits are from employees whereas 56% are from students
  - Residential Student Parking Permit Demand
    - From Master Plan 1,200 beds in Gorham and 815 registered permits from permit data = 0.68 parking space/bed.
    - Based on demographic of expected student population, a higher 0.75 parking space/bed rate was used.

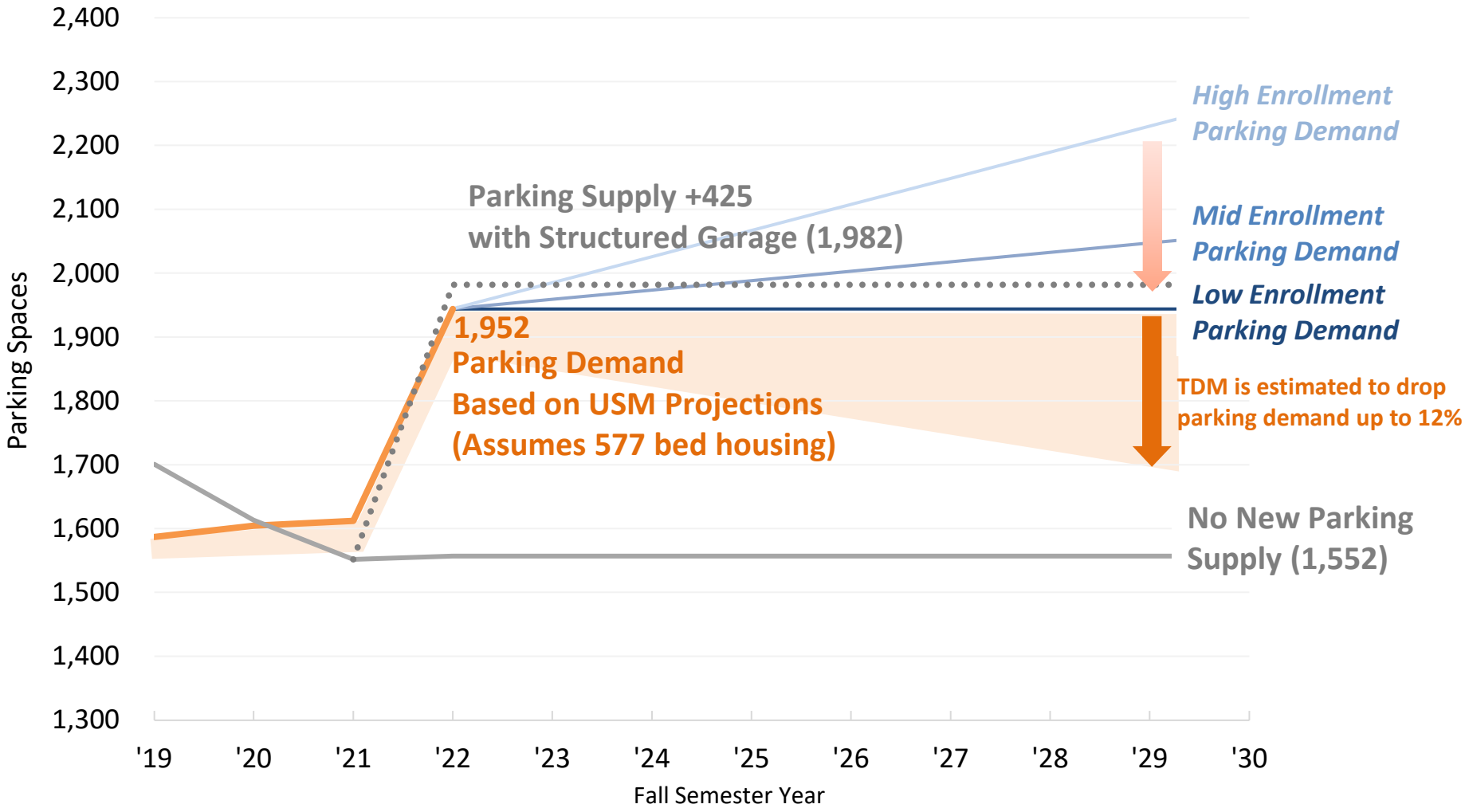
Translating Enrollment to Parking Demand

- To Calculate Parking Demand:
  1. USM Student Enrollment was translated to Portland Campus Student Enrollment
  2. For each forecasted year Portland student enrollment was split into two categories: Commuter student vs Residential student
     - 577 residents assumed on-campus from 2022 into the future.
     - Commuter students equal to total Portland headcount minus on-campus students
  3. Commuter student, residential student, employee, OLLI, and conference attendee parking rates were calculated:
     - Commuter student, employee, OLLI, and conference parking rates were calculated using existing permit demand data ratios
     - Residential student rates were calculated based on Gorham bed counts and resident student permits registered
  4. Calculated parking rates were multiplied by expected population for each year to determine final parking demand by group
  5. Final commuter student, residential student, and employee parking demand were summed to determine total parking demand

Calculating TDM Reduction

- To Calculate the impacts of a TDM program on USM:
  1. A laundry list of appropriate TDM strategies were chosen for USM based the peer review and the assessment of existing transportation conditions.
  2. Impact vs. cost of individual strategies were determined based on USM permit data sales and the transportation survey.
  3. USM narrowed laundry list from step 1 based on political and financial feasibility.
  4. VHB took final package of strategies and simulated potential mode split based on USM permit data and transportation survey.
  5. Mode split was translated to parking reduction based on existing mode split vs. parking demand patterns.
- A list of proposed TDM Strategies are contained in the appendix.

Future Parking Supply vs. Demand

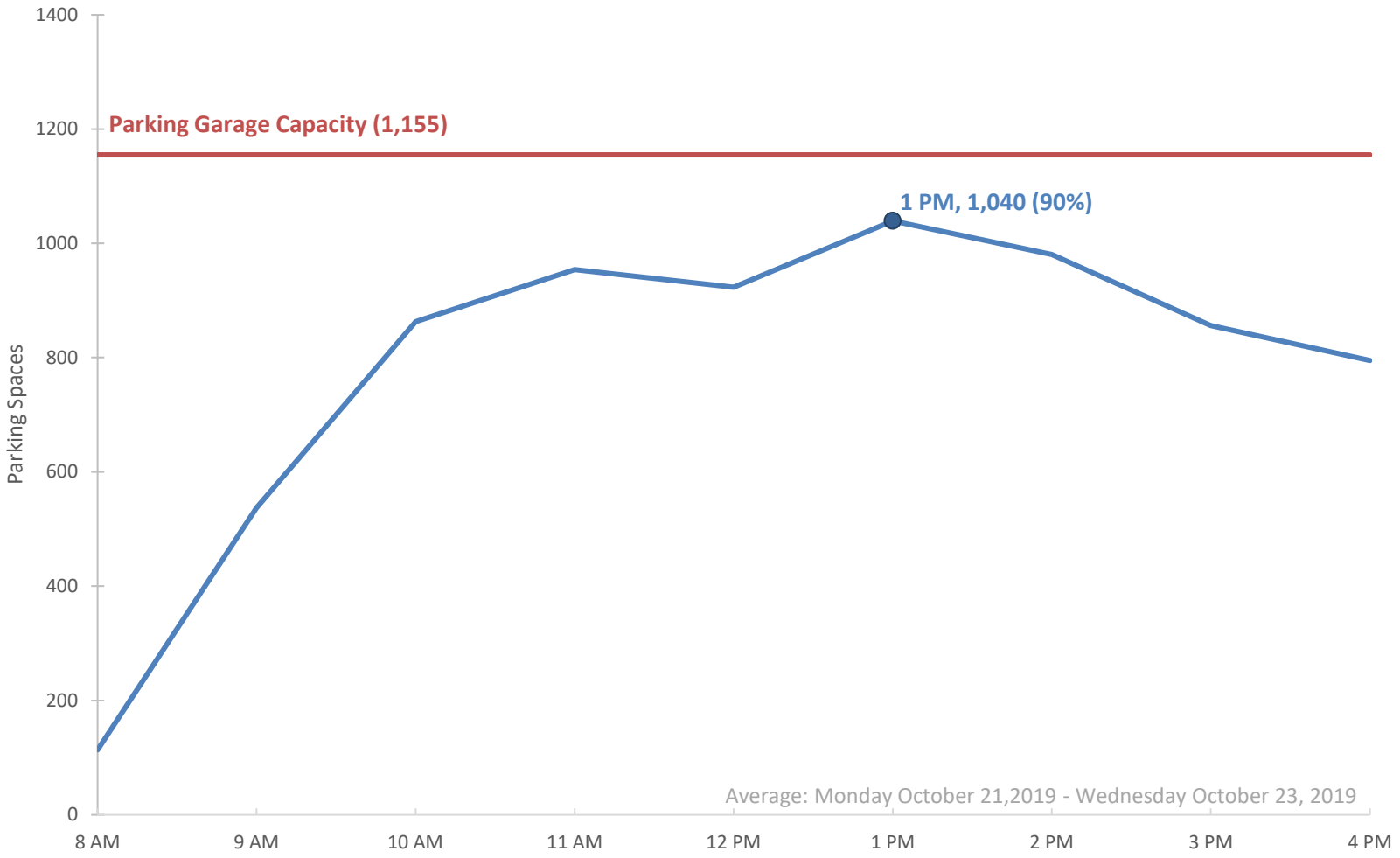


Takeaways

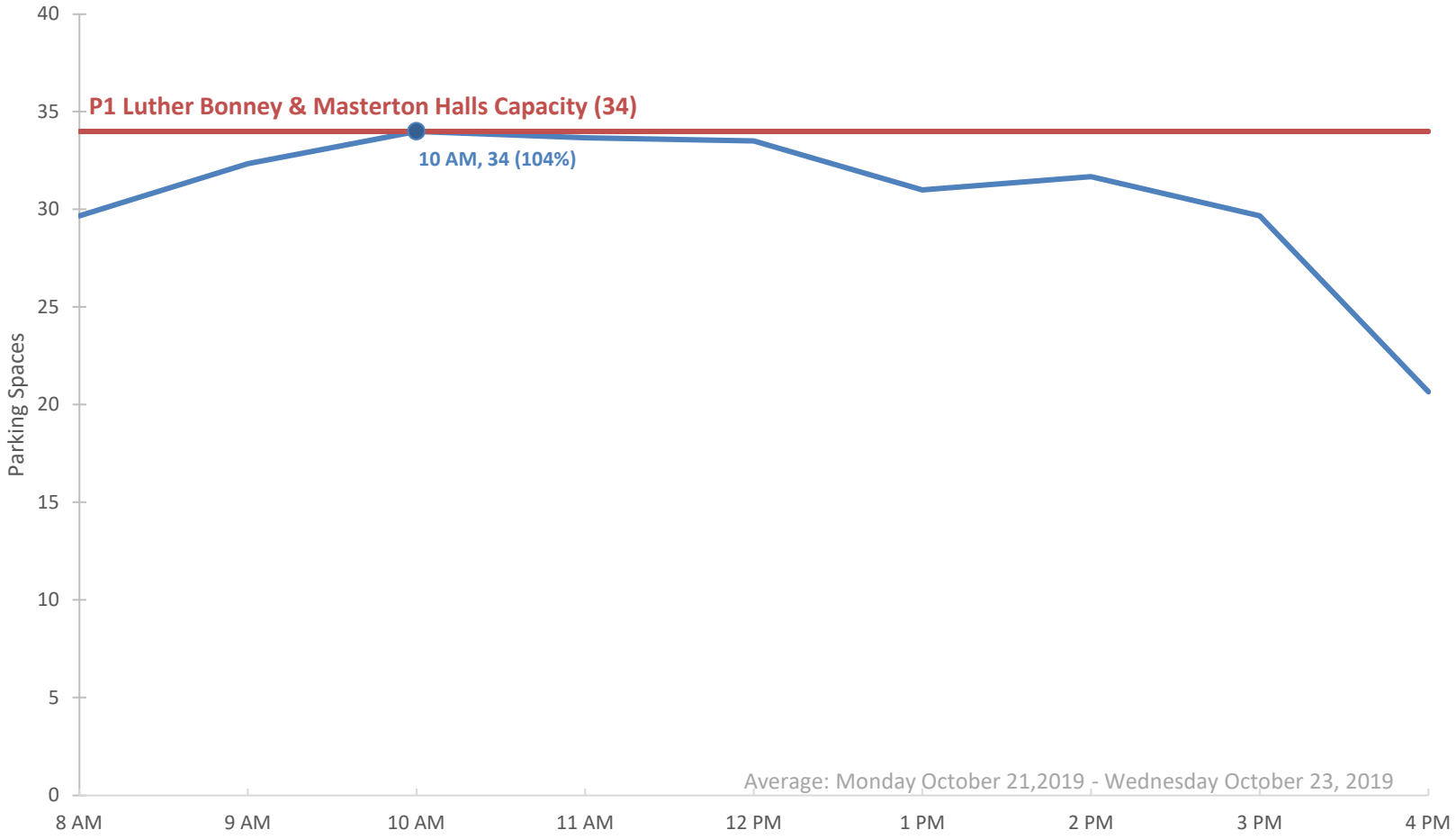
- With construction of a new residence hall and student center, new parking capacity is needed and/or parking demand needs to decrease
  - A moderately aggressive TDM program of strategies, including parking pricing and policy changes, could result in demand reductions of up to about 12 percent for USM
- Depending on enrollment projections, parking supply may not be adequate. USM would have to consider building more parking supply or further reducing parking demand
  - Not anticipated to be an issue until at least 2026 (under a modest 1 percent annual growth in student enrollment and without TDM implementation)
- Enrollment growth may not always directly contribute to growth during the peak demand hour:
  - E.g. Evening classes, distribution of classes among campuses, use of campus for conferences and at-large community events

Appendix:
Hourly Demand Charts by Parking Facility

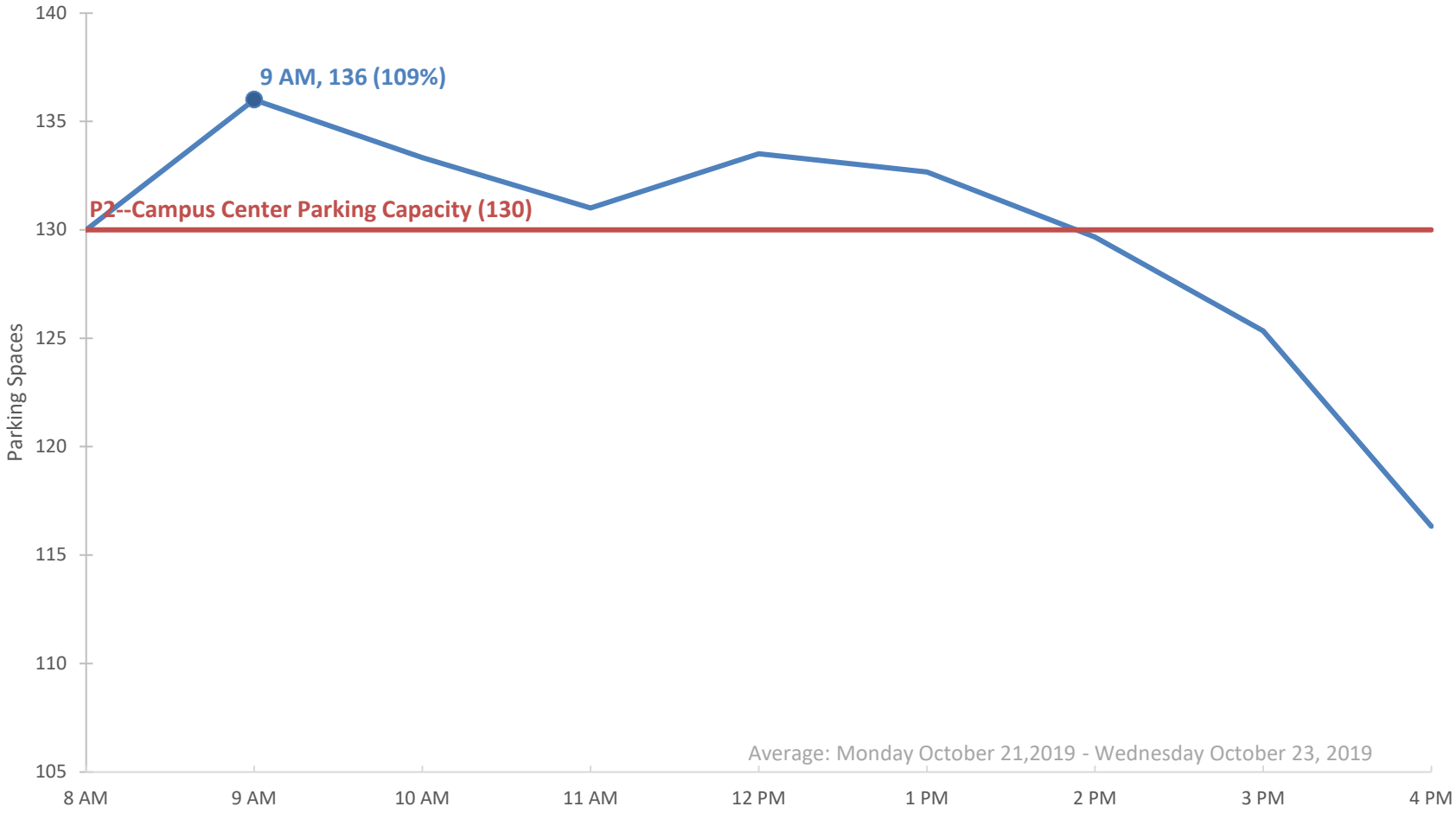
Parking Garage Demand



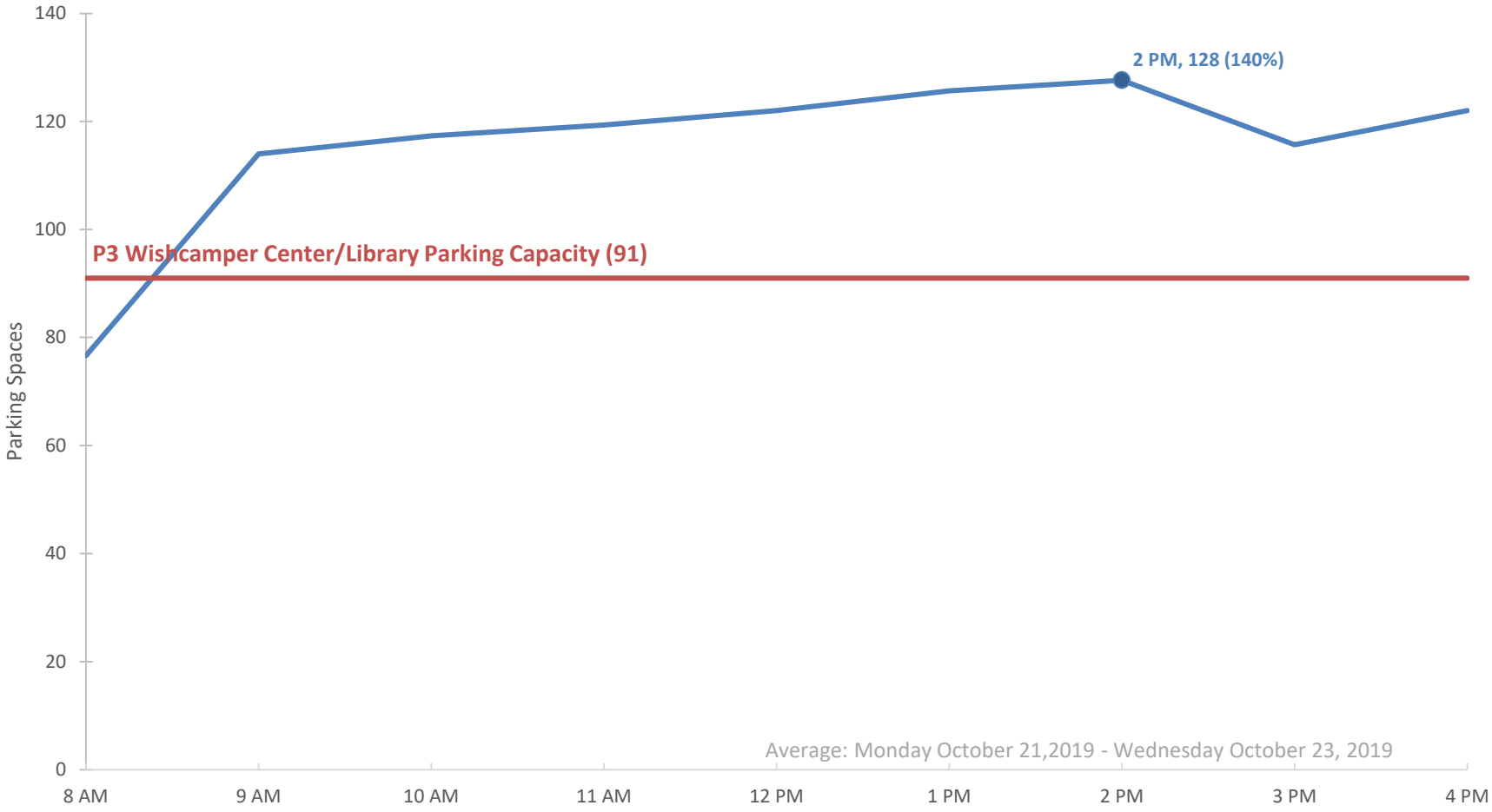
P1 Luther Bonney & Masterton Halls Parking Demand



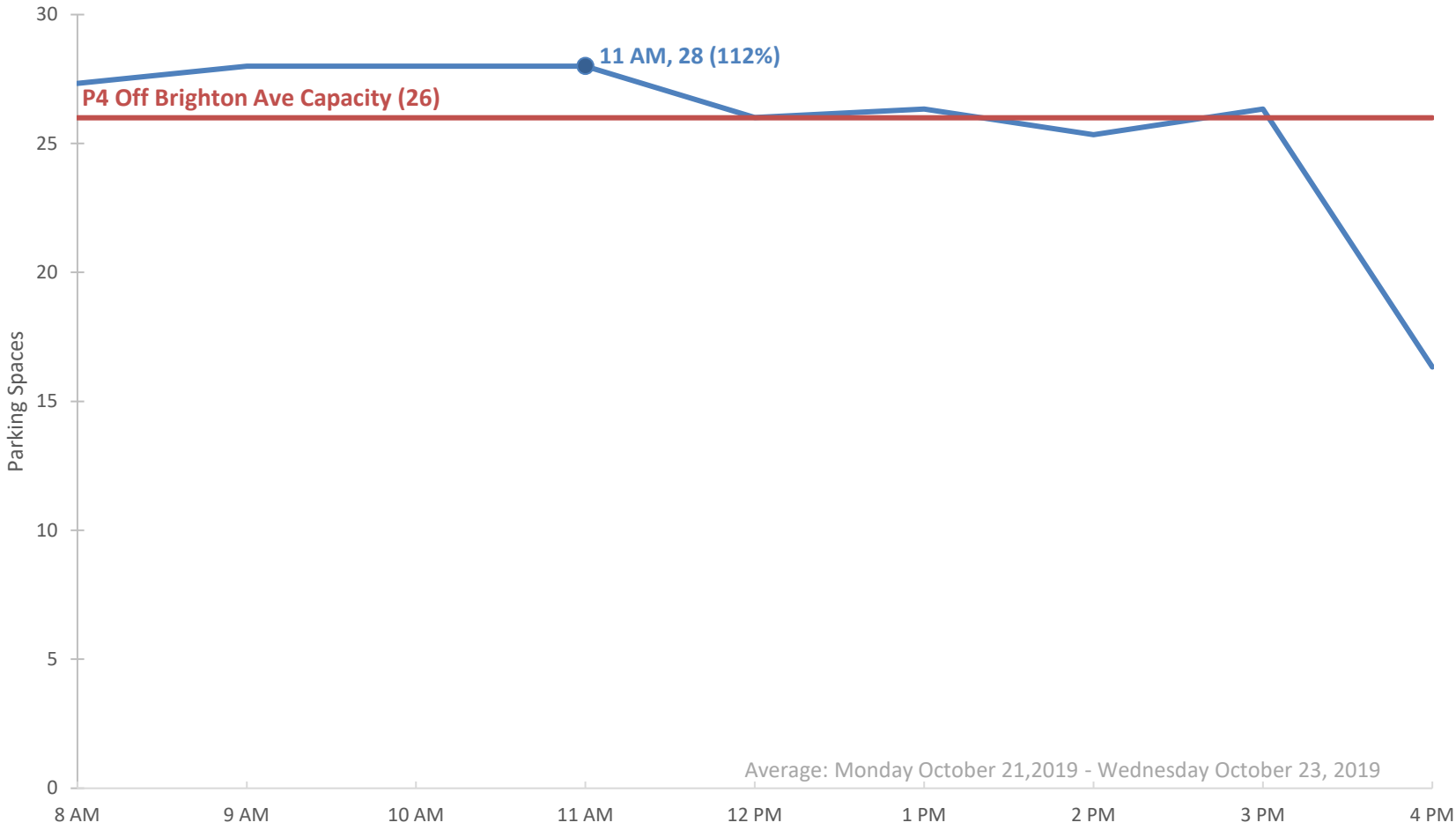
P2 Campus Center (Woodbury Parking Lot)



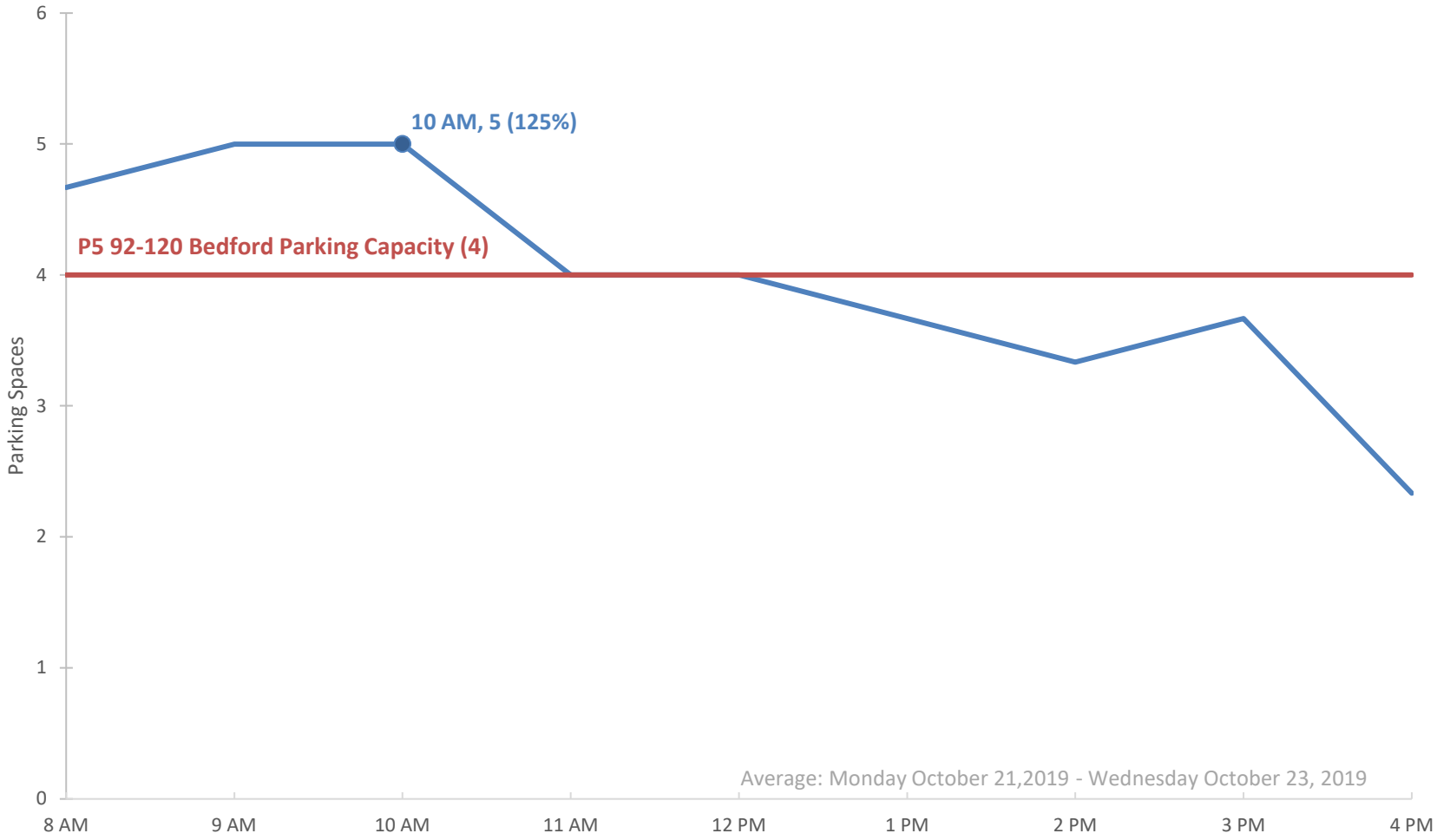
P3 Wishcamper Center/Library Parking Demand



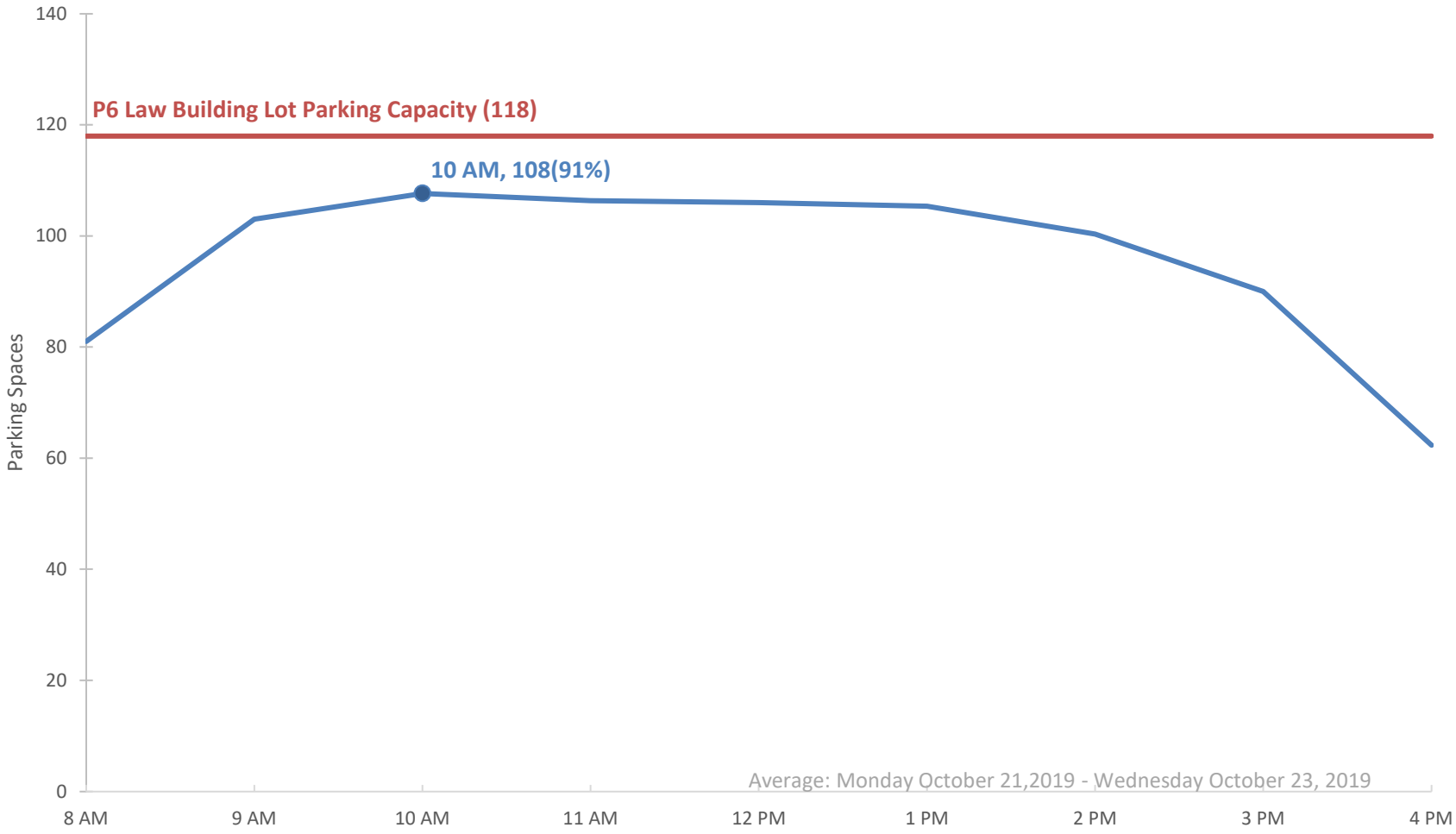
P4 Off Brighton Ave Parking Demand



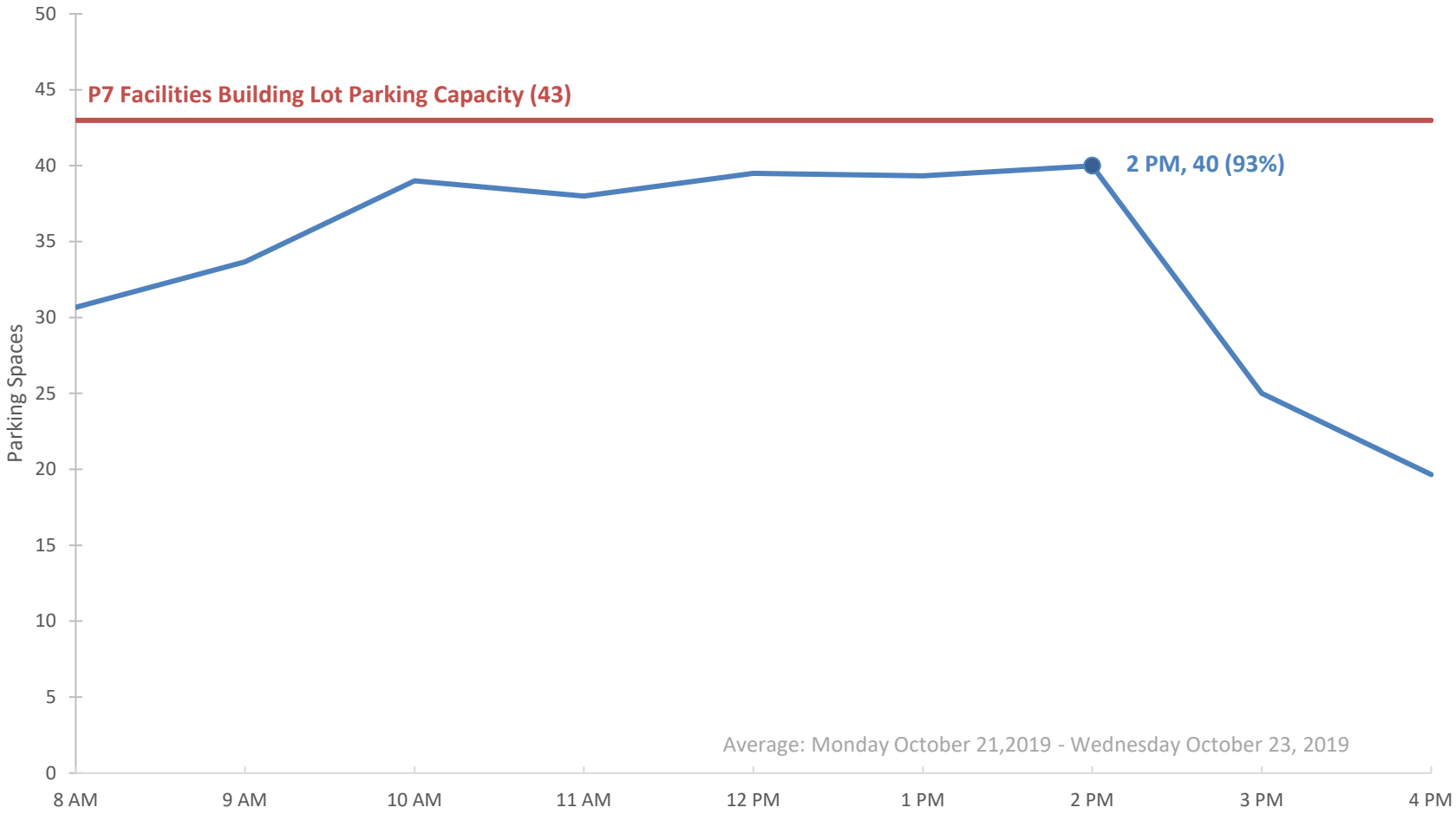
P5 92-120 Bedford Parking Demand



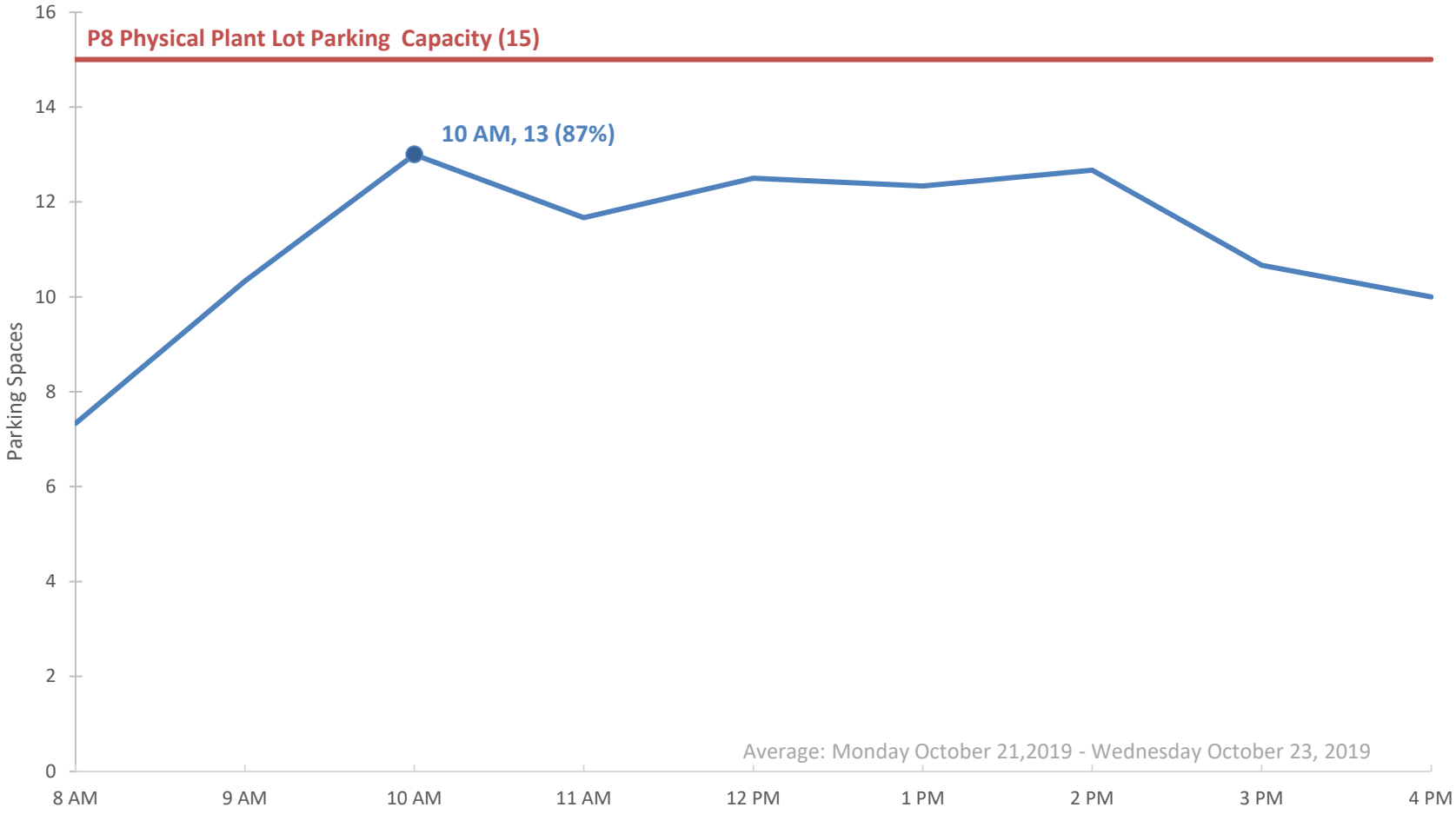
P6 Law Building Lot Parking Demand



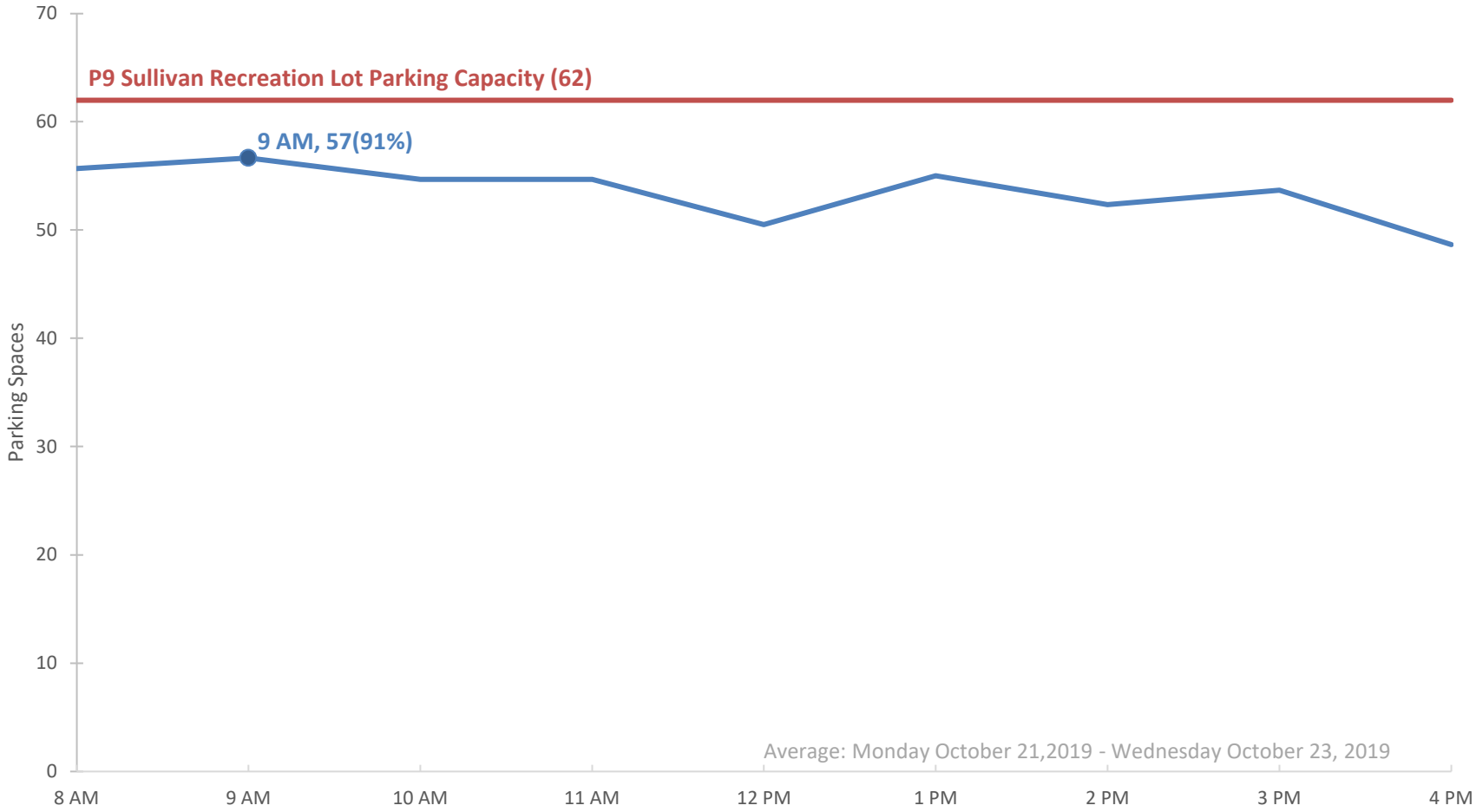
P7 Facilities Building Lot Parking Demand



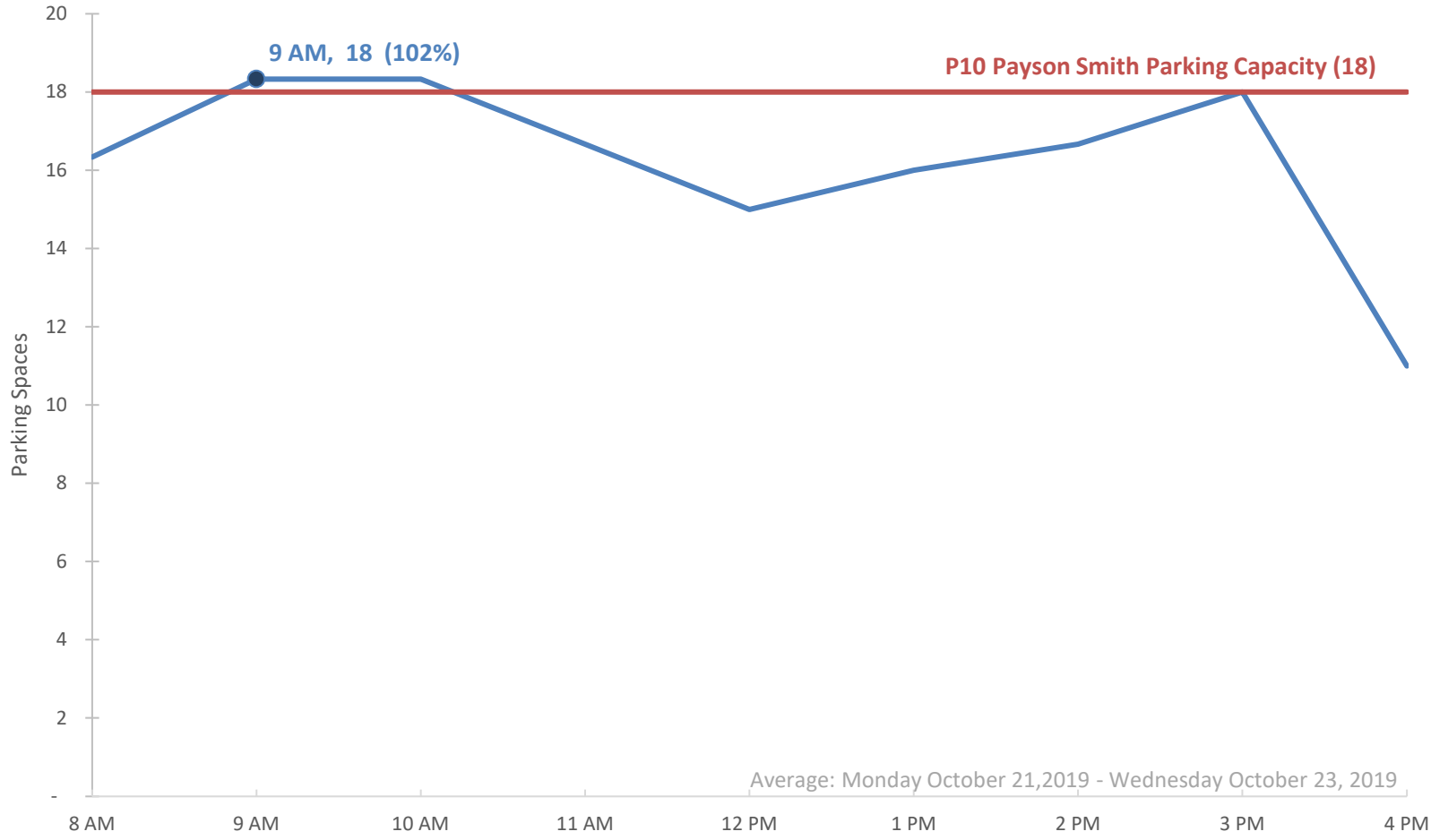
P8 Physical Plant Lot Parking Demand



P9 Sullivan Recreation Lot Parking Demand

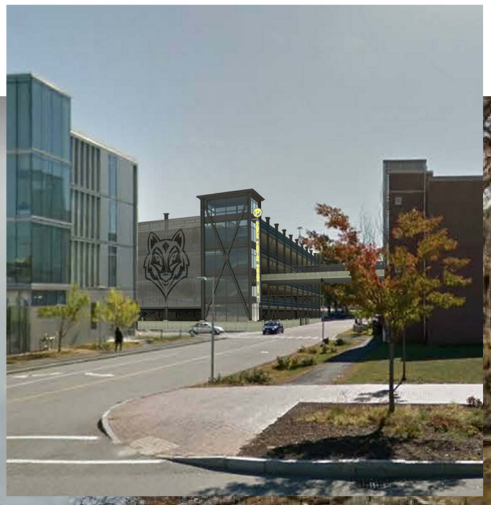


P10 Payson Smith Parking Demand



Parking Feasibility Study

University of Southern Maine
68 Falmouth Street & 88 Bedford/Surrenden Streets
Portland, ME





PLATZ ASSOCIATES
Since 1980
Architects • Engineers
Construction Managers

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Table of Contents

	Page
Executive Summary	1
Part 1 : Parking Feasibility Study of 68 Falmouth Street Lot	
Assessment of Owner's Objectives	5
Site Evaluation	6
Identification of Environmental Requirements	8
Site and Neighborhood Context Description	9
Conceptual Drawings	12
Design Budget and Proposed Project Timeline	23
Part 2 : Parking Feasibility Study of 88 Bedford/Surrenden Street Lot	
Assessment of Owner's Objectives	26
Site Evaluation	27
Identification of Environmental Requirements	29
Site and Neighborhood Context Description	30
Conceptual Drawings	32
Design Budget and Proposed Project Timeline	38

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Exhibits:

A. 2019 University of Southern Maine Facilities Master Plan 40

B. 2018 University of Southern Maine Aerial Photo 41

C. University of Southern Maine Zoning Overlay Plan 42

D. University of Southern Maine Utilities Overlay Plan 43

E. University of Southern Maine Topography Overlay Plan 44



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Executive Summary

Introduction

Platz Associates was contracted by the University of Southern Maine to conduct a site evaluation and Parking Feasibility Study in support of the growing parking demands at the Portland campus. The scope of this feasibility study is to understand the impact and cost implications for constructing a single or multi-level parking structure with possible vertical and/or lateral expansions at the selected sites located at 68 Falmouth Street and 88 Bedford / Surrenden Streets, Portland, Maine.

The following items are included in the study:

1. Review of the Owner's Development Objectives (communicated via 2019 USM Master Plan).
2. Identify constraints and opportunities for the selected site(s) and adjacent parcels.
3. Site evaluation, including but not limited to: onsite observations, assessing physical characteristics of the site(s), assessing codes, ordinances, and regulations, assessing available utilities, assessing access, circulation, and parking potential.
4. Identify environmental impact requirements/opportunities for site(s).
5. Conceptual Designs for level-deck and ramped multi-deck parking structures, including expansion schemes.
6. Estimate of Project Timeline and Cost of Work for each site.

Background

The site at 68 Falmouth Street is 2 acres +/- and was identified as a future development site per the 2019 USM Facilities Master Plan (see attached Exhibit A). The site at 88 Bedford/ Surrenden Streets is approximately 1.5 acres +/- and was identified as a future parking structure expansion site due to the adjacency to the existing parking garage. Both sites currently function as surface parking lots with fairly level topography across the site(s) and existing stormwater drainage and site lighting utilities. The Facilities Master Plan involves the infill development of surface parking and open spaces, affecting parking by both the displacement of current parking and by creating additional parking demand with new buildings and increased population. The Facilities Master Plan accounts for 1,000 parking spaces, 400 displaced and 600 new spaces. In 2017 the USM Portland campus had a headcount of 5,277 students, most all of whom are commuters.

Development Objectives

The most important considerations of the project are to adhere to the President's Goals and the CMPSC Guiding Principles set forth in the USM Facilities Master Plan and the consideration of the upcoming facilities being considered by the University for the adjacent parcels. While fluid in nature, this forecasting of future construction sequencing could provide for opportunities in efficiency and increase the quality of design while lowering the financial investment or impacts to construction schedules.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

CMPSC Guiding Principles (via 2019 USM Facilities Master Plan):

- *Student Experience*- improving the student's academic, co-curricular and living experience.
- *Inclusiveness*- fostering the ability for all to feel safe and participating members of the USM community.
- *Net-Zero Building Policy*- prioritizes capital renewal of existing facilities.
- *Public Safety*- provide the safest campus environment.
- *Mobility*- supporting robust pedestrian, bicycle, shuttle bus, ride share and metro regional public transit systems.
- *Sustainability*- supporting sustainability policies of the University.
- *Neighbors*- establish campus community that are positive members of the neighborhood.
- *Aesthetics*- create an environment that meets the visual quality that meets the mission and goals of the University.

The Portland Plan of the 2019 Facilities Master Plan envisions a transformational future for the campus, with a flexible and dynamic framework. A new campus heart lined by buildings and including significant landscape improvements would seek to capitalize on long views and gateway entry locations.

Process Methodology

First, an understanding of the project goals was established with an initial project kick-off meeting that included designated members from USM. With this consideration of the goals and vision for the project, our design team then visited the selected site(s) and performed a thorough existing conditions review of the available historic data maps, City archive information, available surveys, and visual observations.

For this feasibility study, our first task was to provide a preliminary assessment of the Owner's Development Objectives and identify constraints and opportunities for each site that will impact them. Next, we conducted site evaluations for the parcels that included: (1) on-site observations; (2) assessing the physical characteristics of the site; (3) assessing codes, ordinances and regulations that impact the Owner's Development Objectives; (4) assessing utilities available to the site; and (5) assessing the access, circulation, and parking potentials. Task 3 was identifying the environmental requirements that may apply to the Owner's Development Objectives for the site, such as the need for environmental impact statements, assessments, documentation, testing, or monitoring. A site context description provided for each location that identifies the physical characteristics of the areas immediately surrounding the sites, including land use patterns and potential expansion concepts and assess the impact of the Owner's Development Objectives on the surrounding sites and community. Our analysis also includes concept designs for each parking feasibility study drawn to City of Portland Zoning Code requirements, design budgets, and proposed project timelines for the selected concept designs. After preparing a draft report of the initial findings, meetings were conducted with designated members from USM to review the findings and offer insights and feedback for the preparation of this final report.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Relevant Design Considerations: Parking Feasibility Study for 68 Falmouth Street

After evaluating the identified site, the following options were developed for consideration by the University. Option 1 includes surface level parking with a level deck above and no circulation between the two levels. Option 2 includes surface level parking, two intermediate level decks, and a top level deck, with circulation between the levels. Option 3 includes surface level parking with a level deck above, and lateral expansion into the community garden site, with circulation. Option 4 includes surface level parking and vertical expansion with multiple level decks above in a design that is convertible into future classroom or flexible assembly-type galleries or lecture halls situated along Falmouth Street.

All of the proposed options provide highly efficient parking layouts at approximately 300 square feet per space, indicating the dimensional parameters of the proposed site strongly support parking structure development. Additionally, all options offer multiple direct vehicular and pedestrian access points from existing curb cuts and sidewalk systems at all corners of the site, and integrate well with the existing topography which will minimize costs and site disruption. None of the layouts would require any special City of Portland Planning Board relief or zoning variances.

Chief considerations in selecting the preferred option, or sequential combination of options, include; number of parking spaces desired by phase(s), impact to future building development, and parking displacement for future expansion(s). After review with University Staff, Option 4 was selected for additional massing development to test the conversion aesthetics from the perspective of both the residential neighborhood and the classroom spaces in the adjacent Science Building.

The design parameters for Option 4 include:

- *Initial 4-Level parking garage consisting of 80-space ground level with entrances to North and South, two mid-levels of 114 spaces, and a top level of 117 spaces for a total of 425 spaces.*
- *Level-bay construction along Falmouth Street for possible conversion of parking decks into Office/Classroom space, softening the aesthetic offered to the residential neighborhood.*
- *38 parking spaces may be converted to 11,000 sf gross (8,350 sf net) Office/Classroom spaces, which is possible on a per-floor basis.*
- *Vehicular and pedestrian connections are possible in all directions, including the existing sidewalk system and driveways/lots at Falmouth, Bedford, and Durham Streets.*

For the development of the massing and façade studies, three levels of parking was converted resulting in 33,000 sf gross (25,050 sf net) office/classroom space and an adjacent 323 space parking field. This design maximizes the grade-level sidewalk connections and biases the façade development to the pedestrian realm, leaving the top deck of parking to reduce the building's massing along Falmouth Street and the impacts to the views from within the Science Building.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Relevant Design Considerations: Parking Feasibility Study for 88 Bedford/ Surrenden Streets

After evaluating the identified site, the following options were developed for consideration by the University. Option 1 includes an arcing garage form that responds to the lot line along I-295 with internal circulation ramp connecting all levels of parking and providing site relief and view corridors towards the proposed future graduate center location adjacent to the Library/Osher Map buildings. Option 2 includes a rectangular multi-level garage with internal circulation ramp connecting all levels of parking and skybridge connection to the existing garage at the second level. Option 3 includes a level-deck expansion scenario to the existing garage with independent access to each level and radial internal circulation ramp providing site relief and view corridors towards the proposed future graduate center location adjacent to the Library/Osher Map buildings.

All of the proposed options provide highly efficient parking layouts at approximately 315 square feet per space, indicating the dimensional parameters of the proposed site strongly support parking structure development. Additionally, all options offer multiple direct vehicular and pedestrian access points from existing curb cuts and sidewalk systems at all corners of the site, and integrate well with the existing topography which will minimize costs and site disruption. None of the layouts would require any special City of Portland Planning Board relief or zoning variances.

Chief considerations in selecting the preferred option, or sequential combination of options, include; number of parking spaces desired, site and viewshed impacts to the future graduate center site, and financial impact(s) from modifying the existing garage structure. After review with University Staff, Option 1 was selected for additional massing development to test the conversion aesthetics from the perspective of both the I-295 highway corridor and the access drive adjacent to the Wishcamper Center.

The design parameters for Option 1 include:

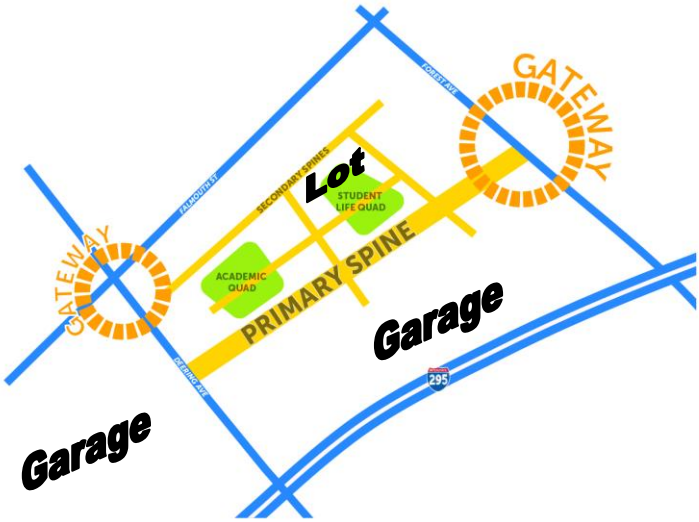
- *5-Level parking garage consisting of 110-space ground level with entrances to North and West, three mid-levels of 161 spaces, and a top level of 173 spaces for a total of 766 spaces.*
- *Sculptural arcing form referencing the I-295 corridor and the adjacent cloverleaf highway on/off ramps provides a large marketing opportunity for integration into the façade elements.*
- Relief provided at the future graduate center building site, allowing for exposure and views between the campus and downtown.
- *Vehicular and pedestrian connections are possible in all directions to the existing sidewalk system and Bedford Street.*

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Part 1 : Parking Feasibility Study of 68 Falmouth Street Lot

Preliminary Assessment of Owner's Development Objectives

The 2019 Facilities Master Plan seeks to establish a new residential quad in place of the existing surface parking lot to connect to and pair with the adjacent academic quad. Liner buildings would reinforce the quad enclosure and the parking structures provided for students, faculty and visitors would be concentrated at the perimeter of the campus.



A concern with this approach is it does not provide a convenient parking adjacency to the buildings being served by the parking fields, the prime factor in the utility of a parking structure. Winter weather and the wide Right-of-way width of the Bedford Street arterial drive serving as the campus gateway combine with a long travel distance as significant barriers to the effective utilization of the existing parking garage.

The Design Team suggests incorporating a flexible, expandable, and interconnected parking armature, located within the campus bounds as defined by the perimeter arterial roadways, establishing a new landscaped residential quad for the campus that preserves open space and long views to Downtown Portland while simultaneously providing a highly effective, safe and available parking solution.

Integration of the parking structures directly with the building(s) they serve could provide opportunities to merge "back-of-house" activities for increased efficiency and utility while preserving development flexibility for the site. The visibility and way-finding provided for the parking structures from the arterial connections should be considered carefully in the campus master planning to ensure the highest levels of convenience and utility.

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Site Evaluation

Utilities

All utilities including but not limited to electric, water, sewer, storm drainage and gas service appear available to the site directly from Falmouth Street, pending confirmation of available capacity by each utility. Of these major utilities serving adjacent buildings/lots, only a storm drainage line and a sewer line appear to cross the site and may need adjustment in coordination with the parking structure development. Additionally, a See Appendix D for additional information.

Topography

The site topography varies throughout the campus, but is generally descending in grade from West to East. The site's existing surface parking lot and related site improvements provide the opportunity to connect at-grade on the East edge and adjacent grades slope up approximately 10 feet to the West edge, an advantage for parking structure development that allows the potential for direct connection to upper levels, reducing the impact of internal and external circulation and "couching" the lower level of parking to reduce visual impact from the campus core. See Appendix E for additional information.

Parking

The site is currently used as a surface parking lot consisting of 62 total parking spaces, 4 of which are dedicated to handicap accessibility. The parking lot is for USM faculty and staff and denoted as Lot P9. The only point of vehicle access is from the North corner of the parking lot from Falmouth Street.

Pedestrian Access

There is a path that borders the South East portion of the parking lot which connects to the Sullivan Recreation and Fitness Complex, the Science Building, and other campus pathways. The pathway is accessible from a set of stairs located in the South corner of the parking lot or the open area located in front of the Sullivan Recreation and Fitness Complex. All parking options provide direct connectivity to the pedestrian circulation system, requiring varied levels of off-site disturbance depending on desired access points. See Appendix B for additional information.

Building Height

The proposed height of the parking structures in all of the options vary, however; each option is below the allowable height of 75' per the zoning ordinance. For the purpose of this feasibility study, the Design Team has developed layouts that are limited in height to 38 feet to correspond with and support the view opportunities from the upper levels of the adjacent Science Building. See Appendix C for additional information.

Building Setbacks

All proposed parking structures are within the setbacks set forth in the zoning ordinance. The only setback that is applicable to this study is the setback along Falmouth Street, which is 20'. See Appendix C for additional information.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Pedestrian Access

Pedestrian access and connectivity is maintained largely "as-is" in each of the parking options. The nature of efficient parking garage design supports pedestrian circulation nodes at the corners where vehicular parking is unavailable. Each parking option anticipates vertical circulation stair towers at these corners, and aligns these pedestrian elements with the existing sidewalk system and away from vehicular drives to provide a high degree of visibility, comfort, and safety.

Vehicle Access

All parking options would maintain the current access point on Falmouth Street, while some would potentially add access points from the central campus parking lot access drive or from Durham Street through the existing Central Heat Station parking lot. These options may not be favorable for long-term implementation, but may be designed to be convertible into pedestrian-focused elements if alternate vehicular access points are provided in a parking garage expansion.

Delivery/Loading Access

The existing loading dock at the surface lot to the Science Building is to be maintained, and importantly, will be expanded with a dedicated entry to reduce traffic backup conditions and to provide additional capacity for future needs. Additional service vehicle or university maintenance parking could be incorporated within this loading zone.



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Identification of Environmental Requirements

Due to the highly variable disposition of silty and sandy soils across the Back Bay basin generally, and extending specifically to the surrounding sites at the existing parking structure at Surrenden Street, it is recommended that a geotechnical engineer be brought on-board early in the schematic design process to provide soil analysis and identify the soil improvements necessary to support the preliminary foundation design.

Beyond this soils composition assessment, there are no known needs for environmental impact statements, additional environmental assessments, or testing/monitoring with respect to the materials reviewed as part of this parking feasibility investigation.

Generally, the proposed parking options provide close integration with the existing grades and take advantage of adjacent elevations to reduce the impact of sitework and potential exposure to the import/export of soils. Additionally, the lighter weight of a steel garage structure would support the use of either spread footings or geopiers, granting the Design Team flexibility to tailor a structural solution with the lowest level of environmental impact.



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Site and Neighborhood Context Description

Campus

The University was founded in 1878 with Corthell Hall being the first university building in Gorham, Maine. The Portland campus is located downtown and bordered by highly trafficked roads including, Interstate Highway 295, Forrest Avenue, Deering Avenue, Falmouth Street, and Bedford Street. The campus buildings are a variety of materials including but not limited to brick, glass curtain wall, panelized systems, and concrete.

Neighborhood

A completely developed urban neighborhood. The adjacent land consists of Interstate Highway 295 on the South, commercial uses on the North and residential uses on the west and south. The largest adjacent land use is the Oakhurst Dairy distribution center between the campus and Forest Ave. The adjacent residential areas provide housing for some of USM's students but are generally a set of very solid and cohesive neighborhoods.

Zoning

The campus is located in Zone R5 in the City of Portland, with an overlay zone type of "USM" for the University of Southern Maine. This zone has a strict set of rules designed to create a quality and cohesive campus environment while integrating with and respecting the residential character of surrounding neighborhoods.

USM Campus Design Principles and Standards (*Adopted May 23, 200)*

STANDARD A-1: Campus Edges Parking lots and structures, blank walls, or backs of buildings shall not be sited in a manner that forms a boundary to neighborhoods and the city.

STANDARD A-5: Views and Landmarks. View corridors and terminations to landmarks such as campus buildings, city buildings, and natural resources, shall be highlighted with design elements such as significant architectural features, quality materials, landscaping, public art or other visual amenities. View corridors and termination points shall include the view up Bedford Street and west across Deering Ave., and other important views as may be identified during campus planning and the City's development review process.

STANDARD B-3: Multi-modality. New development shall relate to a campus circulation system that serves pedestrians/bicyclists, autos, public transportation, service vehicles, and emergency vehicles. New development along transit corridors shall provide convenient and accessible routes from the building to the nearest transit stop.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

STANDARD B-4: Traffic-calming. Circulation improvements internal to the campus shall be designed to create a pedestrian-oriented environment and to discourage speed. Appropriate traffic calming measures may include gateway treatments that signal arrival into the campus environment, corner neck-downs, narrowed travel lanes, roundabouts, speed tables, and other devices. Development along public streets shall be designed with traffic calming measures to the extent allowed by City and State policies and requirements at a minimum.

PRINCIPLE C: Parking, Loading and Service Areas. Parking structures shall be designed and located so as to present an attractive façade to neighboring uses in order to minimize the impact along streets and residential areas. Surface parking lots shall be sited and designed to minimize their visual presence on the campus.

STANDARDS C-1: Structures. Parking structures shall be compatible with adjacent uses and architecture in form, bulk, massing, articulation, and materials. Parking structures shall incorporate architectural design elements in order to achieve visual interest on street frontage facades, and along major pedestrian ways, for the full height of the structure, that serve to enhance the pedestrian experience. STANDARD C-2: Active Uses: Parking structures shall incorporate liner buildings or enclosed active uses on the first floor along all primary frontages (excluding frontage dedicated to entrances, lobbies, and stair towers). Such space shall be provided with a minimum of 9-foot floor to ceiling clearance height and a 25-foot depth (measured from the exterior building wall). Alternatively, the parking structures may be set back at least 35 feet from the primary street right of way and that space shall not be occupied by surface parking or access lanes and shall be designated for future development. The setback space shall be provided with all stubbed utilities and other provisions needed to accommodate further development.

STANDARD C-3: Decks and Ramps. Parking structures shall have horizontal decks on all levels where the decks are visible from the public rights of way. Ramps and no horizontal parking decks shall be screened from all visible angles and shall not be permitted 4 on facades located along or within 45 feet of a public street (Note: such space would allow for the construction of a liner building and a ten-foot separation).

STANDARD C-4: Surface Lots. Parking lots shall be located behind buildings or to the side of existing or future buildings, but shall not occupy more than 64 feet of public street frontage within 45 feet of the street right of way (to allow for a future building). The areas devoted to surface parking shall be screened from streets, walkways, and significant views through the use of design elements such as plantings, fencing, grade changes, and/or walls.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Site Implications (from Owner-provided campus utility plans)

Water Items:

- 4" Water pipe adjacent to the Eastern side of the lot – located at the James V. Sullivan Recreation & Fitness Complex
- 6" Water pipe adjacent to the Northern side of the lot – located under Falmouth Street
- Fire Hydrant adjacent to the Northern side of the lot – located on the opposite side of Falmouth Street

Gas Items:

- 2" Gas line adjacent to the Eastern side of the lot – located at the James V. Sullivan Recreation & Fitness Complex
- 6" Gas line adjacent to the Northern side of the site – located under Falmouth Street

Tele/Data Items:

- 2 Conduits located at the Northern part of the lot cross from East to West

Electrical Items:

- Conduit(s) located at the Northern part of the lot cross from East to West

Current Traffic Patterns

Forest Avenue serves as the primary arrival point to the USM Portland campus. The secondary arrival point to the campus is at the intersection of Deering, Brighton, and Falmouth Streets. The third arrival point to the campus is Bedford Street, which bisects the campus providing access to most of the parking supply for the campus.

Future Traffic Pattern Considerations

Closure of the Brighton Avenue Extension and installation of a roundabout at the intersection of Brighton, Deering, and Falmouth streets. After which, the remaining extension of Brighton Avenue will be given to USM by the city of Portland.

Alternate Means of Transportation

As identified in the Facility Master Plan, USM supports robust pedestrian, bicycle, shuttle bus, ride share and metro regional public transit systems that look beyond private vehicular parking to meet the transportation needs of the campus community. This could have a potential impact on the parking requirements for the Portland campus.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Conceptual Drawings

Design Considerations

The practical parking capacity is an important design consideration due to the fact that no garage can operate at 100% efficiency. The industry accepted efficiency is between 85-95%. This allows for variations in parking activity, loss of parking due to mis-parked vehicles, construction, snow piling, and other unforeseen factors. This efficiency rate also takes into account traffic flow problems related to parkers trying searching for available spaces when the garage is at or near its maximum capacity.

Level of Service

The recommended Level-Of-Service (LOS) for visitor parking is LOS "A" or "B" which provides greater dimensions and ease of use for the parking garage, but for regular monthly parkers an LOS of "C" could be utilized to maximize the number of parking spaces and thereby increasing the efficiency of the design and providing a higher return on investment. LOS "D" is an extremely compact garage design that is mostly reserved for underground parking structures or extremely high-density urban designs.

LOS "B" provides a parking stall that is 8'-9" in width and 17'-9" in length, but this study utilizes a 9'-0" wide and 18'-0" long standard stall, and up to 20% compact spacing per City of Portland Design Standards at 8'-0" wide and 15'-0" long. The drive aisles will be sized at 24' in overall width.

Project Overview

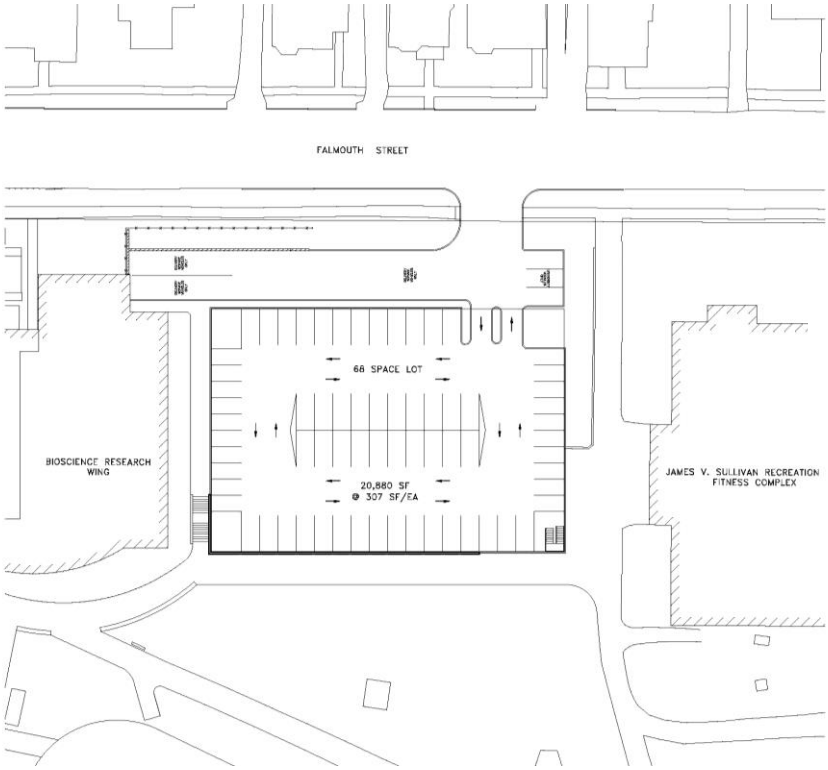
Capacity, expansion, aesthetics and size of the parking structure were taken into consideration for four options developed as part of the programming effort so the design features of each could be evaluated. It is also the understanding that a large structure could have an undesirable impact on the site by restricting view corridors and clashing with the architectural character of the surrounding buildings, with the goal to maintain views from the upper levels of the Science Building towards the city skyline. All of the concept designs therefore top-off at 38'-0" above the existing surface lot to allow for these views from the Science Building.

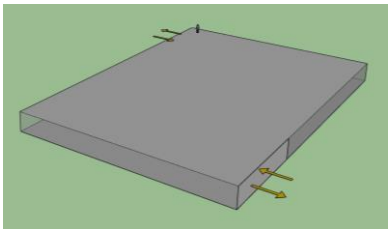
The Parking Options include:

1. Single elevated level-deck parking scenario without internal ramping and providing independent access to two parking levels
2. Ramped multi-level garage with internal circulation ramp connecting all levels of parking.
3. Lateral expansion scenario with independent access to each level (to be combined with Option 2).
4. Level-deck scenario along Falmouth Street convertible to Office/Classroom Space with internal ramped-deck circulation connecting all levels of parking.

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Parking Design Option 1: Single elevated level-deck parking scenario without internal ramping and providing independent access to two parking levels



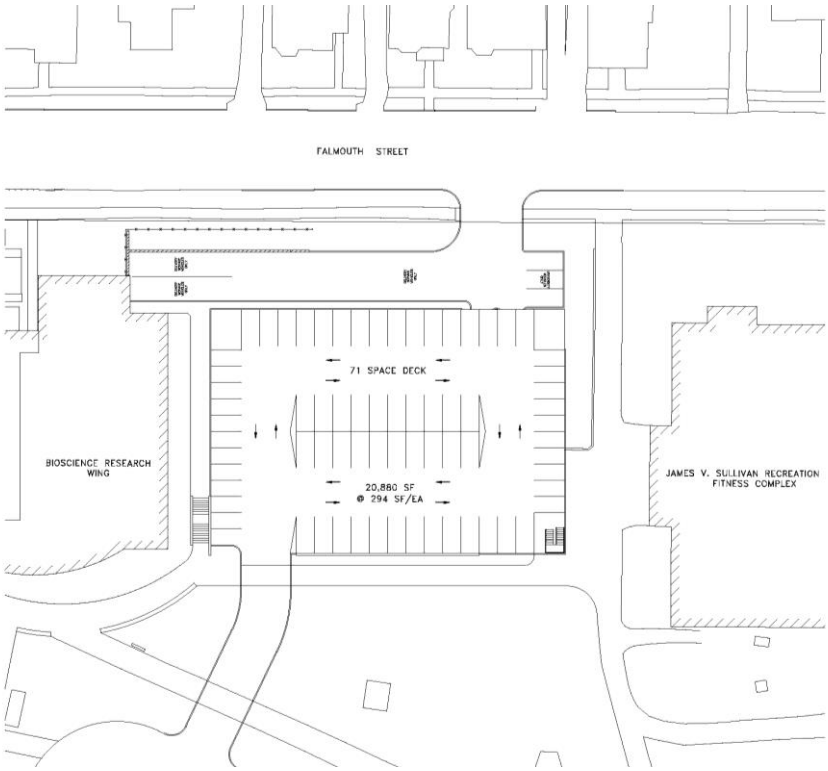


SECOND ~ 20,880 SF @ 294 SF/EA (71 SPACES)

FIRST ~ 20,880 SF @ 307 SF/EA (68 SPACES)

TOTAL ~ 41,760 SF @ 301 SF/EA (139 SPACES)

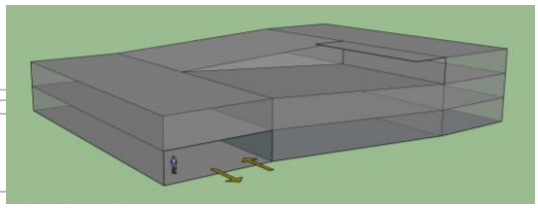
Level 1

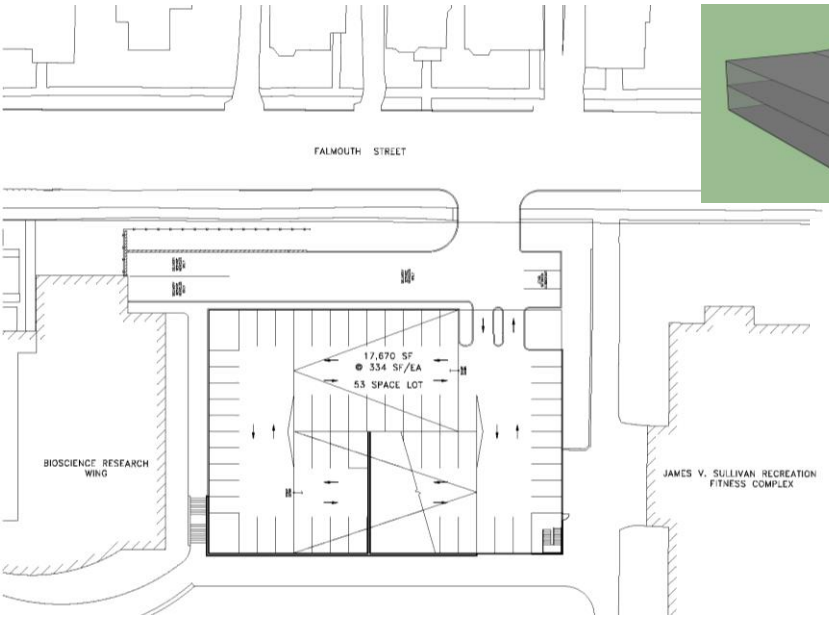


Level 2

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

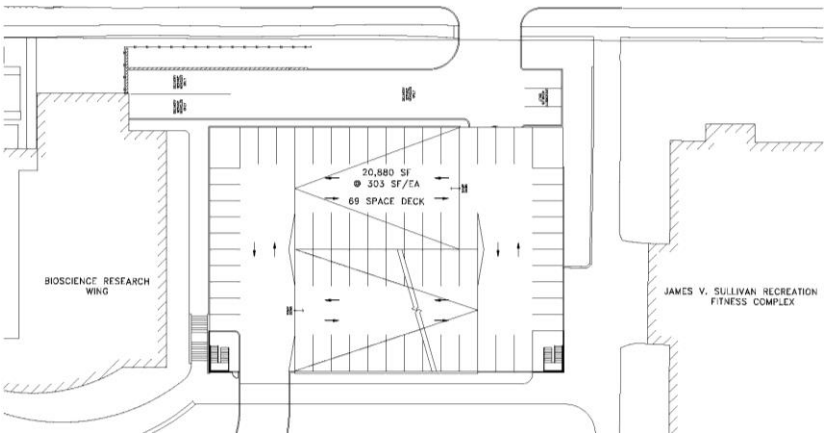
Parking Design Option 2: Ramped multi-level garage with internal circulation ramp connecting all levels of parking



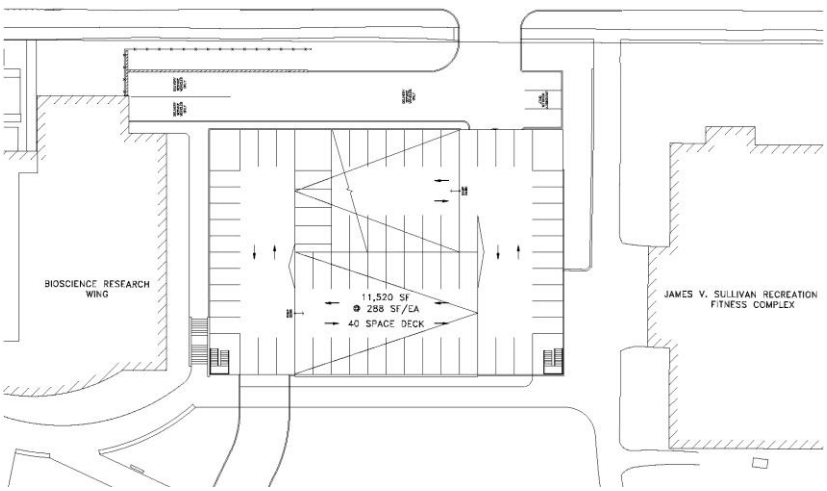


FOURTH ~ 11,520 SF @ 288 SF/EA (40 SPACES)
THIRD ~ 20,880 SF @ 290 SF/EA (72 SPACES)
SECOND ~ 20,880 SF @ 303 SF/EA (69 SPACES)
FIRST ~ 17,670 SF @ 334 SF/EA (53 SPACES)
TOTAL ~ 70,950 SF @ 300 SF/EA (304 SPACES)

Level 1



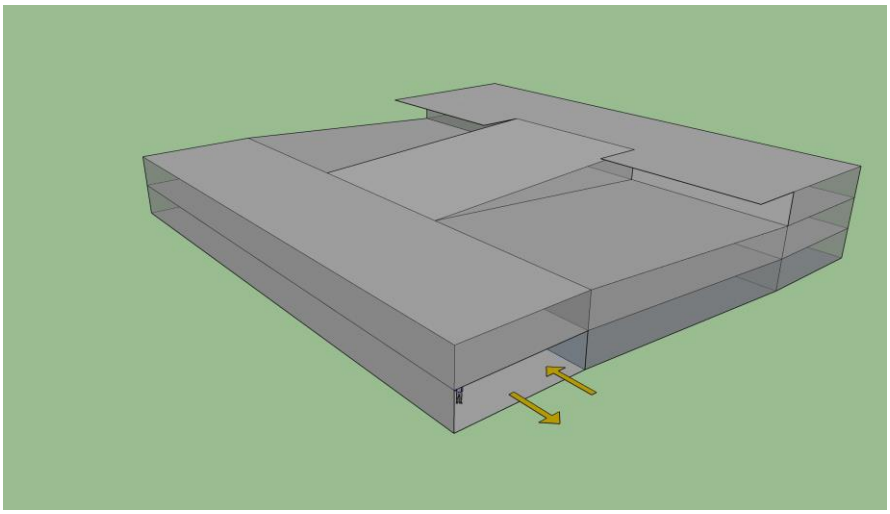
Level 2

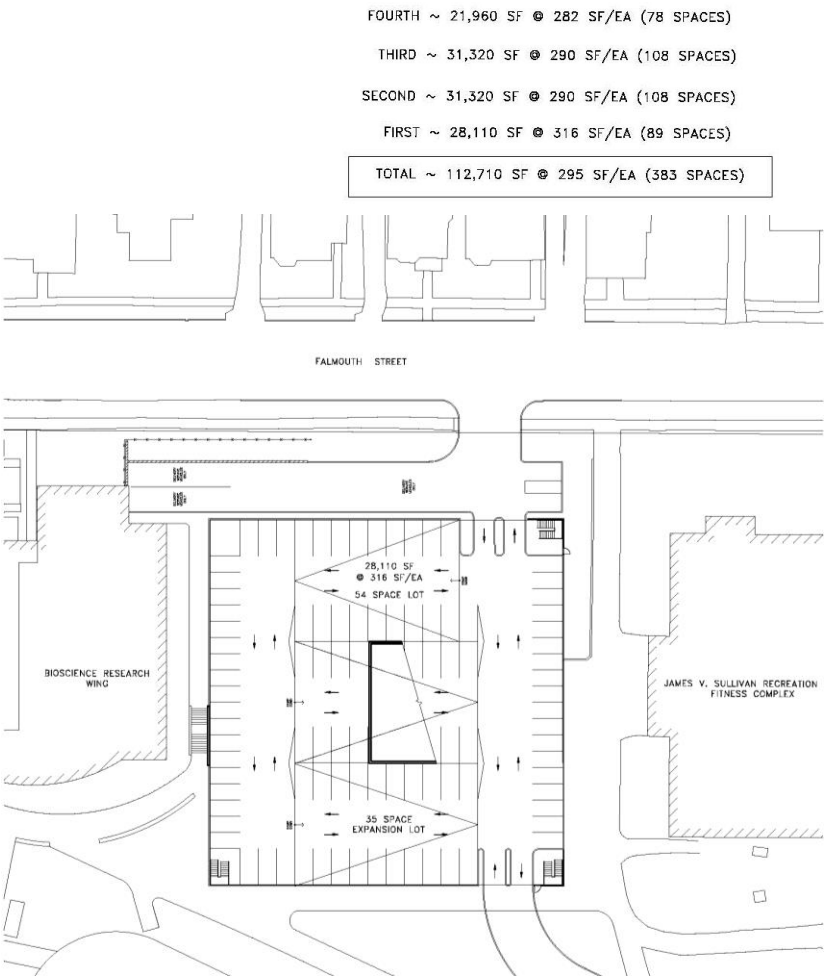


Level 3

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

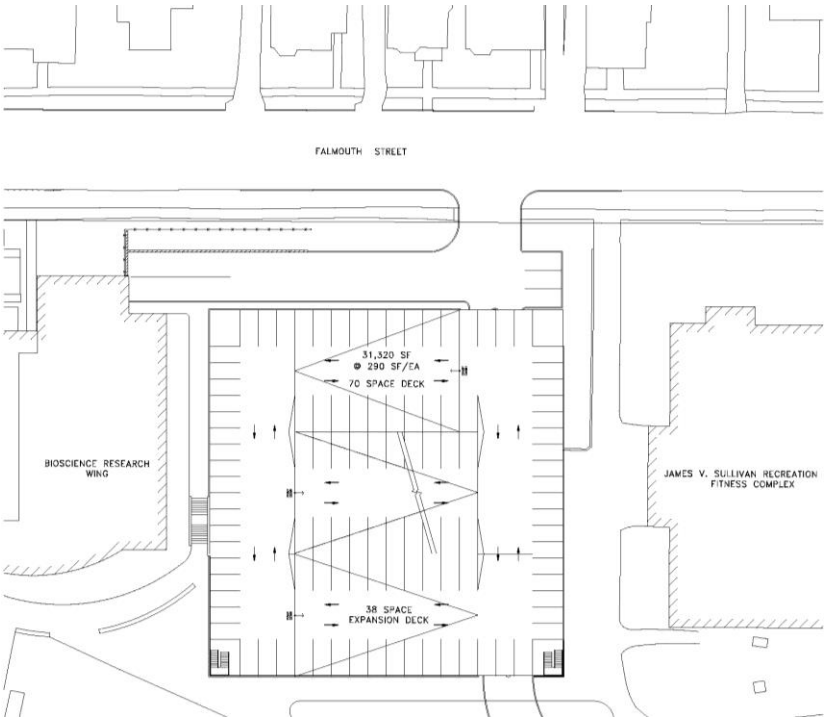
Parking Design Option 3: Level-deck expansion scenario with independent access to each level (to be combined with Option 2)



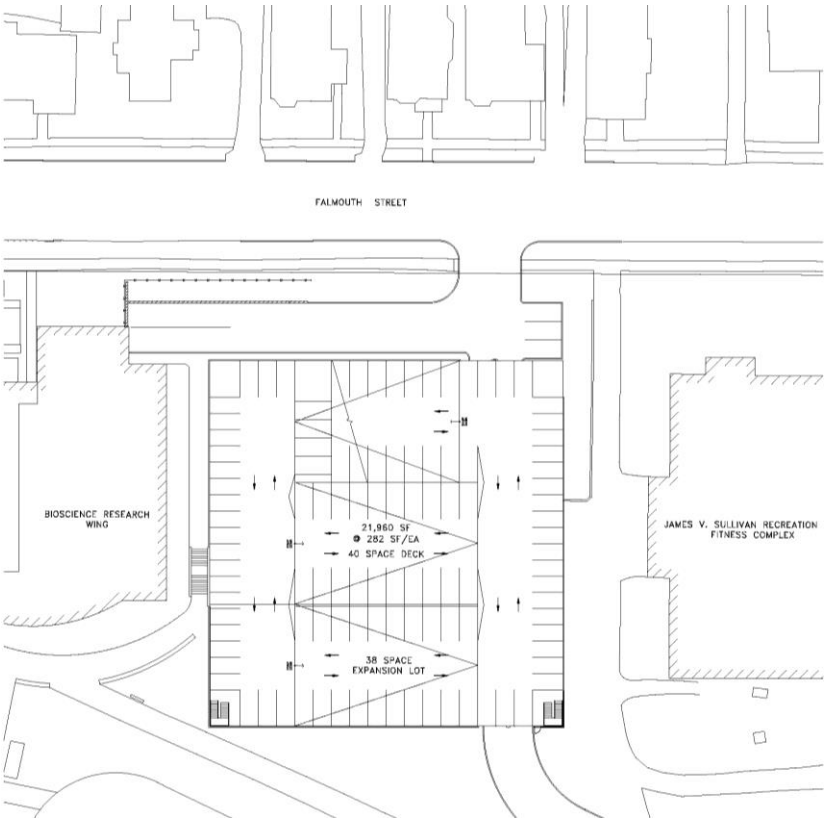


Level 1

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com



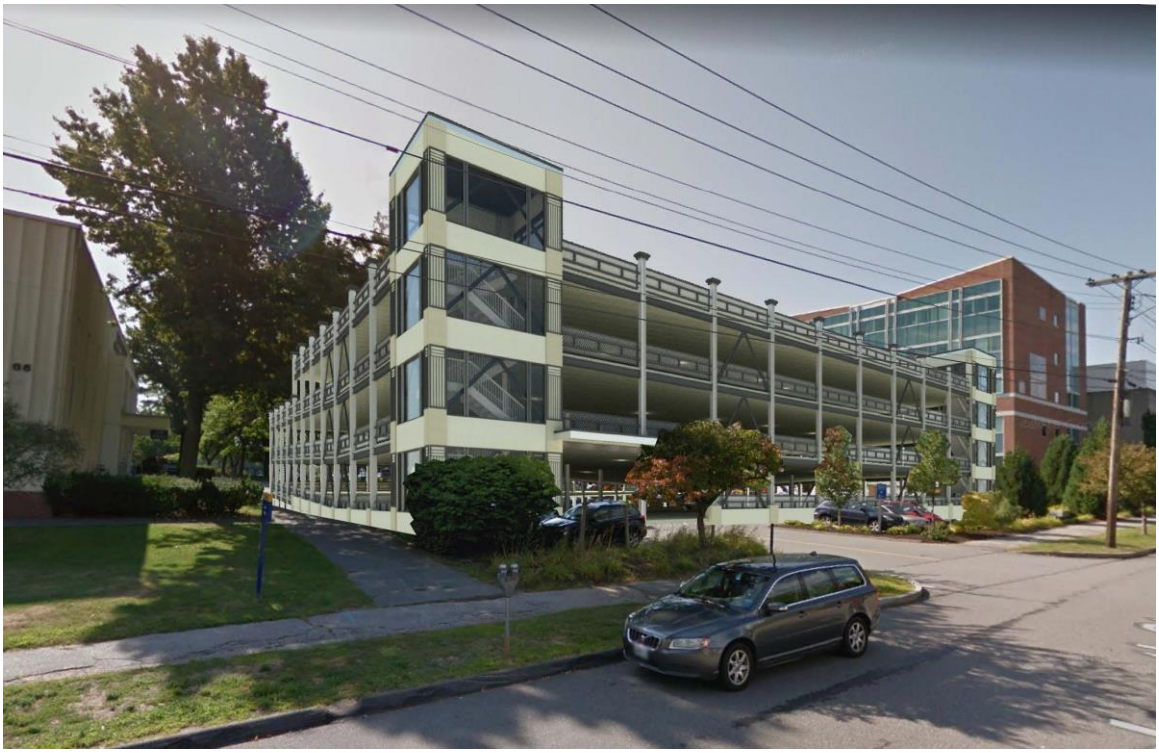
Level 2

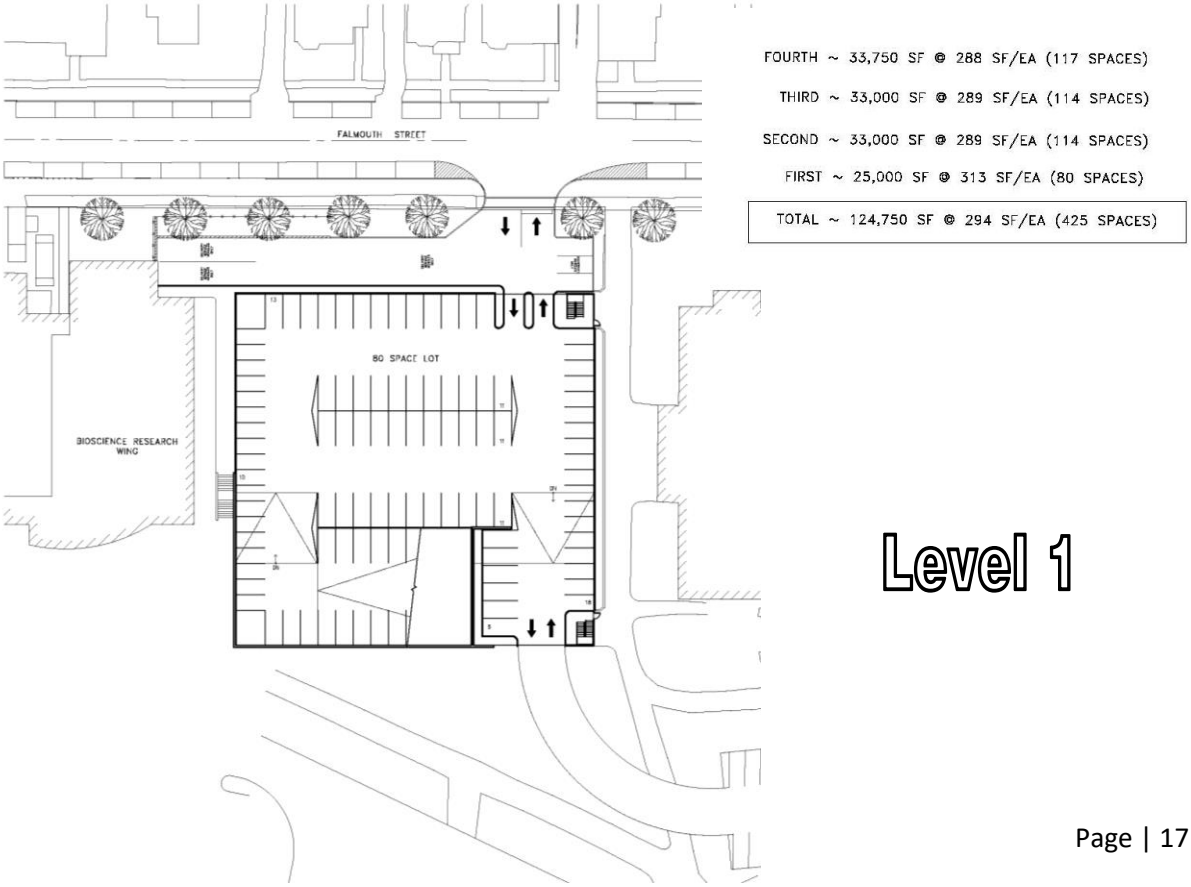


Level 3

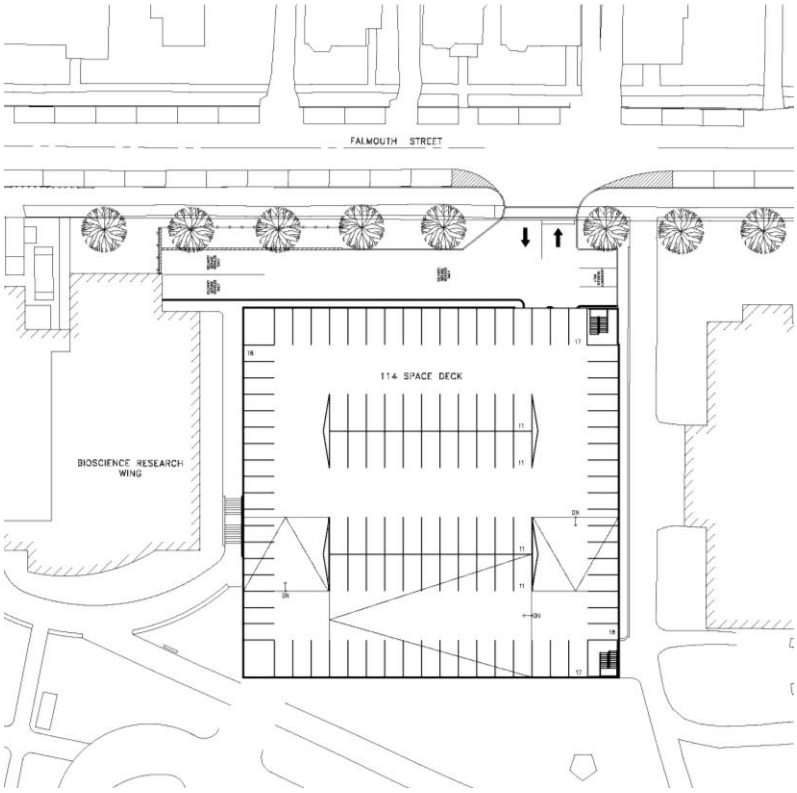
PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Parking Design Option 4A: Level-deck scenario along Falmouth Street convertible to Office/Classroom Space with internal ramped-deck circulation connecting all levels of parking.

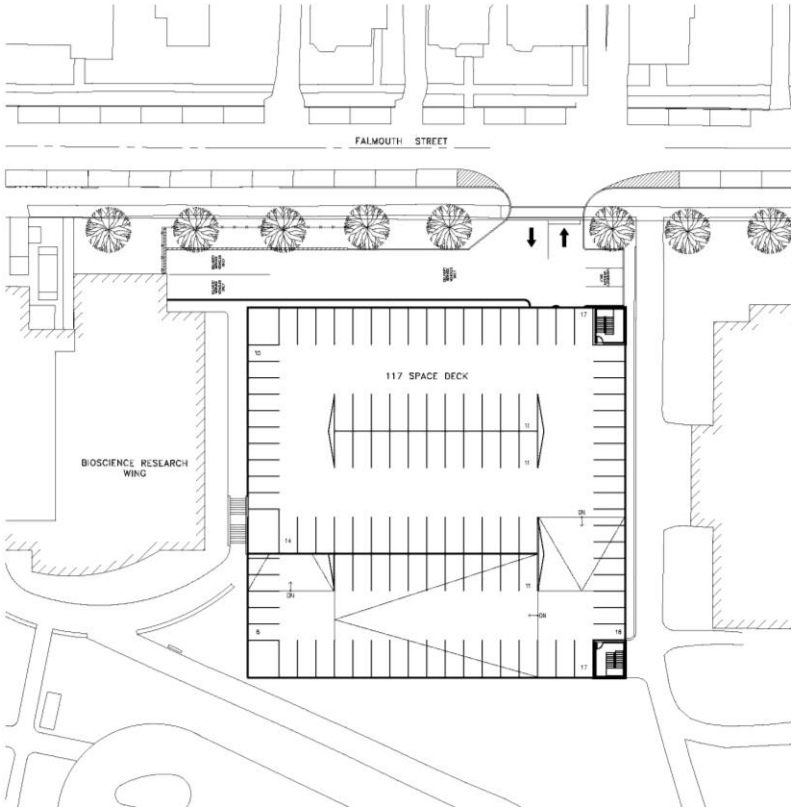




PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com



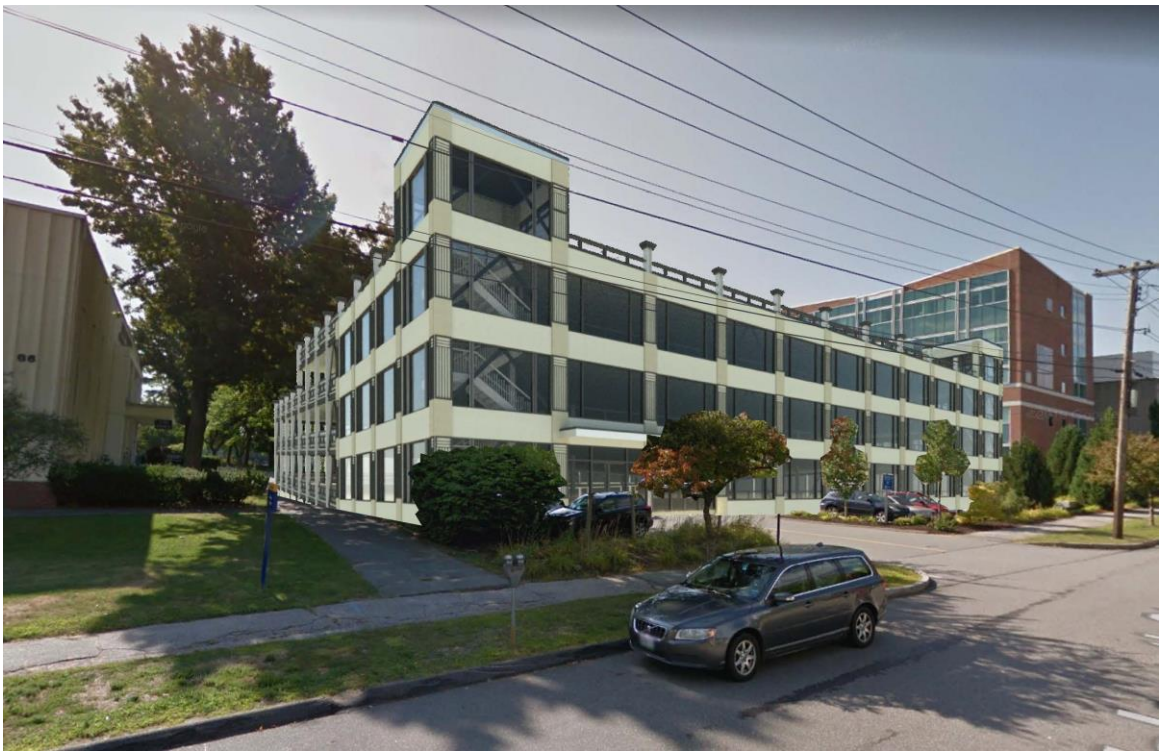
Level 2 & 3

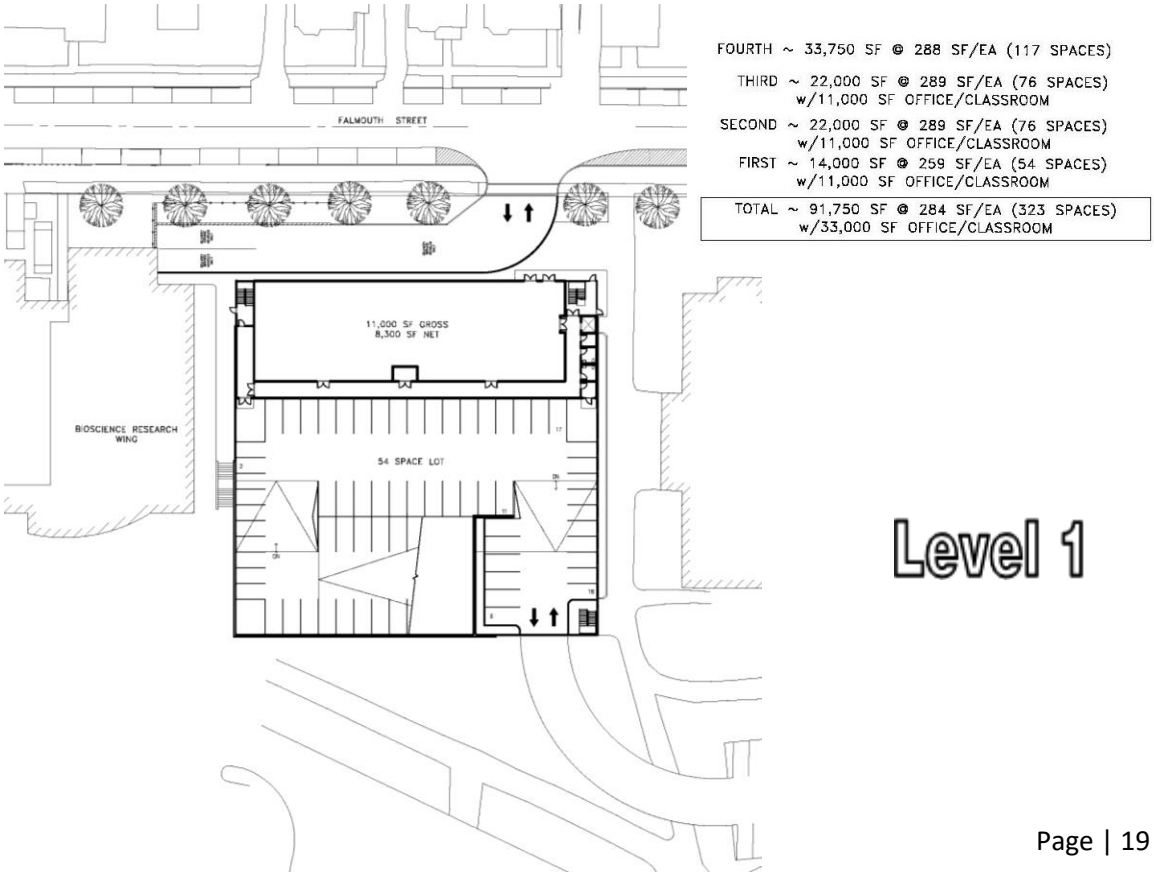


Level 4

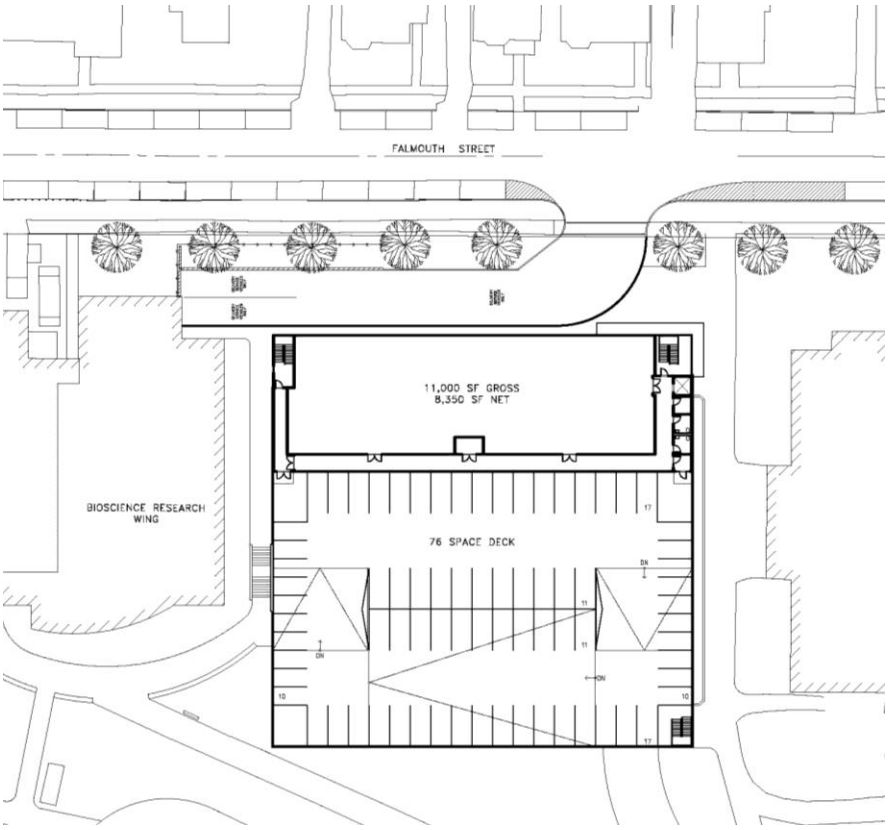
PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Parking Design Option 4B: Conversion to Office/Classroom Space (33,000 SF gross) with internal ramped-deck circulation connecting all levels of parking behind and above.

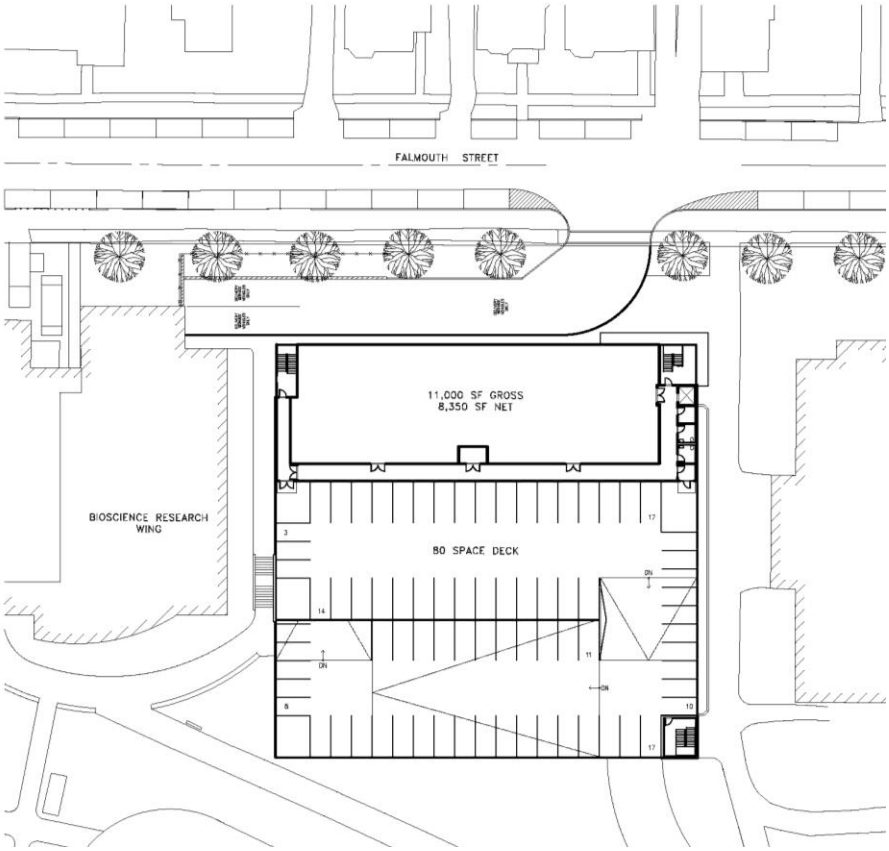




PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

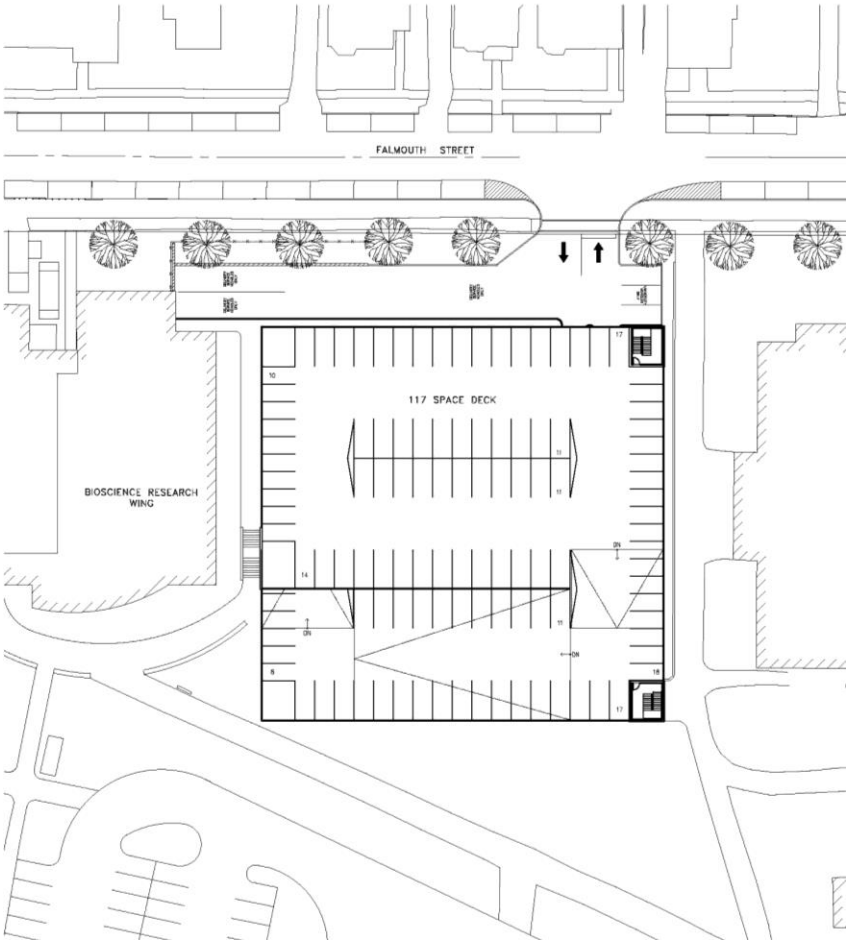


Level 2



Level 3

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com



Level 4



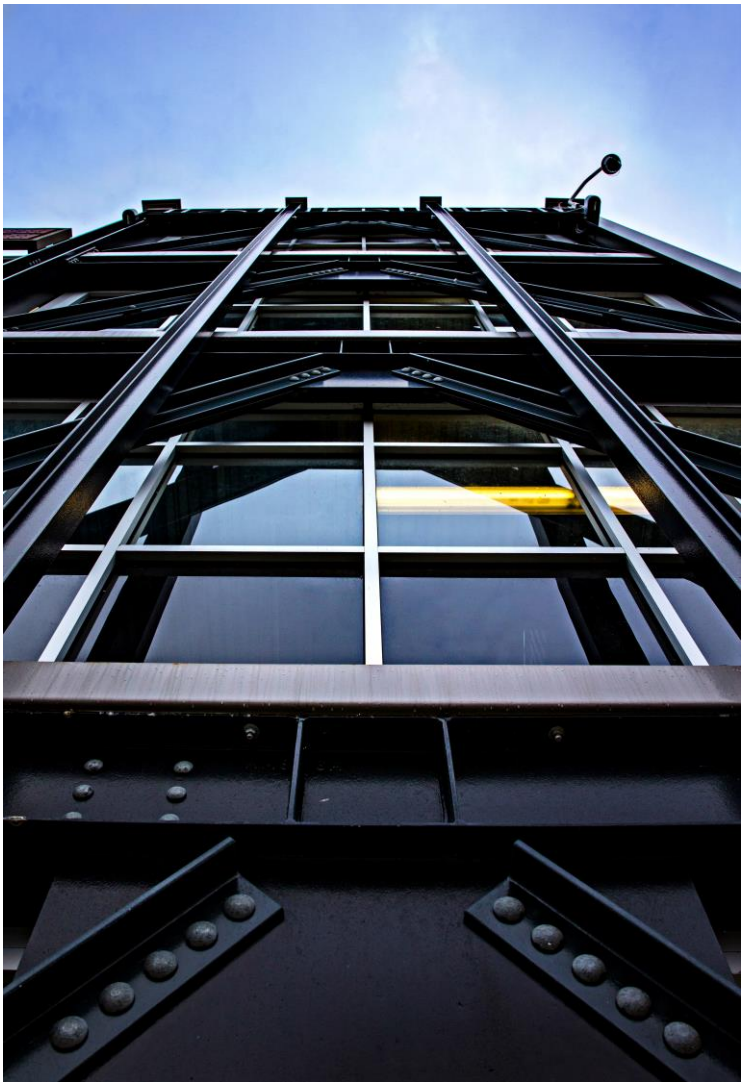
Proposed view from Science Building

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Structural System

The study assumes that a steel structure is used due to cost and the accelerated construction time versus cast in place concrete or pre-cast concrete structures. A footing design of spread footings or rammed aggregate piers is assumed, with cast-in-place composite decks protected with a vehicular traffic coating.

Perhaps most important to the long-term success of the garage design is the patron's feelings of comfort, safety and security while using the facility. Structural steel offers a much thinner structural profile, with small columns, long spans and braced frames rather than massive shear walls, giving the interior of the garage a bright openness with few obstructions for a sense of safety and visual security. Steel framed parking structures can also accommodate any type of façade system, and the building's aesthetics are custom designed to meet the specific requirements of the site or the character of the district surroundings, versus selecting a design from a concrete manufacturer's limited catalogue of standard finishes.



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Design Budget and Proposed Project Timelines

Costs of Steel Structural System

Based on our experience in parking garage design for a number of clients in Maine, we feel that a steel parking structure offers many advantages over a concrete structure and will be a better long-term investment from not only the initial cost and long term maintenance operations perspectives, but also providing more design flexibility and a much more aesthetically-pleasing contributor to the district's architectural fabric.

Initial investment costs are lower for steel-framed parking garages than concrete framing systems, typically quoted 10-15% less, which is partially due to the lighter structural weight and reduced site impacts. Also, the local labor force is far more comfortable with installing a more traditional steel-framed structure versus a concrete structure. The contractors here in Maine will provide a more competitive bid for a steel frame over a concrete system that may force sourcing qualified labor from out-of-state at a higher rate.

The complaint about steel garages in the past is that they have been more expensive to maintain, but we have not found this to be true. Quoted as up to 30% less to maintain than comparative concrete structures by structural engineer examinations, with regular maintenance of the high-performance paint system and elastomeric deck topping, we have found that maintenance costs are very manageable and typically only require spot-patching and paint touch-up, versus the much more extensive deck joint replacements required at regular periodic intervals with precast garages.

Additionally, with the pressures that maintenance budgets endure over the lifespan of a building, the exposed nature of steel-framed design allows for direct visual examination and inspection to assist developing deferred-action maintenance programs to head-off serious issues even during lean times. When concrete structural systems begin to show failure, it is often well past the point of patch and repair, instead requiring the complete and immediate replacement of the overall system which will require a large maintenance capital reserve carried for the life of the garage

Steel frame structures can be easily customized to conform to the particulars of irregular sites, an important consideration in tight urban contexts looking to capitalize on every inch, and may also be expanded in any direction, often planned ahead with the bolt holes pre-drilled. The ease of construction of both the building and the foundation systems capitalize on the efficiencies of shop fabrication, shortening erection schedules and allowing for winter construction. Steel-framed garages typically weigh 20% less than a corresponding concrete structure, which reduces foundation costs and permits a wider range of soil conditions to simplify design.

For all of these reasons, it has been our experience that a steel parking structure would be the most appealing, economical, and flexible garage, offering a maximum return on investment for the University of Southern Maine.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Design Budget

With the Design-Bid-Build project delivery method, the actual costs of the project are not known with certainty until the bid opening, and are also affected by seasonal availability, the state of the current bid environment, and the complexity of the design as it relates to the available pool of responding contractors. That being said, there are a number of factors that can be used to gauge the pricing performance of the garage design relative to the resultant parking efficiency and the number of special features required for the project.

The current 2019 Means Construction Data pricing guide identifies the average cost of a surface parking space is in the $2,500-$3,000 range, structured parking with elevated decks and an open design in the $18,000-$22,000 range, structured parking with elevated decks in a closed design in the $20,000-$24,000 range, and underground parking with a closed design in the $30,000-$35,000 range. The range of these baseline costs should be considered primarily against the backdrop of the resultant parking efficiency on a square-foot basis, but also the specific project program requirements, such as; vehicular entry, ramping, enclosure, ventilation, and pedestrian access. Due to the highly-efficient nature of the options developed in this parking feasibility study, at approximately 300 sf per space, the average square foot cost of around $45 per square foot for a typical steel-framed parking structure would result in a per-space cost of $13,500.

Proposed Project Timeline

Due to the highly variable impact of the City of Portland design review process, in addition to the review and approval procedure timeline for the University's Capital Improvements process, just to name a couple of possible schedule impacts, the exact project timeline is difficult to determine and some degree of flexibility should be considered when forecasting the project approvals timeline. Also figuring into the early project timeline is the project budget pricing requirements, and the design development gaps afforded to these pricing efforts during design. To accelerate the construction schedule, fast-track techniques, performing parts of the construction effort under winter conditions, and possibly selecting a deck system that does not require a traffic topping may be considered.

The schedule requirements for the major design segments and project approvals would be as follows:

- Preliminary Garage Design and Civil Design Document Preparation……. 2 month duration
- City of Portland Planning Board Approval Process……. 3 month duration
- Design Development and Construction Document Preparation……. 3 month duration
- Project Bid and Contractor Award……. 1.5 month duration
- State Fire Marshal and Local Permit Approvals …….. 2 month duration
- Site and Building Construction ……. 8-10 month duration

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

A general timeline for a steel-framed parking garage design and construction that would take best advantage of the traditional construction season with a Spring ground-breaking would be as follows:

- Preliminary Garage Design and Civil Design Document Preparation…….. Nov-Dec 2019
- City of Portland Planning Board Approval Process…….. Nov 2019-Jan 2020
- Design Development and Construction Document Preparation……. Dec 2019-Feb 2020
- Project Bid and Contractor Award……. Feb 2020-March 2020
- State Fire Marshal and Local Permit Approvals ……. March 2020-April 2020
- Structural Steel Shop Drawing Prep and Fabrication…… March 2020-June 2020
- Site and Building Construction …….. April 2020- Dec 2020

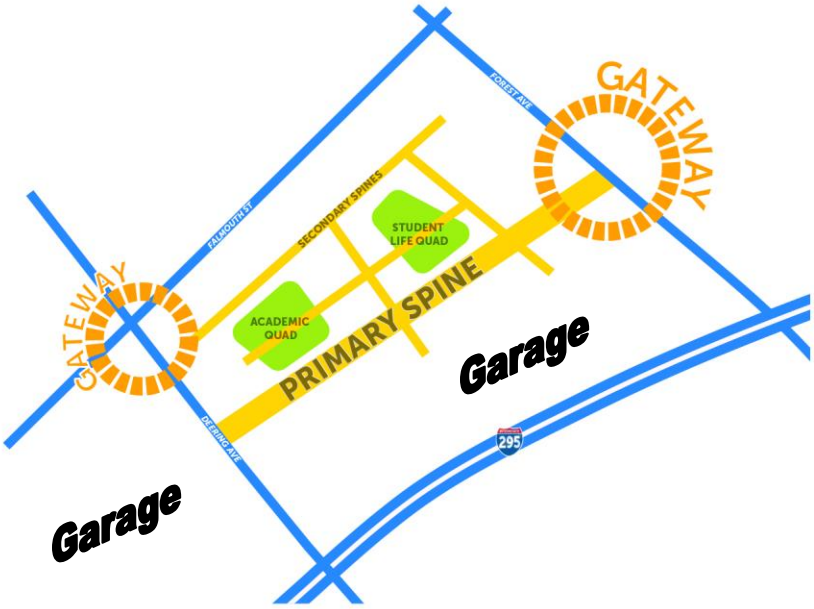


PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Part 2 : Parking Study of 88 Bedford/Surrenden Street Lot

Preliminary Assessment of Owner's Development Objectives

The 2019 Facilities Master Plan proposes a parking garage expansion in place of the existing surface parking lot to service the adjacent proposed graduate center and existing liner buildings along Bedford Street. The parking structure, provided for students, faculty and visitors, would then be concentrated at the perimeter of the campus with multiple direct connections to several high-population campus buildings.



With the parking structure located behind liner buildings along the arterial drive, the visibility of way-finding signage is critically important to ensure utilization and convenience. Concentrating the parking field adjacent to existing buildings and proposed future developments provides opportunities for either direct connections through pedestrian skybridges or short outdoor transitions through foul weather.

The site has been prepared for a parking structure expansion in this location, with water, sprinkler, and storm drainage lines stubbed to the site at the Northern access drive. Access has also been prepared for both vehicles and pedestrians, with little adjustment required to these site improvements to make way for construction of the new garage building.

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Site Evaluation

Utilities

All utilities including but not limited to electric, water, sewer, storm drainage and gas service appear available either directly to the site or from the local arterial connection to Bedford Street, pending confirmation of available capacity by each utility. Of these major utilities, stubs to the site for future buildings include water for domestic and sprinkler service and storm drainage. They appear to cross the site at a convenient point, but may need adjustment in coordination with the parking structure development. Additionally, a See Appendix D for additional information.

Topography

The site's existing surface parking lot and related site improvements provide the opportunity to connect at-grade on all sides of the proposed parking structure, limited only by the potential internal ramp locations within the garage itself. See Appendix E for additional information.

Parking

The site is currently used as a surface parking lot consisting of 40 total parking spaces, 8 of which are dedicated to handicap accessibility. The parking lot is for USM faculty and staff with some accessible parking serving the adjacent Wishcamper Center, and denoted on the campus map as Lot P3. The only point of vehicle access is from a collector drive at the Northwest corner of the parking lot from Bedford Street.

Pedestrian Access

The Bedford Street arterial drive has a wide pedestrian esplanade that provides opportunities to access the site from the Northwest and Northeast corners. All parking options provide direct connectivity to the pedestrian circulation system, possibly including pedestrian skybridge connections to the adjacent existing parking garage and Wishcamper Center, along possibly with the future graduate center proposed between the Wishcamper and Library/Osher Map Buildings. See Appendix B for additional information.

Building Height

The proposed height of the parking structure in all of the options is 55 feet, however; each option is below the allowable height of 85 feet per the zoning ordinance. For the purpose of this feasibility study, the Design Team has developed layouts that are limited in height to five levels of parking to correspond with the adjacent parking garage and Wishcamper Center building heights. See Appendix C for additional information.

Building Setbacks

All proposed parking structures are within the setbacks set forth in the zoning ordinance. The only setback that is applicable to this study is the setback along the I-295 highway corridor, which is 10'. See Appendix C for additional information.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Pedestrian Access

Pedestrian access and connectivity is maintained largely "as-is" in each of the parking options. The nature of efficient parking garage design supports pedestrian circulation nodes at the corners where vehicular parking is unavailable. Each parking option anticipates vertical circulation stair towers at these corners, and aligns these pedestrian elements with the existing sidewalk system and away from vehicular drives to provide a high degree of visibility, comfort, and safety.

Vehicle Access

All parking options would maintain the current access point on Bedford Street, aligning the main entrance with the existing adjacent garage for ideal integration with existing parking patterns and equipment. A access drive would be maintained all-around the proposed structure to allow for maintenance and security, loading or staging areas, and/or snow removal.

Delivery/Loading Access

The two existing single-bay loading zones along the perimeter drive around the site are maintained in all options, with the possibility of incorporating additional service vehicle or university maintenance parking within this loading zone.



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Identification of Environmental Requirements

Due to the highly variable disposition of silty and sandy soils across the Back Bay basin generally, and extending specifically to the surrounding sites at the existing parking structure at Surrenden Street, it is recommended that a geotechnical engineer be brought on-board early in the schematic design process to provide soil analysis and identify the soil improvements necessary to support the preliminary foundation design. Generally, the use of a steel-framed structure for the proposed parking garage would reduce the structural pier requirements from those provided for the adjacent precast garage of the same height, providing some assurance that the soils will support the proposed building scenarios.

Beyond this soils composition assessment, there are no known needs for environmental impact statements, additional environmental assessments, or testing/monitoring with respect to the materials reviewed as part of this parking feasibility investigation.

Generally, the proposed parking options provide close integration with the existing level site grades and take advantage of stubbed utilities to reduce the impact of sitework and potential exposure to the import/export of soils. Additionally, the lighter weight of a steel garage structure would support the use of geopiers, granting the Design Team flexibility to tailor a structural solution with the lowest level of environmental and financial impact.



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Site and Neighborhood Context Description

Campus

The University was founded in 1878 with Corthell Hall being the first university building in Gorham, Maine. The Portland campus is located downtown and bordered by highly trafficked roads including, Interstate Highway 295, Forrest Avenue, Deering Avenue, Falmouth Street, and Bedford Street. The campus buildings are a variety of materials including but not limited to brick, glass curtain wall, panelized systems, and concrete.

Neighborhood

A completely developed urban neighborhood, the adjacent land consists of Interstate Highway 295 on the South, University buildings to the North and East, and the existing parking garage to the West. The largest adjacent land use is the parking garage, which is accessed from Surrenden Street. The adjacent university structures are generally a set of very solid and consistant building blocks, within which the proposed garage options would cohesively connect, with circulation view corridors that offer relief to the massing.

Zoning

The campus is located in Zone R5 in the City of Portland, with an overlay zone type of "USM" for the University of Southern Maine. This zone has a strict set of rules designed to create a quality and cohesive campus environment while integrating with and respecting the residential character of surrounding neighborhoods.

Site Implications (from Owner-provided campus utility plans)

Water Items:

- 6" Water pipe stubbed to the North side of the lot – located at Conant Street
- 8" Water pipe for a possible sprinkler system stubbed to the North side of the lot – located at Conant Street
- Fire Hydrant at the Northwest corner of the lot – located on the site side of the access drive

Gas Items:

- 8" Gas line to the North of the site is available for connection down the access drive – located under Bedford Street

Tele/Data Items:

- Two 4" conduits are located at the Northern part of the site cross from the existing parking garage to the Wishcamper Center.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Electrical Items:

- Conduits are located at all sides of the site, with some lines that might serve a future building needing verification.

Current Traffic Patterns

Forest Avenue serves as the primary arrival point to the USM Portland campus. The secondary arrival point to the campus is at the intersection of Deering, Brighton, and Falmouth Streets. The third arrival point to the campus is Bedford Street, which bisects the campus providing access to most of the parking supply for the campus.

Future Traffic Pattern Considerations

Closure of the Brighton Avenue Extension and installation of a roundabout at the intersection of Brighton, Deering, and Falmouth streets. After which, the remaining extension of Brighton Avenue will be given to USM by the city of Portland. The proposed parking garage would connect to the Bedford Street arterial drive, adjacent to the existing garage exit, which the Design Team suggests could be adjusted to allow incoming traffic in addition to the exit pattern.

Alternate Means of Transportation

As identified in the Facility Master Plan, USM supports robust pedestrian, bicycle, shuttle bus, ride share and metro regional public transit systems that look beyond private vehicular parking to meet the transportation needs of the campus community. This could have a potential impact on the parking requirements for the Portland campus. Areas within and around the proposed parking garage may be outfitted with ride share signage or bicycle racks to encourage and support alternate transportation modes.



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Conceptual Drawings

Design Considerations

The practical parking capacity is an important design consideration due to the fact that no garage can operate at 100% efficiency. The industry accepted efficiency is between 85-95%. This allows for variations in parking activity, loss of parking due to mis-parked vehicles, construction, snow piling, and other unforeseen factors. This efficiency rate also takes into account traffic flow problems related to parkers trying searching for available spaces when the garage is at or near its maximum capacity.

Level of Service

The recommended Level-Of-Service (LOS) for visitor parking is LOS "A" or "B" which provides greater dimensions and ease of use for the parking garage, but for regular monthly parkers an LOS of "C" could be utilized to maximize the number of parking spaces and thereby increasing the efficiency of the design and providing a higher return on investment. LOS "D" is an extremely compact garage design that is mostly reserved for underground parking structures or extremely high-density urban designs.

LOS "B" provides a parking stall that is 8'-9" in width and 17'-9" in length, but this study utilizes a 9'-0" wide and 18'-0" long standard stall, and up to 20% compact spacing per City of Portland Design Standards at 8'-0" wide and 15'-0" long. The drive aisles will be sized at 24' in overall width.

Project Overview

Capacity, expansion, aesthetics and size of the parking structure were taken into consideration for three options developed as part of the programming effort so the design features of each could be evaluated. It is also the understanding that a larger structure could have an undesirable impact on the site by restricting view corridors and clashing with the scale and architectural character of the surrounding buildings. All of the concept designs therefore top-off at 55'-0" above the existing surface lot to match with the scale and massing of the adjacent buildings.

The Parking Options include:

1. Arcing garage form that responds to the lot line along I-295 with internal circulation ramp connecting all levels of parking and providing site relief and view corridors towards the proposed future graduate center location adjacent to the Library/Osher Map buildings.

2. Rectangular multi-level garage with internal circulation ramp connecting all levels of parking and skybridge connection to the existing garage at the second level.

3. Level-deck expansion scenario to the existing garage with independent access to each level and radial internal circulation ramp providing site relief and view corridors towards the proposed future graduate center location adjacent to the Library/Osher Map buildings.

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Parking Design Option 1: Arcing garage form that responds to the lot line along I-295 with internal circulation ramp connecting all levels of parking



FIFTH ~ 53,315 SF @ 308 SF/EA (173 SPACES)

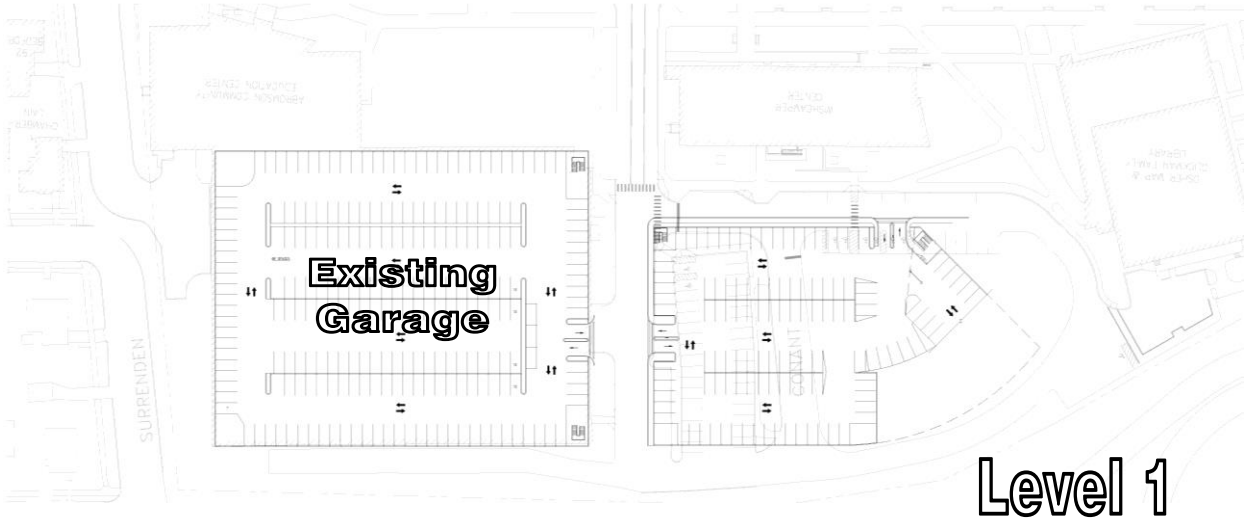
FOURTH ~ 49,715 SF @ 309 SF/EA (161 SPACES)

THIRD ~ 49,715 SF @ 309 SF/EA (161 SPACES)

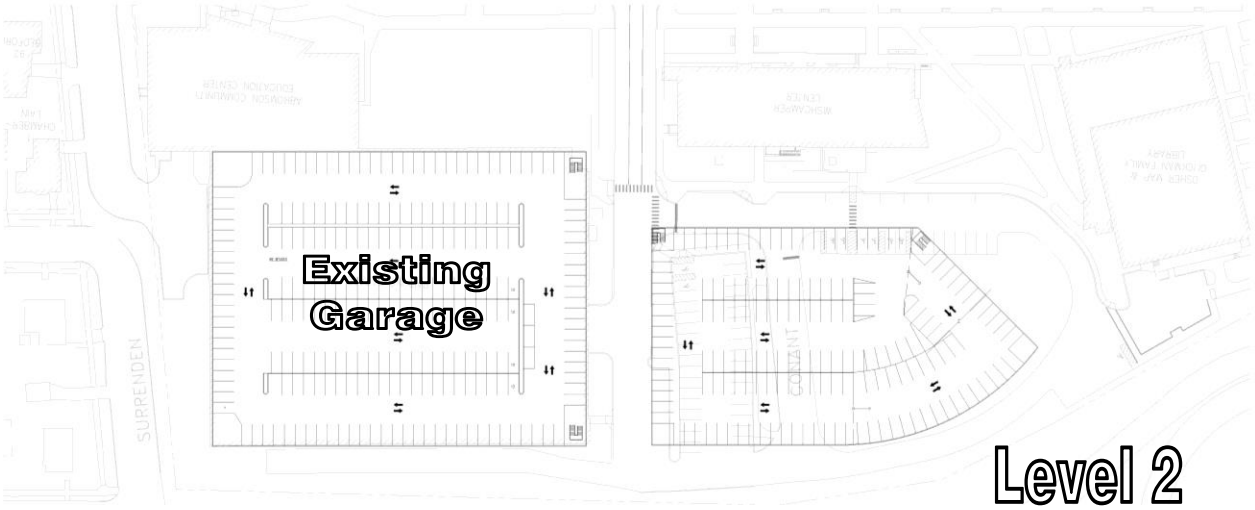
SECOND ~ 49,715 SF @ 309 SF/EA (161 SPACES)

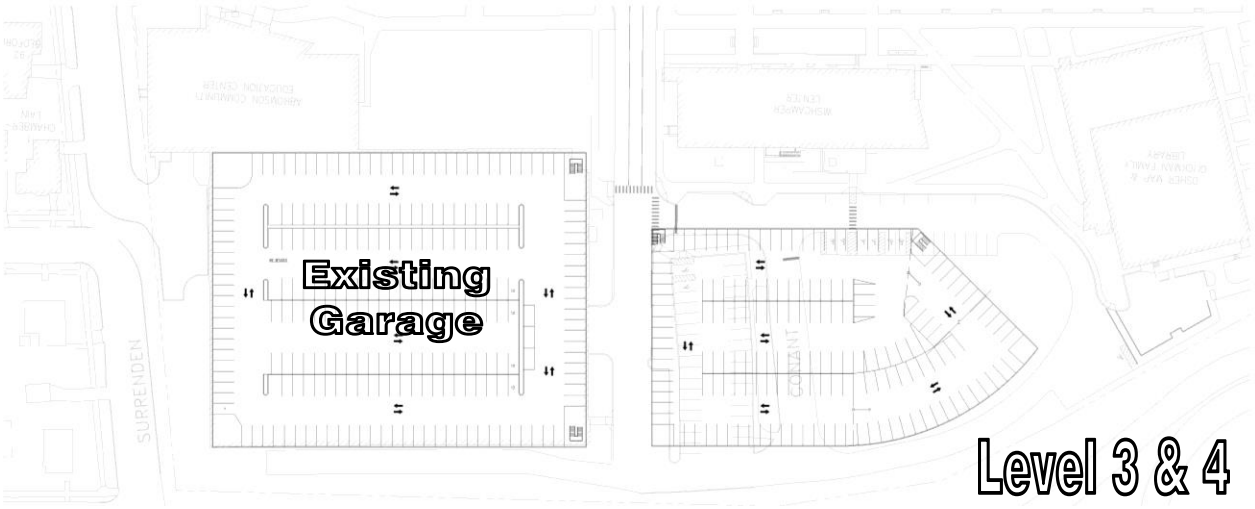
FIRST ~ 37,560 SF @ 341 SF/EA (110 SPACES)

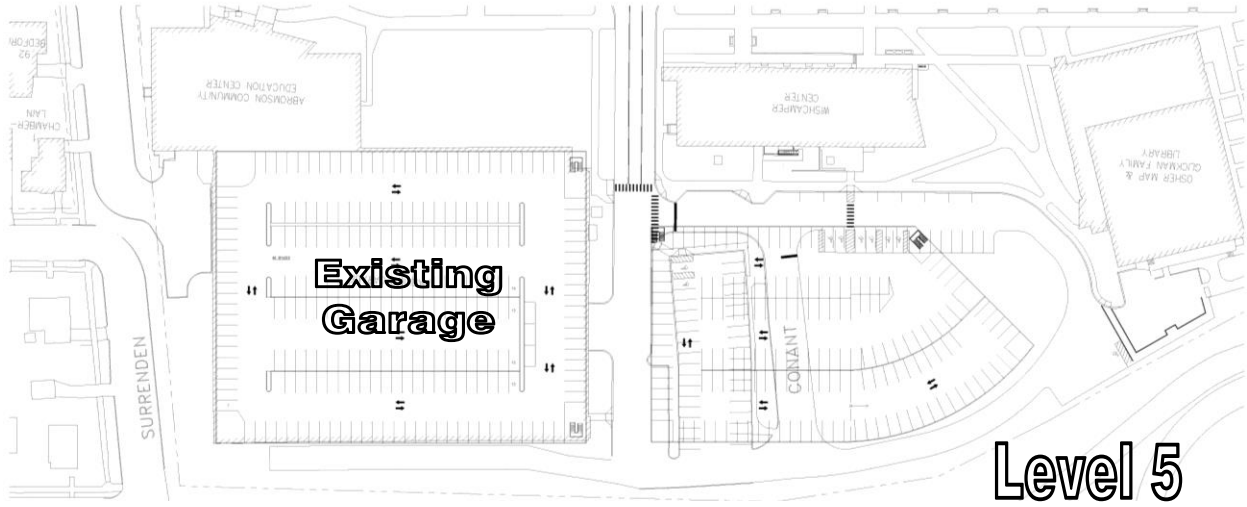
TOTAL ~ 240,020 SF @ 313 SF/EA (766 SPACES)



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

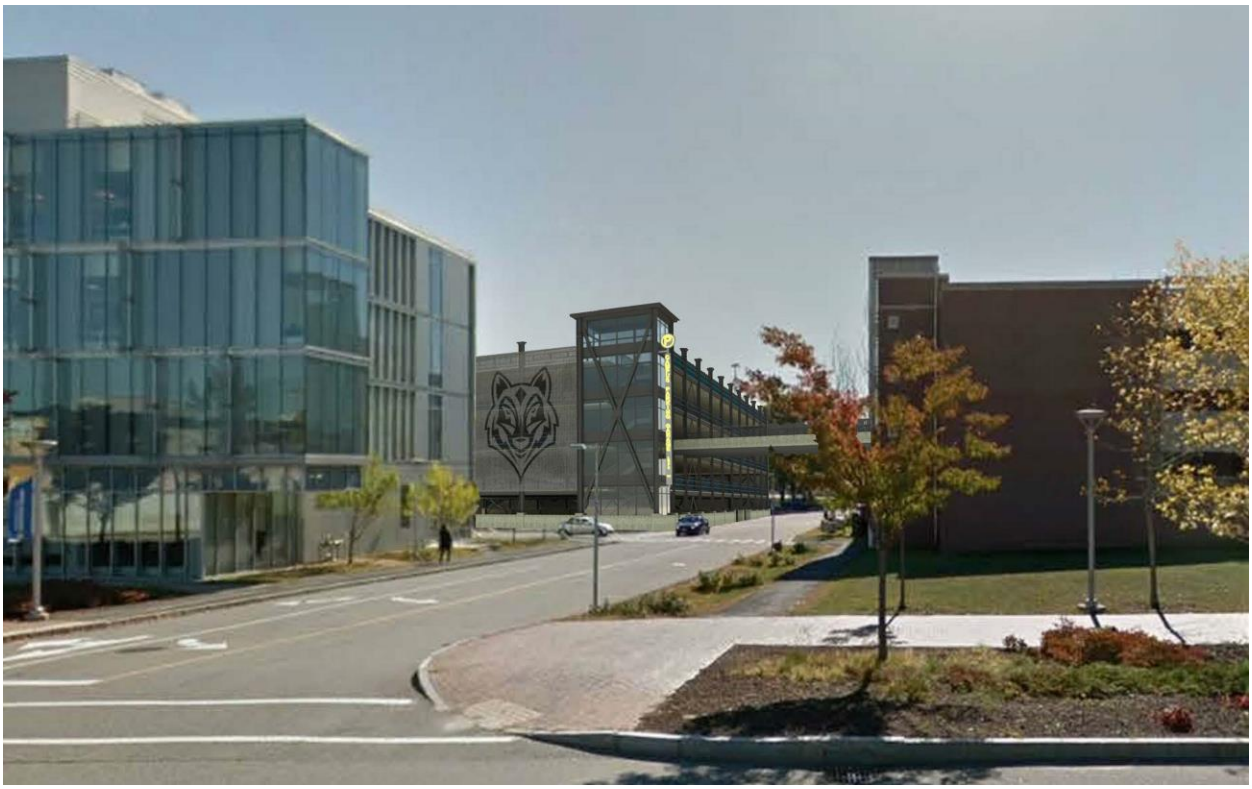






PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Parking Design Option 2: Rectangular multi-level garage with internal circulation ramp connecting all levels of parking and skybridge connection to the existing garage at the second level.



FIFTH ~ 47,575 SF @ 311 SF/EA (153 SPACES)

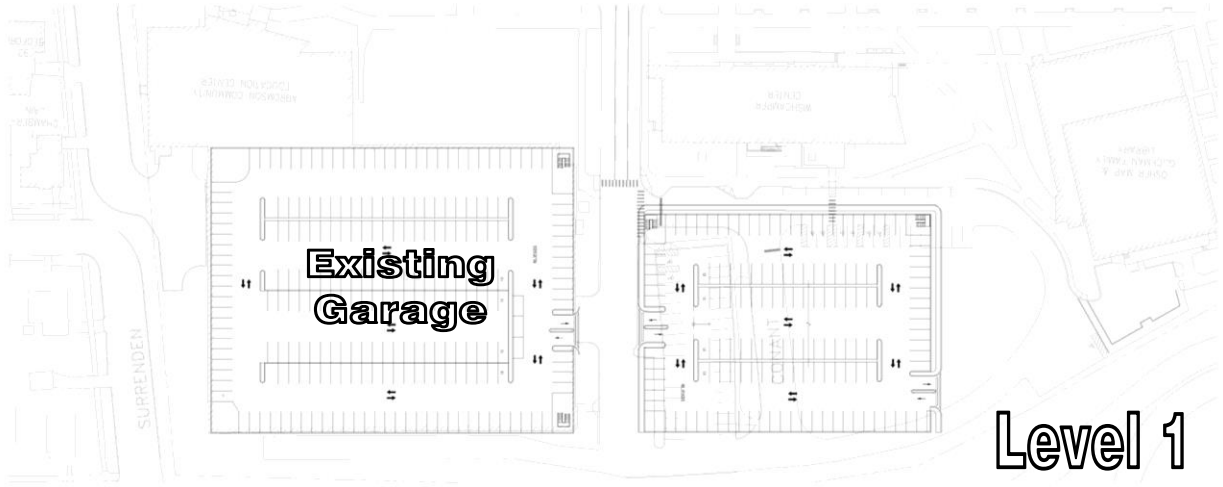
FOURTH ~ 46,475 SF @ 318 SF/EA (146 SPACES)

THIRD ~ 46,475 SF @ 318 SF/EA (146 SPACES)

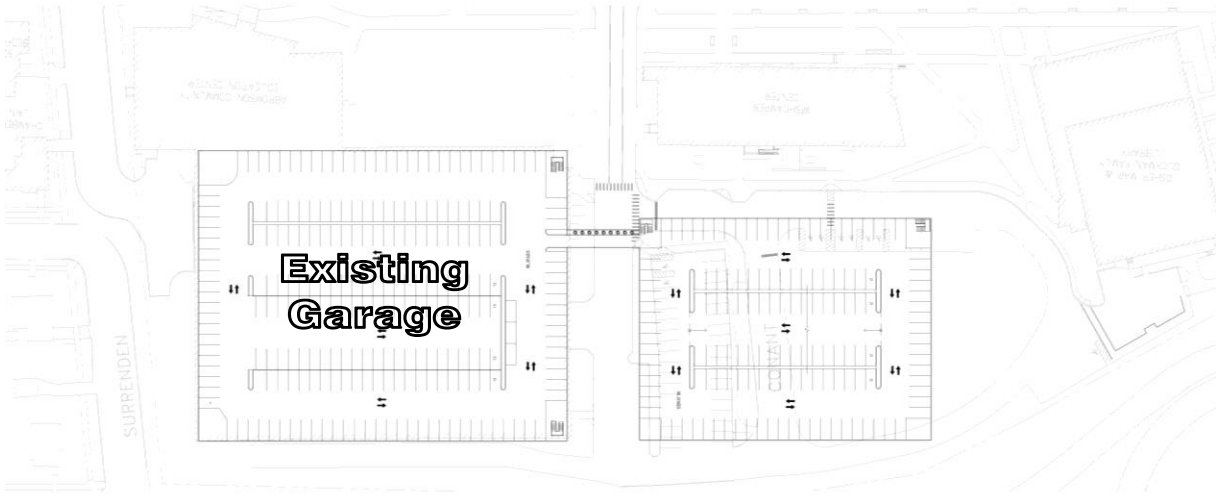
SECOND ~ 46,475 SF @ 318 SF/EA (146 SPACES)

FIRST ~ 46,475 SF @ 334 SF/EA (139 SPACES)

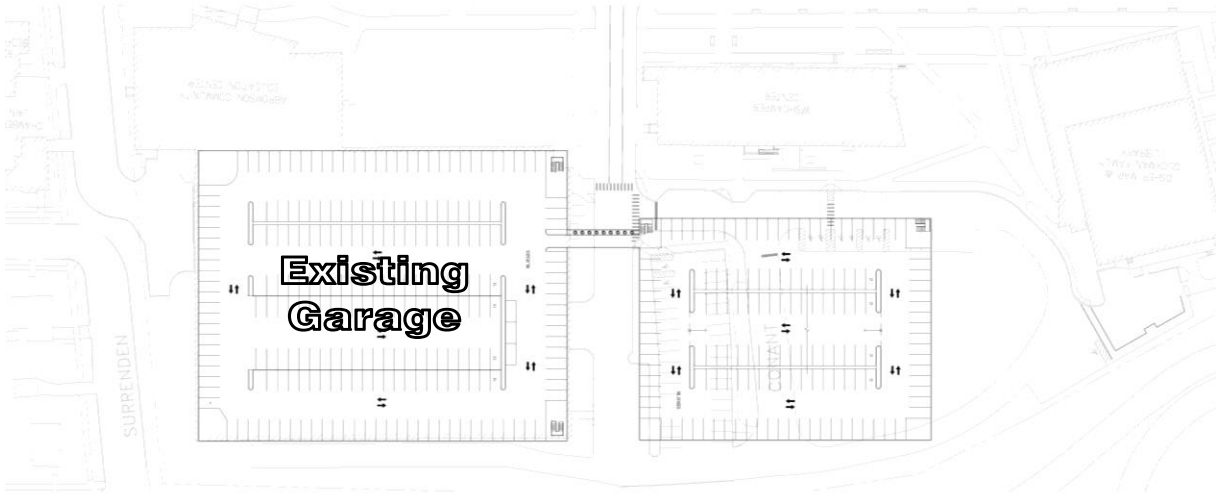
TOTAL ~ 233,475 SF @ 320 SF/EA (730 SPACES)



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com



Level 2 - 4



Level 5

PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Parking Design Option 3: Level-deck expansion scenario to the existing garage with independent access to each level and radial internal circulation ramp

FIFTH ~ 53,315 SF @ 308 SF/EA (173 SPACES)

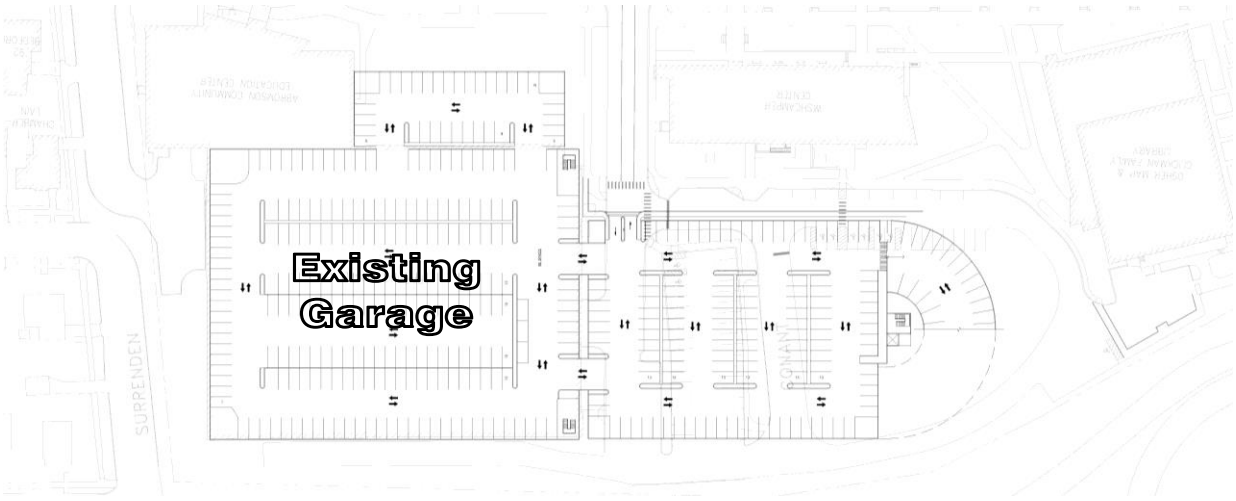
FOURTH ~ 49,715 SF @ 309 SF/EA (161 SPACES)

THIRD ~ 49,715 SF @ 309 SF/EA (161 SPACES)

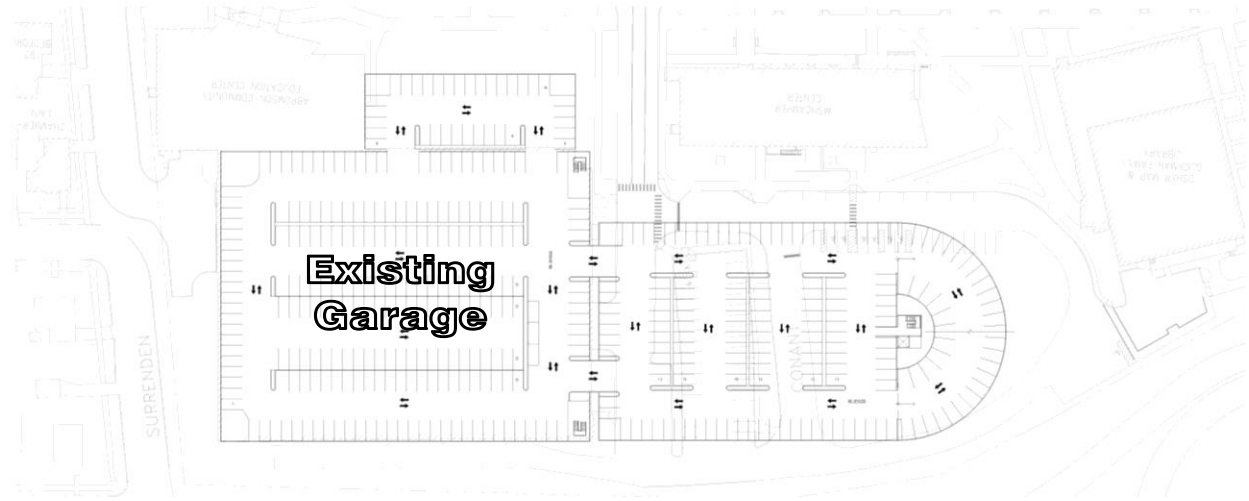
SECOND ~ 49,715 SF @ 309 SF/EA (161 SPACES)

FIRST ~ 37,560 SF @ 341 SF/EA (110 SPACES)

TOTAL ~ 240,020 SF @ 313 SF/EA (766 SPACES)



Level 1



Level 3-5

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Design Budget and Proposed Project Timelines

Costs of Modifying Precast Structural System

Parking Design Option 3 investigates the modification of the existing precast parking structure to expand the parking field with level parking decks and two drive aisles. While a steel-framed parking garage is easily modified post-construction, that is not the case with precast structures. Every element of a precast garage is performing a structural task that would need to be replaced in some form, and due to the heavy loads that precast garages produce, this task is potentially expensive. Cutting into shear walls or even spandrel façade elements might require moment frames and/or removal of the precast tees for a lighter steel-framed system in the area(s) affected. Additionally, the structural piers have been designed for a certain loading, so additional loads would likely need to be carried by separate adjacent footings/piers.

Design Budget

With the Design-Bid-Build project delivery method, the actual costs of the project are not known with certainty until the bid opening, and are also affected by seasonal availability, the state of the current bid environment, and the complexity of the design as it relates to the available pool of responding contractors. That being said, there are a number of factors that can be used to gauge the pricing performance of the garage design relative to the resultant parking efficiency and the number of special features required for the project.

The current 2019 Means Construction Data pricing guide identifies the average cost of a surface parking space is in the $2,500-$3,000 range, structured parking with elevated decks and an open design in the $18,000-$22,000 range, structured parking with elevated decks in a closed design in the $20,000-$24,000 range, and underground parking with a closed design in the $30,000-$35,000 range. The range of these baseline costs should be considered primarily against the backdrop of the resultant parking efficiency on a square-foot basis, but also the specific project program requirements, such as; vehicular entry, ramping, enclosure, ventilation, and pedestrian access. Due to the highly-efficient nature of the options developed in this parking feasibility study, at approximately 315 sf per space, the average square foot cost of around $45 per square foot for a typical steel-framed parking structure would result in a per-space cost of $14,200.

Proposed Project Timeline

Due to the highly variable impact of the City of Portland design review process, in addition to the review and approval procedure timeline for the University's Capital Improvements process, just to name a couple of possible schedule impacts, the exact project timeline is difficult to determine and some degree of flexibility should be considered when forecasting the project approvals timeline. Also figuring into the early project timeline is the project budget pricing requirements, and the design development gaps afforded to these pricing efforts during design. To accelerate the construction schedule, fast-track techniques, performing parts of the construction effort under winter conditions, and possibly selecting a deck system that does not require a traffic topping may be considered.

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

The schedule requirements for the major design segments and project approvals would be as follows:

- Preliminary Garage Design and Civil Design Document Preparation……. 2 month duration
- City of Portland Planning Board Approval Process…….. 3 month duration
- Design Development and Construction Document Preparation……. 3 month duration
- Project Bid and Contractor Award……. 1.5 month duration
- State Fire Marshal and Local Permit Approvals ……..... 2 month duration
- Site and Building Construction ……. 8-10 month duration

A general timeline for a steel-framed parking garage design and construction that would take best advantage of the traditional construction season with a Spring ground-breaking would be as follows:

- Preliminary Garage Design and Civil Design Document Preparation…….. Aug-Sept 2019
- City of Portland Planning Board Approval Process……. Aug-Oct 2019
- Design Development and Construction Document Preparation……. Sept 2019-Nov 2019
- Project Bid and Contractor Award……. Dec 2019-Jan 2020
- State Fire Marshal and Local Permit Approvals ……..… Dec 2019-Jan 2020
- Structural Steel Shop Drawing Prep and Fabrication…… Feb 2020-May 2020
- Site and Building Construction …… March 2020- Nov 2020

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Exhibit A. 2019 University Of Southern Maine Facilities Master Plan

UNIVERSITY OF SOUTHERN MAINE | FACILITIES MASTER PLAN



400,000 GSF | *Site available for academic, housing, parking or athletic growth beyond current program*

PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

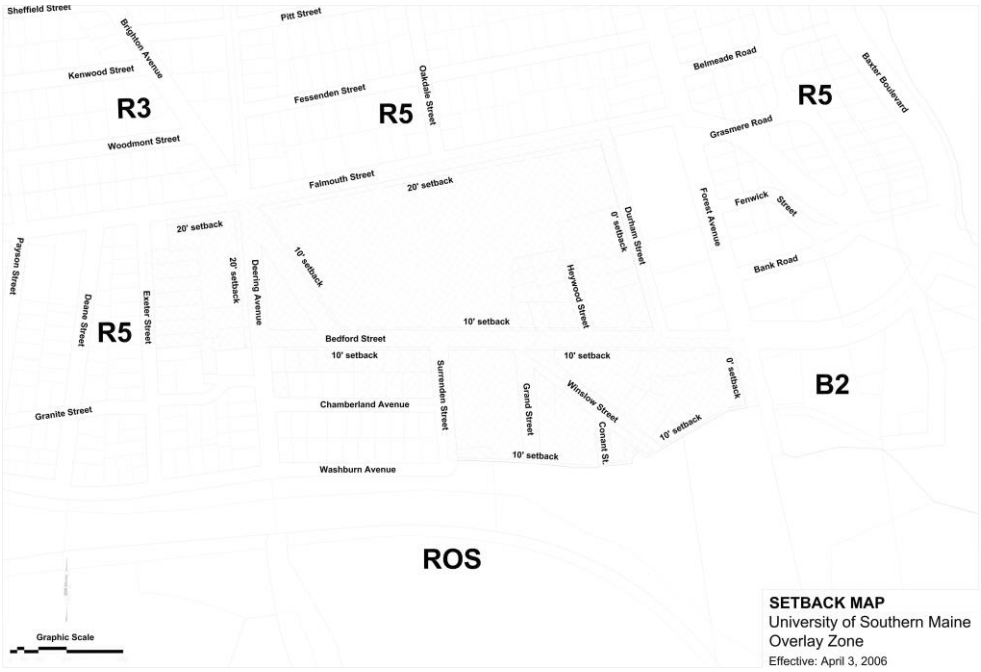
Exhibit B. 2018 University Of Southern Maine Aerial Photo

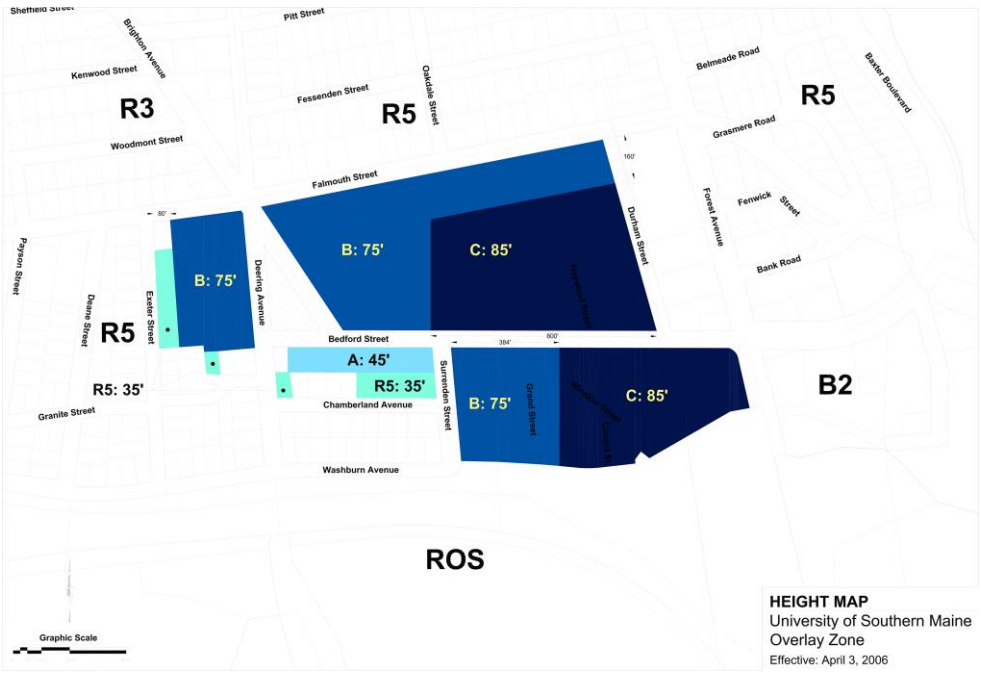




PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

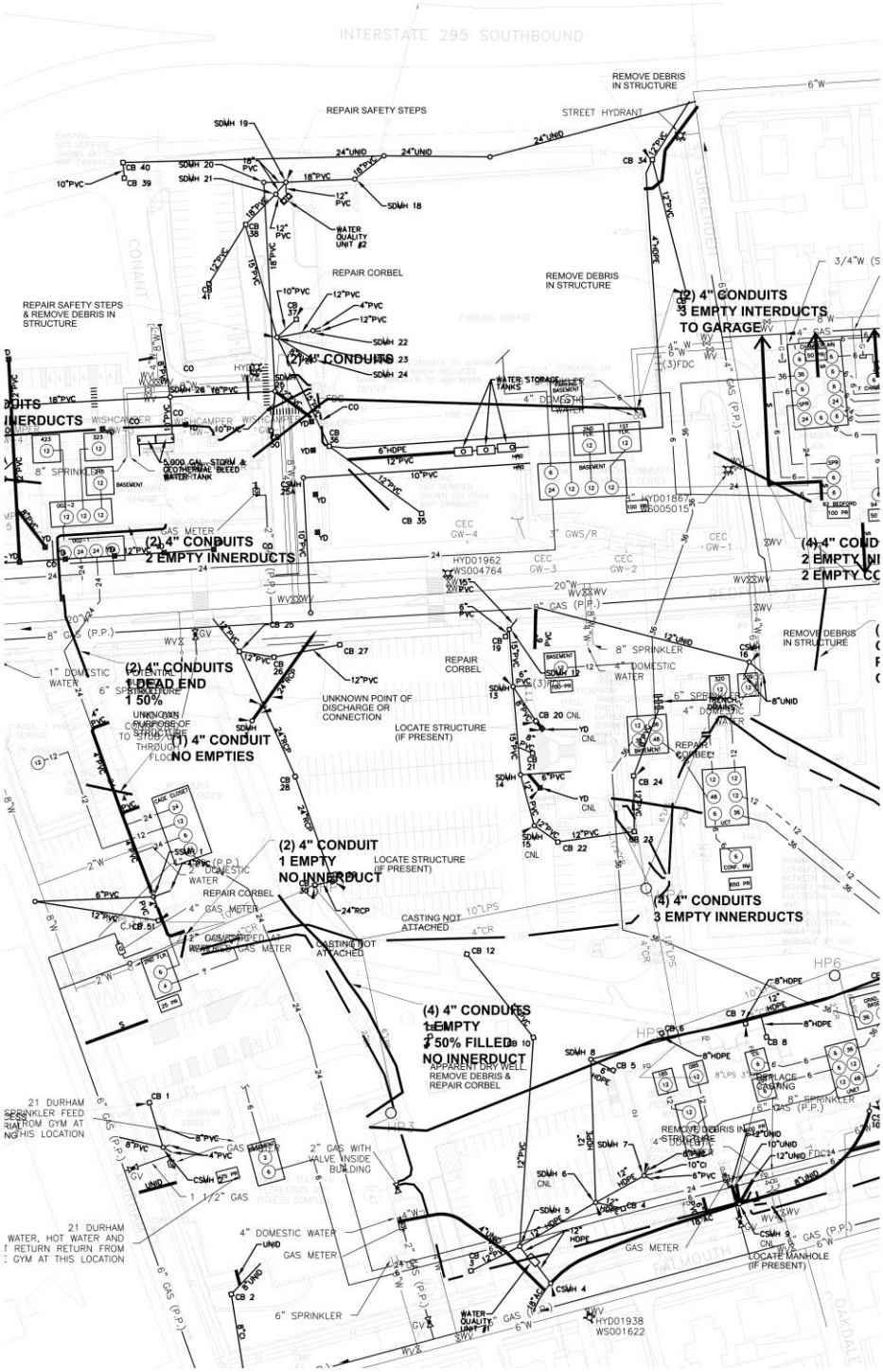
Exhibit C. University Of Southern Maine Zoning Overlay Plan





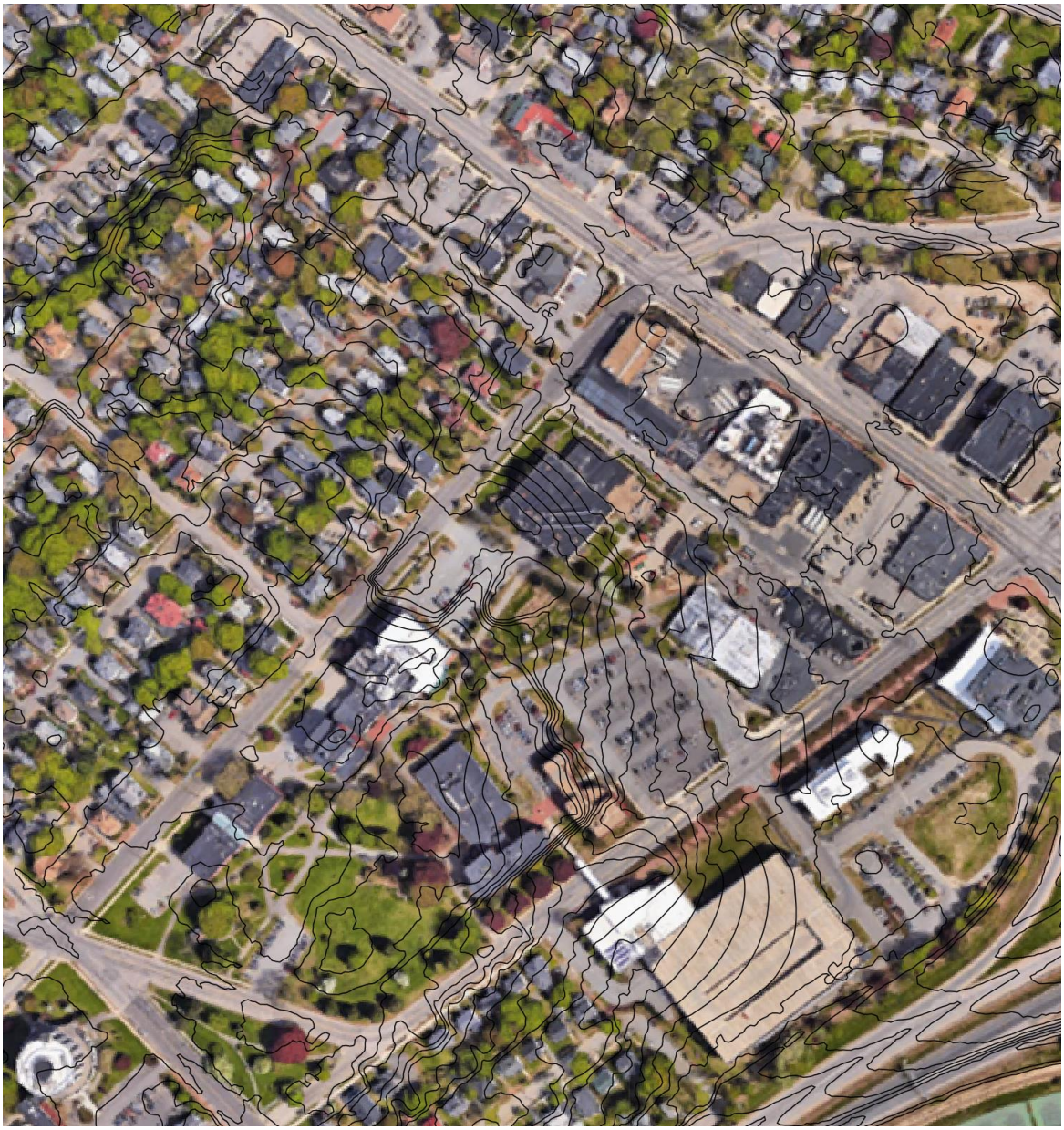
PLATZ ASSOCIATES
tel 207 784 2941 fax 207 784 3856
Architects • Engineers
Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Exhibit D. University Of Southern Maine Utilities Overlay Plan



PLATZ ASSOCIATES
tel 207 784 2941 Architects • Engineers
fax 207 784 3856 Construction Managers
Two Great Falls Plaza, Auburn, Maine 04210
www.platzassociates.com

Exhibit E. University Of Southern Maine Topography Overlay Plan



PLANNING BOARD REPORT
PORTLAND, MAINE

60 Merrymeeting Drive Development
Level III Site Plan & Conditional Use Review
Fallbrook Commons Development LLC, Applicant
PL-000925-2019 CBL: 400 D023

Submitted to: Portland Planning Board Public Hearing Date: November 10, 2020	Prepared by: Andrew Tufts, Planner Date: November 6, 2020



Figure 1: Parcel outline - Source: City of Portland Maine Parcel Viewer

I. INTRODUCTION

Fallbrook Commons Development LLC, has submitted a Level III Site Plan and Conditional Use application for the development of a two-story, 58,197 square-foot skilled nursing care facility at 60 Merrymeeting Drive. The subject property is an 8.28 acre parcel along with approximately 55 linear feet of street frontage on Ray Street. The site is zoned R-3, in which institutional developments are allowed as a conditional use.

The Planning & Urban Development Department sent 228 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the October 30th & October 31st editions of the Portland Press Herald.

Applicant: Fallbrook Commons Development LLC

Consultants: Dan Danvers, L.A. (Sebago Technics, (Landscape Architect)), Michael Pednault, AIA (Gawron Turgeon Architects) Charles Marchese (Sebago Technics (Surveying))

II. REQUIRED REVIEWS

Review	*Applicable Standards*
Site Plan	*Section 14-526*
Conditional Use in the R-3 zone	*Section 14-88*
General Conditional Uses	Section 14-474

III. PROJECT DATA

Existing Zoning	R-3 Residential
Existing Use	*Senior Care Facility - Wooded Lot*
Proposed Use	*Long Term Care Facility*
Parcel Size	8.28 Acres

	Existing	*Proposed*	*Net Change*
Building Footprint	0	37,455 SF	+ 37,455 SF
Building Floor Area	0	58,197 SF	+ 58,197 SF
Impervious Surface Area	0	117,172 SF	+ 117,172 SF
Parking Spaces	0	83	+ 83
Bicycle Parking Spaces	0	10	+ 10



Figure 2: Existing conditions - Source: Google Earth

IV. EXISTING CONDITIONS

The development site is located on Merrymeeting Drive, which is accessed via Ray Street. The parcel, which is currently undeveloped, is approximately 8.28 acres in size and is one portion of the original 12.78 acre parcel of Fallbrook Woods. The site was originally permitted through the state; first as part of a phased subdivision plan and then as part of Fallbrook Woods senior center development. The site is located in the North Deering neighborhood, and is bordered by Ray Street to the east, Florida Avenue to the south, Gertrude Avenue & a wooded area to the west, and the existing Fallbrook Woods facility to the north along with Merrymeeting Condominiums. The surrounding properties are all residential. No sidewalks currently exist on site.

The development site generally slopes downward from a high knob in the western-central portion of the parcel to the north, south and east, with about 24 feet of surface relief across the site. An existing gravel service road for the adjacent Fallbrook Woods facility is located on the north side of the site. The site is within the watershed of an unnamed stream that is a tributary of the Presumpscot River and wetlands are known to exist on the parcel. The wetlands on this site were delineated by Sebago Technics in September of 2018 and are classified as Palustrine Forested (PFO) wetlands. The vegetation in these PFO wetlands primarily consists of maple, speckled alder, cinnamon fern, sensitive fern, and jewelweed. Upland vegetation primarily consists of white pine and red oak. A vernal pool survey was conducted on May 6th, 2019 and no vernal pools were identified on the property.

The Maine Department of Inland Fisheries and Wildlife (IF&W) reviewed the site and found there to be no essential habitats or fisheries habitats that have been mapped. IF&W noted that there was the possibility that the site falls within the migration path of several species of bat. A project review was completed by the Maine Natural Areas Program (MNAP) which found there to be no documented rare botanical features within the project area.

Sebago Technics, Inc. completed a boundary and topographic survey of the site in May & July of 2019, as well as February of 2020. An easement exists for Merrymeeting Drive.



Figure 3: Contextual Site Plan - Source: Sebago Technics

V. PROPOSED DEVELOPMENT

The proposed development includes a two-story, 58,197 square-foot skilled nursing care facility. The purpose of this project is to replace St. Joseph's Rehabilitation and Residence, a 121-bed licensed nursing care center built in 1974, that no longer meets current standards for nursing care centers. St. Joseph's is currently owned by Maine Medical Center and is located approximately 1.5 miles from the proposed development site. In collaboration with Maine Medical Center, Sandy River Company and North Country Associates would create a new licensed nursing care facility to replace the St. Joseph's facility.

The project includes a new 90-bed licensed nursing care center located next to the Fallbrook Woods assisted living facility. The campus approach would allow visitors to access both facilities, provide a smooth transfer for assisted living residents that might need nursing care services, and allow an opportunity for shared support services and management. The development would include three separate "neighborhoods" within the building with a shared commercial kitchen, community areas, and two parking areas totaling 83 parking spaces. Fallbrook Commons proposes a main entrance off Ray Street, and an emergency connection from Merrymeeting Drive to Ray Street.

This project would happen as one phase, which would involve clearing the incidental vegetation, ledge removal, site preparations for the building, and implementation of stormwater management measures. In addition to the Site Plan & Conditional Use Review, this application requires an amended Site Location of

Development (SLODA) and a Natural Resources Protection Act (NRPA) permit. The stormwater from the site will be collected using best management practices consistent with Maine Department of Environmental Protection (DEP) Chapter 500 standards.

The following easements are included with the proposed development:

- A twenty-foot access easement has been proposed from Ray Street to Merrymeeting Drive, to benefit Fallbrook Woods.
- A fifteen-foot grading easement has been proposed along the proposed lot division line to benefit Fallbrook Commons.
- A proposed utility easement would be located along the south east property line from the paper street Topsham Street to Merrymeeting drive, to benefit Fallbrook Woods. Discussions are on-going with Portland Trails to agree upon an access easement across the properties. A trail head is proposed at the back of the rear parking area, as well as at the Ray Street emergency drive entrance.
- The applicant is working with Portland Water District to provide an additional utility easement for an eight-inch main connecting Ray Street to Merrymeeting Drive. This would be a condition of approval.

These easements will be included on drawings as they are completed.

VI. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

Over 40 public comments have been submitted to date. The comments include but are not limited to the following concerns:

- Project scale/ density
- Light & noise pollution
- Environmental impact
- Wetland impacts
- Flooding
- Inappropriate use
- Increased traffic flow – safety
- Wildlife habitat
- Lower property value
- Privacy reduction
- Lack of public transportation
- Stress
- Construction management
- Impact to abutters

A neighborhood meeting was held on the evening of February 18, 2020 at the Fallbrook Woods lobby at 6:00 p.m. for the proposed project. Approximately 30 members of the public attended. Attending on behalf of the development team were Will Conway, Dan Danvers, and Aaron Hunter of Sebago Technics; Daniel Maguire & Doug Gardener as the applicants; and Michael Pednault representing Gawron Turgeon Architects. The applicant began the presentation by introducing the development team. They then provided some insight into the history of the project, and explained the intent for programming. Will Conway from Sebago Technics explained the site plan, parking, landscaping, stormwater, and utility elements. Following Will's explanation, Michael Pednault from Gawron Turgeon Architects explained the proposed building's exterior, interior, and programming. At the end of Michael's presentation, the applicant opened the meeting to the public for questions.

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

The owner of the property is Fallbrook Properties, LLC. The applicant provided a copy of the warranty deed, recorded at the Cumberland County Registry of Deeds in CCRD Book 31613 page 255, which demonstrates their right, title and interest in the property. The applicant team cited their experience and qualifications to demonstrate capacity to design and construct the project.

VIII. ZONING ANALYSIS

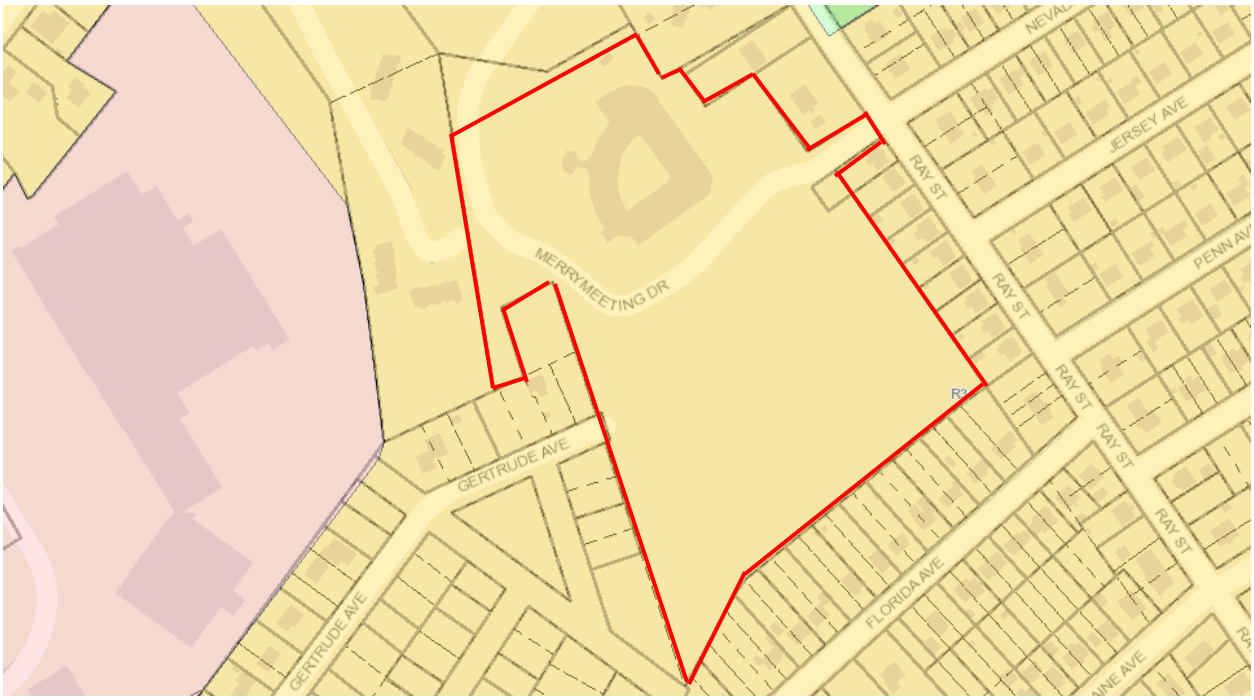


Figure 4: Zoning Map – Source: City of Portland GIS Maps

Dimensional requirements for this project are dictated by the R-3 residential zone. The purpose of the R-3 Residential zone is to provide for medium-density residential development characterized by single-family homes on individual lots and also to provide for planned residential unit developments on substantially sized parcels. Such development shall respond to the physical qualities of a site and complement the scale, character and style of the surrounding neighborhood. Though primarily a residential zone, like other R-zones, it also allows for limited institutional and other non-residential uses, most of which are reviewed as conditional uses.

The proposed project has been assessed by City staff and was determined to meet dimensional requirements for the R-3 zone. These requirements are included as a table on the following page.

Zoning Requirements	R-3	Provided	+/-
Minimum Lot Size	2 AC	8.28 AC	+ 6.28 AC
Minimum Street Frontage	50 ft.	55 ft	+ 5 ft.
Front Yard Minimum	25 ft.	248 ft. scaled	+ 223 ft.
Min. Rear Yard	25 ft.	83 ft. scaled	+ 58 ft.
Min. Yard Right	14 ft. (2 stories)	88 ft. scaled	+ 74 ft.
Min. Yard Left	14 ft. (2 stories)	87 ft. scaled	+ 73 ft.
Maximum Lot Coverage	35%	34%	- 1%
Minimum Lot Width	65 ft.	523 ft.	+ 458 ft.
Maximum Structure Height	35 ft.	34 ft. - 4 in.	- 8 in.
Parking Minimum	73	83	+ 10
Bicycle Parking	10	10	--

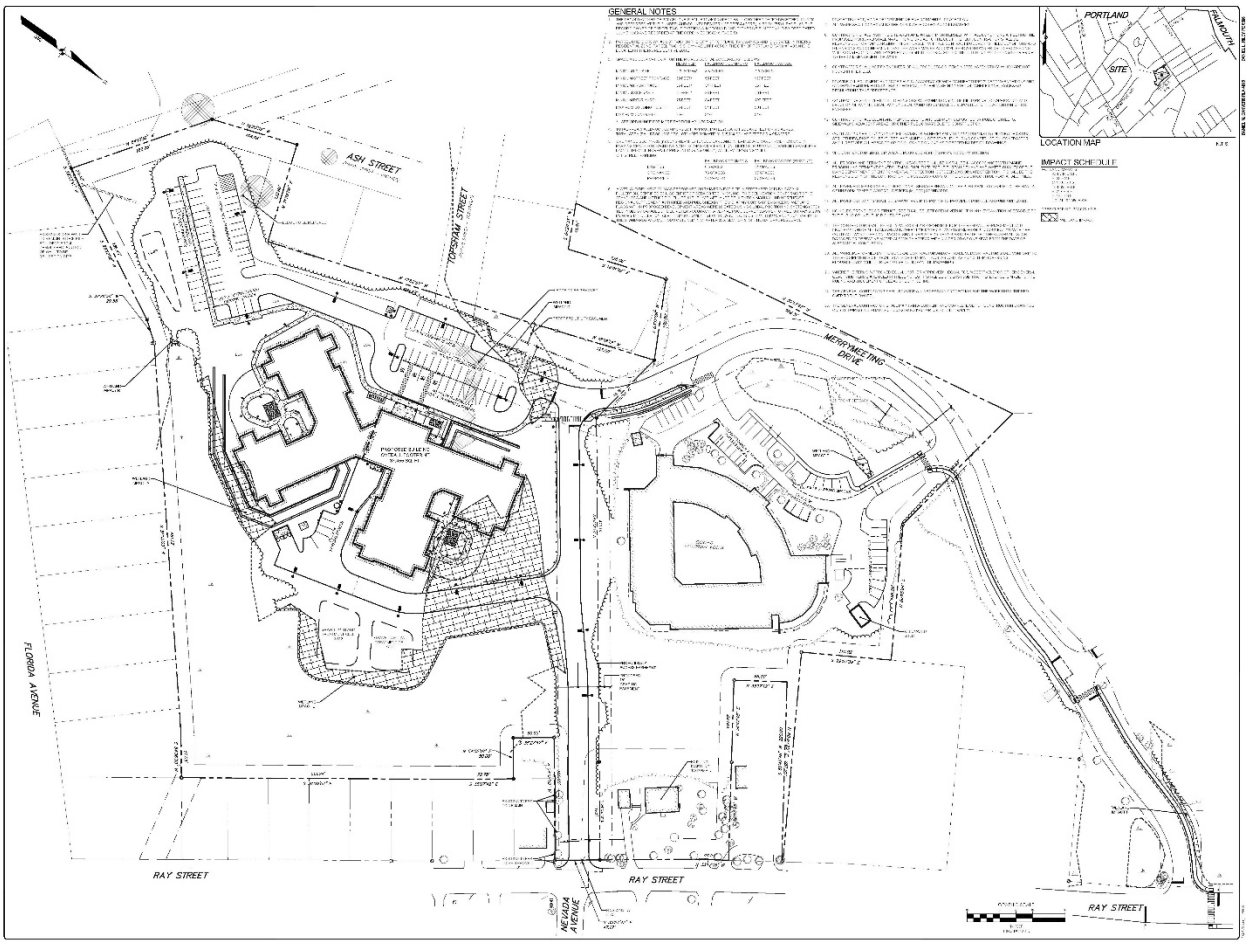


Figure 5: Site Plan - Source: Sebago Technics

IX. DEVELOPMENT REVIEW

Summary of Planning Board Workshop #1 - June 9, 2020

Planning staff introduced the project, followed by the applicant's presentation. Public comment was provided for approximately 60 minutes. The board then answered questions raised by the public and went on to deliberation. Key discussion items included:

- Parking: the proposal called for 93 spaces, exceeding the required amount by 20. The Board stated they would like to see this number revisited and reduced.
- Light trespass: the board encouraged the applicant to enhance the landscape buffer around the parking areas.
- Retaining walls: the board expressed concern around the scale and uninterrupted span of retaining wall facing Ray Street, and encouraged the applicant to address and soften this feature.
- Conditional Use standards: the board asked for a more thorough explanation of how the proposed project meets the conditional use standards for the R-3 zone.

Summary of Planning Board Workshop #2 – September 15, 2020

- Parking: the proposal was revised to reduce the amount of provided parking from 93 to 83 spaces; this still exceeds the required amount by 10 spaces. However, 20 of the proposed spaces have been designed as overflow parking, only to be used for events, and are comprised of structured turf. The Board indicated their appreciation for the reduction in spaces.
- Light trespass: the applicant enhanced the landscape buffer around the parking areas which the Board responded favorably to.
- Retaining walls: the applicant revised the landscape plan by adding a significant number of plantings along each tier of the retaining walls, helping to soften this feature. The Board was satisfied with this approach.
- Conditional Use standards: the applicant provided additional detail regarding how the proposed design meets the standards. The Board requested further information regarding the project's potential impact to onsite wetlands.

A. ZONE-SPECIFIC CONDITIONAL USE STANDARDS – SEC. 14-88

a. *In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas.*

Applicant Response: The project incorporates a land division. The lot being created is currently undeveloped, and its proposed principle use will be a Long-Term Care Facility. All improvements affiliated with the proposed development are contained within the site and do not encroach on surrounding neighborhoods.

Staff Analysis: The applicant has demonstrated that the use expansion cannot be contained within the current site as the land division will result in the creation of a new lot under separate ownership. The proposed development is located on an 8.28 acre wooded parcel and meets the required setbacks from neighboring parcels. The applicant has provided landscape screening around all structures and parking areas.

b. *In the case of a use or use expansion which constitutes a combination of the above-listed uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative.*

Applicant Response: The proposed development satisfies this requirement.

Staff Analysis: The proposed development has a combined lot size of 12.72 acres, satisfying this requirement.

B. GENERAL CONDITIONAL USE STANDARDS – SEC. 14-474

The conditional use standards overlap with many individual site plan standards, and staff will determine overall consistency with conditional use standards via the applicant's responses to staff and Board comments.

a. *The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone.*

Applicant Response: This project will not generate a substantial increase in vehicle traffic to surrounding roadways. The number of parking spaces proposed is right-sized for the operations affiliated with the facility, and are proportionate for the level of care provided. St Joseph's, which is being replaced, operates 24 hours a day and has over 120 parking spaces.

Staff Analysis: The use of the proposed facility is such that the inhabitants will not require vehicles, and only staff and visitors will drive to and from the site. The volume and type of vehicle traffic is not anticipated to be substantially greater than other institutional uses of similar or greater intensity in the R-3 zone. Examples of allowable conditional uses within the R-3 zone that have the potential to generate greater traffic volume than the proposed use include schools, hospitals and places of assembly. Following the first workshop, the applicant submitted revised plans showing a reduction of 9 parking spaces, from 93 to 83. Of those 83, 66 would be paved, while 17 would be structured turf overflow parking for events.

b. *The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.*

Applicant Response: The project will perform in accordance with the performance standards of the ordinance.

Staff Analysis: Following the first workshop, the applicant has relocated the dumpsters further from adjacent properties to reduce the possibility of odor. Additional landscape screening has been added around the parking areas to prevent light trespass. Upon review of the application, staff feel that the project will perform in accordance with the performance standards of the ordinance.

c. *The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.*

Applicant Response: The project will not have a substantial negative impact on surrounding properties, is designed in accordance with Portland's technical manual, and will adhere to the performance standards outlined in the ordinance.

Staff Analysis: At the first workshop, the Planning Board issued concern around the height of the retaining walls facing adjacent properties. The applicant has since enhanced the planting plan along

the walls to include a robust mix of trees, shrubs, and vines. Staff finds this design to adequately soften and disguise the height of the wall.

C. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. Transportation Standards

a. Impact on Surrounding Street Systems and Access and Circulation

Access to the site is proposed by way of Merrymeeting Drive, an existing private roadway serving the Merrymeeting Condominiums and the existing Fallbrook Woods Assisted Living Facility. Merrymeeting Drive intersects Ray Street at an existing all-way stop controlled intersection. At this intersection location, Ray Street is classified as an urban local roadway with a posted speed limit of 25 miles per hour. The project proposes to provide improvements to this intersection including new stop signs, stop bars, and a new marked pedestrian crossing across Ray Street. This crossing would connect a proposed sidewalk on Merrymeeting Drive with the existing sidewalk on the eastern side of Ray Street.

It is also proposed to construct an emergency-only access drive connecting the proposed facility directly with Ray Street. This restricted access drive would intersect Ray Street opposite Nevada Avenue. A locked gate, equipped with a Knox Box, would be installed to prevent unauthorized use.

The proposed development has provided traffic analysis that has been reviewed by City Staff and Consultants. Thomas Errico, PE, Consulting Traffic Engineer has provided the following comments in regard to traffic impacts:

- *The applicant's traffic engineer conducted a trip generation estimate for the project according to accepted traffic engineering methods. According to guidance in the Trip Generation Manual, Institute of Transportation Engineers, 10th Edition, the proposed project would be expected to generate 23 vehicles during the weekday AM peak hour (18 entering and 5 exiting) and 27 vehicles during the weekday PM peak hour (11 entering and 16 exiting). During the worst-case peak hour, the project will generate 41 vehicles (18 entering and 23 exiting). As noted by the applicant, this level of trip generation does not warrant a traffic study per the City Technical Manual (there is a High Crash Location on Allen Avenue near Allen's Corner that is close to ½ mile from the project site). I concur that a traffic study is not required. I would further note that that this level of traffic would not be expected to create safety or mobility issues. During the morning and evening commute peak hours (typically 7:30 to 8:30AM and 4:30 to 5:30PM), the project would add one vehicle to Ray Street about every 2 to 3 minutes.*

- *Based on the trip generation estimate provided by the applicant the proposed project does not require a MaineDOT Traffic Movement Permit.*

- *The applicant is required to submit a Construction Management Plan and as such a plan has been provided. A specific construction vehicle routing plan has not been noted and I would suggest that the applicant provide a suggested routing to minimize impact to the neighborhood.*

b. Sidewalks

There are no existing sidewalks on site. The proposed internal sidewalk would lead from the proposed facility (Fallbrook Commons) to the existing facility (Fallbrook Woods). From there, the applicant is proposing a sidewalk along Merrymeeting Drive, that would connect to Ray Street's sidewalk.

c. Public Transit Access

Bus service is available on Ray Street only on days that schools are open. The closest daily, year-round bus service is on Washington Avenue. The facility would have a private shuttle service for residents.

d. Parking

The proposed project is required to provide 73 parking spaces and is proposing to provide 83 parking spaces on site, resulting in 10 additional spaces beyond the requirement. Of the 83 spaces, 66 are proposed to be paved, while 17 are to be structured turf for overflow and event parking. The facility is expected to employ up to 113 full time equivalent employees as submitted in projections to the Maine Department of Health and Human Services. The staffing occurs in shifts, with 55 employees during the day shift, 25 during the evening shift and 10 employees during the night shift. The applicant's experience has been that providing parking for day shift employees with an allowance of approximately one visitor space per 2.5 beds meets the requirements for a typical day use for family visitors, and specialty service vehicle needs at their other facilities.

Of the 83 proposed parking spaces, 4 are universally accessible. All ADA spaces have been located nearest the primary entrance to the building for employees, guests, and visitors. Six spaces are proposed in the service area at the back of the facility, and are for contractors and facilities maintenance vehicles.

Mike Tremblay P.E., Senior Engineer, has provided a number of comments that are found in the response to comments. (SEE ATTACHMENT G)

e. Bicycle Parking

The applicant is proposing up to 10 bicycle spaces. The bike rack is proposed to be located at the buildings entrance.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

The development has been designed to preserve and protect significant natural features. A Tier 2 Natural Resource Protection Act (NRPA) application has been filed with the Maine Department of Environmental Protection for any proposed wetland impacts. The NRPA Permit was submitted to City Staff on June 5th. Maine Inland Fisheries and Wildlife reviewed the site and found there to be no essential habitats or fisheries habitats that have been mapped. IF&W noted that there was the possibility that the site falls within the migration path of several species of bat. All site clearing should be done outside of the protected bats roosting season. A project review was completed by the Maine Natural Areas Program (MNAP) which found there to be no documented rare botanical features within the project area. Following the first workshop, an appeal has been filed to the DEP challenging the issuance of the NRPA permit. This is ongoing evaluation by the DEP.

The applicant requests a waiver regarding section 14-526. B.1 *"The site plan shall preserve and protect significant natural features by incorporating them into the site design. (Subsection v includes freshwater wetlands."* The applicant has explained that the complete preservation of significant natural features on the site would substantially compromise the development of the proposed conditional use. The applicant has designed the building and parking to be located in the western portion of the site, in an effort to mitigate the disturbance of wetlands, which are to be preserved along the eastern portion of the site. Furthermore, the applicant explored additional wetland mitigation by reducing the building's footprint and going from a one-story building to a two-story concept.

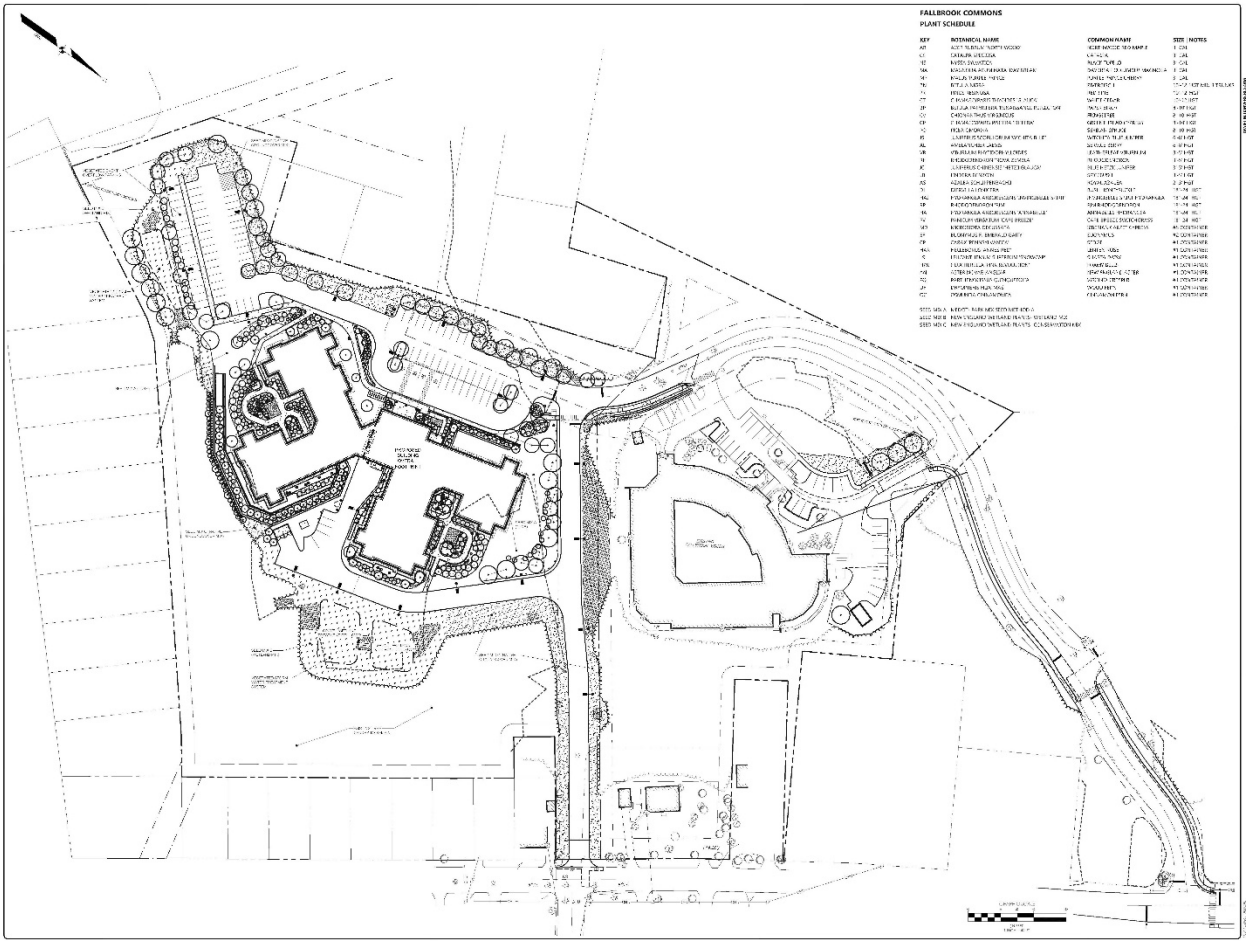


Figure 6: Landscape Plan - Source: Sebago Technics

b. Landscaping and Landscape Preservation

The proposed development involves the partial clearing of site vegetation to allow for site development. Existing tree cover was incorporated into the landscaping plan providing a wooded buffer between the proposed development and existing abutters. No trees with a 10-inch DBH or greater within the setback are to be impacted, as shown on the site plan. Vegetation will be protected during construction in accordance with tree preservation standards listed in Section 4 of the Technical Manual.

A planting schedule is included on the landscape plan that features native trees & shrubs such as Red Maple, Black Tulepo, White Cedar, Service Berry, Viburnum, and Spicebush. Much of the understory groundcover is designed to be seeded using three New England seed mixes, two for wetland areas, and one for parks.

Following the first workshop, the applicant revised the landscape plan to incorporate additional plantings to enhance buffers along the parking areas and retaining walls.



Figure 7: Post-Development SW - Source: Sebago Technics

c. Water Quality, Storm Water Management and Erosion Control

Development of the project site would result in an increase of approximately 118,068 square feet of impervious area. Since the project will disturb more than one (1) acre of land area, Maine DEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. The project avoids adverse impacts by implementing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 4) during construction and postconstruction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

To mitigate the changes in hydrologic patterns due to the development of this project, an under drained soil filter, a gravel wetland, and a roof drip edge filters have been included in the proposed stormwater management infrastructure. Through the use of the proposed BMP's, 100% of new impervious area and 91.8% of new developed area will be receiving treatment. This exceeds the requirements for the Maine DEP General Standards. The

project exceeds 100% of the new impervious area treated by directing untreated offsite impervious area to the proposed gravel wetland.

Since the planned project will create less than three (3) acres of impervious surface, Maine DEP Chapter 500 Flooding Standards are not required to be met. However, the Flooding Standard has been met as a local requirement. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site does not exceed the peak flows of stormwater prior to undertaking the project. The project is also required to meet the standards required for a Site Location of Development (SLOD) permit. A SLOD application has been submitted to DEP, reviewed by Planning staff, and found to be in accordance with site plan standards.

Lauren Swett, P.E., Consulting Civil Engineer, has provided the following comments in regard to stormwater and erosion control:

***Comment**: The Applicant should evaluate the steepness of some of their pipes. In particular pipes SD-21 and RD-4 are steep, due to the proposed change in grade. RD-1 is also relatively steep. Please consider potential velocity issues at the ends of these pipes. "*
***Response:** Given the relatively small tributary areas and corresponding flow rates we do not have a concern regarding the slopes at these locations. To address the concern, we have adjusted the grades of SD-12 at the upstream and downstream structures. We have revised the alignment of the roof drains and added connection/drop structures at the top of the slope to flatten the grade.*

***Comment** "Pipe SD-18 is missing from the Stormdrain Pipe Data tables. "*
***Response:** Pipe SD-18 has been added to the tables.*

***Comment**: "Wall drains are noted to be connected to CB-8. Please clarify the depth of these connections to verify that the pipe can connect to the structure with all of the other proposed stormdrain connections."*
***Response:** Inverts for the wall drain inverts have been added to the labels. The wall drains enter above the site drainage pipes to accommodate the connection.*

***Comment:** "Ability to serve confirmation will be required from utilities, including the Portland Water District for domestic and fire water services and the Department of Public Works for sewer. "*
***Response:** We have reached out to Portland Water District and are working with them on the sizing of the domestic, Fire, and Sewer services.*

4. Site Design Standards

a. Snow and Ice Loading

The buildings have been designed and located such that accumulated snow and ice will not fall onto adjacent properties or public ways. Snow will be removed from the parking lots and stockpiled within the site perimeter or if necessary, removed from the site.

b. View Corridors

The site is not located within any corridors identified in the Downtown Vision View Corridor Protection Plan.

c. Historic Resources

The development is not located within a designated historic district.

d. Exterior Lighting

All new exterior lighting at the site will be full cutoff with no light emitted above the horizontal plane, and in accordance with Section 12 of the Technical Manual. A photometric lighting plan has been prepared by Hubbel Lighting Consultants to demonstrate illumination levels throughout the site would be consistent with City standards.

e. Noise and Vibration

All heating, ventilation, air conditioning equipment including air handlers and generators are designed to meet local, state, and federal emissions and noise requirements. All construction will take place between 7 a.m. and 7 p.m.

f. Signage and Wayfinding

All signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.

g. Zoning Related Design Standards

The R-3 zone does not have any zone-specific design standards and the Site Plan Ordinance does not include design review for this use.

h. Construction Management Plan

The construction management plan and narrative were submitted and reviewed by City staff. A site analysis conducted by S.W. Cole provided the following guidance for the proposed construction:

- *Some areas of shallow bedrock were encountered at the explorations; thus blasting for bedrock removal should be anticipated. The depth of blasting should be controlled to less than 1 foot below footing subgrades and 2 feet below floor slab, pavement and utility subgrades.*

- *Subgrades across the site will consist of sensitive silts and clays. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays when wet. Excavation of soil bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.*

- *Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.*

X. SITE LOCATION OF DEVELOPMENT REVIEW

The City of Portland has delegated review authority from Maine DEP for large projects that trigger Site Location of Development Act (SLODA) review. The standards for this review generally dovetail with Portland's existing site plan and subdivision standards:

- Financial & Technical Capacity: see section VII, above.
- Traffic Movement: see site plan standards, a, above.
- No Adverse Effect on the Natural Environment: see site plan standards, b, above.
- Soil Types: see site plan standards, b, above.
- Ground Water: see site plan standards, 2, above.
- Infrastructure: see site plan 2, 3, and 4, above.
- Flooding: see site plan, 2, above.
- Storm Water Management & Erosion and Sedimentation Control: see site plan 2, above.

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommend that the Planning Board find the 60 Merrymeeting Drive development project meets the applicable standards of Portland's Land Use Code.

XII. PROPOSED MOTIONS FOR THE BOARD TO CONSIDER

A. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on November 10, 2020, for application #PL-000925-2019, relevant to the Site Plan Standards of the Land Use Code and Portland's Technical and Design Standards, and other regulations, and the testimony presented at the Planning Board hearing:

1. Impact to Wetlands

The Planning Board **[finds / does not find]** based upon the City Engineer's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard section 14-526. B.1 *"The site plan shall preserve and protect significant natural features by incorporating them into the site design (Subsection v includes freshwater wetlands"*, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning **Board [waives/ does not waive]** the Technical Manual standard Section 14-526.B.1.

2. Compact Parking Spaces

The Planning Board **[finds / does not find]** based upon the City Engineer's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual, *Section 1.14, Parking lots with greater than 10 spaces may be comprised of up to 20% compact parking spaces,* that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning **Board [waives/ does not waive]** the Technical Manual standard Section 1.14.

B. CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on November 10, 2020, for application PL-000925-2019, relevant to Portland's Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board [**finds/does not find**] the proposed conditional use is in conformance with the Land Use Code.

C. SITE PLAN REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on November 10, 2020, for application #PL-000925-2019, 60 Merrymeeting Drive relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board [**finds/does not find**] that the plan is in conformance with the site plan standards of the Land Use Code.

PRIOR TO ISSUANCE OF A BUILDING PERMIT

1. The applicant shall provide confirmation of adequate wastewater capacity from the Department of Public Works for review and approval by the Planning Authority.

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Public Comments
2. Comment Response Letters
3. Traffic Comments
4. Precedent Photos

APPLICANT'S SUBMITTALS

A - COVER LETTER
B – CHECKLIST
C - RIGHT, TITLE & INTEREST
D - FINANCIAL CAPACITY
E - TECHNICAL CAPACITY
F - ZONING ANALYSIS TABLE - EXISTING LOT
G - ZONING ANALYSIS TABLE - PROPOSED LOT
H - NEIGHBORHOOD MEETING
I - LETTER ON PROJECT NEED
J - JEFF SANDERS_LETTER OF SUPPORT
K - MHPC RESPONSE LETTER
L - SLODA 2020-03-02
M - STORMWATER REPORT
N - TRAFFIC MEMO
O - TRANSPORTATION ANALYSIS
P - SITE PLAN STANDARDS
Q - CONSTRUCTION MANAGEMENT NARRATIVE
R - RESPONSE TO COMMENTS
S - EVIDENCE OF APPROVALS
T - EXTERIOR LIGHTING
U - NARRATIVE OF PLAN CHANGES
V - LETTER TO PLANNING BOARD 6.29.20

PLANS

P1. COVER
P2. EXISTING CONDITIONS
P3. SITE PLANS
P4. GRADING PLANS
P5. UTILITY PLANS
P6. LANDSCAPE PLAN
P7. PHOTOMETRIC PLAN
P8. SIGNAGE & WAYFINDING
P9. SURVEY

P10. STORMWATER PLANS
P11. ARCHITECTURAL DRAWINGS
P12. SITE PLAN RENDERING
P13. CONSTRUCTION MANAGEMENT PLAN

June 4, 2020
18347

Andrew Tufts
Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Response to Comments for Fallbrook Commons
Parcel ID: 400 D 023001

Dear Andrew:

A neighborhood meeting for the Fallbrook Commons project was held on February 18th at Fallbrook Woods, approximately 30 of neighbors attended the meeting. We have made a number of revisions to the plans based on comments and concerns raised at the meeting. These concerns were primarily related to the proposed entrance off of Ray Street, the parking areas at the existing facility (Fallbrook Woods), and pedestrian access along Merrymeeting Drive.

The applicant proposes the following changes to the project:

- The proposed access from Ray Street opposite Nevada Avenue has been revised to be an Emergency Only Entrance. This emergency access driveway will be gated with a Knox box for emergency access only to both the proposed and existing facilities.
- The primary entrance to the proposed facility will be from the Merrymeeting Drive, through the existing facility.
- Sidewalks have been added along Merrymeeting Drive for pedestrians and the existing roadway will be repaved to improve its condition
- The parking area at the existing facility (Fallbrook Woods) will be modified and expanded to relocate existing on street parking from Merrymeeting Drive to the facility's parking lot.

We have included revised sections of the original application to reflect the project design, revised plans, and offer the following response to staff comments received in February 2020.

Response to Comments- Planning and Urban Development

Comments from- Mike Tremblay: *"There is a crest vertical curve on Ray Street approximately 200 feet northwest of the site driveway. Vehicles traveling along Ray Street may not be able to see a vehicle entering or exiting the site driveway, depending on the speed of the approaching vehicle and weather conditions. The stopping sight distance for a vehicle traveling 30mph is 200 feet, assuming a flat roadway surface. The marked speed limit on Ray Street is 25mph, but prevailing speeds may be higher. The Applicant should provide sight distance analysis at the site driveway. If sight distance is found to be insufficient, the applicant should provide solutions."*

Response: Sebago Technics traffic engineer has measured sight distance to be 270' from the Ray Street entrance exceeding the requirements for the posted 25 mph speed limit and a 30MPH assumed speed. The applicant has revised the plans to make the entrance off Ray Street opposite Nevada Avenue a gated

emergency fire entrance only. The applicant proposes to use Merrymeeting Drive as the primary entrance to the proposed facility. Additionally, the applicant proposes to improve the pedestrian and vehicular access along Merrymeeting Drive by repaving the road and adding a sidewalk from Ray Street to the new facility as shown on the plans attached to this submission.

Comment from- Mike Tremblay: *"In the bay of parking immediately outside the main entrance to the site, there are accessible parking signs that appear to be installed directly into the ground between parking spaces. This would appear to be challenging to plow/maintain and may result in damage/removal of the signs. A raised area where these signs could be mounted is suggested."*

Response: The applicant is proposing signs on bollards within the parking area to protect them from plowing / mechanical damage. A detail further of the sign on bollard is provided on sheet 16.

Comment from- Mike Tremblay: *"There are 92 parking spaces proposed on-site. There is little information provided about the anticipated parking demand. Given that the site has significant wetlands impacts, right-sizing the parking lots is of paramount importance. The applicant should provide justification for the parking supplied on-site."*

Response: Parking for 92 vehicles is proposed to accommodate the anticipated staffing and visitor requirements of the facility and is based on the applicants experience at similar facilities of this size and use. The facility is expected to employ up to 113 Full time equivalent (FTE) employees as submitted in projections with the Maine Department of Health and Human Services. The staff occurs in shifts. with 55 employees during the day shift, 25 during the evening shift and 10 employees during the night shift. The applicant's experience has been that providing parking for day shift employees with an allowance of approximately one visitor space per 2.5 beds meets the requirements for a typical day use for family visitors, and specialty service vehicle needs at their other facilities.

Comment from- Mike Tremblay: *"Of the 92 proposed parking spaces, 4 are universally accessible. ADA guidelines require 10% of spaces to be accessible for outpatient medical facilities, and 20% of spaces to be accessible for mobility rehabilitation facilities. Understanding that the proposal is for an assisted living/nursing care facility, and thus does not fall under one of the above categories, the number of accessible spaces provided on-site should be considered carefully, as the minimum amount required may not be appropriate."*

Response: This facility is not an outpatient medical facility or a rehabilitation facility, the parking count meets the ADA 208.2.3 Residential Facilities Standards. Residents of this facility will not have cars, leaving all parking spaces to be for guests, employees, and other Non-residents (208.2.3.3). This section refers the requirements back to the standard ADA parking table (Table 208.2) requiring 4 spaces. All ADA spaces at Fallbrook Commons will be Van Accessible.

Comment from- Mike Tremblay: *"None of the accessible spaces are provided in the lower satellite parking area containing the majority of parking spaces. It appears these spaces serve a different level of the building than the main entrance. The applicant should consider the appropriateness of providing a portion of, or additional, accessible spaces in the lower lot. Note that this lot appears to be closest to the courtyard area, which could be the best area for a resident to wait for a relative to pick them up, etc. in this case, the parking area closest to the courtyard would be the lower parking lot. "*

Response: All ADA spaces have been located nearest the primary entrance to the building for employees, guests, and visitors. All public access to the building is controlled through the main entrance. The courtyard entrances are for egress and maintenance/staff access only and are not open to visitors or residents from the outside the front door is the primary entrance for staff and is the only entrance for visitors.

Comment from- Mike Tremblay: *"None of the six parking spaces serving the service entrance, presumably provided for employees, is accessible. "*
Response: The service area is for contractors and facilities maintenance vehicles. Employees and other visitors will use the upper lots.

Comment from- Mike Tremblay: *"Understanding that there is a significant grade challenge, and that this area is currently proposed to be landscaped, the apparent desire line between the courtyard and the lower parking area is a direct line between the courtyard and lower parking area. The Applicant should consider providing a staircase serving this desire line, in addition to the accessible route already proposed. "*

Response: The courtyards are not accessible to the public from the outside. The gates are for egress and maintenance access only. The desire line from the parking areas will be to the front door of the facility.

Comment from- Mike Tremblay: *"The intersection of the site driveway with the internal driveway between sites appears to have two of the three legs under stop control. This is irregular and not recommended. An all-way stop, or partial stop control where only the site driveway has a stop sign, is recommended. "*

Response: The intersection has been revised to an all-way stop.

Comment from- Benjamin Pearson: *"2000-gallon external grease interceptor proposed. A junction manhole is required with channel where grease interceptor outlet connects to sanitary sewer. (See sheet 10 of 19) / Utility Plan 1. Circled in red below. "*

Response: Sewer Man Hole (SMH) 1 has been added to Utility drawing 2.

Comment from- Benjamin Pearson: *"No construction management plan narrative - map provided. A CMP using newest template will be required with building permit submittal. "*

Response: A construction management plan, and map have been provided as section 37 in our application documents. Uploaded 01.08.2020. We have also uploaded this plan to the Construction Management Plan section of E-plan for clarity.

Response to Comments- Lauren Swett from Woodard and Curran

Comment from- Lauren Swett: *"The project is required to conform with Maine DEP Chapter 500 Stormwater Regulations as well as with the City of Portland Section 5 of the Technical Manual. Conformance with the Basic, General and Flooding Standards is required. "*

Response:

- Basic Standards – The Applicant has proposed erosion and sedimentation control measures in conformance with the Basic Standards.
- General Standards – The Applicant has proposed an under drained soil filter, gravel wetland, and roof drip edge filters to treat the proposed project area.
- Flooding Standards – The proposed project will not increase flows in the post-development condition, in conformance with the Flooding Standards.

Comment from- Lauren Swett: *"The Applicant should evaluate the steepness of some of their pipes. In particular pipes SD-21 and RD-4 are steep, due to the proposed change in grade. RD-1 is also relatively steep. Please consider potential velocity issues at the ends of these pipes. "*

Response: Given the relatively small tributary areas and corresponding flow rates we do not have a concern regarding the slopes at these locations. To address the concern, we have adjusted the grades of SD-12 at the upstream and downstream structures. We have revised the alignment of the roof drains and added connection/drop structures at the top of the slope to flatten the grade.

Comment from- Lauren Swett: *"Pipe SD-18 is missing from the Stormdrain Pipe Data tables. "*

Response: Pipe SD-18 has been added to the tables

Comment from- Lauren Swett: *"Wall drains are noted to be connected to CB-8. Please clarify the depth of these connections to verify that the pipe can connect to the structure with all of the other proposed stormdrain connections. "*

Response: Inverts for the wall drain inverts have been added to the labels. The wall drains enter above the site drainage pipes to accommodate the connection.

Comment from- Lauren Swett: *"Ability to serve confirmation will be required from utilities, including the Portland Water District for domestic and fire water services and the Department of Public Works for sewer. "*

Response: We have reached out to Portland Water District and are working with them on the sizing of the domestic, Fire, and Sewer services.

Response to Comments- Robert Bartels- PWD

Comment from- Robert Bartels: *"We are going to want to see the public water main extended through the site from Merrymeeting Drive to the entrance at Ray Street. The hydrant can then be public and the domestic service will not need a meter pit. Please update your design to show a public water main in an easement through the access drive. Please use the attached as reference. Connect the two 8" mains."*

Response: We have complied with this request. Changes will be shown on the next round of drawings.

Response to Comments- Jason Grant- Life Safety CEO

Comment from- Robert Bartels: *"The hydrant should be moved to somewhere in the vicinity of the arrow marked on the attached plan."*

Response: We have relocated the hydrant to the desired location. This change will be reflected on the next round of drawings.

Thank you for your time and consideration during your review. We look forward to the planning board workshop and continued feedback from staff.

Sincerely,

SEBAGO TECHNICS, INC.



Daniel M Danvers, RLA
Maine Licensed Landscape Architect

Cc: Daniel Maguire / John Orestis / Doug Gardner

Att. 3

Portland Maine | Yes. Google's good here.

Andrew Tufts <atufts@portlandmaine.gov>

60 Merrymeeting Drive - Traffic Review Comments

2 messages

Tom Errico <thomas.errico@tylin.com> Mon, Jun 1, 2020 at 6:10 PM
To: "atufts@portlandmaine.gov" <atufts@portlandmaine.gov>

How is This?

Hi Andrew – I have conducted a review of the site plan application materials as it relates to traffic impacts and offer the following comments.

- The applicant's traffic engineer conducted a trip generation estimate for the project according to accepted traffic engineering methods. According to guidance in the Trip Generation Manual, Institute of Transportation Engineers, 10th Edition, the proposed project would be expected to generate 23 vehicles during the weekday AM peak hour (18 entering and 5 exiting) and 27 vehicles during the weekday PM peak hour (11 entering and 16 exiting). During the worst-case peak hour, the project will generate 41 vehicles (18 entering and 23 exiting). As noted by the applicant, this level of trip generation does not warrant a traffic study per the City Technical Manual (there is a High Crash Location on Allen Avenue near Allen's Corner that is close to ½ mile from the project site). I concur that a traffic study is not required. I would further note that that this level of traffic would not be expected to create safety or mobility issues. During the morning and evening commute peak hours (typically 7:30 to 8:30AM and 4:30 to 5:30PM), the project would add one vehicle to Ray Street about every 2 to 3 minutes.

- Based on the trip generation estimate provided by the applicant the proposed project does not require a MaineDOT Traffic Movement Permit.

- The applicant is required to submit a Construction Management Plan and as such a plan has been provided. A specific construction vehicle routing plan has not been noted and I would suggest that the applicant provide a suggested routing to minimize impact to the neighborhood.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TY LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Instagram



© www.peterurbanski.com






ROUTE 66
BALLPARKS


320


Avita


EXIT
8


EXIT
Bistro



© www.peterurbanski.com





November 12, 2019
18347

Christine Grimando
Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Fallbrook Commons
Parcel ID: 400 D 023001

Dear Christine:

On behalf of Fallbrook Commons, we are pleased to submit the attached plans and supporting documents for Site Plan and Municipal Delegated review for the proposed improvements to Lot F001 Map 403. Fallbrook Commons has retained Sebago Technics, and Gawron Turgeon Architects to provide planning, design, permitting and construction services for the project.

The sole purpose of this project is to replace St. Joseph's Rehabilitation and Residence, a 121-bed licensed nursing care center built in 1974, that no longer meets current standards for nursing care centers. St. Joseph is currently owned by Maine Medical Center. In collaboration with Maine Medical Center, Sandy River Company and North Country Associates will create a new licensed nursing care facility to replace St. Joseph Rehabilitation and Residence. Sandy River and North Country have extensive experience developing, owning and operating senior care facilities throughout Maine.

The project includes a new 90-bed licensed nursing care center located next to Fallbrook Woods assisted living facility. The campus approach will allow visitors to access both facilities, provide a seamless transfer for assisted living residents that might need nursing care services, and allow an opportunity for shared support services and management. The development includes the construction of a two story, 58,197 sf building that will include three separate "neighborhoods" within the building with a shared commercial kitchen, community areas, and two parking areas totaling 92 parking spaces. Fallbrook Commons proposes a main entrance off Ray Street, and an emergency connection to Merrymeeting Drive.

This project will happen as one phase, which will involve clearing the incidental vegetation, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by late 2021.

In addition to the Site Plan Review, this application will require an amended Site Location of Development (SLODA) and a Natural Resource Protection Act (NRPA) permit. The Stormwater from the site will be collected using three BMP's following Maine Department of Environmental Protection's (DEP) chapter 500 standards.

The property is 12.78 acres, exists within the Residential-3 zone, and has frontage along Ray Street. The property will be divided into two lots with the addition of Lot F005 Map 403 to show two lots with frontage on Ray street. Fallbrook Commons will be 8.28 acres. Fallbrook Woods lot will be a conforming

lot with 4.95 acres and frontage on Ray Street. The following is a summary of how the project meets the Site Plan Review Standards:

TRANSPORTATION STANDARDS

- This type of facility generates moderate traffic trips. Residents do not drive; therefore, trips are limited to employees and family visitors.
- The primary entrance is proposed at Ray Street, with emergency access from Merrymeeting Drive. Adequate sight distance at Ray Street will be met with the removal of existing trees.
- The project includes a dedicated loading and service area at the lower level of the building.
- Sidewalks are provided from the proposed parking areas to the main entrance to the building.
- Adequate parking is provided for vehicles and bicycles.

ENVIRONMENTAL QUALITY STANDARDS

- To the extent possible, existing vegetation on the site will be maintained, Wetland impacts are proposed, however, are minimized by the proposed steep slopes and retaining walls.
- The project includes a robust landscaping program.
- Water quality is maintained, as the project meets the standards for stormwater management and erosion controls.

PUBLIC INFRASTRUCTUE AND PUBLIC SAFETY STANDARDS

- There are no City Master Plans governing the development of this site.
- There are no threats to public safety. Fire prevention is provided by a sprinkler system within the proposed building, a fire hydrant and adequate fire vehicle circulation is provided for.
- We understand that adequate public utility capacity is available to serve the project.

SITE DESIGN STANDRADS

- There are no issues relative to impacts from massing, ventilation, wind, shadows, snow/ ice loading nor view corridors.
- Proposed site lighting includes full cutoff fixtures and no light trespass onto adjacent properties.
- Noise and vibration from construction activities will be controlled within City standards.
- Adequate signage and wayfinding is provided for.
- All zoning related design standards are met.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel M Danvers, RLA
Maine Licensed Landscape Architect

Cc: Daniel Maguire / John Orestis / Doug Gardner

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes to the left

General Application Documents

Checklist	Items to be Provided
Yes ✔ NA Plan	PROJECT DESCRIPTION • Cover Letter with detailed project description
Yes NA ✔ Plan	COMPLETED CHECKLIST – LEVEL III APPLICATION
Yes ✔ NA Plan	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements
Yes ✔ NA Plan	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable • Permits or letters of non-jurisdiction, if applicable
Yes ✔ NA Plan	ZONING ASSESSMENT • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes NA ✔ Plan	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable • Evidence of existing easements and any proposed easements
Yes NA ✔ Plan	WAIVER REQUESTS • Written request for waiver describing request and reason. Waiver Table
Yes ✔ NA Plan	FINANCIAL CAPABILITY • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes ✔ NA Plan	TECHNICAL CAPABILITY • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Please submit each document as a separate PDF file.

TRANSPORTATION

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Transportation Analysis- Traffic Impact (14-526 (a) 1)** • Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts • Traffic Impact Study (Technical Manual, Section 1) if applicable
Yes NA Plan ✔	**Access and Circulation (14-526 (a) 2 a)** • Access and internal circulation, addressing ADA access • Access and egress impacts on traffic flows • Description and use of drive-up features, if applicable
Yes NA Plan ✔	**Loading and Servicing (14-526 (a) 2 b)** • Loading and servicing needs, route and travel way geometrics for deliveries • Turning templates for delivery vehicles, if applicable
Yes NA Plan ✔	**Sidewalks (14-526 (a) 2 c)** • Sidewalks and condition along street frontages and internal walkways • Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
Yes NA Plan ✔	**Public Transit (14-526 (a) 3), if applicable** • Existing available transit services • Proposed site plan design details, such as easement, pad base, and shelter
Yes NA Plan ✔	**Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c)** • Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements • Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
Yes NA Plan ✔	**Bicycle Parking (14-526 (a) 4 b)** • Address bicycle parking requirements and identify locations on-site • Construction details for bike racks (Technical Manual, Section 1)
Yes NA Plan ✔ ✔	**Snow Storage (14-526 (a) 4 d)** • Management plan for snow removal and locate snow storage areas on plan
Yes NA Plan ✔	**Traffic Demand Management (TDM) (14-526 (a) 5), if applicable** • Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes NA Plan ✔	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes NA Plan ✔	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes NA Plan ✔	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes NA Plan ✔	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

ENVIRONMENTAL AND STORMWATER

Check list	Assess/Provide/Document:
Yes NA Plan ✔ ✔	**Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA Plan ✔ ✔	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA Plan ✔ ✔	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable

SITE DESIGN

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA Plan ✔	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA Plan ✔ ✔	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA Plan ✔	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appendix 1)

Yes	NA	Plan	
	✔		**Historic Resources (14-526 (d) 5), if applicable** • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
Yes	NA	Plan	
✔		✔	**Exterior Lighting (14-526 (d) 6)** • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
Yes	NA	Plan	
	✔		**Noise and Vibration (14-526 (d) 7)** • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
Yes	NA	Plan	
✔		✔	**Signage and Wayfinding (14-526 (d) 8), if applicable** • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
Yes	NA	Plan	
	✔		**Zone Related Design Standards (14-526 (d) 5)** • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples

Construction Management Plan

Check list	
Yes NA Plan ✔ ✔	**Construction Management Plan** • Construction Management Document and Plan

Level II and Level III Site Plan Checklist

Please upload the following drawings with the listed details into e-Plan as separate pdfs.

☑ **RECENT BOUNDARY SURVEY** (stamped by Maine Licensed Surveyor)

Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

☑ **Existing Conditions**

- Approximate location of structures on abutting property
- Topography
- Locate water courses
- Delineate wetlands
- Zone lines

☑ **Proposed Site Plan**

- Ground floor area, and grade elevations for all buildings

☑ **Access, Circulation, and Parking**

- Streets and intersections adjacent to site , any proposed geometric modifications
- Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas
- Existing and proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications

☑ **Site Considerations**

- Identify snow storage areas
- Location of fire hydrants
- Location of solid waste management facilities

☑ **UTILITY PLAN** including:

- Existing utilities on site and within public streets
- Location, sizing, and directional flows of all existing and proposed utilities
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

☑ GRADING and DRAINAGE PLAN including:
• Existing grades and drainage • Proposed grades • Proposed stormwater management meeting Technical Manual (Section 5) standards • Location and proposed alteration of a water course • Preservation or alteration of wetlands
☑ EROSION CONTROL
• Must be in compliance with Technical Manual, Section 5
☑ LANDSCAPE PLAN including:
• Existing vegetation to be preserved and preservation measures • Proposed landscaping and buffers • Planting schedule
☐ RECORDING PLAT, if applicable
• IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)
☑ ARCHITECTURAL PLANS & RENDERINGS including:
• Exterior building elevations, color renderings, illustrations of all sides • Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening • Provide context drawings, if applicable (Design Manual, page 1) • Floor plans

AGREEMENT FOR PURCHASE AND SALE OF REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of two parcels of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal descriptions to be used in conveying the Property are annexed hereto and incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

period, not to exceed 30 days from the time Seller receives written notice of the defect, unless otherwise agreed to by both parties, to remedy the title, after which time, if such defect is not corrected so that there is marketable title, Buyer may within forty-five (45) days thereafter, at Buyer's option, withdraw said earnest money and neither party shall have any further obligation hereunder. Seller hereby agrees to make a good-faith effort to cure any title defect during such period,but shall not be obligated to expend more than $5,000 to cure. If Closing of the real estate transaction is delayed on account of such defects, the parties shall bargain regarding whether and the terms under which the remainder of the closing contemplated under the Memorandum of Agreement may be consummated and this real estate transaction completed thereafter.

b. Seller further agrees to execute and deliver to Buyer at Closing the following documents: (i) a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations); (ii) a title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession; (iii) an affidavit regarding underground storage tanks (as required by Maine Law), and (iv) documents demonstrating Seller's authority to convey and good standing as evidenced by a copy of Seller's resolution authorizing the transaction contemplated herein and all other documents regarding authority or any other matter reasonably required from the Closing.

c. To the extent that the conveyance of title to the Property to Buyer requires the subdivision of lots, Buyer shall bear the cost, or shall reimburse Seller, for the cost of any outside legal and surveyor expense reasonably necessary to secure such subdivision, including any necessary municipal or other approvals.

4. DEED: The Property shall be conveyed by a quitclaim with covenant deed and shall be free and clear of all encumbrances except for Permitted Encumbrances, and except for covenants, conditions, easements and restrictions of record and usual public utilities servicing the Property and shall be subject to applicable land use and building laws and regulations.

5. POSSESSION/OCCUPANCY: Possession/occupancy of Property shall be given to Buyer immediately at Closing unless otherwise agreed by both parties in writing.

6. RISK OF LOSS: Until transfer of title, the risk of loss or damage to said Property by fire or otherwise is assumed by Seller unless otherwise agreed in writing. Said Property shall at closing be in substantially the same condition as at present, excepting reasonable use and wear.

7. PRORATIONS: The following items shall be prorated as of the date of closing:

a. Buyer and Seller shall each pay one-half of the transfer tax as required by the laws of the State of Maine.

b. Buyer and Seller shall reasonably cooperate on the proration of any other needed item at Closing. The property is vacant land, and so no heating oil or water and sewer charges are expected.

c. Real Estate Taxes for any potions of the Property subject to such taxes, based on the municipality's current tax year.

8. INSPECTION. Buyer may enter into any part of the Property at all reasonable times in order to inspect the Property, conduct surveys, soil tests and engineering studies and to do such things as are reasonably necessary with respect to its acquisition and intended development of the Property. In the event that the Buyer does not terminate this Agreement, this inspection contingency to its obligation to close shall be conclusively deemed waived.

9. AGENCY DISCLOSURE: Buyer and Seller acknowledge that they have not engaged a real estate broker in their transaction.

10. PRIOR STATEMENTS: This Agreement and the referenced Memorandum of Agreement set forth the entire agreement between the parties relating to the conveyance of the property described in Exhibit A, and there are no other representations, agreements or understandings with respect to the subject matter of this Agreement.

11. ASSIGNS: This Agreement shall extend to and be obligatory upon successors, and assigns of the respective parties. This Agreement may be assigned only to persons or entities controlling, controlled by, or under common control of a party.

12. COUNTERPARTS: This Agreement may be signed on any number of identical counterparts, including telefax copies, with the same binding effect as if all of the signatures were on one instrument.

13. BUYER'S NOMINEE: Buyer may transfer its rights under this Agreement to an entity or the nominee which it controls. Buyer shall, however, remain jointly and severally liable with such transferee for all of Buyer's obligations under this Agreement and under the Memorandum of Agreement, and such transferee shall be required to assume joint and several liability for all such obligations. Buyer shall give Seller prompt written notice of any such transfer at least seven (7) days before the scheduled Closing, which notice shall include sufficient information to identify the transferee entity or nominee and certified copies of its organizational documents. No assignment shall be valid unless Seller has approved the agreement pursuant to which the assignment is consummated. No other assignment of this Agreement by Buyer is permitted.

14. EFFECTIVE DATE: This Agreement is a binding contract when signed by both Seller and Buyer and when that fact has been communicated to all parties or to their agents. Time is of the essence of this Agreement to the extent set forth in the Master Agreement.

15. BEST EFFORTS: Each of the parties shall undertake to take all reasonable steps necessary to achieve the satisfaction of conditions leading to a Closing under this Agreement.

16. FACSIMILE COPIES: All parties to this Agreement agree to accept facsimile or photocopies of this document and any signatures thereto as originals.

17. REPRESENTATIONS OF SELLER: Seller represents to Buyer that the following are true as of the date of this Agreement and will be true as of the Closing:

a. To the best of Seller's knowledge, there are no violations of any applicable law, ordinance or regulation at the Property.

b. To the best of Seller's knowledge, there are no special wastes, underground storage tanks, asbestos containing materials, waste oil, petroleum and any other hazardous substances, materials or wastes contaminating the Property. The terms used in the foregoing sentence shall include, without limitation, all substances, materials, etc., designated by such terms under any laws, ordinances, or regulations, whether federal, state, or local. This presentation shall except such materials used in the regular course of business and disposed of in compliance with all applicable laws.

c. Other than matters of record that constitute Permitted Encumbrances, there are no outstanding pending or threatened liens, claims, rights of first refusal, or encumbrances against the Property.

18. NOTICES. Any notice or communication given pursuant to this Agreement by either of the parties to the other shall be in writing and delivered as provided in the Master Agreement for notices.

19. GOVERNING LAW. This Agreement shall be construed according to the laws of the State of Maine.

20. TERMINATION OF AGREEMENT. This Agreement shall terminate if:

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

Seller acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2-1/2% of the consideration unless Seller furnishes to Buyer a certificate by the Seller stating, under penalty of perjury, that Seller is a resident of Maine or the transfer is otherwise exempt from withholding.

Buyer Fallbrook Core Development LLC ~~Tax I.D.~~
#

Signature

Daniel J. Maguire
Name/Title, there unto duly authorized
Member

Seller accepts Buyer's offer and agrees to deliver the Property at the price and upon the terms and conditions set forth above.

Signed this 26th day of August, 2019.

Seller FALLBROOK PROPERTIES, LLC Tax I.D. # 270433266

By:
Signature

JOHN C. ORESTIS, PRINCIPAL & MANAGING MEMBER
Name/Title, there unto duly authorized

EXHIBIT A

(legal descriptions begin on next page)



Exhibit A

AGREEMENT FOR PURCHASE AND SALE
OF
REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of a parcel of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal description to be used in conveying the Property are annexed hereto and also incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

EXHIBIT A
Proposed Description Parcel One

A certain lot or parcel of land situated on the westerly sideline of Ray Street in the City of Portland, County of Cumberland, State of Maine as depicted on a plan titled "Existing Conditions of Fallbrook Nursing Care, Merrymeeting Drive, Portland, Maine for Sandy River Company, 217 Commercial Street, Suite 201, Portland, Maine 04112, Record Owner Fallbrook Properties, LLC, 418 Ray Street, Portland Maine 04103" by Sebago Technics, Inc., dated May 30, 2019 and revised through July 10, 2019 to be recorded in the Cumberland County Registry of Deeds (CCRD) and being more particularity bounded and described as follows:

Beginning at a 5/8-inch rebar, 6-inches above grade on the westerly sideline of Ray Street and the northerly corner of land now or formerly of Amanda J. Connelly as described in a deed recorded in the CCRD in Book 34668, Page 155;

Thence S 54°32'18" W, along land now or formerly of Amanda J. Connelly and land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS as described in a deed recorded in the CCRD in Book 6632, Page 99, a distance of 150.00 feet to a 5/8-inch iron rod, 8-inches above grade;

Thence S 35°27'42" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at land now or formerly of Jason D. Smith and Laurie R. Smith JTS as described in a deed recorded in the CCRD in Book 32730, Page 23;

Thence S 35°27'42" E, along land now or formerly of Jason D. Smith and Laurie R. Smith JTS and land now or formerly of Debora D. Morgan as described in a deed recorded in the CCRD in Book 13636, Page 105, a distance of 72.78 feet to a point;

Thence S 34°40'07" E, along land now or formerly of Debora D. Morgan, Gladys A. Moody as described in a deed recorded in the CCRD in Book 32780, Page 65, Marilyn D. Webb as described in a deed recorded in the CCRD in Book 29023, Page 310, Anna J. Aiken and James W. Aiken JTS as described in a deed recorded in the CCRD in Book 25390, Page 8, John M. Scholz as described in a deed recorded in the CCRD in Book 10841, Page 202, Jaime L. Hiltz as described in a deed recorded in the CCRD in Book 23255, Page 247 and David DiPietro as described in a deed recorded in the CCRD in Book 32054, Page 195, a distance of 333.24 feet to a 5/8-inch iron rod, 15-inches above grade at land now or formerly of Hon Khuu as described in a deed recorded in the CCRD in Book 32424, Page 248 and land now or formerly of Regan S. Brendan as described in a deed recorded in the CCRD in Book 32806, Page 341;

Thence S 54°36'33" W, along land now or formerly of Regan S. Brendan, a distance of 51.09 feet to a point;

Thence S 51°05'03" W, along land now or formerly of Regan S. Brendan, land now or formerly of Christian Sabrina Katheryn as described in a deed recorded in the CCRD in Book 32949, Page 39, land now or formerly of Mary A. Packard and Amanda M. Packard as described in a deed recorded in the CCRD in Book 10936, Page 100, land now or formerly of Haylee E. Hasson as described in a deed recorded in the CCRD in Book 33706, Page 89, land now or formerly of Hilary Carr as described in a deed recorded in the CCRD in Book 29976, Page 255, land now or formerly of Paula M. Urbach as described in a deed recorded in the CCRD in Book 31613, Page 621, land now or formerly of Ian P. Houseal as described in a deed recorded in the CCRD in Book 30070, Page 164, land now or formerly of Luis O. Garcia and Monica M. Garcia JTS as described in a deed recorded in the CCRD in Book 30353, Page 291 and land now or formerly of Matthew A. Anderson as described in a deed recorded in the CCRD in Book 32380, Page 112, a distance of 481.12 feet to a 5/8-inch iron rod, 12-inches above grade;

Thence S 37°28'58" W, along land now or formerly of Matthew A. Anderson, a distance of 29.58 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 28°22'08" W, along land now or formerly of Matthew A. Anderson, land now or formerly of Megan T. and Jonathan A. York JTS as described in a deed recorded in the CCRD in Book 25317, Page 156 and land now or formerly of Joy M. and Michael J. Borlawsky as described in a deed recorded in the CCRD in Book 9606, Page 268, a distance of 186.45 feet;

Thence S 29°23'41" W, along land now or formerly of Joy M. and Michael J. Borlawsky, a distance of 20.45 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at the centerline of the vacated Wadco Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29;

Thence N 54°10'52" W, through the vacated Wadco Street, a distance of 182.25 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 18°20'52" W, through the vacated Wadco Street and the vacated Ash Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, a distance of 108.08 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 71°39'08" E, through the vacated Ash Street and along land now or formerly of Jeffrey A. Hayes Trustee as described in a deed recorded in the CCRD in Book 30716, Page 21, a distance of 123.80 feet to a point;

Thence N 17°52'57" W, along land now or formerly of Jeffrey A. Hayes Trustee, land now or formerly of Bertha L. Judkins as described in a deed recorded in the CCRD in Book 7750, Page 196, Topsham Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, land now or formerly of House of Hogwarts, LLC as described in a deed recorded in the CCRD in Book 34616, Page 309, a distance of 369.17 feet to a 1-inch iron pipe, 2-inches above grade;

Thence N 18°18'12" W, along land now or formerly of House of Hogwarts, LLC, a distance of 125.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 79°57'00" E, through land of Fallbrook Properties, LLC, a distance of 99.99 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, through land to be retained by Fallbrook Properties, LLC, a distance of 420.18 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at other land of Fallbrook Properties, LLC;

Thence continuing N 54°32'18" E, through other land of Fallbrook Properties, LLC, a distance of 119.82 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set on the westerly sideline of Ray Street;

Thence S 35°27'42" E, along Ray Street, a distance of 55.00 feet to the Point of Beginning;

Containing approximately 8.28 Acres.

The bearings herein are Grid North, Maine State Plane Coordinate System, West Zone 1802, NAD83.

August 28, 2019
AJS/jg

Current Owner Information:

CBL	400 D023001
Land Use Type Verify legal use with Inspections Division	RETAIL & PERSONAL SERVICE
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421	**OWNER OF RECORD AS OF APRIL 2019**
LAND VALUE	$305,600.00	FALLBROOK PROPERTIES LLC
BUILDING VALUE	$3,086,400.00	418 RAY ST
NET TAXABLE - REAL ESTATE	$3,392,000.00	PORTLAND ME 04103
TAX AMOUNT	$79,067.52	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map V



Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

SHORT FORM QUITCLAIM DEED WITH COVENANT

FALLBROOK, INC., a Maine corporation with a principal place of business in Portland, Maine, FOR CONSIDERATION PAID, grants to **FALLBROOK PROPERTIES, LLC**, a Maine limited liability company whose mailing address is 418 Ray Street, Portland, Maine 04103, with QUITCLAIM COVENANT certain real property, together with any improvements thereon, located at 418 Ray Street, Portland, Cumberland County, Maine, and more particularly described on **Exhibit A** attached hereto and made a part hereof (the "Premises").

IN WITNESS WHEREOF, Fallbrook, Inc. has caused this instrument to be executed by Robert J. Feeney, its President thereunto duly authorized, this 15th day of December, 2009.

WITNESSETH:

Name:

FALLBROOK, INC.

By:
Name: Robert J. Feeney
Title: President

State of Maine
County of Cumberland, ss.

December 15, 2009

PERSONALLY APPEARED the above-named Robert J. Feeney, President of Fallbrook, Inc., as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Before me,

Name: Kevan Lee Rinehart
Title: Attorney/ ME 9303

EXHIBIT A

A certain parcel of land situated Westerly of Ray Street in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at the southeasterly corner of Fallbrook, a Condominium, at a point on the Westerly sideline of land now or formerly of John N. Jr. and Glennis E. Fitzpatrick (Book 2773, Page 224);

Thence, S 13°-05'-20" E by the land of Fitzpatrick 110.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 76°-54 '-40" E by the land of Fitzpatrick 256.90 feet to a point on the Westerly sideline of Ray Street marked by 5/8" iron rod set;

Thence, S 16°-25'-15" E by the sideline of Ray Street 1.42 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Ivan G. and Edwina F. Callahan (Book 2997, Page 486);

Thence, S 73°-34'-45" W by the land of Callahan 220.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 16°-25'-15" E by the land of Callahan 65.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 73°-34'-45" E by the land of Callahan 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Malcolm A. and Gail E. McDonald (Book 3614, Page 219);

Thence, S 18°-02'-05" E by the land of McDonald 163.18 feet to a point marked by a 5/8" iron rod set;

Thence, N 74°-25'-15" E by the land of McDonald 120.00 feet to a point on the Westerly sideline of Ray Street marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the sideline of Ray Street 47.17 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Donald A. and Evelyn Thompson (Book 2892, Page 451);

Thence, S 71°-24'-15" W by the land of Thompson 150.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 71°-24'-15" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Richard E. and Carolyn Grover (Book 2895, Page 492);

Thence, S 18°-35'-45" E by the land of Grover and by the land now or formerly of Raymond A. and Florence M. Sevigny (Book 2490, Page 327) 72.78 feet to a point marked by a 5/8" iron rod set;

Thence, S 17°-48'-10" E by the land of Sevigny and by the lands now or formerly of Gladys A. and Kenneth V. Moody (Book 3471, Page 62), Betty L. Denbow (Book 2682; Page 313), Anna J. Aiken (Book 3570, Page 212), David A. and Carolyn J. Matthews (Book 4483, Page 163), Laura H. Clark (Book 3708, Page 194), and George and Doris Castonia (Book 4960, Page 286) 333.24 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Frances F. Gatchell (Book 6257, Page 342);

Thence, S 71°-28'-30" W by the land of Gatchell 51.09 feet to a point marked by a 5/8" iron rod set;

Thence, S 67°-57'-00" W by the land of Gatchell and lands now or formerly of Eleanor L. and Sherry Sapko, Charles E. and Linda J. Foshay (Book 3920, Page 212), Linwood J. and Ruth L. Thaxter, Charles L. Arey (Book 2320, Page 55), Dorothy M. and Richard M. Butler (Book 3765, Page 177), Norman C. and Caroline M. Walton (Book 2014, Page 140), James P. and Lula S. Cullen (Book 2044, Page 474), and Glenda R. and Roger R. Pushor (Book 4755, Page 44) 481.12 feet to a point marked by a 5/8" iron rod set;

Thence, S 54°-20'-55" W by the land of Pushor 29.58 feet to a point marked by a 5/8" iron rod set;

Thence, S 45°-14'-05" W by the land now or formerly of Claire D. and Edward L. Gulick (Book 3782, Page 285) and by the land now or formerly of John H. and Jeannette B. Greer (Book 2824, Page 131) 186.45 feet to a stone wall intersection and the end of Wadco Street;

Thence, N 01°-01'-00" W by a stone wall 7.90 feet to the Northeasterly sideline of Wadco Street;

Thence, N 37°-18'-55" W by the sideline of Wadco Street 165.51 feet to a point marked by a 5/8" iron rod set at the Easterly sideline of Ash Street;

Thence, N 01°-28'-55" W by the sideline of Ash Street 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Diane M. and Richard C. Hayes (Book 3615, Page 161);

Thence, N 88°-31'-05" E by the land of Hayes 98.80 feet to a stonewall;

Thence, N 01°-01'-00" W by the land of Hayes, the land now or formerly of Bertha C. Judkins, by the end of Topsham Street, and by the land now or formerly of David F. Marshall (Book 4804, Page 317) 369.17 feet to a 1" iron pipe found;

Thence, N 01°-26'-15" W by the land of Marshall 125.00 feet;

Thence, S 80°-04'-05" W by the land of Marshall 100.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 1°-09'-05" E by the land of Marshall 125.00 feet to a 1" iron pipe found at the Northeast corner of the land now or formerly of Bertha C. Judkins;

Thence, S 81°-21'-30" W by the land of Judkins 56.91 feet to a 1/4" iron rod found at the Southeast corner of the land now or formerly of F. S. Plummer Co. (Book 6869, Page 110);

Thence, N 07°-34'-10" E by land of F. S. Plummer Co. 592.31 feet;

Thence, S 63°-29'-00" E by Fallbrook, a Condominium, 190.24 feet to a point;

Thence, N 76°-59'-40" E by Fallbrook, a Condominium, 166.98 feet to the point of beginning.

Also including and subject to those easements and rights, in common with others, which are described in the below referenced documents:

(1) Easements from George and Doris Castonia dated December 20, 1985, recorded in Book 7036, Page 92;

(2) Easements from Calvin L. and Myrtle W. Gailey, dated December 20, 1985, and recorded in Book 7036, Page 96;

(3) Easement from Frances F. Gatchell dated December 20, 1985, and recorded in Book 7036, Page 100; and

(4) Easement to the City of Portland for a turn-around at the terminus of Topsham Street and other matters shown on the Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66.

Also, an easement for all purposes in common with others over, under and along the 50 foot wide right of way shown on the said Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66 and reserved in the Declaration of Fallbrook Condominium dated April 20, 1989 and recorded in Book 8730, Page 206.

Also subject to the following exceptions and matters:

1. Title to and rights of the public and others entitled thereto in and to any portion of the Premises located within the bounds of adjacent streets, roads and ways.

2. Setback and minimum building value restrictions set forth in Indenture by and between Reginald and Isabelle H. Carles and Gretta and Edith Henderson, dated January 24, 1949 and recorded in the Cumberland County Registry of Deeds in Book 1951, Page 85 (further references herein to recorded documents are

references to documents recorded in said Registry).

3. Terms and provisions of a State of Maine Department of Environmental Protection Site Location Order #L-011219-87-A-N issued to Liberty Group, Inc., dated October 10, 1985 and recorded in Book 6958, Page 88, as transferred by unrecorded Order dated January 22, 1988; as further transferred to MM II Real Estate Corporation by Order dated February 24, 1989 and recorded in Book 8681, Page 310; as further transferred to Merreal Corp. by Order dated April 3 1989 and recorded in Book 8733, Page 187; and as affected by Order dated December 28, 1992 and recorded in Book 10500, Page 287.

4. Easement from the Merrymeeting Developers to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 25, 1988 and recorded in Book 8444, Page 191.

5. Easement granted to Portland Water District by instrument dated September 21, 1988 and recorded in Book 8490, Page 164.

6. Matters affecting the Premises shown on plan entitled "Condominium Plat III, Fallbrook, A Condominium on Ray Street, Portland, Maine, for Merreal Corp., by Owen Haskell, Inc., dated May 10, 1990 and recorded in Plan Book 185, Page 15.

7. Terms and conditions of a Maintenance Agreement by and between Fallbrook, Inc. and Fallbrook, A Condominium, dated February 4, 1993 and recorded in Book 10546, Page 73.

8. Utility easement from Fallbrook, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 26, 1993 and recorded in Book 10771, Page 14.

9. Utility easement granted to Northern Utilities, Inc. by instrument dated October 7, 1993 and recorded in Book 11022, Page 51.

10. Agreement for Transfer and Assumption of Special Declarant Rights by and between Fallbrook, Inc. and Fallbrook Condominium Association, dated June 28, 1993 and recorded in Book 10804, Page 329.

11. Contract for Electric Service by and between Fall Brook Woods and Central Maine Power Company, dated June 18, 1993 and recorded in Book 11243, Page 201.

12. All encumbrances, restrictions and other matters of record affecting the Premises as of the date hereof.

Meaning and intending to convey the premises conveyed to Grantor herein by Deed from Merreal Corp., formerly named MM II Real Estate Corporation, to Fallbrook, Inc., dated December 20, 1991 and recorded in Book 9831, Page 59.

Received
Recorded Register of Deeds
Dec 30,2009 02:11:13P
Cumberland County
Pamela E. Lovley

Sandy River
COMPANY

November 1, 2019

City of Portland
Planning Board
389 Congress Street
Portland, Maine 04101

Re: Funding the Development of Fallbrook Commons

Dear Planning Board:

On behalf of Fallbrook Commons, we are submitting this letter to assure you were can fund the proposed new 90-bed nursing care facility on the campus of Fallbrook Woods on Ray Street.

Sandy River Company is developing this project in partnership with the owner of Fallbrook Woods. This development team has a long history of successfully developing and securing debt and equity financing for senior care facilities throughout Maine. In the past 5 years alone, Sandy River has developed facilities in Maine with over $100M in total project costs. These projects are funded with a combination of bank loans and equity raised from our pool of private investors.

We are continuously in discussions with Maine banks who are eager to participate in the financing of our projects. Currently, Androscoggin Savings Bank is financing a 66-unit new assisted living center under construction in Auburn with $13M in bank financing. NBT Bank is financing a 90-bed facility in Sanford with $17M in bank financing. Please note that we have not selected a bank for the Fallbrook Commons project and generally won't select a bank while we are still going through the approval process to include a Certificate of Need approval from the Maine Department of Health and Human Services. We don't expect to break ground until early summer, 2020 and will negotiate with several banks and make a final bank selection near that time. Thus, we prefer to not include a letter on financing from any particular bank. Please note that we have obtained financing on our projects from five different Maine banks over the past five years.

On equity, we have investors eager to invest in these kinds of projects based on our decades of experience creating successful senior care facilities throughout Maine.

We assure the Planning Board we can finance this proposed project.

Sincerely,

Daniel J Maguire
Managing Partner

Technical Capability

Fallbrook Commons Development LLC has compiled a team of highly qualified contractors, consultants, and engineers for this proposed project.

The project team includes:

Sebago Technics, Inc. (STI) is a multi-disciplined engineering firm with over 35 years of experience, that offers a wide range of services specializing in land development, planning, permitting and engineering design services. We maintain a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, land surveying, and environmental engineering.

Gawron Turgeon Architects (GTA) is a multi-disciplined design firm with over 35 years of experience. They offer multi-disciplined planning and design services with a team that is comprised of architects, architectural designers, interior designers, landscape architects, and project managers.

Please see the cover letter for additional information.

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

Existing Lot Remaining: Fallbrook Woods

ZONING ANALYSIS Relevant Zone(s) Residential 3 (R-3)

All Projects:

	Required	Proposed
Lot Size	2 ac	4.5 ac
Area Per Dwelling Unit	6,500 sf	n/a
Minimum Street Frontage	50 ft	157 ft
Front Yard Minimum	n/a	n/a
Front Yard Maximum	25 ft	25 ft
Rear Yard	25 ft	25 ft
Yard Right	16 ft	16 ft
Yard Left	16 ft	16 ft
Side Street Setback	20 ft	20 ft
Step Back	n/a	n/a
Maximum Lot Coverage	35%	31%
Minimum Lot Coverage	n/a	n/a
Maximum Height	35 ft	No Change
Open Space	n/a	n/a
Maximum Impervious Area	n/a	n/a
Pavement Setback	n/a	n/a
Floor Area Ratio	n/a	n/a
Off Street Parking Spaces	---	93
Loading Bays	2	No Change
Other 1	n/a	n/a
Other 2	n/a	n/a
Other 3	n/a	n/a

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	n/a	n/a
Minimum Lot Area per Dwelling	n/a	n/a
Maximum # Units per Building	n/a	n/a
Maximum Building Length	n/a	n/a
Maximum Accessory Building Length	n/a	n/a
Minimum Setbacks	n/a	n/a
Minimum Building Separation	n/a	n/a
Minimum Open Space	n/a	n/a

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density	n/a	n/a	n/a
Height	n/a	n/a	n/a
Setback Reduction	n/a	n/a	n/a
Recreation Space	n/a	n/a	n/a
Maximum Accessory Building Length	n/a	n/a	n/a
Minimum Setbacks	n/a	n/a	n/a
Minimum Building Separation	n/a	n/a	n/a
Minimum Open Space	n/a	n/a	n/a
Explanatory Text 1 (optional): n/a			
Explanatory Text 2 (optional): n/a			
Explanatory Text 3 (optional): n/a			

Proposed Lot- Fallbrook Commons

ZONING ANALYSIS Relevant Zone(s) Residential 3 (R-3)

All Projects:

	Required	Proposed
Lot Size	2 ac	4.5 ac
Area Per Dwelling Unit	6,500 sf	n/a
Minimum Street Frontage	50 ft	157 ft
Front Yard Minimum	n/a	n/a
Front Yard Maximum	25 ft	25 ft
Rear Yard	25 ft	25 ft
Yard Right	16 ft	16 ft
Yard Left	16 ft	16 ft
Side Street Setback	20 ft	20 ft
Step Back	n/a	n/a
Maximum Lot Coverage	35%	31%
Minimum Lot Coverage	n/a	n/a
Maximum Height	35 ft	No Change
Open Space	n/a	n/a
Maximum Impervious Area	n/a	n/a
Pavement Setback	n/a	n/a
Floor Area Ratio	n/a	n/a
Off Street Parking Spaces	---	93
Loading Bays	2	No Change
Other 1	n/a	n/a
Other 2	n/a	n/a
Other 3	n/a	n/a

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	n/a	n/a
Minimum Lot Area per Dwelling	n/a	n/a
Maximum # Units per Building	n/a	n/a
Maximum Building Length	n/a	n/a
Maximum Accessory Building Length	n/a	n/a
Minimum Setbacks	n/a	n/a
Minimum Building Separation	n/a	n/a
Minimum Open Space	n/a	n/a

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density	n/a	n/a	n/a
Height	n/a	n/a	n/a
Setback Reduction	n/a	n/a	n/a
Recreation Space	n/a	n/a	n/a
Maximum Accessory Building Length	n/a	n/a	n/a
Minimum Setbacks	n/a	n/a	n/a
Minimum Building Separation	n/a	n/a	n/a
Minimum Open Space	n/a	n/a	n/a
Explanatory Text 1 (optional): n/a			
Explanatory Text 2 (optional): n/a			
Explanatory Text 3 (optional): n/a			

Meeting Minutes

A neighborhood meeting was held on February 18, 2020 at the Fallbrook Woods lobby at 60 Merrymeeting Drive in Portland at 6:00pm for the proposed licensed nursing care facility Fallbrook Commons.

Minutes:

The meeting was attended by 30 members of the public. The Applicant began the presentation by introducing the development team. Offered some insight into the history of the project, explained the intent for programming, and handed off to Will Conway from Sebago Technics to explain the site plan, parking, landscaping, stormwater, and utility elements. Following Will's explanation, Michael Pednault from Gawron Turgeon Architects was introduced to explain the proposed building's exterior, interior, and programming. At the end of Michael's presentation, The Applicant opened the meeting to the public for Questions.

A member of the public sought insight into the name of Nevada Avenue, concerned the name would change as a result of the project.

A neighbor explained that they felt the entrance on Ray Street was dangerous and asked the team to consider signage, location, and entrance allocation carefully.

> The design team explained that Sebago Technics' traffic engineers have assessed the sight distance and speed limit on Ray Street and found that we meet city standards.

Many neighbors from Fallbrook Condos expressed opinions regarding traffic on Merrymeeting Drive. They expressed concerns that people speed down the road and present a hazard to pedestrians using the road. There is a general concern that patrons of the proposed facility will favor the entrance on Merrymeeting Drive, over the entrance on Ray Street.

> The design team explained that they are currently working with the Road Committee from Fallbrook Condominiums.

A neighbor from Florida Ave inquired about drainage from the site, showing a concern that water from the project will affect their property.

> The design team explained that the proposed Stormwater management plan results in no increased flows of water from the site.

An abutter inquired about the wetland impacts, and limits of clearing affiliated with the project.

> The design team explained the NRPA application process with DEP and showed the wetland fill areas on the plan, which are highlighted by a hatch pattern.

A neighbor inquired about the potential for a collaboration with Portland Trails.

> The Design team has been in contact with Portland Trails but no decisions have been made at this time.

An abutter from Florida Ave inquired about buffering between the project and the properties along Florida Ave.

> The design team highlighted the limits of clearing, and explained the area along Florida Avenue that is to be planted with evergreens to screen between the properties.

A neighbor asked if the design team had considered a 3-story design.

> The design team explained that they had considered a 3-story design, and that a 3-story layout was infeasible to accommodate residents having access to nature, and that the height of the building would breach the tree canopy which would present a visual impact on the neighbors.

A neighbor asked about the construction schedule and further inquired about the duration.

> The design team explained that construction could take 16 months, and they hope to start Summer – Fall of 2020.

A neighbor asked about the construction vehicle access to the project.

> The design team explained that construction vehicles would enter the project site through the new driveway and not along Merrymeeting Drive.

At the end of the question and answer period a neighbor did offer that their mother is a resident of another project completed by the team. She mentioned that the facility is fabulous and her mother and their family are very happy with the facility.

The meeting adjourned at 7:17pm the design team remained available for few additional questions. The meeting closed at 7:30 pm

Sincerely,



Daniel M. Danvers, RLA
Sebago Technics, Inc.

NEIGHBORHOOD MEETING SIGN-IN

18347

Proposed FALLBROOK COMMONS LICENSED NURSING CARE FACILITY
Ray Street, Portland

Date/Time of Meeting: **February 18, 2020 at 6 P.M.**

Location: **Fallbrook Woods, 60 Merrymeeting Drive**
Portland Maine 04103

Members of the Public in Attendance		
Printed Name	**E-mail**	**Address**
1. Mike & Deb Denbow	mdenbow@maine.rr.com	69 Florida Ave, Portland Maine
2. Gene & Ellen Rowe	None Provided	295 Ray Street, Portland
3. Elizabeth Huntley	ehuntley@maine.rr.com	1 Nevada Ave
4. George St.Clair	George36@gmail.com	36 Nevada Ave
5. Lee Whitney	leeanninmaine@gmail.com	1 Merrymeeting Drive
6. George Barber	gabarber@yahoo.com	19 Merrymeeting Drive
7. Carol Doughty	cndoughty@yahoo.com	54 Florida Ave
8. Ben Doughty	bdoughty@cozyharbor.com	54 Florida Ave
9. Donna Towle	None Provided	8 Merrymeeting Drive
10. Monica Garcia	Monygarcia2@yahoo.com	80 Florida Ave
11. Ann Acheson	tinkeya@yahoo.com	28 Merrymeeting Dr
12. Paul & Kym Cournoyer	Setsail34@gmail.com	24 Merrymeeting Dr
13. Darrin Ramsdell	dramsdell@gmail.com	12 Penn Ave Portland
14. David Dumont	Ddumont11@hotmail.com	2 Merrymeeting Drive
15. Karen Woodberry	Kwood07@hotmail.com	459 Allen Ave #26
16. Ellen Anastos	Ellen.Anastos@ncmoves.com	459 Allen Ave #25
17. Elizabeth Stanton	foodloverrd@gmail.com	16 Merrymeeting Drive
18. Joy Gallant	Gallant-joy@yahoo.com	62 Florida Ave

Printed Name	E-Mail	Address
19. James Sullivan	None Provided	83 Florida Ave
20. John Scholz	johnms@gwi.net	334 Ray Street
21. Beth Webster	Mom21kid@aol.com	47 Florida Ave
22. Susan Harkins	None Provided	50 Florida Ave
23. Hilary Shorey	Hilary.carr09@gmail.com	96 Florida Ave
24. Kimerly Sinclair	Ksinc@maine.edu	333 Ray Street
25.		
26.		
27.		
28.		
29.		
30.		
31.		
32.		
33.		
34.		
35.		
36.		
37.		
38.		
39.		
40.		
41.		

Applicant and Consultant Team in Attendance:	
1. William Conway (Sebago Technics)	wconway@sebagotechnics.com
2. Dan Danvers (Sebago Technics)	ddanvers@sebagotechnics.com
3. Aaron Hunter (Sebago Technics)	ahunter@sebagotechnics.com
4. Daniel Maguire (Sandy River Company)	dmaguire@sandyriver2.com
5. Doug Gardner (North Country	DGardner@ncaltc.com
6. Michael Pednault	mpednault@gawronturgeon.com
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

18347

NEIGHBORHOOD MEETING SIGN-IN

Proposed FALLBROOK COMMONS LICENSED NURSING CARE FACILITY
Ray Street, Portland

Date/Time of Meeting: February 18, 2020 at 6 P.M.

Location: Fallbrook Woods, 60 Merrymeeting Drive
Portland Maine 04103

Members of the Public in Attendance

	Printed Name	E-mail	Address
1.	Michael Deb Dearborn	mdearborn@maine.rr.com	69 Florida Ave Portland ME
2.	Gene Ellen Rowe		295 Ray St. Portland, ME.
3.	Elizabeth Huntley	ehuntley@maine.rr.com	31 Nevada Ave.
4.	George St Clair	george36@myfairpoint.net	36 Nevada Ave. Portland
5.	Lee Whitney	leeannmaine@gmail.com	1 Merrymeeting Dr. Portland
6.	George Barber	gabarber@yahoo	19 " " "
7.	Carol Doughty	Cndoughty@yahoo.com	54 Florida Ave
8.	Ben Doughty	bdoughty@cozyharbor.com	54 Florida Ave
9.	Donna Towle		8 Merrymeeting Drive - Portland, ME
10.	Monica Garcia	Monygarcia2@yahoo.com	80 Florida Avenue
11.	Ann Acheson	finkoya@yahoo.com	2 Merrymeeting Dr. Portland
12.	PAUL KIM COURNOYER	SETSAIL34@GMAIL.COM	24 MERRYMEETING DR PORTLAND
13.	Darrin Ramsdell	dramsdell@gmail.com	12 Penn Ave Portland
14.	David Dumont	ddumont11@hotmail.com	2 Merrymeeting DR. Portland
15.	Karen Woodberry	kwood07@hotmail.com	459 Allen Ave #16
16.	Ellen Anastos	ELLEN.ANASTOS@NEMOVES.COM	" " " #25 Portland 04103
17.	Elizabeth Stanton	foodloverrd@gmail.com	16 Merrymeeting Dr Portland 04103
18.	Joy Gallant	gallant-joy@yahoo.com	62 Florida Ave Portland ME 04103.

	Printed Name	E-Mail	Address
19.	JAMES SULLIVAN		83 Florida Ave Port
20.	John Scholz	Johnms@gwi.net	334 Ray St Port
21.	Beth Webster	Mom2kid@aol.com	47 Florida Ave Portland
22.	Susan Hawkins		50 Florida Ave Portland
23.	Hilary Shorey	hilary.carr09@gmail.com	96 Florida Ave Portland
24.	Kimberly Sinclair	KSinC@maine.edu	333 Ray Street Portland
25.			
26.			
27.			
28.			
29.			
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			
41.			

Applicant and Consultant Team in Attendance:	
1. William Conway	wconway@sebagotechnics.com
2. Dan Danvers	ddanvers@sebagotechnics.com
3. Aaron Hunter	ahunter@sebagotechnics.com
4. Mike Pedhault	mpedhault@gawrontturgeon.com - Architect
5. ~~George Barbe~~	~~gabarber@yahoo.com~~
6. ~~LeeAnn Whitney~~	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

Sandy River
COMPANY

Att. H

May 15, 2020

Andrew Tufts
City of Portland Planning Board

Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

Re: Fallbrook Commons replacement project for St Joseph Manor

We are providing this letter to share the need to replace St. Joseph Manor and to do so just as soon as we can.

This project is a collaboration between Maine Medical/Maine Health, Sandy River Company, and North Country Associates. Maine Medical Center currently owns St. Joseph Manor, a 121-bed licensed nursing home. Maine Medical will sell the bed rights of St Joseph Manor to Sandy River and North Country, who will jointly develop and operate a new 90-bed state-of-the art licensed nursing care center to replace St Joseph and to be located on land abutting Fallbrook Woods, a 66-bed assisted living facility on Ray Street.

The existing 45-year old nursing care facility does not meet today's skilled nursing facility standards and has outlived its useful life as a nursing home. Additionally, as we have all learned from COVID-19, existing older nursing homes are extremely vulnerable places in managing such outbreaks. We need to replace St Joseph Manor for the following reasons:

- The resident rooms are small, shared rooms, and four persons to a bathroom that do not meet ADA standards, nor appropriately allow for managing any possible virus outbreaks. The new building will be largely private rooms with private baths and offer a much safer environment to manage infectious disease control.

- Built in 1974, the facility is an old-style long double loaded corridor facility with dead end corridors. The layout of the building does not allow for efficient programming and caregiving. The proposed new facility will consist of three "neighborhoods" offering the opportunity to create both a traditional long-term care neighborhood and short stay rehabilitation neighborhoods, as well as decentralize dining and living areas. This layout also offers the opportunity to significant improve the management of any outbreaks of infectious disease.

- The physical plant is in poor condition with failing or outdated mechanical systems, heating inefficiencies and a roof that needs replacing; there is an entire wing that is not operational.

Clearly, replacing St Joseph Manor with a new state-of-the-art nursing center will have a dramatic positive impact on the quality of life of residents and improve the emotional health of residents and their families. As part of the collaboration for this project, it became important that the replacement facility and services continue to be offered within the City of Portland. Please note that the proposed new replacement facility is within a mile of St Joseph, allowing for a nearby transition for residents and family and staff. The development of a new 90-bed nursing home requires at least 5-7 acres of land which is almost impossible to find with the City. The available land at Fallbrook Woods offered the opportunity to create a campus whereby staff and resources can be shared as well as families could easily visit family members that might be in both facilities.

The project received approval from Maine Department of Health and Human Services on January 13, 2020. Since then, there has been several delays. First, we learned that the City of Portland's Planning Board was backed up with several other projects ahead of this project. And then COVID-19 entered all our lives and further delayed any opportunity to bring this project to an agenda with the Planning Board. We also held a "neighborhood" meeting and listened to concerns about our initial proposed entrance from Ray Street to the proposed new nursing center. Based on feedback from neighbors about traffic safety at that entrance point, we decided to change that entrance to a gated fire safety access only and utilize the existing private road, Merrymeeting Drive, that comes into the existing assisted living facility and create a more defined senior care campus. We have amended our plans accordingly with upgrades to Merrymeeting Drive that also address concerns from Fallbrook Condos neighbors which also share Merrymeeting Drive.

We would like to begin construction this year. The new facility will take approximately 16 months to build and not open until 2022. Building and opening the replacement facility for St Joseph Manor just as soon as possible is critical to the health and safety of residents and staff.

We really appreciate the City of Portland's support for this important project.

Sincerely,

Daniel J Maguire
Managing Partner
Sandy River Company

Maine Medical Center
MaineHealth

Att. I

November 12, 2019

Ms. Christine Grimando
Department of Planning and Urban Development of Portland
389 Congress Street
4th Floor
Portland, Maine 04101

Dear Ms. Grimando,

I am writing on behalf of Maine Medical Center to express our support for the proposed Fallbrook Care Center and the partnership between Sandy River Co. and North Country Associates that will bring this critically needed center for senior care services to Portland.

As the president of Maine Medical Center, I advocate daily for our vision of "Working together to ensure our communities are the healthiest in America," and that is exactly what this project is creating. As you already know, Maine is the oldest state in the nation and the need to serve the demand for senior care in new, innovative and resident-centered ways is growing.

Fallbrook Care Center will provide more than just a home to residents who require short and long-term living arrangements, it will also play an important role in the continuum of medical care in our local community. Patients recovering from complex medical conditions will have a supportive environment aligned with best practices for senior care.

Maine Medical Center strongly endorses the proposed project.

Please do not hesitate to reach out to me if we can be of further assistance as you evaluate this project.

Respectfully,

Jeffrey D. Sanders
President

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

Att. J

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

November 21, 2019

Ms. Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Project: MHPC #1678-19 Fallbrook Commons; Ray Street/ Merrymeeting Drive Senior Living Facility

Town: Portland, ME

Dear Ms. Nichols:

In response to your recent request, I have reviewed the information received November 14, 2019 to initiate consultation on the above referenced project in accordance with the requirements of Maine Department of Environmental Protection.

Based on the information provided, I have concluded that there are no National Register listed or known eligible properties on or adjacent to the proposed project site. In addition, the parcel is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, at megan.m.rideout@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer

November 7, 2019
18347

Mr. Kirk Mohney
Maine Historic Preservation Commission
65 State House Station
Augusta, Maine 04333

Re: Fallbrook Commons - Senior Living Facility
Ray Street / Merrymeeting Drive, Portland
Parcel ID: 403 F001, 403-F005

Dear Mr. Mohney:

On behalf of the project applicant, Sebago Technics respectfully requests site review for a proposed new senior living facility adjacent to an existing senior facility in the North Deering section of Portland on Ray Street. The property is 12.78± acres and is located in the City Residential-3 zone. Per available resources we have determined that the site is not located in a local Historic District.

The project includes a new senior living facility that will be located next to the existing Fallbrook Woods assisted living community. The development includes the construction of a two-story, 37,450± sf building with 90 bedrooms and two adjacent parking areas. The new senior facility will be accessed by a new driveway from Ray Street with secondary access for emergency use over Merrymeeting Drive.

The project area is mostly wooded and will be cleared for the proposed site improvements. The applicant intends to leave the majority of the municipal building setbacks vegetated. Post-construction views to and from the new facility will be filtered through a combination of the existing mature vegetation and new landscaping.

We respectfully request review of the Maine Historic Preservation Commission database for any properties or structures of historic significance in the vicinity of the project site. For your reference, I have enclosed a site location map, the site property cards and Google Earth street view images of the surrounding residential areas. At your earliest convenience, please review and forward your findings. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,18347

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist / Project Coordinator

enc.

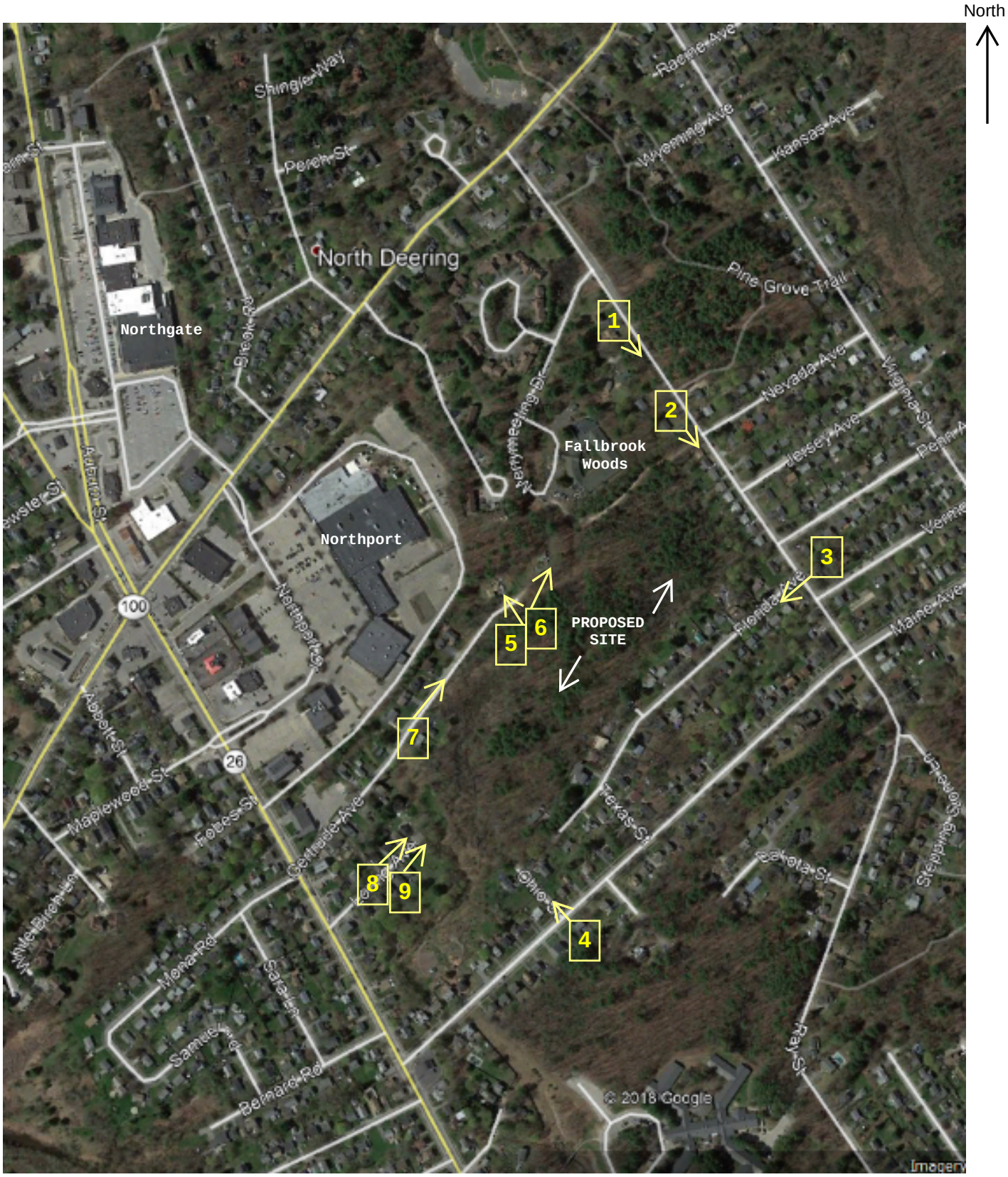


PHOTO KEY – Fallbrook Commons, Portland



Street view looking southeast along Ray Street toward the project entrance location

1



Street view looking southeast from the proposed Ray Street project entrance location

2



View along Florida Avenue from Ray Street

3



View along Ohio Street from Maine Avenue

4



Gertrude Avenue terminus -1

5



Gertrude Avenue terminus -2

6



Mid Gertrude Avenue Existing Conditions – residences and wooded area

7



View along Loring Avenue to end

8



View 2 - Loring Avenue to end



PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	403 F005001
Land Use Type	SINGLE FAMILY
Verify legal use with Inspections Division	
Property Location	368 RAY ST
Owner Information	MCDONALD PATRICIA A & CATHERINE E MCDONALD 368 RAY ST PORTLAND ME 04103
Book and Page	8818/50
Legal Description	403-F-5 RAY ST 368 19695 SF
Rental Registration	No
Acres	0.4522

Current Assessed Valuation:

TAX ACCT NO.	25541
LAND VALUE	$79,700.00
BUILDING VALUE	$105,800.00
HOMESTEAD	($16,800.00)
NET TAXABLE - REAL ESTATE	$168,700.00
TAX AMOUNT	$3,932.40

OWNER OF RECORD AS OF APRIL 2019
MCDONALD PATRICIA A &
CATHERINE E MCDONALD
368 RAY ST
PORTLAND ME 04103

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

	Building 1
Year Built	1955
Style/Structure Type	3
# Units	1
Bedrooms	2
Full Baths	1
Total Rooms	5
Attic	NONE
Basement	FULL
Square Feet	1200

View Sketch View Map View Picture

Outbuildings/Yard Improvements:

	Building 1
Year Built	1980
Structure	GARAGE-WD/CB
Size	14X22
Units	1

Grade	C
Condition	A

Sales Information:

Sale Date	Type	Price	Book/Page
7/7/1989	LAND + BUILDING	$0.00	8818/50

New Search!



PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	400 D023001
Land Use Type	RETAIL & PERSONAL SERVICE
Verify legal use with Inspections Division	
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421	**OWNER OF RECORD AS OF APRIL 2019**
LAND VALUE	$305,600.00	FALLBROOK PROPERTIES LLC
BUILDING VALUE	$3,086,400.00	
NET TAXABLE - REAL ESTATE	$3,392,000.00	418 RAY ST PORTLAND ME 04103
TAX AMOUNT	$79,067.52	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

	Building 1
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map View Picture

Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

New Search!

Att. K

Site Location of Development Permit Application
Fallbrook Commons

Prepared for
Fallbrook Care Development, LLC
P.O. Box 110
Portland, ME 04112

Prepared by
Sebago Technics
75 John Roberts Rd.
South Portland, ME 04106

February 2020
18347

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207-200-2100 • Fax: 207-856-2206

Table of Contents

Application

Section Title

Section 1 Development Description
Section 2 Title, Right or Interest
Section 3 Financial Capacity
Section 4 Technical Ability
Section 5 Noise
Section 6 Visual Quality and Scenic Character
Section 7 Wildlife and Fisheries
Section 8 Historic Site
Section 9 Unusual Natural Areas
Section 10 Buffers
Section 11 Soils
Section 12 Stormwater Management
Section 13 Urban Impaired Stream Submissions
Section 14 Basic Standards
Section 15 Groundwater
Section 16 Water Supply
Section 17 Wastewater Disposal
Section 18 Solid Waste
Section 19 Flooding
Section 20 Blasting
Section 21 Air Emissions
Section 22 Odors
Section 23 Water Vapor
Section 24 Sunlight
Section 25 Notices

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE **FORM A PAGE 1**
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ **20 acre development** ☐ **Planning Permit** ☐ **Metallic Mining**	☐ **Marine Oil Terminal** ☐ **Structure** ☐ **Subdivision**	■ **Major Amendment** ☐ **Minor Amendment**

1. Name of Applicant:	Fallbrook Care Development LLC	**6. Name of Agent (if applicable):**	Sebago Technics Inc/Dan Danvers
2. Applicant's Mailing Address:	P.O. Box 110, Portland, ME 04112	**7. Agent's Mailing Address:**	75 John Roberts Rd S. Portland
3. Applicant's Daytime Phone #:	207-233-8665	**8. Agent's Daytime Phone # :**	207-200-2125
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	dmaguire@sandyriver2.com	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	ddanvers@sebagotechnics.com

PROJECT INFORMATION

11. Name of Development:	Fallbrook Commons						
12. Map and Lot #'s:	**Map #:** 400	**Lot #:** D23-01	**13. Deed Reference #'s:**		**Book #:** 27501	**Page #:** 183	
14. Location of Project City/Town:	Portland	**15. County:**	Cumberland	**16. UTM Northing**		**17. UTM Easting**	
18. Brief Description of Project including total parcel size:	Construction of a two-story, 58,197 sf senior care facility on a 12.78 acre parcel						

19. Type of Direct Watershed: (Check all that apply)

☐ Lake not most at risk ■ River, stream or brook ☐ Coastal wetland
☐ Lake most at risk ☐ Urban impaired stream ☐ Wellhead or public water
☐ Lake most at risk, severely blooming ☐ Freshwater wetland

20. Name of Waterbody Project Site drains to:	unnamed stream that discharges to the Presumpscot River		
21. Amount of Developed Area:	Total acres: 5.6	Existing Developed area: 0 acres	New Developed area: 5.6 acres
22. Amount of Impervious Area:	Total acres: 2.7	Existing Impervious areas 0 acres	New Impervious area: 2.7 acres

23. Development started prior to obtaining a license?:	☐ **Yes** ■ **No**		
24. .Development or any portion of the site subject to enforcement action?	☐ **Yes** ■ **No**	**If yes**, name of enforcement staff involved?	
25. Common scheme of development?:	■ **Yes** ☐ **No**	**26. Title, Right or Interest:**	☐ **own** ☐ **lease** ■ **purchase option** ☐ **written agreement**
27. Natural Resources Protection Act permit required?:	■ **Yes** ☐ **No**	**If yes:** ☐ **PBR** ☐ **Tier 1** ☐ **Full Permit** ■ **Tier 2**	
28. Existing DEP Permit number (if applicable):	L-011219-87-A-N		
29. Names of DEP staff person(s) present at the pre-application meeting:	City of Portland delegated review		
30. Does agent have an interest in project? If yes, what is the interest?	☐ **Yes** ■ **No**		

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)"..

Signed: _____ **Title** Member **Date:** 2/20/20

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** _____ **Date:** 2/20/20

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): DANIEL DANVERS

Date: 03/02/2020

Re/Cert/Lic No.: _____
Engineer _____
Geologist _____
Soil Scientist _____
Land Surveyor _____
Site Evaluator _____
Active Member of the Maine Bar _____
Professional Landscape Architect 4815
Other _____

Section 1

Development Description

Section 1

Development Description

A. Narrative

The project includes a new senior living facility located next to Fallbrook Woods assisted living. The development includes the construction of a two story, 58,197 sf building that will house 90 beds, a commercial kitchen, community areas, and two parking areas with a total of 92 parking spaces. Fallbrook Health Center proposes a main entrance off of Ray Street, and an emergency connection to Merrymeeting Drive.

This project is proposed to be complete as one phase, which will involve clearing the incidental vegetation, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by 2021.

The project site is comprised of undeveloped, mostly wooded land with frontage on Ray Street. The site was originally permitted through the State; first as part of a phased subdivision plan and then as part of Fallbrook Woods senior center development (L-11219-87-G-C). The subject parcel is approximately 8.28 acres and is a portion of the Fallbrook Woods original 12.78-acre parcel. The Fallbrook Commons project is not directly affiliated with Fallbrook Woods, however given the nature of these two facilities there will be a connecting drive to the existing Fallbrook Woods.

The proposed project is within the watershed of an unnamed stream that is a tributary of the Presumpscot River, which is not classified as most-at-risk in the Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development, And Urban Impaired Streams. Chapter 500 Stormwater Phosphorus Standards do not apply.

B. Topographic Map

Attached as Figure 1.

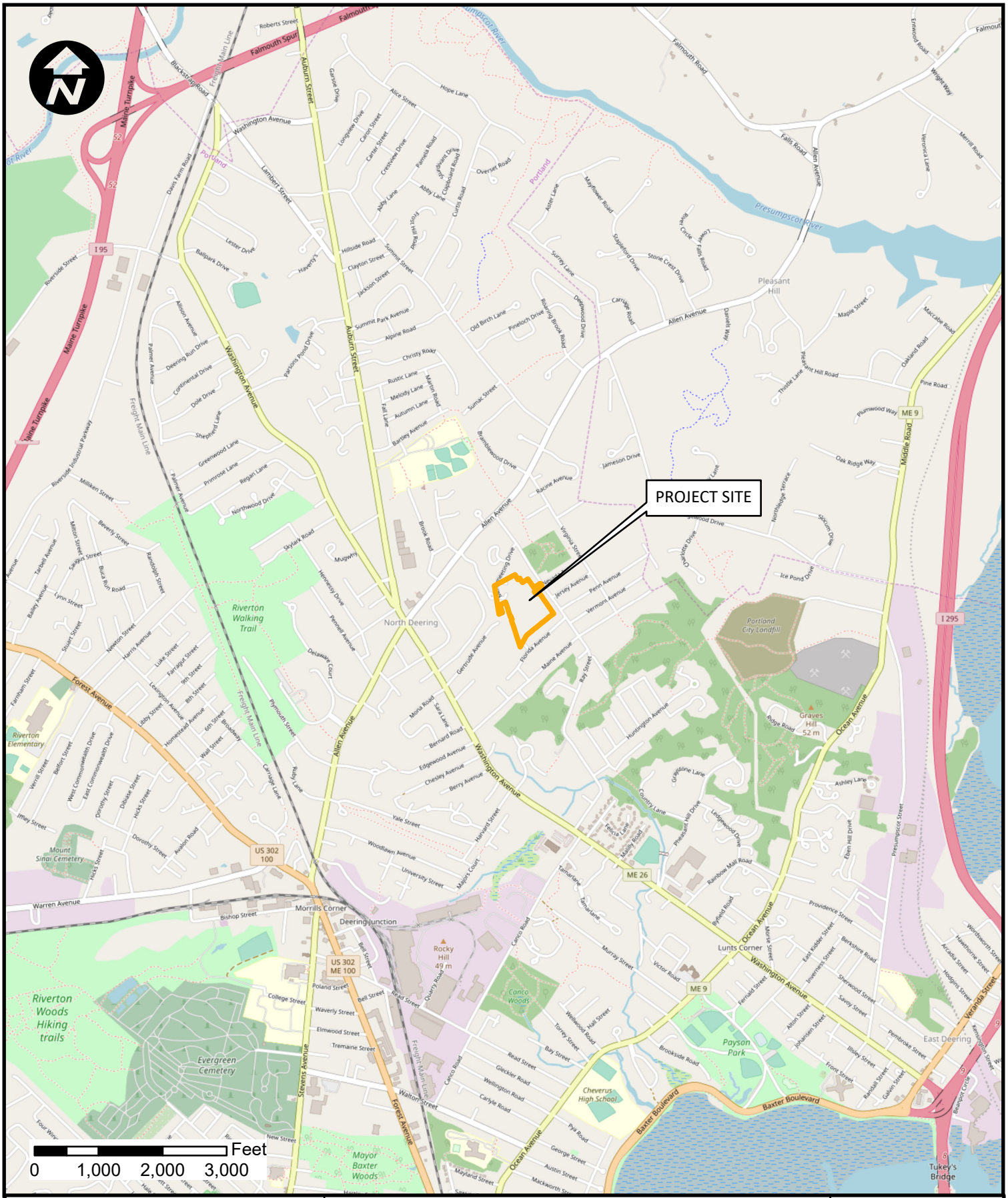
C. Construction Plan

Site improvements are scheduled to begin in summer 2020 with completion by late 2021. The proposed project will begin upon recipe of all appropriate permits.

D. Drawings

All appropriate site drawings are attached. Individual plans are listed below.

Sheet Number	Sheet Title
1	Cover Sheet
1 of 1	Existing Conditions Plan
2	Notes and Legend
3	Overall Site Plan
4	Site Plan 1
5	Site Plan 2
6	Grading Plan 1
7	Grading Plan 2
8	Gravel Wetland Detail
9	Underdrained Soil Filter Detail
10	Utility Plan 1
11	Utility Plan 2
12	Landscape Plan 1
13	Landscape Plan 2
14	erosion Control Notes and Details
15	Details 1
16	Details 2
17	Details 3
18	Pre-Development Stormwater Plan
19	Post-Development Stormwater Plan



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE LOCATION MAP
FALLBROOK COMMONS

SCALE: 1:24,000

DATE: 10/22/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
USGS Quadrangle: Portland West

18347_LocationMap.mxd

PROJECT NUMBER: 18347

Section 2

Title, Right or Interest

Section 2

Title, Right or Interest

The record owner of the parcels is Fallbrook Properties, LLC by a deed and recorded at the Cumberland County Registry of Deeds in Book 27501 Page 183. A purchase and sales agreement is in place between Fallbrook Properties, LLC and the applicant, Fallbrook Care Development, LLC.

Please see this Section for a copy of the deed and purchase and sales agreement.

AGREEMENT FOR PURCHASE AND SALE
OF
REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of two parcels of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal descriptions to be used in conveying the Property are annexed hereto and incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

period, not to exceed 30 days from the time Seller receives written notice of the defect, unless otherwise agreed to by both parties, to remedy the title, after which time, if such defect is not corrected so that there is marketable title, Buyer may within forty-five (45) days thereafter, at Buyer's option, withdraw said earnest money and neither party shall have any further obligation hereunder. Seller hereby agrees to make a good-faith effort to cure any title defect during such period,but shall not be obligated to expend more than $5,000 to cure. If Closing of the real estate transaction is delayed on account of such defects, the parties shall bargain regarding whether and the terms under which the remainder of the closing contemplated under the Memorandum of Agreement may be consummated and this real estate transaction completed thereafter.

b. Seller further agrees to execute and deliver to Buyer at Closing the following documents: (i) a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations); (ii) a title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession; (iii) an affidavit regarding underground storage tanks (as required by Maine Law), and (iv) documents demonstrating Seller's authority to convey and good standing as evidenced by a copy of Seller's resolution authorizing the transaction contemplated herein and all other documents regarding authority or any other matter reasonably required from the Closing.

c. To the extent that the conveyance of title to the Property to Buyer requires the subdivision of lots, Buyer shall bear the cost, or shall reimburse Seller, for the cost of any outside legal and surveyor expense reasonably necessary to secure such subdivision, including any necessary municipal or other approvals.

4. DEED: The Property shall be conveyed by a quitclaim with covenant deed and shall be free and clear of all encumbrances except for Permitted Encumbrances, and except for covenants, conditions, easements and restrictions of record and usual public utilities servicing the Property and shall be subject to applicable land use and building laws and regulations.

5. POSSESSION/OCCUPANCY: Possession/occupancy of Property shall be given to Buyer immediately at Closing unless otherwise agreed by both parties in writing.

6. RISK OF LOSS: Until transfer of title, the risk of loss or damage to said Property by fire or otherwise is assumed by Seller unless otherwise agreed in writing. Said Property shall at closing be in substantially the same condition as at present, excepting reasonable use and wear.

7. PRORATIONS: The following items shall be prorated as of the date of closing:

a. Buyer and Seller shall each pay one-half of the transfer tax as required by the laws of the State of Maine.

b. Buyer and Seller shall reasonably cooperate on the proration of any other needed item at Closing. The property is vacant land, and so no heating oil or water and sewer charges are expected.

c. Real Estate Taxes for any potions of the Property subject to such taxes, based on the municipality's current tax year.

8. INSPECTION. Buyer may enter into any part of the Property at all reasonable times in order to inspect the Property, conduct surveys, soil tests and engineering studies and to do such things as are reasonably necessary with respect to its acquisition and intended development of the Property. In the event that the Buyer does not terminate this Agreement, this inspection contingency to its obligation to close shall be conclusively deemed waived.

9. AGENCY DISCLOSURE: Buyer and Seller acknowledge that they have not engaged a real estate broker in their transaction.

10. PRIOR STATEMENTS: This Agreement and the referenced Memorandum of Agreement set forth the entire agreement between the parties relating to the conveyance of the property described in Exhibit A, and there are no other representations, agreements or understandings with respect to the subject matter of this Agreement.

11. ASSIGNS: This Agreement shall extend to and be obligatory upon successors, and assigns of the respective parties. This Agreement may be assigned only to persons or entities controlling, controlled by, or under common control of a party.

12. COUNTERPARTS: This Agreement may be signed on any number of identical counterparts, including telefax copies, with the same binding effect as if all of the signatures were on one instrument.

13. BUYER'S NOMINEE: Buyer may transfer its rights under this Agreement to an entity or the nominee which it controls. Buyer shall, however, remain jointly and severally liable with such transferee for all of Buyer's obligations under this Agreement and under the Memorandum of Agreement, and such transferee shall be required to assume joint and several liability for all such obligations. Buyer shall give Seller prompt written notice of any such transfer at least seven (7) days before the scheduled Closing, which notice shall include sufficient information to identify the transferee entity or nominee and certified copies of its organizational documents. No assignment shall be valid unless Seller has approved the agreement pursuant to which the assignment is consummated. No other assignment of this Agreement by Buyer is permitted.

14. EFFECTIVE DATE: This Agreement is a binding contract when signed by both Seller and Buyer and when that fact has been communicated to all parties or to their agents. Time is of the essence of this Agreement to the extent set forth in the Master Agreement.

15. BEST EFFORTS: Each of the parties shall undertake to take all reasonable steps necessary to achieve the satisfaction of conditions leading to a Closing under this Agreement.

16. FACSIMILE COPIES: All parties to this Agreement agree to accept facsimile or photocopies of this document and any signatures thereto as originals.

17. REPRESENTATIONS OF SELLER: Seller represents to Buyer that the following are true as of the date of this Agreement and will be true as of the Closing:

a. To the best of Seller's knowledge, there are no violations of any applicable law, ordinance or regulation at the Property.

b. To the best of Seller's knowledge, there are no special wastes, underground storage tanks, asbestos containing materials, waste oil, petroleum and any other hazardous substances, materials or wastes contaminating the Property. The terms used in the foregoing sentence shall include, without limitation, all substances, materials, etc., designated by such terms under any laws, ordinances, or regulations, whether federal, state, or local. This presentation shall except such materials used in the regular course of business and disposed of in compliance with all applicable laws.

c. Other than matters of record that constitute Permitted Encumbrances, there are no outstanding pending or threatened liens, claims, rights of first refusal, or encumbrances against the Property.

18. NOTICES. Any notice or communication given pursuant to this Agreement by either of the parties to the other shall be in writing and delivered as provided in the Master Agreement for notices.

19. GOVERNING LAW. This Agreement shall be construed according to the laws of the State of Maine.

20. TERMINATION OF AGREEMENT. This Agreement shall terminate if:

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

Seller acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2-1/2% of the consideration unless Seller furnishes to Buyer a certificate by the Seller stating, under penalty of perjury, that Seller is a resident of Maine or the transfer is otherwise exempt from withholding.

Buyer Fallbrook Core Development LLC ~~Tax I.D.~~
#

Signature

Daniel J. Maguire
Name/Title, there unto duly authorized
Member

Seller accepts Buyer's offer and agrees to deliver the Property at the price and upon the terms and conditions set forth above.

Signed this 26th day of August, 2019.

Seller FALLBROOK PROPERTIES, LLC Tax I.D. # 270433266

By:

Signature

JOHN C. ORESTIS, PRINCIPAL & MANAGING MEMBER
Name/Title, there unto duly authorized

EXHIBIT A

(legal descriptions begin on next page)



Exhibit A

AGREEMENT FOR PURCHASE AND SALE
OF
REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of a parcel of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal description to be used in conveying the Property are annexed hereto and also incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

EXHIBIT A
Proposed Description Parcel One

A certain lot or parcel of land situated on the westerly sideline of Ray Street in the City of Portland, County of Cumberland, State of Maine as depicted on a plan titled "Existing Conditions of Fallbrook Nursing Care, Merrymeeting Drive, Portland, Maine for Sandy River Company, 217 Commercial Street, Suite 201, Portland, Maine 04112, Record Owner Fallbrook Properties, LLC, 418 Ray Street, Portland Maine 04103" by Sebago Technics, Inc., dated May 30, 2019 and revised through July 10, 2019 to be recorded in the Cumberland County Registry of Deeds (CCRD) and being more particularity bounded and described as follows:

Beginning at a 5/8-inch rebar, 6-inches above grade on the westerly sideline of Ray Street and the northerly corner of land now or formerly of Amanda J. Connelly as described in a deed recorded in the CCRD in Book 34668, Page 155;

Thence S 54°32'18" W, along land now or formerly of Amanda J. Connelly and land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS as described in a deed recorded in the CCRD in Book 6632, Page 99, a distance of 150.00 feet to a 5/8-inch iron rod, 8-inches above grade;

Thence S 35°27'42" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at land now or formerly of Jason D. Smith and Laurie R. Smith JTS as described in a deed recorded in the CCRD in Book 32730, Page 23;

Thence S 35°27'42" E, along land now or formerly of Jason D. Smith and Laurie R. Smith JTS and land now or formerly of Debora D. Morgan as described in a deed recorded in the CCRD in Book 13636, Page 105, a distance of 72.78 feet to a point;

Thence S 34°40'07" E, along land now or formerly of Debora D. Morgan, Gladys A. Moody as described in a deed recorded in the CCRD in Book 32780, Page 65, Marilyn D. Webb as described in a deed recorded in the CCRD in Book 29023, Page 310, Anna J. Aiken and James W. Aiken JTS as described in a deed recorded in the CCRD in Book 25390, Page 8, John M. Scholz as described in a deed recorded in the CCRD in Book 10841, Page 202, Jaime L. Hiltz as described in a deed recorded in the CCRD in Book 23255, Page 247 and David DiPietro as described in a deed recorded in the CCRD in Book 32054, Page 195, a distance of 333.24 feet to a 5/8-inch iron rod, 15-inches above grade at land now or formerly of Hon Khuu as described in a deed recorded in the CCRD in Book 32424, Page 248 and land now or formerly of Regan S. Brendan as described in a deed recorded in the CCRD in Book 32806, Page 341;

Thence S 54°36'33" W, along land now or formerly of Regan S. Brendan, a distance of 51.09 feet to a point;

Thence S 51°05'03" W, along land now or formerly of Regan S. Brendan, land now or formerly of Christian Sabrina Katheryn as described in a deed recorded in the CCRD in Book 32949, Page 39, land now or formerly of Mary A. Packard and Amanda M. Packard as described in a deed recorded in the CCRD in Book 10936, Page 100, land now or formerly of Haylee E. Hasson as described in a deed recorded in the CCRD in Book 33706, Page 89, land now or formerly of Hilary Carr as described in a deed recorded in the CCRD in Book 29976, Page 255, land now or formerly of Paula M. Urbach as described in a deed recorded in the CCRD in Book 31613, Page 621, land now or formerly of Ian P. Houseal as described in a deed recorded in the CCRD in Book 30070, Page 164, land now or formerly of Luis O. Garcia and Monica M. Garcia JTS as described in a deed recorded in the CCRD in Book 30353, Page 291 and land now or formerly of Matthew A. Anderson as described in a deed recorded in the CCRD in Book 32380, Page 112, a distance of 481.12 feet to a 5/8-inch iron rod, 12-inches above grade;

Thence S 37°28'58" W, along land now or formerly of Matthew A. Anderson, a distance of 29.58 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 28°22'08" W, along land now or formerly of Matthew A. Anderson, land now or formerly of Megan T. and Jonathan A. York JTS as described in a deed recorded in the CCRD in Book 25317, Page 156 and land now or formerly of Joy M. and Michael J. Borlawsky as described in a deed recorded in the CCRD in Book 9606, Page 268, a distance of 186.45 feet;

Thence S 29°23'41" W, along land now or formerly of Joy M. and Michael J. Borlawsky, a distance of 20.45 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at the centerline of the vacated Wadco Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29;

Thence N 54°10'52" W, through the vacated Wadco Street, a distance of 182.25 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 18°20'52" W, through the vacated Wadco Street and the vacated Ash Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, a distance of 108.08 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 71°39'08" E, through the vacated Ash Street and along land now or formerly of Jeffrey A. Hayes Trustee as described in a deed recorded in the CCRD in Book 30716, Page 21, a distance of 123.80 feet to a point;

Thence N 17°52'57" W, along land now or formerly of Jeffrey A. Hayes Trustee, land now or formerly of Bertha L. Judkins as described in a deed recorded in the CCRD in Book 7750, Page 196, Topsham Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, land now or formerly of House of Hogwarts, LLC as described in a deed recorded in the CCRD in Book 34616, Page 309, a distance of 369.17 feet to a 1-inch iron pipe, 2-inches above grade;

Thence N 18°18'12" W, along land now or formerly of House of Hogwarts, LLC, a distance of 125.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 79°57'00" E, through land of Fallbrook Properties, LLC, a distance of 99.99 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, through land to be retained by Fallbrook Properties, LLC, a distance of 420.18 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at other land of Fallbrook Properties, LLC;

Thence continuing N 54°32'18" E, through other land of Fallbrook Properties, LLC, a distance of 119.82 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set on the westerly sideline of Ray Street;

Thence S 35°27'42" E, along Ray Street, a distance of 55.00 feet to the Point of Beginning;

Containing approximately 8.28 Acres.

The bearings herein are Grid North, Maine State Plane Coordinate System, West Zone 1802, NAD83.

August 28, 2019
AJS/jg

Current Owner Information:

CBL	400 D023001
Land Use Type Verify legal use with Inspections Division	RETAIL & PERSONAL SERVICE
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421	**OWNER OF RECORD AS OF APRIL 2019**
LAND VALUE	$305,600.00	FALLBROOK PROPERTIES LLC
BUILDING VALUE	$3,086,400.00	418 RAY ST
NET TAXABLE - REAL ESTATE	$3,392,000.00	PORTLAND ME 04103
TAX AMOUNT	$79,067.52	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map V



Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

SHORT FORM QUITCLAIM DEED WITH COVENANT

FALLBROOK, INC., a Maine corporation with a principal place of business in Portland, Maine, FOR CONSIDERATION PAID, grants to **FALLBROOK PROPERTIES, LLC**, a Maine limited liability company whose mailing address is 418 Ray Street, Portland, Maine 04103, with QUITCLAIM COVENANT certain real property, together with any improvements thereon, located at 418 Ray Street, Portland, Cumberland County, Maine, and more particularly described on **Exhibit A** attached hereto and made a part hereof (the "Premises").

IN WITNESS WHEREOF, Fallbrook, Inc. has caused this instrument to be executed by Robert J. Feeney, its President thereunto duly authorized, this 15th day of December, 2009.

WITNESSETH:

Name:

FALLBROOK, INC.

By:
Name: Robert J. Feeney
Title: President

State of Maine
County of Cumberland, ss.

December 15, 2009

PERSONALLY APPEARED the above-named Robert J. Feeney, President of Fallbrook, Inc., as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Before me,

Name: Kevan Lee Rinehart
Title: Attorney/ ME 9303

EXHIBIT A

A certain parcel of land situated Westerly of Ray Street in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at the southeasterly corner of Fallbrook, a Condominium, at a point on the Westerly sideline of land now or formerly of John N. Jr. and Glennis E. Fitzpatrick (Book 2773, Page 224);

Thence, S 13°-05'-20" E by the land of Fitzpatrick 110.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 76°-54 '-40" E by the land of Fitzpatrick 256.90 feet to a point on the Westerly sideline of Ray Street marked by 5/8" iron rod set;

Thence, S 16°-25'-15" E by the sideline of Ray Street 1.42 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Ivan G. and Edwina F. Callahan (Book 2997, Page 486);

Thence, S 73°-34'-45" W by the land of Callahan 220.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 16°-25'-15" E by the land of Callahan 65.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 73°-34'-45" E by the land of Callahan 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Malcolm A. and Gail E. McDonald (Book 3614, Page 219);

Thence, S 18°-02'-05" E by the land of McDonald 163.18 feet to a point marked by a 5/8" iron rod set;

Thence, N 74°-25'-15" E by the land of McDonald 120.00 feet to a point on the Westerly sideline of Ray Street marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the sideline of Ray Street 47.17 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Donald A. and Evelyn Thompson (Book 2892, Page 451);

Thence, S 71°-24'-15" W by the land of Thompson 150.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 71°-24'-15" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Richard E. and Carolyn Grover (Book 2895, Page 492);

Thence, S 18°-35'-45" E by the land of Grover and by the land now or formerly of Raymond A. and Florence M. Sevigny (Book 2490, Page 327) 72.78 feet to a point marked by a 5/8" iron rod set;

Thence, S 17°-48'-10" E by the land of Sevigny and by the lands now or formerly of Gladys A. and Kenneth V. Moody (Book 3471, Page 62), Betty L. Denbow (Book 2682; Page 313), Anna J. Aiken (Book 3570, Page 212), David A. and Carolyn J. Matthews (Book 4483, Page 163), Laura H. Clark (Book 3708, Page 194), and George and Doris Castonia (Book 4960, Page 286) 333.24 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Frances F. Gatchell (Book 6257, Page 342);

Thence, S 71°-28'-30" W by the land of Gatchell 51.09 feet to a point marked by a 5/8" iron rod set;

Thence, S 67°-57'-00" W by the land of Gatchell and lands now or formerly of Eleanor L. and Sherry Sapko, Charles E. and Linda J. Foshay (Book 3920, Page 212), Linwood J. and Ruth L. Thaxter, Charles L. Arey (Book 2320, Page 55), Dorothy M. and Richard M. Butler (Book 3765, Page 177), Norman C. and Caroline M. Walton (Book 2014, Page 140), James P. and Lula S. Cullen (Book 2044, Page 474), and Glenda R. and Roger R. Pushor (Book 4755, Page 44) 481.12 feet to a point marked by a 5/8" iron rod set;

Thence, S 54°-20'-55" W by the land of Pushor 29.58 feet to a point marked by a 5/8" iron rod set;

Thence, S 45°-14'-05" W by the land now or formerly of Claire D. and Edward L. Gulick (Book 3782, Page 285) and by the land now or formerly of John H. and Jeannette B. Greer (Book 2824, Page 131) 186.45 feet to a stone wall intersection and the end of Wadco Street;

Thence, N 01°-01'-00" W by a stone wall 7.90 feet to the Northeasterly sideline of Wadco Street;

Thence, N 37°-18'-55" W by the sideline of Wadco Street 165.51 feet to a point marked by a 5/8" iron rod set at the Easterly sideline of Ash Street;

Thence, N 01°-28'-55" W by the sideline of Ash Street 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Diane M. and Richard C. Hayes (Book 3615, Page 161);

Thence, N 88°-31'-05" E by the land of Hayes 98.80 feet to a stonewall;

Thence, N 01°-01'-00" W by the land of Hayes, the land now or formerly of Bertha C. Judkins, by the end of Topsham Street, and by the land now or formerly of David F. Marshall (Book 4804, Page 317) 369.17 feet to a 1" iron pipe found;

Thence, N 01°-26'-15" W by the land of Marshall 125.00 feet;

Thence, S 80°-04'-05" W by the land of Marshall 100.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 1°-09'-05" E by the land of Marshall 125.00 feet to a 1" iron pipe found at the Northeast corner of the land now or formerly of Bertha C. Judkins;

Thence, S 81°-21'-30" W by the land of Judkins 56.91 feet to a 1/4" iron rod found at the Southeast corner of the land now or formerly of F. S. Plummer Co. (Book 6869, Page 110);

Thence, N 07°-34'-10" E by land of F. S. Plummer Co. 592.31 feet;

Thence, S 63°-29'-00" E by Fallbrook, a Condominium, 190.24 feet to a point;

Thence, N 76°-59'-40" E by Fallbrook, a Condominium, 166.98 feet to the point of beginning.

Also including and subject to those easements and rights, in common with others, which are described in the below referenced documents:

(1) Easements from George and Doris Castonia dated December 20, 1985, recorded in Book 7036, Page 92;

(2) Easements from Calvin L. and Myrtle W. Gailey, dated December 20, 1985, and recorded in Book 7036, Page 96;

(3) Easement from Frances F. Gatchell dated December 20, 1985, and recorded in Book 7036, Page 100; and

(4) Easement to the City of Portland for a turn-around at the terminus of Topsham Street and other matters shown on the Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66.

Also, an easement for all purposes in common with others over, under and along the 50 foot wide right of way shown on the said Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66 and reserved in the Declaration of Fallbrook Condominium dated April 20, 1989 and recorded in Book 8730, Page 206.

Also subject to the following exceptions and matters:

1. Title to and rights of the public and others entitled thereto in and to any portion of the Premises located within the bounds of adjacent streets, roads and ways.

2. Setback and minimum building value restrictions set forth in Indenture by and between Reginald and Isabelle H. Carles and Gretta and Edith Henderson, dated January 24, 1949 and recorded in the Cumberland County Registry of Deeds in Book 1951, Page 85 (further references herein to recorded documents are

references to documents recorded in said Registry).

3. Terms and provisions of a State of Maine Department of Environmental Protection Site Location Order #L-011219-87-A-N issued to Liberty Group, Inc., dated October 10, 1985 and recorded in Book 6958, Page 88, as transferred by unrecorded Order dated January 22, 1988; as further transferred to MM II Real Estate Corporation by Order dated February 24, 1989 and recorded in Book 8681, Page 310; as further transferred to Merreal Corp. by Order dated April 3 1989 and recorded in Book 8733, Page 187; and as affected by Order dated December 28, 1992 and recorded in Book 10500, Page 287.

4. Easement from the Merrymeeting Developers to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 25, 1988 and recorded in Book 8444, Page 191.

5. Easement granted to Portland Water District by instrument dated September 21, 1988 and recorded in Book 8490, Page 164.

6. Matters affecting the Premises shown on plan entitled "Condominium Plat III, Fallbrook, A Condominium on Ray Street, Portland, Maine, for Merreal Corp., by Owen Haskell, Inc., dated May 10, 1990 and recorded in Plan Book 185, Page 15.

7. Terms and conditions of a Maintenance Agreement by and between Fallbrook, Inc. and Fallbrook, A Condominium, dated February 4, 1993 and recorded in Book 10546, Page 73.

8. Utility easement from Fallbrook, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 26, 1993 and recorded in Book 10771, Page 14.

9. Utility easement granted to Northern Utilities, Inc. by instrument dated October 7, 1993 and recorded in Book 11022, Page 51.

10. Agreement for Transfer and Assumption of Special Declarant Rights by and between Fallbrook, Inc. and Fallbrook Condominium Association, dated June 28, 1993 and recorded in Book 10804, Page 329.

11. Contract for Electric Service by and between Fall Brook Woods and Central Maine Power Company, dated June 18, 1993 and recorded in Book 11243, Page 201.

12. All encumbrances, restrictions and other matters of record affecting the Premises as of the date hereof.

Meaning and intending to convey the premises conveyed to Grantor herein by Deed from Merreal Corp., formerly named MM II Real Estate Corporation, to Fallbrook, Inc., dated December 20, 1991 and recorded in Book 9831, Page 59.

Received
Recorded Register of Deeds
Dec 30,2009 02:11:13P
Cumberland County
Pamela E. Lovley

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Tue Nov 12 2019 13:38:02. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
FALLBROOK COMMONS DEVELOPMENT LLC	20200861DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
08/12/2019	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

JAMES N. BRODER, ESQ.
C/O BERNSTEIN SHUR
P.O. BOX 9729
PORTLAND, ME 04104 5029

Back to previous screen | New Search

Click on a link to obtain additional information.

List of Filings	View list of filings	
Obtain additional information:		
Additional Addresses	Plain Copy	Certified copy
Certificate of Existence (more info)	Short Form without amendments ($30.00)	Long Form with amendments ($30.00)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.



If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or e-mail or visit our Feedback page.

© Department of the Secretary of State

Section 3

Financial Capacity

Section 3

Financial Capacity

A. Estimated Costs

The anticipated construction cost of the proposed site improvements is approximately $17,840,821.

B. Financing

Please see this Section for a letter of financial capacity.

Sandy River
COMPANY

November 1, 2019

City of Portland
Planning Board
389 Congress Street
Portland, Maine 04101

Re: Funding the Development of Fallbrook Commons

Dear Planning Board:

On behalf of Fallbrook Commons, we are submitting this letter to assure you were can fund the proposed new 90-bed nursing care facility on the campus of Fallbrook Woods on Ray Street.

Sandy River Company is developing this project in partnership with the owner of Fallbrook Woods. This development team has a long history of successfully developing and securing debt and equity financing for senior care facilities throughout Maine. In the past 5 years alone, Sandy River has developed facilities in Maine with over $100M in total project costs. These projects are funded with a combination of bank loans and equity raised from our pool of private investors.

We are continuously in discussions with Maine banks who are eager to participate in the financing of our projects. Currently, Androscoggin Savings Bank is financing a 66-unit new assisted living center under construction in Auburn with $13M in bank financing. NBT Bank is financing a 90-bed facility in Sanford with $17M in bank financing. Please note that we have not selected a bank for the Fallbrook Commons project and generally won't select a bank while we are still going through the approval process to include a Certificate of Need approval from the Maine Department of Health and Human Services. We don't expect to break ground until early summer, 2020 and will negotiate with several banks and make a final bank selection near that time. Thus, we prefer to not include a letter on financing from any particular bank. Please note that we have obtained financing on our projects from five different Maine banks over the past five years.

On equity, we have investors eager to invest in these kinds of projects based on our decades of experience creating successful senior care facilities throughout Maine.

We assure the Planning Board we can finance this proposed project.

Sincerely,

Daniel J Maguire
Managing Partner

Section 4

Technical Ability

Section 4

Technical Ability

Fallbrook Care Development LLC has compiled a team of highly qualified contractors, consultants, and engineers for this proposed project.

The project team includes:

Sebago Technics, Inc. (STI) is a multi-disciplined engineering firm with over 35 years of experience, that offers a wide range of services specializing in land development, planning, permitting and engineering design services. We maintain a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, land surveying, and environmental engineering.

Gawron Turgeon Architects (GTA) is a multi-disciplined design firm with over 35 years of experience. They offer multi-disciplined planning and design services with a team that is comprised of architects, architectural designers, interior designers, landscape architects, and project managers.

Resumes of key personnel will be provided upon request.

Section 5

Noise

Section 5

Noise

A. <u>Developments Producing a Minor Noise Impact</u>

The proposed project involves the construction of a senior living facility on an undeveloped parcel abutting an assisted living facility. Given the nature of the proposed development and the surrounding complementary services, it is not anticipated that the project will result in an increase of noise generated at this site. As a result, a full noise study is not warranted. Temporary noise may arise during construction as a result of construction equipment working on the site. This noise potential is short-term and also not expected to be significant.

Construction will occur from 7 a.m. to 7 p.m. or during daylight hours and will be in compliance with the City of Portland ordinance.

Section 6

Visual Quality & Scenic Character

Section 6

Visual Quality

The proposed project involves the construction of a new senior living facility near an existing assisted living facility. All proposed improvements have been designed with the visual quality of the site in mind. The proposed trees and shrubs have been selected and sited to provide a privacy buffer, as well as to be visual appealing and easily maintained. A wooded buffer is to remain between the development and the abutting properties along Ray Street and Florida Avenue,

New lighting proposed for the project will have full cut-off's and has been modeled to demonstrate the anticipated lighting levels at the property line.

See this section for the product information sheets for items related to project improvements. See the plan set for more detailed information on the project design.

CIMARRON LED

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Construction:
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:
- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:
- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:
- L90 at 60,000 hours (Projected per IESNA TM-21-11)

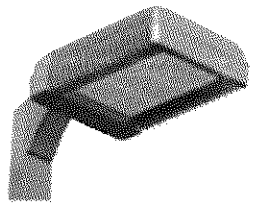
Installation:
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

Finish:
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

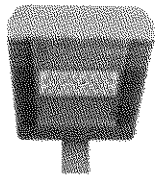
Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

Listings:
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- IDA approved • IP65

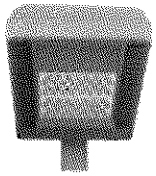
PRODUCT IMAGE(S)



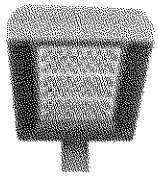
90 LED 3/4 VIEW



30 LED

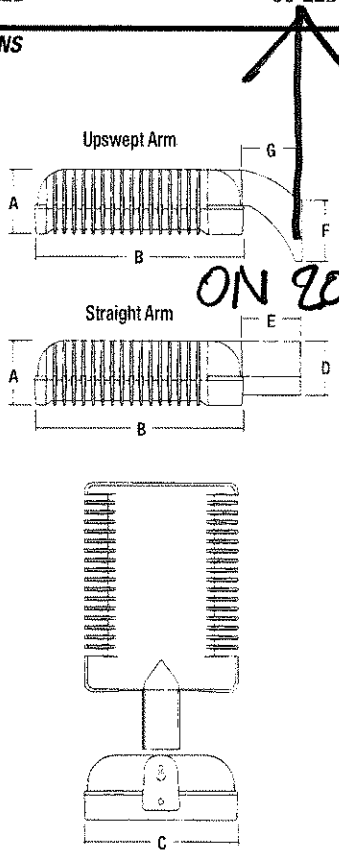


60 LED



90 LED

DIMENSIONS



A	B	C	D	E	F	G
6 3/4" 171mm	21 3/4" 552mm	16" 406mm	6 5/8" 168mm	6 5/16" 160mm	5 5/8" 143mm	6 1/8" 155mm

CERTIFICATIONS/LISTINGS

c SP us

DLC

Turtle Friendly

IDA *3000K and warmer CCTs only

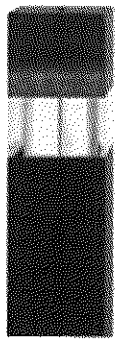
ORDERING INFORMATION SEE NEXT PAGE

© 2018 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: www.hubbelloutdoor.com • Printed in USA CL1LED-SPEC January 23, 2018 11:44 AM

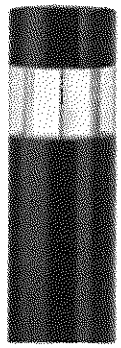
Fresno FN

Bollards

- Rotatable LED assembly adjustment for ideal placement and aiming of asymmetric light pattern
- 24 high brightness LEDs at 500mA deliver symmetric distribution at 46w
- 12 high brightness LEDs at 700mA deliver asymmetric distribution at 30w
- Available in three different color correlated temperatures
- >60,000 HOUR L90
- Extruded aluminum housing with single screw access for top relamping; Decorative cast top with tamper resistant hardware
- Sealed one-piece, clear acrylic lens
- Durable Lektrocote® TGIC thermoset polyester powder coat paint finish assures long life and maintenance-free service
- Concealed, cast aluminum anchor base; Four 1/2" x 10" anchor bolts on 4" diameter bolt circle
- Listed to UL1598 for use in wet locations
- 5 year limited system warranty



FRESNO SQUARE



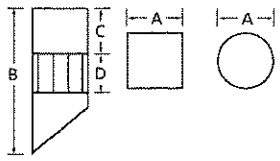
FRESNO ROUND

MADE-TO-ORDER **ORDERING INFORMATION**

SERIES		SOURCE/WATTAGE/LED		VOLTAGE		COLOR		OPTIONS[1]	
FN1	Fresno Square	12LU-3K	asymmetric, 27W, 3000K CCT	U	120V-277V	DB	Dark Bronze	CD	0-10V dimmable
FN2	Fresno Round	12LU-4K	asymmetric, 27W, 4000K CCT	1	120	BL	Black	24	24" OAH[2]
		12LU-5K	asymmetric, 27W, 5000K CCT	2	277	WH	White	30	30" OAH[2]
		24LU-3K	symmetric, 41W, 3000K CCT	3	240	GR	Gray	36	36" OAH[2]
		24LU-4K	symmetric, 41W, 4000K CCT	4	277	PS	Platinum Silver	F(X)	Fusing[3]
		24LU-5K	symmetric, 41W, 5000K CCT	5	480	RD	Red (premium color)	P(X)	Button Photocell[3]
		24LU-AM	symmetric, 20W, Amber 590nm	F	347	FG	Forest Green (premium color)	ABS	Bolts shipped ahead
						CC	Custom Color (consult factory)		

[1] Any or all options may be used together
[2] Standard fixture height is 42", only one overall height (OAH) may be selected
[3] Replace '(X)' with corresponding voltage (1=120, 2=208, 3=240, 4=277, 5=480, 6=347), Button Photocell not available in 480V

DIMENSIONS



	A	B	C	D	Weight
FN1	6 3/4" sq.	42"	6"	4"	41 lbs.
	171 mm	1067 mm	152 mm	102 mm	18.6 kg
FN2	7" dia.	42"	6"	4"	41 lbs.
	178 mm	1067 mm	152 mm	102 mm	18.6 kg

Section 7

Wildlife and Fisheries

Section 7

Wildlife and Fisheries

Maine Inland Fisheries and Wildlife (IF&W) was contacted to review the project site and a response letter was received on November 20, 2019. There are no essential habitats or fisheries habitats that have been mapped that will be impacted by this project. IF&W did note that given the nature of Maine that there was a possibility that the project area falls within the migration path of several species of bats. They also recommended that the site be reviewed for the presence of vernal pools.

All proposed tree clearing is planned for the fall which is outside the bat migration and breeding season. There are no known sizable outcrops on site that could be utilized as habitat for bats.

The project site has been reviewed for vernal pools. Please see Section 11 for the wetland memo dated May 14, 2019 by Sebago Technics.

Please see this Section for all Maine Inland Fisheries and Wildlife correspondence.

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

November 20, 2019

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 1A
Portland, ME 04101

RE: Information Request - Fallbrook Commons Senior Living Facility, Portland

Dear Stefanie:

Per your request received November 12, 2019, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Fallbrook Commons Senior Living Facility Project* in Portland.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat.

While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Significant Wildlife Habitat

Significant Vernal Pools

At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are

Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

We recommend that 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



Becca Settele
Wildlife Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Portland, Fallbrook Commons Senior Living Facility (Version 1)

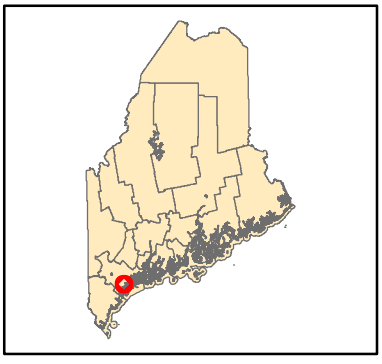
Maine Department of Inland Fisheries and Wildlife

0 0.125 0.25 0.5 0.75 1 Miles

Projection: UTM, NAD83, Zone 19N

Date: 11/14/2019

- ProjectPoints
- ProjectLines
- ProjectPolys
- ProjectSearchAreas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 Iwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats



November 7, 2019
18347

Mr. John Perry, Environmental Coordinator
Maine Department of Inland Fisheries & Wildlife
41 State House Station
Augusta, Maine 04333
ifw@environmentalreview@maine.gov

Re: Fallbrook Commons - Senior Living Facility
Merrymeeting Drive, Portland
Parcel ID: 400 D 023001

Dear John:

On behalf of the project applicant, Sebago Technics, Inc. respectfully requests a site review for the proposed new senior living facility and associated site improvements on Merrymeeting Drive in the North Deering section of Portland. In order to move forward with regulatory permitting we ask that you review your available data for any lands that support rare, threatened and endangered species, designated essential and significant wildlife habitats, and fisheries habitat.

For your reference, I have enclosed a site location map. At your earliest convenience, please review and forward your findings. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist/ Project Coordinator

enc.

Section 8

Historic Sites

Section 8

Historic Sites

Maine Historic Preservation Commission (MHPC) was contacted on November 7, 2019 to review the project site for possible impacts to historic resources. As per the MHPC response letter dated November 21, 2019, the proposed project will not result in an impact to any historic resources.

Please see this Section for a copy of the request letter and the MHPC response

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

November 21, 2019

Ms. Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Project: MHPC #1678-19 Fallbrook Commons; Ray Street/ Merrymeeting Drive Senior Living Facility

Town: Portland, ME

Dear Ms. Nichols:

In response to your recent request, I have reviewed the information received November 14, 2019 to initiate consultation on the above referenced project in accordance with the requirements of Maine Department of Environmental Protection.

Based on the information provided, I have concluded that there are no National Register listed or known eligible properties on or adjacent to the proposed project site. In addition, the parcel is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, at megan.m.rideout@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer

November 7, 2019
18347

Mr. Kirk Mohney
Maine Historic Preservation Commission
65 State House Station
Augusta, Maine 04333

Re: Fallbrook Commons - Senior Living Facility
Ray Street / Merrymeeting Drive, Portland
Parcel ID: 403 F001, 403-F005

Dear Mr. Mohney:

On behalf of the project applicant, Sebago Technics respectfully requests site review for a proposed new senior living facility adjacent to an existing senior facility in the North Deering section of Portland on Ray Street. The property is 12.78± acres and is located in the City Residential-3 zone. Per available resources we have determined that the site is not located in a local Historic District.

The project includes a new senior living facility that will be located next to the existing Fallbrook Woods assisted living community. The development includes the construction of a two-story, 37,450± sf building with 90 bedrooms and two adjacent parking areas. The new senior facility will be accessed by a new driveway from Ray Street with secondary access for emergency use over Merrymeeting Drive.

The project area is mostly wooded and will be cleared for the proposed site improvements. The applicant intends to leave the majority of the municipal building setbacks vegetated. Post-construction views to and from the new facility will be filtered through a combination of the existing mature vegetation and new landscaping.

We respectfully request review of the Maine Historic Preservation Commission database for any properties or structures of historic significance in the vicinity of the project site. For your reference, I have enclosed a site location map, the site property cards and Google Earth street view images of the surrounding residential areas. At your earliest convenience, please review and forward your findings. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,18347

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist / Project Coordinator

enc.

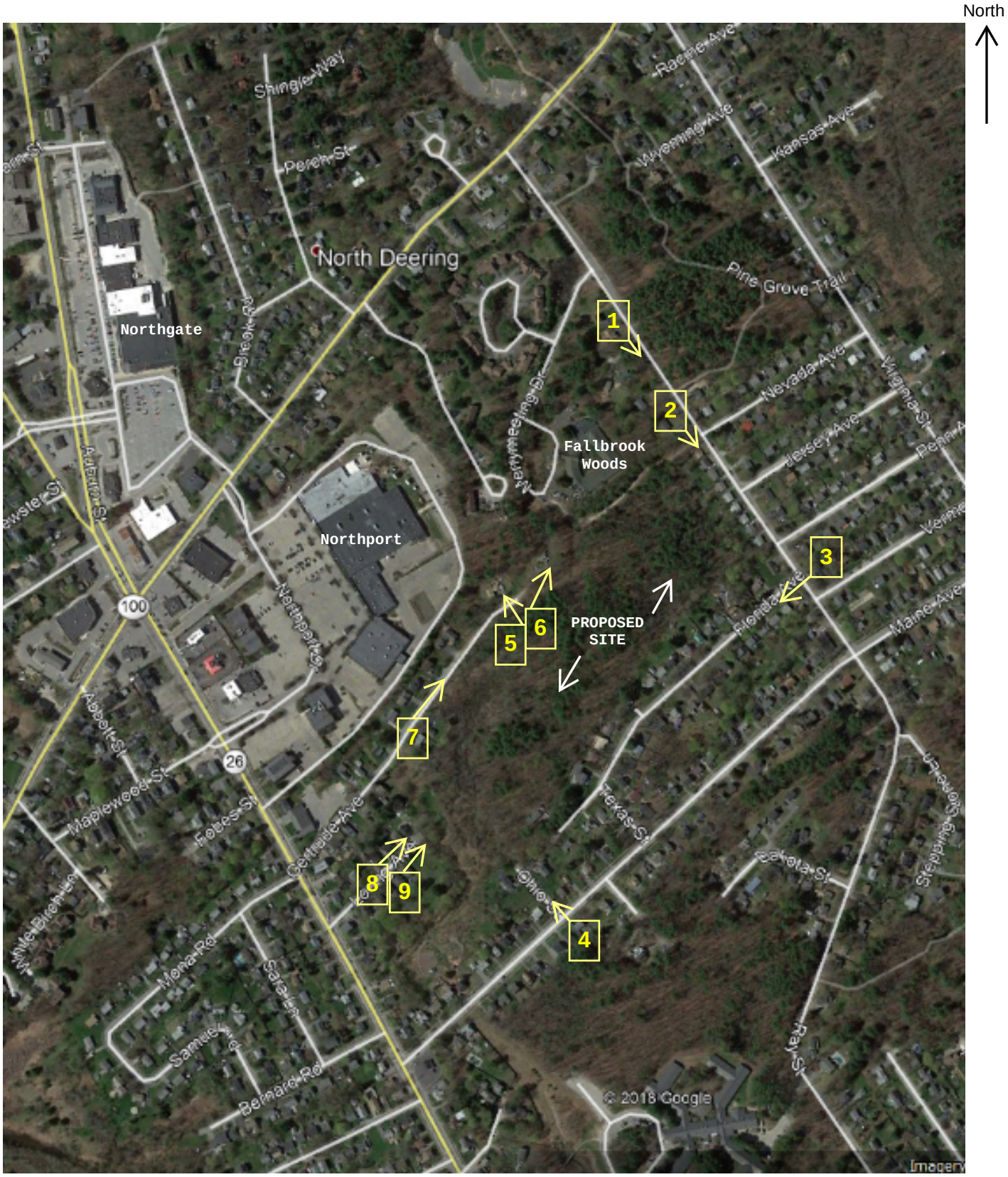


PHOTO KEY – Fallbrook Commons, Portland



Street view looking southeast along Ray Street toward the project entrance location

1



Street view looking southeast from the proposed Ray Street project entrance location

2



View along Florida Avenue from Ray Street

3



View along Ohio Street from Maine Avenue

4



Gertrude Avenue terminus -1

5



Gertrude Avenue terminus -2

6



Mid Gertrude Avenue Existing Conditions – residences and wooded area

7



View along Loring Avenue to end

8



View 2 - Loring Avenue to end

PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

City Home Departments City Council E-Services Calendar Jobs

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	403 F005001
Land Use Type	SINGLE FAMILY
Verify legal use with Inspections Division	
Property Location	368 RAY ST
Owner Information	MCDONALD PATRICIA A & CATHERINE E MCDONALD 368 RAY ST PORTLAND ME 04103
Book and Page	8818/50
Legal Description	403-F-5 RAY ST 368 19695 SF
Rental Registration	No
Acres	0.4522

Current Assessed Valuation:

TAX ACCT NO.	25541
LAND VALUE	$79,700.00
BUILDING VALUE	$105,800.00
HOMESTEAD	($16,800.00)
NET TAXABLE - REAL ESTATE	$168,700.00
TAX AMOUNT	$3,932.40

OWNER OF RECORD AS OF APRIL 2019
MCDONALD PATRICIA A &
CATHERINE E MCDONALD
368 RAY ST
PORTLAND ME 04103

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1955
Style/Structure Type	3
# Units	1
Bedrooms	2
Full Baths	1
Total Rooms	5
Attic	NONE
Basement	FULL
Square Feet	1200

View Sketch View Map View Picture

Outbuildings/Yard Improvements:

Building 1	
Year Built	1980
Structure	GARAGE-WD/CB
Size	14X22
Units	1

Grade	C
Condition	A

Sales Information:

Sale Date	Type	Price	Book/Page
7/7/1989	LAND + BUILDING	$0.00	8818/50

New Search!



PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	400 D023001
Land Use Type	RETAIL & PERSONAL SERVICE
Verify legal use with Inspections Division	
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421	**OWNER OF RECORD AS OF APRIL 2019**
LAND VALUE	$305,600.00	FALLBROOK PROPERTIES LLC
BUILDING VALUE	$3,086,400.00	
NET TAXABLE - REAL ESTATE	$3,392,000.00	418 RAY ST PORTLAND ME 04103
TAX AMOUNT	$79,067.52	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

	Building 1
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map View Picture

Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

New Search!

Section 9

Unusual Natural Areas

Section 9

Unusual Natural Areas

A project review request was forwarded to Maine Natural Areas Program (MNAP) and a response was received on November 7, 2019. Their review of the site found no documented rare botanical features within the project area.

Please see this Section for a copy of the request letter and the MNAP response.

November 7, 2019
18347

Ms. Lisa St. Hilaire
Maine Natural Areas Program
93 State House Station
Augusta, ME 04333-0093
lisa.st.hilaire@maine.gov

Re: Fallbrook Commons - Senior Living Facility
Merrymeeting Drive, Portland
Parcel ID: 400 D 023001

Dear Lisa:

On behalf of the project applicant, Sebago Technics, Inc. respectfully requests a site review for a proposed new senior living facility and associated site improvements on Merrymeeting Drive in the North Deering section of Portland. In order to move forward with regulatory permitting we ask that you review your available data for any lands that support rare and endangered plants, rare natural communities and ecosystems, and other natural communities and ecosystems in the vicinity of the proposed project area.

For your reference, I have enclosed a Site Location Map with the proposed project location identified. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist/Project Coordinator

enc.

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

November 7, 2019

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Via email: snichols@sebagotechnics.com

Re: Rare and exemplary botanical features in proximity to: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Dear Ms. Nichols:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received November 7, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,



Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
	T	S2	G5	2011-08-15	17	Tidal wetland (non-forested, wetland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
Columbia Water-meal						
	SC	S2	G5	2002-08-04	2	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed						
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5?	2011-08-04	19	Open wetland, not coastal nor rivershore (non-forested, wetland),Old

Rare and Exemplary Botanical Features within 4 miles of Project: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
						field/roadside (non-forested, wetland or upland)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
MacGregor's Rye						
	SC	S2	G5	2016-09-11	13	<null>
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress						
	T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Mountain-laurel						
	SC	S2	G5	1985-08-01	13	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Mountain Honeysuckle						
	E	S2	G5	2018-06-02	14	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2007-07-30	10	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2015-07-07	17	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Pale Green Orchis						
	SC	S2	G4?T4Q	1907-07-05	27	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not coastal nor rivershore (non-forested, wetland)
Palmate-leaved Violet						
	PE	SH	G5	1908	1	Hardwood to mixed forest (forest, upland)
Slender Knotweed						
	PE	SH	G5	1902-09-07	1	Dry barrens (partly forested, upland)

Rare and Exemplary Botanical Features within 4 miles of
Project: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Small Reed Grass						
	SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Spotted Wintergreen						
	T	S2	G5	1991-09	11	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Tidal Marsh Estuary Ecosystem						
	<null>	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Upper Floodplain Hardwood Forest						
	<null>	S3	GNR	2012	20	Forested wetland
Upright Bindweed						
	T	S2	G4G5	2007-06-28	5	Dry barrens (partly forested, upland),Old field/roadside (non-forested, wetland or upland)
Variable Sedge						
	E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	1911-06-29	9	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	2018-08-29	6	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	2017-08-22	4	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Vasey's Pondweed						
	SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Wild Garlic						
	SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest, upland)
Wild Leek						
	SC	S3	G5	2018-05-02	55	Hardwood to mixed forest (forest, upland),Forested wetland

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

Section 10

Buffers

Section 10

Buffers

Visual Buffers

Please see the plan set for the Landscaping plans for detailed information on the proposed visual buffers.

Stormwater Buffers

There are no stormwater buffers proposed for this project.

Section 11

Soils

Section 11

Soils

A. Soil Survey Map and Report

Please see the pre- and post-development drainage plans for the Class 'D' soil delineation.

B. Soil Survey Intensity Level by Development Type

A class 'D' medium intensity soil survey was utilized on the drainage plans and a site-specific geotechnical investigation was conducted for infrastructure improvements.

C. Geotechnical Investigation

See this Section for a copy of the geotechnical report completed by S.W. Cole.

D. Hydric Soils Mapping

Sebago Technics, Inc. reviewed the site for wetlands and vernal pools within the project area. See this section for a copy of a wetlands memo from Sebago Technics dated May14, 2019.

Memorandum

18347To: Kylie Mason

From: Mike Jakubowski

Date: May 14, 2019

Subject: #18347 – Fallbrook

The wetlands on this site were delineated by Gary Fullerton and Mike Jakubowski of Sebago Technics, Inc. in September of 2018. This delineation conforms to the standards and methods outlined in the 1987 Wetlands Delineation Manual and Regional Supplement authored and published by the U.S. Army Corps of Engineers. The wetlands were marked in the field with alpha numeric pink "wetland delineation" flagging. The flags were then located using a Trimble gps backpack unit capable of decimeter accuracy.

Wetlands found are classified as forested wetlands (PFO). The vegetation in these PFO wetlands primarily consists of, maple (*Acer spp.*), speckled alder (*Alnus incana*), cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern (*Onoclea sensibilis*), and jewelweed (*Impatiens capensis*). Upland vegetation primarily consists of white pine (*Pinus strobus*) and red oak (*Quercus rubra*).

A vernal pool survey was conducted on May 6th, 2019. No vernal pools were identified on the property. There has been no field determination for streams and it is not suspected that there are streams present on this property.



Photograph 1. PFO wetland at western extent of project boundary.



Photograph 2. PFO wetland at eastern extent of project boundary.



Photograph 3. PFO wetland at eastern extent of project boundary.



Photograph 4. PFO wetland at eastern extent of project boundary, near access road.

REPORT

18-1201.1 S

October 24, 2019

Explorations and Geotechnical Engineering Services

Proposed Assisted Living Facility
418 Ray Street
Portland, Maine

Prepared For:
Sandy River Company
Attention: Daniel Maguire
P.O. Box 110
Portland, Maine 04112

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-615-2766

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Scope and Purpose 1
1.2 Site and Proposed Construction 1
2.0 EXPLORATION AND TESTING 2
2.1 Explorations 2
2.1.1 Current Explorations 2
2.1.2 Prior Explorations 2
2.2 Testing 3
3.0 SUBSURFACE CONDITIONS 3
3.1 Soil and Bedrock 3
3.2 Groundwater 4
4.0 EVALUATION AND RECOMMENDATIONS 4
4.1 General Findings 4
4.2 Site and Subgrade Preparation 5
4.3 Excavation and Dewatering 6
4.4 Foundations 7
4.5 Foundation Drainage 7
4.6 Slab-On-Grade 8
4.7 Entrance Slabs and Sidewalks 8
4.8 Segmental Retaining Wall 9
4.9 Fill, Backfill and Compaction 9
4.10 Weather Considerations 11
4.11 Paved Areas 11
4.12 Design Review and Construction Testing 12
5.0 CLOSURE 12

Appendix A Limitations
Appendix B Figures
Appendix C Exploration Logs & Key
Appendix D Laboratory Test Results

18-1201.1 S

October 24, 2019

Sandy River Company
Attention: Daniel Maguire
P.O. Box 110
Portland, Maine 04112

Subject: Explorations and Geotechnical Engineering Services
Proposed Assisted Living Facility
418 Ray Street
Portland, Maine

Dear Daniel:

In accordance with our Proposal, dated June 21, 2019, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations, earthwork and pavement associated with the proposed construction. Our scope of services included a review of prior test pit explorations, coordinating supplemental test boring and auger probe explorations, soils laboratory testing, a geotechnical analysis of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The site is located at 418 Ray Street in Portland, Maine and consists of an undeveloped, wooded parcel. The site generally slopes downward from a high knob in the western-central portion of the site to the north, south and east, with about 24 feet of

surface relief across the site. An existing gravel service road for the adjacent Fallbrook Woods facility is located on the north side of the site.

Based on the information provided, we understand development plans call for construction of a new single-story with partial basement, multi-wing, assisted living building with associated paved parking and access road areas. We understand the building will have a finish floor elevation of 102 feet (project datum) and a finish basement elevation of 90 feet, requiring tapered fills approaching 19 feet and tapered cuts approaching 12 feet. Site access is proposed off of Ray Street, along the existing service road, and connecting to Merrymeeting Drive.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

S. W. Cole Engineering, Inc. (S.W.COLE) reviewed prior test pit explorations and coordinated and logged supplemental test boring and auger probe explorations as detailed below.

2.1.1 Current Explorations

Eight test borings (B-1 through B-8) and six auger probes (P-1 through P-6) were made July 25 and August 6, 2019 by S. W. Cole Explorations, LLC. The exploration locations were selected and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using GPS methods. The approximate locations of these explorations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the test borings and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.1.2 Prior Explorations

Fifteen test pits (TP-1 through TP-15) were made at the site on September 13, 2018 by Shaw Brothers Construction, Inc. working under subcontract to S.W.COLE. These exploration locations were selected and established in the field by S.W.COLE using GPS methods. The approximate exploration locations are shown on the "Exploration

Location Plan" attached in Appendix B. Logs of these explorations are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information provided by Sebago Technics.

2.2 Testing

The test borings and auger probes were drilled using a combination of solid-stem auger, hollow-stem auger and cased wash-boring techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. Shelby tube sampling and Vane Shear Testing (VST) were performed where softer cohesive soils were encountered. SPT blow counts, PPT and VST results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Atterberg Limits and moisture content test results are noted on the logs. The results of a one-dimensional laboratory consolidation test are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

The explorations generally encountered a soil profile consisting of glaciomarine sands, silts, and clays, overlying relatively shallow refusal surfaces (bedrock). The principle soils encountered are described below. Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

Fill: Test pits TP-12 and TP-13 encountered existing access road embankment fill, consisting of dark brown and brown sand with varying portions of silt, gravel, cobbles, brick, and organics. Test pit TP-12 penetrated the fill at a depth of 1.3 feet; a layer of geotextile was present at the bottom of the fill.

Glaciomarine Soils: Underlying surficial organics and the fill, the explorations generally encountered glaciomarine soils consisting of loose to medium dense, brown and light brown sand with varying portions of silt and gravel, sandy silt, and silty clay. The silty clay was predominantly stiff and brown, interbedded in the silts and sands, but transitioned to a

DRAFT

layer of softer gray silty clay at test pit TP-7 and borings B-4 and B-5. The softer gray clay extended to depths varying from 14 to 15 feet, where penetrated. One dimensional consolidation testing performed on a sample of the gray clay indicates it is overconsolidated by approximate 2,700 psf at a depth of about 11 feet. VST performed in the gray clay indicates undrained shear strength of approximately 600 psf.

Refusal Surfaces: Where encountered, depth to refusal surface (probable bedrock) varied from about 2 feet to 20 feet. Up to approximately 2 feet of weathered bedrock was penetrated by the drilling equipment before encountering refusal at the test boring and auger probe explorations. The depths to refusal (probable bedrock) at the exploration locations are summarized on the "Exploration Location Plan".

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Saturated soils were encountered at depths varying from 2 to 13 feet. Groundwater likely becomes perched on the relatively impervious silts, clays, and bedrock encountered at the explorations. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- Spread footing foundations and a slab-on-grade floors bearing on properly prepared subgrades appear suitable for the proposed building. Footings should bear on at least 3-inches of compacted Crushed Stone overlying properly prepared subgrades. On-grade floor slabs should bear on at least 12-inches of properly compacted Structural Fill overlying properly prepared subgrades. On-grade lower level floor slabs should bear on 6 inches of compacted Crushed Stone overlying properly prepared subgrades.

- Some areas of shallow bedrock were encountered at the explorations; thus blasting for bedrock removal should be anticipated. The depth of blasting should be controlled to less than 1 foot below footing subgrades and 2 feet below floor slab, pavement and utility subgrades.

- All topsoil, existing fills and debris must be completely removed from beneath the proposed building and backfilled with compacted Granular Borrow.

- Existing fills in paved areas should be proof-rolled and soft areas repaired prior to filling or placing pavement subbase gravels.

- Subgrades across the site will consist of sensitive silts and clays. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays when wet. Excavation of soil bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.

4.2 Site and Subgrade Preparation

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil should be completely removed from areas of proposed fill and construction. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Building Pad and Footings: As discussed, bedrock removal is anticipated in the building pad. The contractor should be prepared to remove fractured and overblasted bedrock beneath the building until sound, intact bedrock is encountered. Voids and fractures in the bedrock surface should be thoroughly choked by working and compacting blasting fines or Crushed Stone into the surface.

We recommend that fills needed to raise the building pad in the on-grade portion of the building, as well as adjacent retaining walls and surrounding site areas, be completed up to within 2 feet of finished grade at least 30 days prior to excavating for foundations in this portion of the building.

We recommend that footings be excavated using a smooth-edged bucket and that footings be underlain by at least 3 inches of compacted Crushed Stone overlying native non-organic soils, compacted Granular Borrow or sound intact bedrock.

Paved and Utilities: Uncontrolled fills and blasted bedrock subgrades encountered beneath proposed paved areas should be proof-rolled and densified with at least 3 passes of a 10 ton vibratory roller compactor. Areas that become soft or continue to yield after densification should be removed and replaced with compacted Granular Borrow.

Beneath pipes and utility structures with soft trench bottoms, we recommend overexcavating with a smooth edged bucket and installing at least 1 foot of Underdrain Sand below fabric wrapped bedding materials. The depth of bedding materials for soft trench bottoms should be at least 12 inches of pipes and 24 inches of structures.

4.3 Excavation and Dewatering

Excavation work will generally encounter uncontrolled fills, silty sand, silt, clay and bedrock. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays, when wet. Final cuts to subgrade in soil should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Based on the subsurface findings, we anticipate blasting will be required for bedrock removal. We recommend a licensed blasting contractor be engaged to provide bedrock removal. Pre-blast surveys should be completed on surrounding structures, water supply wells and infrastructure prior to commencing blasting activities. The depth of blasting should be controlled to less than 1 foot below footing subgrades and 2 feet below floor slab, pavement and utility subgrades.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, water supply wells and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity.

Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.4 Foundations

We recommend the proposed buildings be supported on spread footings founded on at least 3-inches of compacted Crushed Stone overlying properly prepared subgrades. For foundations bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design consideration:

Geotechnical Parameters for Spread Footings and Foundation Walls	
Design Frost Depth (100 year AFI)	4.5 feet
Net Allowable Soil Bearing Pressure	2.0 ksf
Base Friction Factor	0.35
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	30°
Seismic Soil Site Class	D (IBC 2015)
Estimated Total Settlement	1-inch
Differential Settlement	½-inch

Foundations adjacent to site retaining walls must be founded below a 1H:1V plane extending up and back from the bottom of the reinforced soil zone or back of wall, whichever is closer to the building.

4.5 Foundation Drainage

We recommend an underdrain system be installed on the outside edge of perimeter footings. The underdrain pipe should consist of 4-inch diameter, perforated SDR-35 foundation drain pipe bedded in Crushed Stone and wrapped in non-woven geotextile fabric. The underdrain pipe must have a positive gravity outlet protected from freezing, clogging and backflow. Surface grades should be sloped away from the building for positive surface water drainage. General underdrain details are illustrated on the "Foundation Detail Sketch" attached in Appendix B.

4.6 Slab-On-Grade

On-grade floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted Structural Fill placed over properly prepared subgrades. Similarly, basement floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci provided the slab is underlain by at least 6-inches of compacted Crushed Stone over properly prepared subgrades. The structural engineer or concrete consultant must design steel reinforcing and joint spacing appropriate to slab thickness and function.

We recommend a radon venting system and sub-slab vapor retarder be installed beneath the building floor slabs. The vapor retarder must have a permeance that is less than the floor cover or surface treatment that is applied to the slab. The vapor retarder must have sufficient durability to withstand direct contact with the sub-slab base material and construction activity. The vapor retarder material should be placed according to the manufacturer's recommended method, including the taping and lapping of all joints and wall connections. The architect and/or flooring consultant should select the vapor retarder products compatible with flooring and adhesive materials.

The floor slab should be appropriately cured using moisture retention methods after casting. Typical floor slab curing methods should be used for at least 7 days. The architect or flooring consultant should assign curing methods consistent with current applicable American Concrete Institute (ACI) procedures with consideration of curing method compatibility to proposed surface treatments, flooring and adhesive materials.

4.7 Entrance Slabs and Sidewalks

Entrance slabs and sidewalks adjacent to the building must be designed to reduce the effects of differential frost action between adjacent pavement, doorways, and entrances. We recommend that non-frost susceptible Structural Fill be provided to a depth of at least 4.5 feet below the top of entrance slabs. This thickness of Structural Fill should extend the full width of the entrance slab and outward at least 4.5 feet, thereafter transitioning up to the bottom of the adjacent sidewalk or pavement gravels at a 3H:1V or flatter slope. General details of this frost transition zone are shown on the "Foundation Detail Sketch" attached in Appendix B.

DRAFT

For plaza slabs extending beyond immediate building entrances, we recommend extending the thickness of Structural Fill beneath the entire plaza slab thereafter transitioning up to the bottom of the adjacent sidewalk or pavement gravels at a 3H:1V or flatter slope. Alternatively, the entrance slab and plaza slab may be insulated for frost protection. General details of this frost transition zone are shown on the "Foundation Detail Sketch" attached in Appendix B.

4.8 Segmental Retaining Wall

For the proposed site retaining walls, we recommend wet-cast segmental retaining walls. We recommend the facing blocks be founded on a minimum 6-inch thick leveling course of compacted Crushed Stone overlying properly prepared subgrades. For design of Segmental Retaining Walls (SRW), such as Redi-Scape, we recommend the following geotechnical parameters for design:

Geotechnical Parameters for Segmental Retaining Wall		
Wall Zone	**Unit Weight (pcf)**	**Friction Angle**
Reinforced Soil	130	34
Retained Soil	125	30
Foundation Soil	125	30

Design of the retaining wall and evaluation of base sliding, overturning and internal stability of the wall are the responsibility of the wall design engineer. The wall designer must account for construction surcharge loads and future live load conditions. S.W.COLE should be retained to perform a global stability analysis of the SRW and to review the SRW submittal.

4.9 Fill, Backfill and Compaction

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Common Borrow: Fill to raise grades in paved and landscape areas should be non-organic compactable earth meeting the requirements of 2014 MaineDOT Standard Specification 703.18 Common Borrow. Where used beneath paved areas, Common Borrow fills shall be capped with a 12 inch layer of Granular Borrow prior to installing Pavement Subbase materials.

Granular Borrow: Fill to raise grades in building and paved areas, as well as to repair soft areas, should be sand or silty sand meeting the requirements of 2014 MaineDOT Standard Specification 703.19 Granular Borrow.

Structural Fill: Backfill for foundations, on-grade slab base material and material below exterior entrance slabs should be clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

Underdrain Sand: Sand used beneath bedding materials in soft trench bottoms should be clean, free-draining sand meeting the requirements of 2014 MaineDOT Standard Specification 703.22 Underdrain Backfill Material Type B.

Crushed Stone: Crushed Stone, used beneath foundations, basement floor slabs and for underdrain aggregate should be washed ¾-inch crushed stone meeting the requirements of 2014 MaineDOT Standard Specification 703.22 Underdrain Backfill Material Type C.

Reuse of Site Soils: The non-organic on-site soils are unsuitable for reuse in building areas, but may be suitable for reuse as Common Borrow in paved and landscape areas, provided they are at a compactable moisture content at the time of reuse.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill in building and paved areas be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

4.10 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.11 Paved Areas

We anticipate paved areas will be subjected primarily to passenger vehicle and light delivery truck traffic with occasional heavy delivery truck traffic. Considering the site soils, and proposed usage, we offer the following pavement section for consideration.

FLEXIBLE (HMA) PAVEMENT SECTION – 2014 MaineDOT Standard Specs	
Pavement Layer	**Material Thickness**
MaineDOT 9.5 mm Hot Mix Asphalt	1 ½ inches
MaineDOT 19.0 mm Hot Mix Asphalt	2 ½ inches
MaineDOT 703.06 Aggregate Base Type A	6 inches
MaineDOT 703.06 Aggregate Subbase Type D	12 inches

The base and subbase materials should be compacted to at least 95 percent of their maximum dry density as determined by ASTM D-1557. Hot mix asphalt pavement should be compacted to 92 to 97 percent of its theoretical maximum density as determined by ASTM D-2041. A tack coat should be used between successive lifts of bituminous pavement.

It should be understood that frost penetration can be on the order of 4.5 feet in this area. In the absence of full depth excavation of frost susceptible soils below paved areas and subsequent replacement with non-frost susceptible compacted fill, frost penetration into the subgrade will occur and some heaving and distress of pavement must be anticipated.

4.12 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork, foundation and pavement recommendations have been properly interpreted and implemented.

A soils and concrete testing program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities, the preparation of foundation bearing surfaces and pavement subgrades, as well as to provide testing and IBC Special Inspection services for soils, concrete, steel, spray-applied fireproofing, structural masonry and asphalt construction materials.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Timothy J. Boyce, P.E.
Senior Geotechnical Engineer

TJB:emw

DRAFT

S.W.COLE ENGINEERING, INC.

APPENDIX A

Limitations

This report has been prepared for the exclusive use of Sandy River Company for specific application to the proposed Assisted Living Facility at 418 Ray Street in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

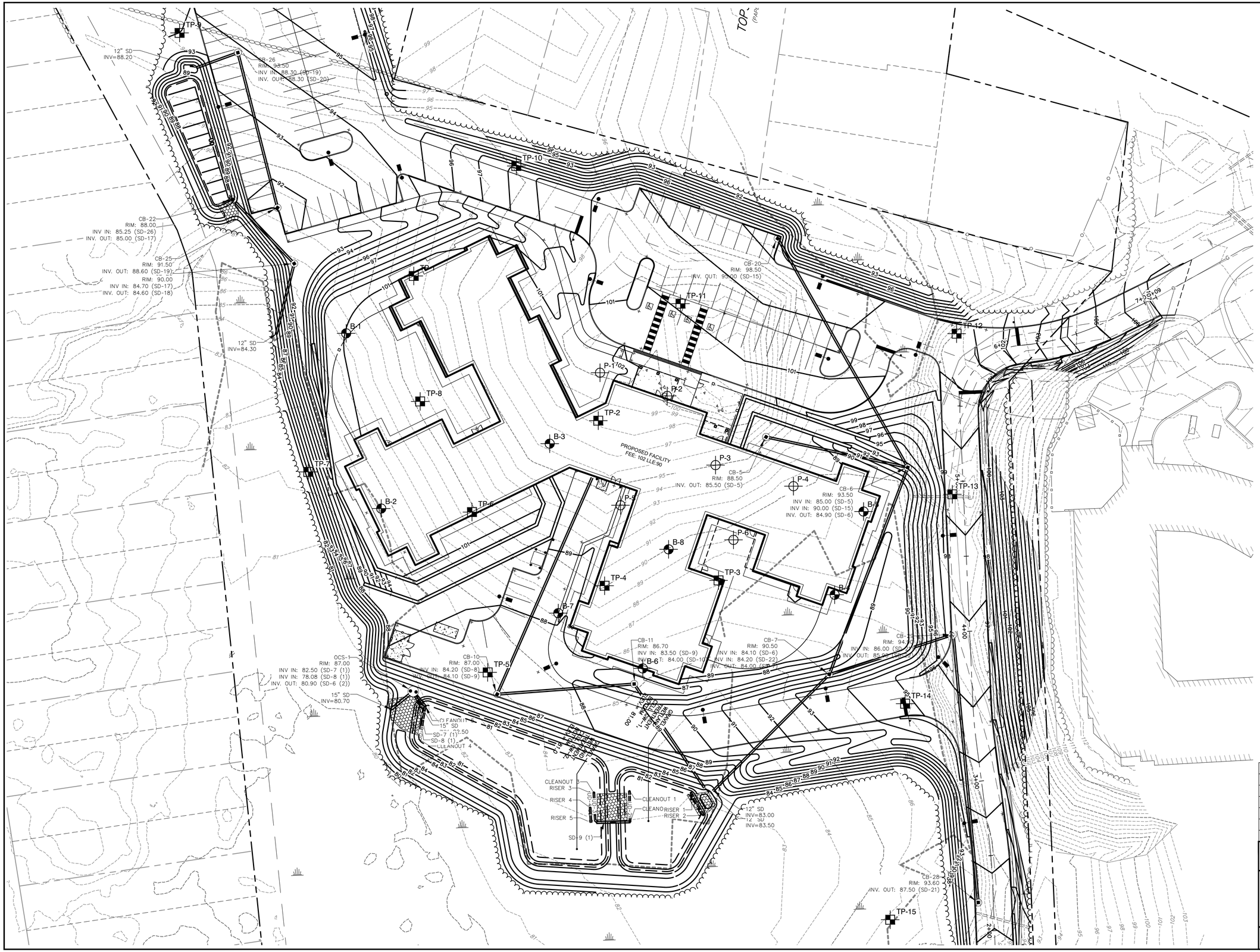
S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

S.W.COLE ENGINEERING, INC.

APPENDIX B

Figures



EXPLORATION ID	DEPTH TO TOP OF ROCK, FT.	DEPTH TO REFUSAL, FT.
P-1	1.8	3.1
P-2	6.8	7.5
P-3	9.0	9.6
P-4	5.5	6.3
P-5	5.5	6.2
P-6	6.5	7.3
B-1	7.3	7.5
B-2	18.2	19.9
B-3	1.5	3.3
B-4	16.5	17.8
B-5	18.1	18.1
B-6	12.5	12.5
B-7	14.0	14
B-8	10.0	10
TP-1	2.4	2.4
TP-2	4.3	4.3
TP-3	7.5	7.5
TP-4	6.7	6.7
TP-5	8.5	8.5
TP-6	9.0	9
TP-7	10.5 NR	NO REFUSAL
TP-8	4.0	4
TP-9	1.8	1.8
TP-10	5.0 NR	NO REFUSAL
TP-11	4.4 NR	NO REFUSAL
TP-12	6.0 NR	NO REFUSAL
TP-13	3.2 NR	NO REFUSAL
TP-14	5.0 NR	NO REFUSAL
TP-15	5.0 NR	NO REFUSAL

LEGEND:

- APPROXIMATE BORING LOCATION
- APPROXIMATE PROBE LOCATION
- APPROXIMATE TEST PIT LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1" = 40' SCALE PLAN OF THE SITE ENTITLED "GRADING PLAN," PREPARED BY SEBAGO TECHNICS, INC., DATED 11/1/2019.
2. THE EXPLORATIONS WERE LOCATED IN THE FIELD BY GPS SURVEY BY S. W. COLE ENGINEERING, INC., USING A MAPPING GRADE TRIMBLE GPS RECEIVER.
3. TEST PITS TP-1 THROUGH TP-13 WERE PERFORMED UNDER THE DIRECTION OF S.W.COLE IN SEPTEMBER 2018.
4. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
5. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 30 60 Feet

NO.	DATE	DESCRIPTION	BY
1	10/24/2019	REPORT SUBMITTAL	CEM
0	08/07/2019	DRAFT SUBMITTAL	CEM

S.W.COLE ENGINEERING, INC.

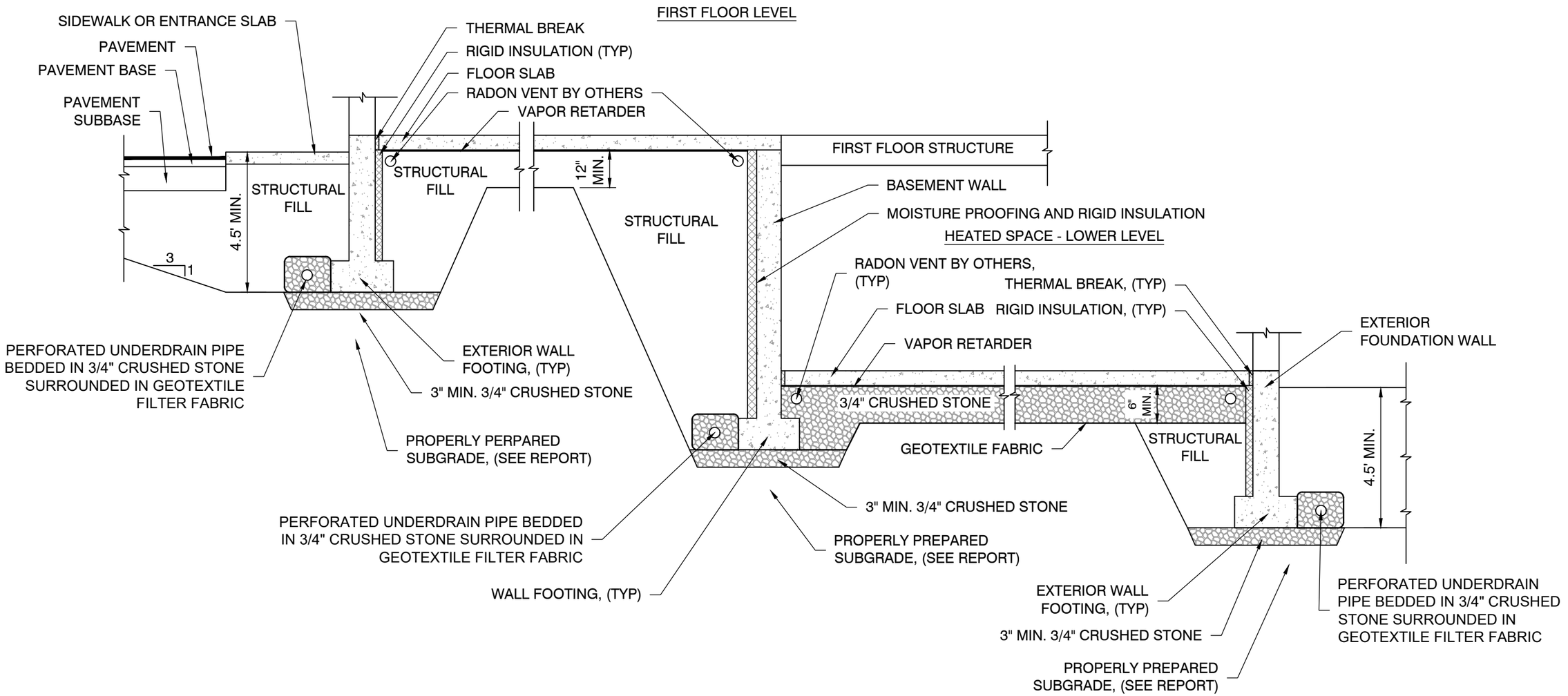
SANDY RIVER COMPANY

EXPLORATION LOCATION PLAN

PROPOSED ASSISTED LIVING FACILITY
418 RAY STREET
PORTLAND, MAINE

Job No.: 18-1201.1 Scale: 1" = 30'
Date : 08/07/2019 Sheet: 1

P:\2018\18-1201.1\CAD\Drawings\18-1201.1 ELP.dwg, 10/24/2019 1:32:04 PM, 1:1, CEM, S.W. Cole Engineering, Inc.



NOTE:

1. UNDERDRAIN INSTALLATION AND MATERIAL GRADATION RECOMMENDATIONS ARE CONTAINED WITHIN THIS REPORT.
2. DETAIL IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY, NOT FOR CONSTRUCTION.

S.W.COLE ENGINEERING, INC.

SANDY RIVER COMPANY

FOUNDATION DETAIL SKETCH

PROPOSED ASSISTED LIVING FACILITY
418 RAY STREET
PORTLAND, MAINE

Job No.:	18-1201.1	Scale:	Not to Scale
Date :	10/24/2019	Sheet:	2

R:\2018\18-1201.1\CAD\Drawings\18-1201.1 FDS.dwg, 10/24/2019 1:29:51 PM, 1:1, CEM, S. W. Cole Engineering, Inc.

APPENDIX C

Exploration Logs and Key

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-1
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 87' +/- | **TOTAL DEPTH (FT):** 7.5 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 7/25/2019 Soils wet to saturated below 6.5 ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
85			1D		0-2	24/10	1-1-3-4			0.8 Dark brown, sandy silt with roots and organics (Topsoil)		
			2D		2-4	24/15	3-3-7-10	w =13.1 %		1.5 Loose, rust-brown silty SAND with gravel Medium dense light brown silty SAND, trace gravel		
	5		3D		5-7	24/21	12-10-9-8			5.0 Medium dense, light brown and gray SAND and SILT, trace gravel		
80										7.3 Probable weathered BEDROCK Refusal at 7.5 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-1

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-2
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 83' +/-
TOTAL DEPTH (FT): 19.9
LOGGED BY: Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Kevin Hanscom
DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50
AUGER ID/OD: 2 1/4 in / 5 5/8 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic
HAMMER WEIGHT (lbs): 140 / 300
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.91
HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): ▼ 2 ft 7/25/2019 Free Water in borehole at 2'
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/20	WOH-1-3-4	q_P=4 ksf		0.8 Dark brown, clayey silt with roots and organics (Topsoil)	▼	
80			2D		2-4	24/24	5-6-6-6	q_P=3 to 6 ksf w =27.8 %		Stiff to very stiff, brown silty CLAY		
	5		3D		5-7	24/24	3-4-4-4	q_P=3 ksf w =36.4 %				
75										9.1 Medium dense, brown-gray silty SAND, some gravel		
	10		4D		10-12	24/1	6-9-11-11					
70										16.0 Medium dense to dense, brown SAND, some silt, trace gravel		
	15		5D		15-17	24/16	7-7-12-23			18.2 Probable cobbles or weathered BEDROCK		
65												

Refusal at 19.9 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-2

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-3
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 96' +/- | **TOTAL DEPTH (FT):** 3.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 7/25/2019 No free water observed. Soils moist.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
95			1D		0-1.4	17/12	1-2-50/5"			0.8 Dark brown, sandy silt with roots and organics (Topsoil) 1.5 Medium dense, gray-brown silty SAND with bedrock fragements Probable weathered BEDROCK Refusal at 3.3 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-3

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-4
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 87' +/- | **TOTAL DEPTH (FT):** 17.8 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 12.8 ft 7/25/2019 Free water at 12.8'
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/7	WOH/12"-1-1			1.0 Forest duff & dark brown sandy silt with organics (Topsoil)		
85			2D		2-4	24/22	3-3-3-4	q_P=4 to 2 ksf		2.0 Very loose, gray silty SAND with rootlets; Stiff to medium, gray sandy clayey SILT		
	5		3D		5-7	24/24	3-3-5-6	q_P=6 to 2 ksf; w =29.5 %		4.5 Very stiff to medium, brown silty CLAY, some sand		
80												
	10		4D		10-12	24/24	WOH-WOH-2-2	w =34.1 %; W_L=29; W_P=16		9.0 Soft to medium, gray silty CLAY with frequent sand seams		
			1U		10.1-12.1	24/24						
75			1V		12-12	0				No Vane Penetration at 1V - sand seam Offset Boring and Obtained 1U	▽	
	15		5D		15-16.5	18/12	9-9-10-25/0"			14.0 Medium dense, brown SAND and SILT		
70										16.5 Probable weathered BEDROCK		

Refusal at 17.8 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-4

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT:	Sandy River Company
PROJECT:	Proposed Assisted Living Facility
LOCATION:	418 Ray Street, Portland, Maine

BORING NO.:	**B-5**
SHEET:	1 of 1
PROJECT NO.	18-1201.1
DATE START:	7/25/2019
DATE FINISH:	7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 89' +/- **TOTAL DEPTH (FT):** 18.1 **LOGGED BY:** Patrick Otto

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Hollow Stem Auger

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.91 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): 7/25/2019 Soils saturated below 9'

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/3	WOH-1-1-4			Forest duff & dark brown sandy silt with organics (Topsoil)		
										1.5		
			2D		2-4	24/20	2-3-4-4			2.0 Loose, tan silty SAND		
										Very stiff to stiff, brown sandy clayey SILT with silty SAND seams, trace gravel at 3.5'		
85												
	5		3D		5-7	24/24	4-3-5-5	w =30.9 %		4.5 Very stiff to stiff, brown silty CLAY		
80										9.0		
	10		4D		10-10.5	6/6	WOH	S_V=0.63/0.16ksf		Medium, gray silty CLAY		
			1V		10.5-11.3	10		w =42.1 %				
75												
	15									No Vane Rotation at 2V - Sand Seam		
			2V		15-16	12				15.0 Loose, layered gray silty CLAY and SAND		
			5D		16-18	24/24	6-7-8-15			16.0 Medium dense, brown silty SAND, some gravel		

Refusal at 18.1 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-5**

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-6
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 8/6/2019
DATE FINISH: 8/6/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 85' +/- | **TOTAL DEPTH (FT):** 12.5 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Jeff Lee | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted CME 850 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.75 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 8 ft 8/6/2019 Soils saturated below 8'
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/24	1-5-7-7			0.5 Very loose, dark brown sandy silt with organics (Topsoil)		
			2D		2-4	24/18	7-9-9-12			2.0 Medium dense, gray-brown sandy SILT with rootlets		
80	5		3D		5-7	24/24	5-8-12-15			Medium dense, gray SAND and SILT with clay seams 4.5 Very stiff, brown silty CLAY with frequent sand seams	▽	
			4D		8-10	24/20	6-9-14-10			8.0 Medium dense, tan silty SAND, some gravel		
75	10											

Refusal at 12.5 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-6

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-7
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 8/6/2019
DATE FINISH: 8/6/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 87' +/-
TOTAL DEPTH (FT): 14.0
LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Jeff Lee
DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Track Mounted CME 850
AUGER ID/OD: 2 1/4 in / 5 5/8 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic
HAMMER WEIGHT (lbs): 140 / 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.75
HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 8 ft 8/6/2019 Soils wet at 5', saturated at 10'
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Drilling
▼ At Completion of Drilling
▼ After Drilling
D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear
Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot
WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
85			1D		0-2	24/24	1-3-5-7			0.5 Very loose, dark brown sandy SILT with organics 1.0 Loose, tan SAND and SILT with rootlets 3.0 Medium dense, gray SAND and SILT with rootlets		
	5		2D		5-7	24/24	4-7-6-8			Medium dense, brown silty SAND with olive-brown silty clay seams	▽	
80												
	10		3D		10-12	24/20	5-6-8-9			9.0 Medium dense, tan silty SAND, some gravel		
75												

Refusal at 14.0 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-7

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-8
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 8/6/2019
DATE FINISH: 8/6/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 89' +/-
TOTAL DEPTH (FT): 10.1
LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Jeff Lee
DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted CME 850
AUGER ID/OD: N/A / 4 1/2 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic
HAMMER WEIGHT (lbs): 140 / 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.75
HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 8/6/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/14	1-1-1-2			1.0 Very loose, dark brown sandy silt with organics (Topsoil)		
			2D		2-4	24/15	2-6-7-14			2.0 Very loose, tan silty SAND		
85	5		3D		5-7	24/22	5-5-10-11			Medium dense, tan silty SAND, some gravel		
80	10		4D		10-10.1	1/1	25/1"			Refusal at 10.1 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-8

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 1

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 92' +/- **COMPLETION DEPTH (FT):** 2.4
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics and roots					
		0.8 Brown silty SAND with roots					
		2.0 Brown gravelly SAND, some silt, with bedrock fragments					

Refusal at 2.4 feet
Probable bedrock

TEST PIT TP- 2

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 98' +/- **COMPLETION DEPTH (FT):** 4.3
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics and roots					
		0.8 Brown sandy SILT with roots					
		2.0 Light brown gravelly SAND, some silt					

Refusal at 4.3 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 3

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 86.5' +/- **COMPLETION DEPTH (FT):** 7.5
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.0 Gray-brown sandy SILT with rootlets to 2'					
		2.6 Brown sandy SILT, some clay					
5							
		6.0 Layered brown silty SAND and sandy SILT					

Refusal at 7.5 feet
Probable bedrock

TEST PIT TP- 4

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 88' +/- **COMPLETION DEPTH (FT):** 6.7
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.3 Brown silty SAND with rootlets to 2.3'					
		3.4 Brown sandy silty CLAY				4-	q_p=8 ksf
5							
		6.0 Brown silty SAND, some gravel, with bedrock fragments				6-	q_p=8 ksf

Refusal at 6.7 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

S.W.COLE ENGINEERING, INC.

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 5

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 84' +/- **COMPLETION DEPTH (FT):** 8.5
WATER LEVEL DEPTHS (FT): 9/13/2018 Soils wet below 6' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / Dark brown sandy SILT with rootlets					
		0.8 Brown sandy clayey SILT, with rootlets to 2'				3-	q_P=6 ksf
5		4.4 Layered brown SAND and SILT					
		6.0 Gray-brown silty CLAY					
		7.5 Brown silty gravelly SAND, with cobbles					

Refusal at 8.5 feet
Probable bedrock

TEST PIT TP- 6

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 88' +/- **COMPLETION DEPTH (FT):** 8.5
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown sandy SILT with organics and roots					
		1.3 Rust brown silty SAND, with rootlets					
		2.4 Light brown SAND, some gravel, some silt, with cobbles and boulders					
5							

Refusal at 9.0 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 7

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 82' +/- **COMPLETION DEPTH (FT):** 10.5
WATER LEVEL DEPTHS (FT): 9/13/2018 Light seepage at 7', soils saturated at 8.5' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown silty SAND with organics and roots					
		0.8 Gray-brown SAND and SILT, with clay seams					
		3.0 Gray-brown sandy silty CLAY				3-	q_P=5 ksf
		4.0 Very stiff to medium, gray-brown sandy silty CLAY				4-	q_P=3 to 4 ksf
5						5-	q_P=2 to 3 ksf
						6-	q_P=1.5 ksf
						8-	q_P=1 ksf
		8.5 Gray silty CLAY					
10							

Bottom of Exploration at 10.5 feet
Limit of excavator

TEST PIT TP- 8

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 88' +/- **COMPLETION DEPTH (FT):** 4.0
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.3 Brown silty SAND, with roots					
		2.0 Brown gravelly SAND, some silt, with cobbles					

Refusal at 4.0 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 9

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 94' +/- **COMPLETION DEPTH (FT):** 1.8
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.0 Brown sandy SILT, with roots and cobbles/bedrock fragments					

Refusal at 1.8 feet
Probable bedrock

TEST PIT TP-10

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 94' +/- **COMPLETION DEPTH (FT):** 5.0
WATER LEVEL DEPTHS (FT): No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.0 Brown silty SAND with roots					
		2.0 Gray-light brown SAND and SILT					
		4.0 Layered brown SAND and SILT					
5		4.9 Brown gravelly SAND, some silt					

Bottom of Exploration at 5.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP-11

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 100' +/- **COMPLETION DEPTH (FT):** 4.4
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		0.5 Brown silty SAND with roots					
		2.3 Brown gravelly SAND and SILT with cobbles					

Bottom of Exploration at 4.4 feet

TEST PIT TP-12

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 98' +/- **COMPLETION DEPTH (FT):** 6.0
WATER LEVEL DEPTHS (FT): 9/13/2018 Light seepage in test pit sidewall at 4' and 5.5' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Dark brown sandy SILT with organics, roots and fabric (FILL)					
		1.3 Brown silty SAND					
		3.0 Brown SAND and silt, some clay					
		4.2 Brown sandy silty CLAY					
5						5-	q_P=4 to 5 ksf

Bottom of Exploration at 6.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP-13

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 96' +/- **COMPLETION DEPTH (FT):** 3.2
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown silty gravelly SAND with cobbles and brick (FILL)					
		2.0 Brown silty gravelly SAND with cobbles and boulders (FILL) -geotextile fabric at 3'-					
		Bottom of Exploration at 3.2 feet					

TEST PIT TP-14

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 86' +/- **COMPLETION DEPTH (FT):** 5.0
WATER LEVEL DEPTHS (FT): 9/13/2018 Light seepage at ground surface and 4' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Dark brown sandy SILT with organics and roots					
		0.6 Gray-brown SAND and silt with roots					
		1.5 Gray-brown SAND and silt, trace gravel, with clayey seams and layers					
5		Bottom of Exploration at 5.0 feet					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP-15

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 85' +/- **COMPLETION DEPTH (FT):** 5.0
WATER LEVEL DEPTHS (FT): 9/13/2018 Soils wet at 4.5' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with roots					
		1.0 Brown sandy SILT					
		2.7 Very stiff, gray sandy clayey SILT				3-	q_P=6 to 8 ksf
5		Bottom of Exploration at 5.0 feet					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

S.W.COLE ENGINEERING, INC.

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

APPENDIX D

Laboratory Test Results

S.W.COLE ENGINEERING, INC.

Consolidation Test

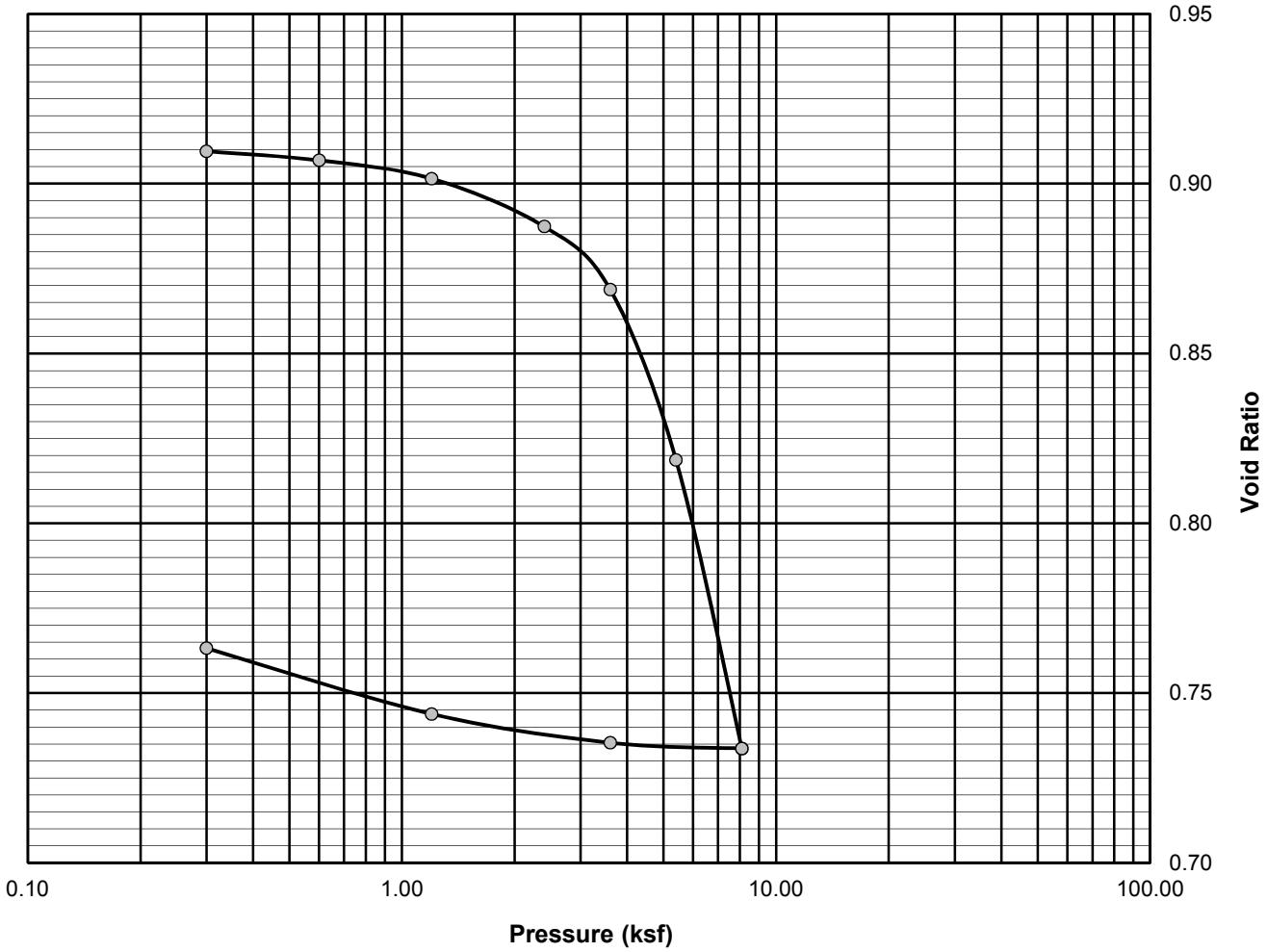
ASTM D-4767

Project Name: Portland - Assisted Living Facility
Client: Sandy River Company

Project Number: 18-1201.1
Lab ID: 22903B
Date: 8/26/2019

Boring: B-4
Sample: 1U
Depth: 10-12'

P_C =	4.1 KSF +/-
C_C =	0.02
C_R =	0.48
w =	34.1%
W_L =	29
W_P =	16



Comments:

EMW
Reviewed By

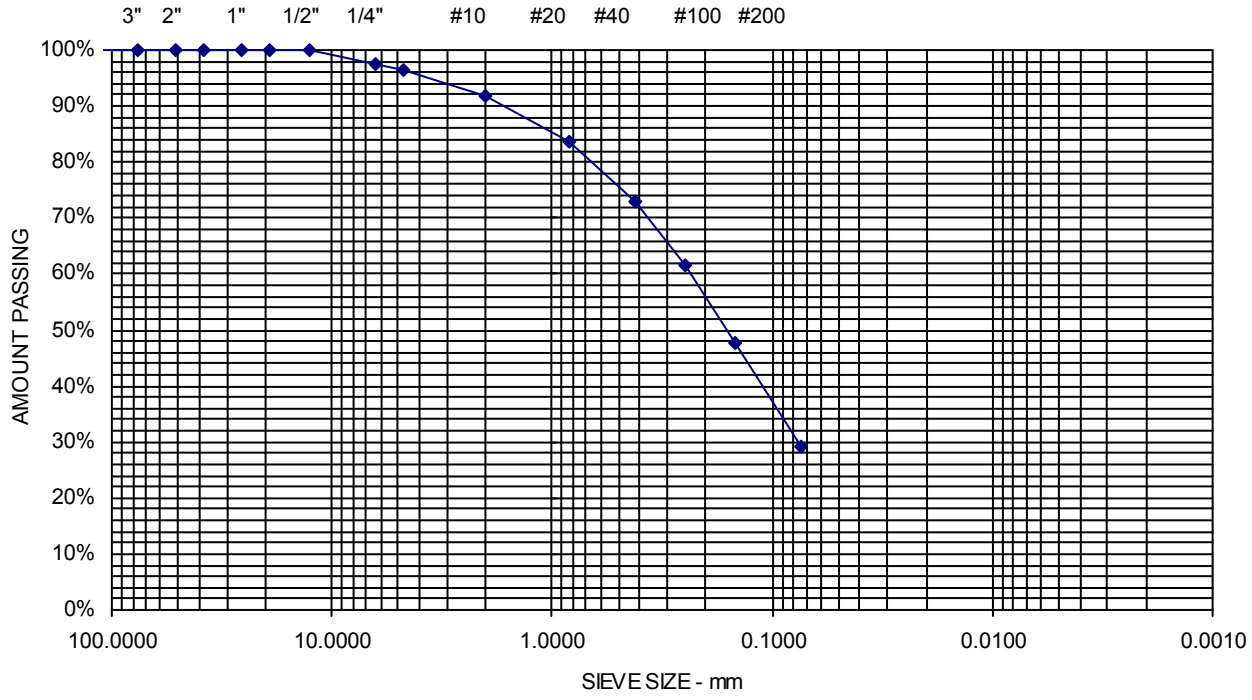
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED ASSISTED LIVING FACILITY - DESIGN PHASE GEOTECHNICAL	Project Number	18-1201.1
		Lab ID	25367G
Client	SANDY RIVER COMPANY	Date Received	7/29/2019
		Date Completed	7/31/2019
Material Source	**B-1 2D 2-4**	Tested By	JACK LABBE

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
6.3 mm	**1/4"**	**98**	
4.75 mm	**No. 4**	**97**	3.5% Gravel
2.00 mm	**No. 10**	**92**	
850 um	**No. 20**	**84**	
425 um	**No. 40**	**73**	67.5% Sand
250 um	**No. 60**	**61**	
150 um	**No. 100**	**48**	
75 um	**No. 200**	**29.0**	29% Fines



Comments:

Sheet

Section 12

Stormwater Management

Section 12

Stormwater Management

See this Section for a copy of the stormwater management plan.

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT PLAN

For

FALLBROOK COMMONS
PORTLAND, MAINE

Prepared for

Sandy River Company
217 Commercial Street
Portland, Maine 04112

November 12, 2019

Table of Contents

Contents

I. Introduction 1
II. Existing Conditions 1
III. Soils 1
IV. Proposed Site Improvements 2
V. Pre-Development Conditions Model 2
VI. Post-Development Conditions Model 3
VII. Stormwater Management 4
Basic Standard - Chapter 500, Section 4(B) 4
General Standard - Chapter 500, Section 4(C) 4
Flooding Standard - Chapter 500, Section 4(F) 5
VIII. Summary 7

Appendices

Appendix 1: Watershed Plans and Stormwater Treatment Plans
Appendix 2: Stormwater Quality Calculations
Appendix 3A: Hydrologic Modeling – Pre-Development Model (HydroCAD) Summary
Appendix 3B: Hydrologic Modeling – Post-Development Model (HydroCAD) Summary
Appendix 4: Inspection, Maintenance and Housekeeping Plan
Appendix 5: Web Soil Survey
Appendix 6: FEMA Map
Appendix 7: Form F: Soil Profile/Classification Information

STORMWATER MANAGEMENT PLAN REPORT
Fallbrook Commons
Portland, Maine

I. Introduction

This Stormwater Management Plan Report has been prepared to present analyses performed to address the potential impacts associated with the project due to proposed modification to stormwater runoff characteristics and land cover changes. The stormwater management controls outlined in this report have been designed to suit the proposed development and to comply with applicable regulatory requirements.

II. Existing Conditions

The project site is comprised of undeveloped land consisting of mostly wooded land coverage with access from Ray Street and Merrymeeting Drive. The site is approximately 12.78 acres and is bounded by Florida Avenue and Ray Street residences to the south and east, Fallbrook Woods senior center to the north, and Topsham Street and undeveloped residential parcels to the west. Paper streets Wadco Street and Ash Street are located to the south and southeast of the site and are currently undeveloped.

Slopes on the site range from flat low-lying easterly wetland areas to undeveloped slopes ranging from 5-40% with exposed ledge areas located in the western portion of the parcel. Site drainage generally travels easterly toward the wetland area nearest the intersection and residences of Ray Street and Florida Avenue and enters a closed drainage system in the Ray Street right of way. Small portions of the site drain west to a wetland in the Topsham Street right of way.

The site is tributary to an unnamed stream draining northeasterly from the site and discharging at the mouth of the Presumpscot River, which is not classified as most-at-risk or urban impaired according to Chapter 502, Direct Watersheds of Lakes Most At-Risk From New Development, and Urban Impaired Stream Standards.

The proposed development area of the site is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Portland, community-panel number 230051 002 C. Please find a copy of the FEMA map attached as Appendix 6.

III. Soils

Soil information for the site was obtained via the USDA United States Department of Agriculture and Natural Resources Conservation Service's Web Soil Survey. The Hydrologic Soil Group (HSG) of the site soils are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Name	Soil Symbol	HSG	Slope (%)
BELGRADE	BgB	C	0-8
BUXTON	BuB	D	3-8
HOLLIS	HrB	C	0-8
HOLLIS	HrC	C	8-15
HOLLIS	HsB	C	0-8
SCANTIC	Sn	D	0-3

Hydrologic Soil Group boundaries are delineated on the Watershed Map. A copy of the Web Soil Survey is included as Appendix 5.

IV. Proposed Site Improvements

The project includes a new senior living facility located next to the existing Fallbrook Woods Assisted Living facility. The development includes the construction of a two story, 37,455 sf building that will house 90 bedrooms, a commercial kitchen, community areas, and two parking areas totaling 93 parking spaces. Fallbrook Health Center proposes an entrance off of Ray Street, and an emergency connection to Merrymeeting Drive.

This project will happen as one phase, which will involve clearing the vegetation as required, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by 2021.

The property is 12.78 acres, exists within the Residential-3 zone, and has frontage along Ray Street. The proposed development will improve approximately 5.6 acres of undeveloped land, as shown on the General Standards worksheet attached as Appendix 2. This includes approximately 2.7 acres of new impervious area.

V. Pre-Development Conditions Model

The pre-development watershed plan consists of four subcatchments labeled 1.0S, 1.1S, 2.0S, and 3.0S in the HydroCAD model. Three locations were identified as Study Points (SP) for comparing peak runoff rates.

SP-1 is located in the easterly corner of the lot where runoff leaves the site via a wetland. Watershed 1.0S directly contributes runoff to this study point with a tributary area of approximately 9.4 acres. Subcatchment 1.1S flows into to 1.0S through an existing 15" culvert with an inlet control structure identified as node 1.1P. The culvert crosses under an existing gravel access road draining an area of approximately 2.7 acres. SP-1 and the associated drainage area are tributary to an offsite unnamed stream traveling northeasterly from the site and discharging to the Presumpscot River.

SP-2 is located in the undeveloped southerly corner of the lot where runoff leaves the site via overland flow into the paper street right of way of Wadco Street. Subcatchment 2.0S contributes runoff to this study point with a tributary area of approximately 0.4 acres. SP-2 and its associated drainage area drain to an offsite unnamed stream discharging to the Presumpscot River.

SP-3 is located in the westerly corner of the lot that is a majority undeveloped where runoff leaves the site into the undeveloped Topsham Street right of way. A small portion of this area includes previously developed grass and pavement area from the neighboring Fallbrook Woods facility. Watershed 3.0S contributes runoff to this study point with a tributary area of approximately 0.9 acres. SP-3 and the associated drainage area are also tributary to an offsite unnamed stream discharging to the Presumpscot River.

VI. Post-Development Conditions Model

The post-development watershed area consists of the same overall area as the pre-development plan, however, the subcatchments have been broken into smaller areas as a result of the proposed development.

SP-1: Post-development subcatchments 10.0S and 10.1S represent the existing undeveloped and developed land within pre-development subcatchments 1.0S and 1.1S respectively. Subcatchments 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, and 13.1S represent the majority of the proposed developed area including the building, parking areas, and landscaped islands.

Subcatchments 11.0S, 11.1S, and 11.2S represent approximately 3.1 acres of the developed site tributary to a proposed Gravel Wetland (GW-1) modeled as node 11.0P which provides both quantity and quality treatment of the stormwater runoff. Portions of subcatchment 11.1S include developed areas from the neighboring Fallbrook Woods facility and are directed to a proposed replacement culvert modeled as node 11.1P.

Subcatchment 12.0S represents approximately 1.3 acres of the developed area and is tributary to the proposed Underdrained Soil Filter (UDSF-1) modeled as node 12.0P which provides both quantity and quality treatment of the stormwater runoff.

Subcatchments 13.0S and 13.1S are approximately 0.8 acres of the proposed building roofline area and is tributary to the proposed Roof Drip Edge BMPs modeled as nodes 13.0P and 13.1P which provide quality treatment of the stormwater runoff.

SP-2: Post-development subcatchment 20.0S represents the remaining undeveloped land from pre-development subcatchment 2.0S.

SP-3: Post-development subcatchment 30.0S represents the remaining undeveloped land from pre-development subcatchment 3.0S and a small portion of developed landscape and pavement directed via constructed grassed swale and sheet flow to an existing wetland area.

The three Best Management Practices (gravel wetland, underdrained soil filter, and roof drip edge) have been designed and sized in accordance with MDEP BMP standards contained within Chapter 500 and the BMP Manual. The proposed BMPs treat runoff tributary to SP-1. The areas tributary to SP-2 and SP-3 are reduced in the post-development conditions due to site development. Sizing calculations can be found in Appendix 2.

VII. Stormwater Management

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. The project avoids adverse impacts by implementing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 4) during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply, which require a project's stormwater management system to include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The General Standards require treatment of no less than 95% of the site's created impervious area and no less than 80% of the site's created developed area (landscaped area and impervious area combined).

To mitigate the changes in hydrologic patterns due to the development of this project, an underdrained soil filter, a gravel wetland, and a roof drip edge filters have been included in the stormwater management infrastructure. Filtration BMPs are effective at removing a wide range of pollutants through the use of soil filter media.

BMP sizing and treatment calculations are provided as Appendix 2.

Through the use of the proposed BMP's, 106.5% of new impervious area and 91.8% of new developed area will be receiving treatment. This exceeds the requirements for the Maine DEP General Standards. The project exceeds 100% of the new impervious area treated by directing untreated offsite impervious area to the proposed gravel wetland.

Flooding Standard - Chapter 500, Section 4(F)

Since the planned project will create less than three (3) acres of impervious surface, MDEP Flooding Standards are not required to be met. However, the Flooding Standard has been met as a local requirement. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

A runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500: Stormwater Management (effective date August 2015). Rainfall values for York County are listed in the table below.

Storm Frequency Precipitation (in./24 hr) Cumberland County	
2-year	3.1
10-year	4.6
25-year	5.8

The following table presents the watershed data for pre- and post-development conditions, as delineated for the analysis.

Subcatchment (Watershed)	Pre-Development			Post-Development		
	Area (ac)	Cn	Tc (Min.)	Area (ac)	Cn	Tc (Min.)
1.0S	9.42	77	29.3			
1.1S	2.68	80	23.9			
2.0S	0.44	70	18.7			
3.0S	0.92	72	16.1			
10.0S				4.54	79	28.5
10.1S				2.63	80	23.9
11.0S				1.93	92	11.7
11.1S				0.54	76	18.0
11.2S				0.62	81	15.0
12.0S				1.29	87	17.3
13.0S				0.40	98	6.0
13.1S				0.39	98	6.0
20.0S				0.28	70	18.0
30.0S				0.85	73	16.1
Total	**13.46**			**13.46**		

The following table presents the results of the stormwater runoff calculations at the analysis points for the pre-development and post-developed conditions.

Stormwater Runoff Summary Table			
Study Point	**Storm Event**	**Pre-Development (cfs)**	**Post-Development (cfs)**
SP-1	2-year	8.4	6.3
	10-year	19.4	17.2
	25-year	25.9	24.7
SP-2	2-year	0.2	0.2
	10-year	0.7	0.4
	25-year	0.9	0.6
SP-3	2-year	0.6	0.6
	10-year	1.6	1.5
	25-year	2.2	2.1

The HydroCAD Data output sheets from this analysis are appended to this report (Appendix 3) along with pre-development and post-development watershed maps (Appendix 1). The model predicts that the peak runoff rates in the post-development condition at Study Points 1, 2, and 3 are at or below pre-development runoff rates for the 2, 10, and 25-year storm events with implementation of the proposed stormwater management practices.

VIII. Summary

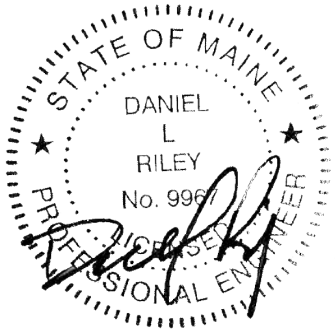
The proposed development has been designed to manage stormwater runoff through Best Management Practices approved by MDEP. Stormwater BMP's provide treatment to 106.5% (95% required) of impervious areas, and 91.8% (80% required) of the total developed area. Runoff discharging from the site will be at or below pre-development conditions for the 2, 10 and 25-year storm events at all three study points. Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping procedures have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

Prepared by:

SEBAGO TECHNICS, INC.

Daniel L. Riley, P.E.
Vice President, Engineering

DLR/BAW



11/12/2019

Appendix 1

Watershed Plans

(see plan set)

Appendix 2

Stormwater Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 18347 Fallbrook Commons **Date:** 11/11/2019

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10.0S	197,762	8,676	226	167,582	21,278	21,504	176,258	NO	0	0	0	
10.1S	114,524	24,914	0	85,730	3,880	3,880	110,644	NO	0	0	0	
11.0S	83,879	0	55,667	0	28,212	83,879	0	YES	55,667	28,212	83,879	GW-1
11.1S	23,407	0	0	0	23,407	23,407	0	YES	0	23,407	23,407	GW-1
11.2S	27,173	7,890	700	9,821	8,762	9,462	17,711	YES	8,590	18,583	27,173	GW-1
12.0S	56,194	0	27,298	0	28,896	56,194	0	YES	27,298	28,896	56,194	UDSF-1
13.0S	17,204	0	17,204	0	0	17,204	0	YES	17,204	0	17,204	DL
13.1S	16,974	0	16,974	0	0	16,974	0	YES	16,974	0	16,974	DL
20.0S	12,129	0	0	12,129	0	0	12,129	NO	0	0	0	
30.0S	37,005	0	0	24,501	12,504	12,504	24,501	NO	0	0	0	
TOTAL (S.F.)	**586,251**	**41,480**	**118,069**	**299,763**	**126,939**	**245,008**	**341,243**		**125,733**	**99,098**	**224,831**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**118,069**	**TOTAL DEVELOPED AREA (S.F.)**	**245,008**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**125,733**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**224,831**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**106.49%**	**% OF AREA RECEIVING TREATMENT**	**91.76%**

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons			
SHEET NO.	1	OF	1	
CALCULATED BY	BAW	DATE	11/11/2019	
FILE NAME	18347 WQC.xlsx	PRNT DATE	11/11/2019	

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system….holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to GRAVEL WETLAND

Landscaped Area	70,202.0	SF							
Impervious Area	64,257.0	SF							
Minimum Surface Area									
Required	(2% X Landscaped + 5%" X Impervious)								
Total Landscaped Area	70,202.00	SF	Area	1,404.0	SF				
Total Impervious Area	64,257.00	SF	Area	3,212.9	SF				
Required Minimum Surface Area				4,616.9	SF				
Provided Surface Area				6,175.0	SF				
Treatment Volume									
Required	(0.4" X Landscaped + 1.0" X Impervious)								
Landscaped Area	70,202.00	SF	Volume	2,340.1					
Impervious Area	64,257.00	SF	Volume	5,354.8					
Treatment Volume Required				7,694.8	CF	0.177	AF		
Minimum Treatment Cell Volume (45%)				3,462.7	CF	0.079	AF		
Provided Treatment Volume (Bay 1)				4,790.0	CF				
Provided Treatment Volume (Bay 2)				5,860.0	CF				
Total Provided Treatment Volume				10,650.0	CF				
Minimum "Forebay" Cell Volume (10%)				769.5	CF				
Provided Treatment Volume (Forebay)				800.0	CF				

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	1
CALCULATED BY	BAW	DATE	11/11/2019
FILE NAME	18347 WQC.xlsx	PRNT DATE	11/11/2019

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References

1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1
   a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF-1

Landscaped Area	28,896.00	SF							
Impervious Area	27,298.00	SF							
Minimum Surface Area									
Required	(2% X Landscaped + 5%" X Impervious)								
Total Landscaped Area	28,896.00	SF	Area	577.9	SF				
Total Impervious Area	27,298.00	SF	Area	1,364.9	SF				
Required Minimum Surface Area				1,942.8	SF				
Provided Surface Area				1,955.0	SF				
Treatment Volume									
Required	(0.4" X Landscaped + 1.0" X Impervious)								
Landscaped Area	28,896.00	SF	Volume	963.2					
Impervious Area	27,298.00	SF	Volume	2,274.8					
Treatment Volume Required				3,238.0	CF	0.074	AF		
Provided Treatment Volume				3,730.0	CF	0.086	AF		

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1	"Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"								
Annual Sediment Load:	55 cubic feet per acre per year of sanded area								
Area to be sanded:	27,298.00	SF							
Sediment Volume	34	CF							
Provided	160	CF	16	Inch Deep Forebay		with area of		120	sf

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	2
CALCULATED BY	BAW	DATE	11/11/2019
FILE NAME	18347 WQC.xlsx	PRNT DATE	11/11/2019

Gravel Wetland - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 10,650 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.12 \text{ cfs}$$

surface area of filter = 6,175 SF

h = 1.72 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.019 sf = 2.81 sq. in.

Max. Diam = 1.89 in

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	2	OF	2
CALCULATED BY	BAW	DATE	11/11/2019
FILE NAME	18347 WQC.xlsx	PRNT DATE	11/11/2019

Underdrained Soil Filter 1 - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 3,730 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.04 \text{ cfs}$$

surface area of filter = 1,955 SF

h = 1.91 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.006 sf = 0.93 sq. in.

Max. Diam = 1.09 in

SEBAGO TECHNICS, INC.
75 John Roberts Road, Suite 4A
South Portland, ME 04106
(207) 200-2100 FAX (207) 856-2206

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	1
CALCULATED BY	BAW	DATE	11/11/2019
CHECKED BY	BJB		
FILE NAME	18347 WQC.xlsx	PRINT DATE	11/11/2019

Treatment Calculations for Proposed Roof Drip Edge						
WQV Calculation						
(WQV = Water Quality Volume)						
Total Impervious Area =	34,180	sf				
WQV (MDEP)= 1" x Impervious Area =		2,848.3	cf =	0.065	acre-ft	
Length of Trench=		1510.0	ft.			
Width of Trench=		3.5	ft.			
Depth of Stone		12.0	in.	40% porosity		
Depth of Sand Media=		12.0	in.	20% porosity		
WQV Provided = Area of Trench * (Depth of stone*stone porosity + Depth of sand*sand porosity)						
WQV for first 1" =	2,114.0	cf				
Additional WQV Provided =	1,057.0	cf				
Total WQV Provided =	**3,171.0**	**cf**				

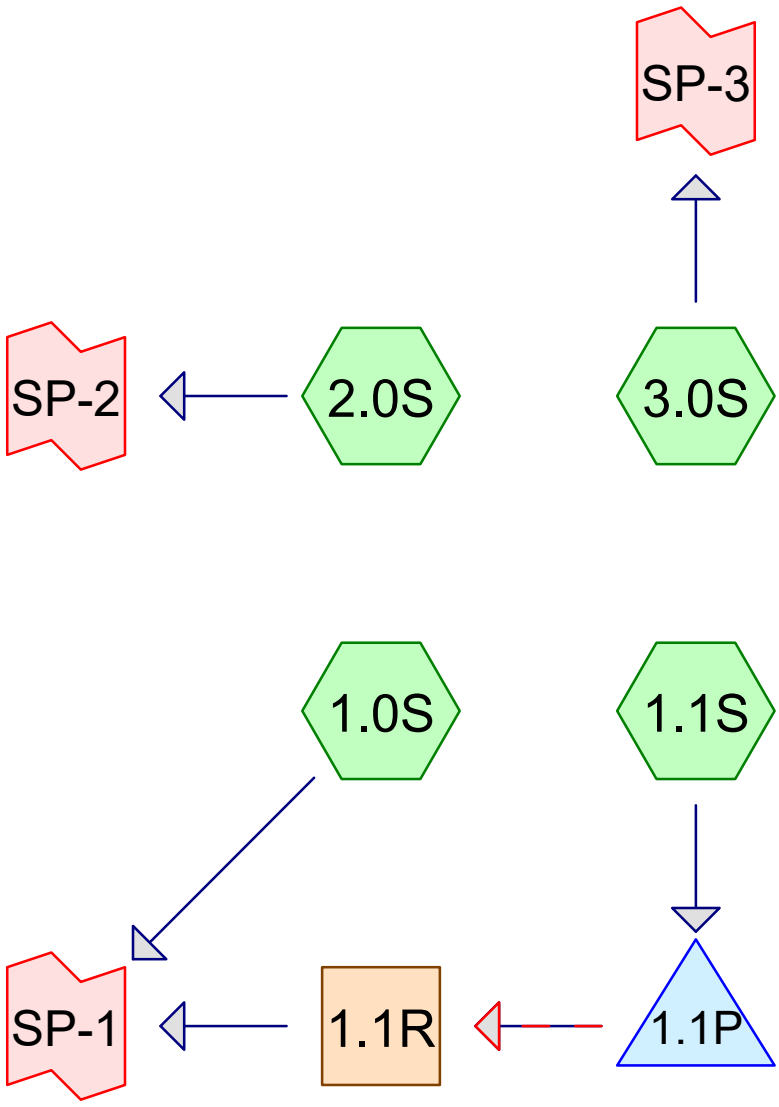
The stone reservoir volume for the drip edge filter was designed to provide the storage required to convey the water quality storm (storm that generates 1" of runoff over the roof) through the filter media under the stone. Additonal water quality is provided in the porosity of the underdrain sand.

Appendix 3

HydroCAD Output
Pre-Development and
Post-Development Models

Appendix 3A
PREDEVELOPMENT

PRE-DEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 18347 PRE-DEVELOPMENT 2019-11-07
Prepared by Sebago Technics, Printed 11/7/2019
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.917	74	>75% Grass cover, Good, HSG C (1.0S, 1.1S, 3.0S)
1.899	80	>75% Grass cover, Good, HSG D (1.0S, 1.1S)
0.139	96	Gravel surface, HSG C (1.0S, 3.0S)
0.063	96	Gravel surface, HSG D (1.0S)
0.124	98	Paved parking, HSG C (1.0S, 1.1S, 3.0S)
0.046	98	Paved parking, HSG D (1.0S, 1.1S)
0.400	98	Roofs, HSG C (1.0S, 1.1S)
0.394	98	Roofs, HSG D (1.0S, 1.1S)
3.529	70	Woods, Good, HSG C (1.0S, 1.1S, 2.0S, 3.0S)
5.947	77	Woods, Good, HSG D (1.0S, 1.1S, 3.0S)
13.458	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.108	HSG C	1.0S, 1.1S, 2.0S, 3.0S
8.350	HSG D	1.0S, 1.1S, 3.0S
0.000	Other	
13.458		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=1.14"
Flow Length=740' Tc=29.3 min CN=77 Runoff=6.95 cfs 0.895 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.56 cfs 0.296 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.24 cfs 0.028 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=0.87"
Flow Length=292' Tc=16.1 min CN=72 Runoff=0.63 cfs 0.067 af

Reach 1.1R: Avg. Flow Depth=0.11' Max Vel=0.44 fps Inflow=2.43 cfs 0.294 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=1.82 cfs 0.294 af

Pond 1.1P: Peak Elev=93.92' Storage=1,040 cf Inflow=2.56 cfs 0.296 af
Primary=2.43 cfs 0.294 af Secondary=0.00 cfs 0.000 af Outflow=2.43 cfs 0.294 af

Link SP-1: Inflow=8.42 cfs 1.190 af
Primary=8.42 cfs 1.190 af

Link SP-2: Inflow=0.24 cfs 0.028 af
Primary=0.24 cfs 0.028 af

Link SP-3: Inflow=0.63 cfs 0.067 af
Primary=0.63 cfs 0.067 af

Total Runoff Area = 13.458 ac Runoff Volume = 1.286 af Average Runoff Depth = 1.15"
92.84% Pervious = 12.494 ac 7.16% Impervious = 0.964 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=2.46"
Flow Length=740' Tc=29.3 min CN=77 Runoff=15.49 cfs 1.928 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.33 cfs 0.606 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.66 cfs 0.070 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.05"
Flow Length=292' Tc=16.1 min CN=72 Runoff=1.60 cfs 0.157 af

Reach 1.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.22 cfs 0.605 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=4.32 cfs 0.605 af

Pond 1.1P: Peak Elev=94.16' Storage=1,502 cf Inflow=5.33 cfs 0.606 af
Primary=5.22 cfs 0.605 af Secondary=0.00 cfs 0.000 af Outflow=5.22 cfs 0.605 af

Link SP-1: Inflow=19.39 cfs 2.533 af
Primary=19.39 cfs 2.533 af

Link SP-2: Inflow=0.66 cfs 0.070 af
Primary=0.66 cfs 0.070 af

Link SP-3: Inflow=1.60 cfs 0.157 af
Primary=1.60 cfs 0.157 af

Total Runoff Area = 13.458 ac Runoff Volume = 2.761 af Average Runoff Depth = 2.46"
92.84% Pervious = 12.494 ac 7.16% Impervious = 0.964 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=3.31"
Flow Length=740' Tc=29.3 min CN=77 Runoff=20.90 cfs 2.594 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=7.05 cfs 0.803 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.94 cfs 0.098 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.83"
Flow Length=292' Tc=16.1 min CN=72 Runoff=2.24 cfs 0.217 af

Reach 1.1R: Avg. Flow Depth=0.21' Max Vel=0.63 fps Inflow=6.32 cfs 0.802 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=5.75 cfs 0.802 af

Pond 1.1P: Peak Elev=94.42' Storage=2,183 cf Inflow=7.05 cfs 0.803 af
Primary=6.32 cfs 0.802 af Secondary=0.00 cfs 0.000 af Outflow=6.32 cfs 0.802 af

Link SP-1: Inflow=25.86 cfs 3.396 af
Primary=25.86 cfs 3.396 af

Link SP-2: Inflow=0.94 cfs 0.098 af
Primary=0.94 cfs 0.098 af

Link SP-3: Inflow=2.24 cfs 0.217 af
Primary=2.24 cfs 0.217 af

Total Runoff Area = 13.458 ac Runoff Volume = 3.712 af Average Runoff Depth = 3.31"
92.84% Pervious = 12.494 ac 7.16% Impervious = 0.964 ac

Summary for Subcatchment 1.0S:

Runoff = 20.90 cfs @ 12.40 hrs, Volume= 2.594 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,649	98	Paved parking, HSG C
1,243	98	Paved parking, HSG D
12,810	74	>75% Grass cover, Good, HSG C
65,319	80	>75% Grass cover, Good, HSG D
5,779	98	Roofs, HSG C
6,933	98	Roofs, HSG D
85,234	70	Woods, Good, HSG C
223,398	77	Woods, Good, HSG D
5,175	96	Gravel surface, HSG C
2,751	96	Gravel surface, HSG D
410,291	77	Weighted Average
394,687		96.20% Pervious Area
15,604		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0930	0.15		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.6	180	0.0550	1.17		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
29.3	740	Total			

Summary for Subcatchment 1.1S:

Runoff = 7.05 cfs @ 12.33 hrs, Volume= 0.803 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,275	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,695	74	>75% Grass cover, Good, HSG C
17,419	80	>75% Grass cover, Good, HSG D
11,644	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,088	70	Woods, Good, HSG C
33,453	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
116,561	80	Weighted Average
91,655		78.63% Pervious Area
24,906		21.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Summary for Subcatchment 2.0S:

Runoff = 0.94 cfs @ 12.26 hrs, Volume= 0.098 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,260	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
19,260	70	Weighted Average
19,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.8	110	0.0400	1.00		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
18.7	210	Total			

Summary for Subcatchment 3.0S:

Runoff = 2.24 cfs @ 12.22 hrs, Volume= 0.217 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,473	98	Paved parking, HSG C
0	98	Paved parking, HSG D
4,421	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
31,125	70	Woods, Good, HSG C
2,219	77	Woods, Good, HSG D
875	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
40,113	72	Weighted Average
38,640		96.33% Pervious Area
1,473		3.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Summary for Reach 1.1R:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.32 cfs @ 12.44 hrs, Volume= 0.802 af
Outflow = 5.75 cfs @ 12.60 hrs, Volume= 0.802 af, Atten= 9%, Lag= 9.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.63 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 42.6 min

Peak Storage= 4,419 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.49 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'



‡

Stage-Area-Storage for Reach 1.1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
89.00	0.0	0
89.01	0.3	149
89.02	0.6	305
89.03	1.0	467
89.04	1.3	636
89.05	1.7	812
89.06	2.1	995
89.07	2.4	1,185
89.08	2.8	1,381
89.09	3.3	1,584
89.10	3.7	1,795
89.11	4.1	2,011
89.12	4.6	2,235
89.13	5.1	2,465
89.14	5.6	2,702
89.15	6.1	2,946
89.16	6.6	3,197
89.17	7.1	3,455
89.18	7.7	3,719
89.19	8.2	3,990
89.20	8.8	4,268
89.21	9.4	4,553
89.22	10.0	4,844
89.23	10.6	5,142
89.24	11.2	5,448
89.25	11.9	5,759
89.26	12.5	6,078
89.27	13.2	6,403
89.28	13.9	6,736
89.29	14.6	7,075
89.30	15.3	7,420
89.31	16.0	7,773
89.32	16.8	8,132
89.33	17.5	8,499
89.34	18.3	8,872
89.35	19.1	9,251
89.36	19.9	9,638
89.37	20.7	10,031
89.38	21.5	10,431
89.39	22.3	10,838
89.40	23.2	11,252
89.41	24.1	11,672
89.42	24.9	12,100
89.43	25.8	12,534
89.44	26.8	12,975
89.45	27.7	13,422
89.46	28.6	13,877
89.47	29.6	14,338
89.48	30.5	14,806
89.49	31.5	15,281
89.50	32.5	15,763
89.51	33.5	16,251
89.52	34.5	16,746
89.53	35.6	17,248
89.54	36.6	17,757
89.55	37.7	18,272
89.56	38.8	18,795
89.57	39.8	19,324
89.58	40.9	19,860
89.59	42.1	20,402
89.60	43.2	20,952
89.61	44.3	21,508
89.62	45.5	22,071
89.63	46.7	22,641
89.64	47.9	23,218
89.65	49.1	23,801
89.66	50.3	24,392
89.67	51.5	24,989
89.68	52.8	25,592
89.69	54.0	26,203
89.70	55.3	26,821
89.71	56.6	27,445
89.72	57.9	28,076
89.73	59.2	28,713
89.74	60.5	29,358
89.75	61.9	30,009
89.76	63.2	30,668
89.77	64.6	31,332
89.78	66.0	32,004
89.79	67.4	32,683
89.80	68.8	33,368
89.81	70.2	34,060
89.82	71.7	34,759
89.83	73.1	35,465
89.84	74.6	36,177
89.85	76.1	36,896
89.86	77.6	37,622
89.87	79.1	38,355
89.88	80.6	39,095
89.89	82.1	39,841
89.90	83.7	40,595
89.91	85.3	41,354
89.92	86.8	42,121
89.93	88.4	42,895
89.94	90.1	43,675
89.95	91.7	44,462
89.96	93.3	45,256
89.97	95.0	46,057
89.98	96.6	46,865
89.99	98.3	47,679
90.00	**100.0**	**48,500**

Summary for Pond 1.1P:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 7.05 cfs @ 12.33 hrs, Volume= 0.803 af
Outflow = 6.32 cfs @ 12.44 hrs, Volume= 0.802 af, Atten= 10%, Lag= 6.9 min
Primary = 6.32 cfs @ 12.44 hrs, Volume= 0.802 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 94.42' @ 12.44 hrs Surf.Area= 3,015 sf Storage= 2,183 cf
Flood Elev= 95.01' Surf.Area= 4,798 sf Storage= 4,485 cf

Plug-Flow detention time= 6.8 min calculated for 0.802 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (837.9 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.70'	12,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.70	80	0.0	0	0
92.00	100	100.0	27	27
93.00	214	100.0	157	184
94.00	1,779	100.0	997	1,180
95.00	4,735	100.0	3,257	4,438
96.00	11,075	100.0	7,905	12,343

Device	Routing	Invert	Outlet Devices
#1	Primary	91.72'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.72' / 89.67' S= 0.0512 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	92.25'	**6.0" Vert. Controlling Orifice** C= 0.600
#3	Device 1	93.70'	**15.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	95.05'	**30.0' long x 10.0' breadth Roadway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.32 cfs @ 12.44 hrs HW=94.42' TW=89.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.32 cfs of 6.72 cfs potential flow)
  ├**2=Controlling Orifice** (Orifice Controls 1.31 cfs @ 6.67 fps)
  └**3=Grate** (Orifice Controls 5.01 cfs @ 4.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.70' TW=89.00' (Dynamic Tailwater)
└**4=Roadway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 1.1P:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
91.70	80	0
91.75	83	4
91.80	87	8
91.85	90	13
91.90	93	17
91.95	97	22
92.00	100	27
92.05	106	32
92.10	111	38
92.15	117	43
92.20	123	49
92.25	129	56
92.30	134	62
92.35	140	69
92.40	146	76
92.45	151	84
92.50	157	91
92.55	163	99
92.60	168	108
92.65	174	116
92.70	180	125
92.75	186	134
92.80	191	143
92.85	197	153
92.90	203	163
92.95	208	173
93.00	214	184
93.05	292	197
93.10	371	213
93.15	449	234
93.20	527	258
93.25	605	286
93.30	683	319
93.35	762	355
93.40	840	395
93.45	918	439
93.50	997	487
93.55	1,075	538
93.60	1,153	594
93.65	1,231	654
93.70	1,310	717
93.75	1,388	785
93.80	1,466	856
93.85	1,544	931
93.90	1,623	1,010
93.95	1,701	1,094
94.00	1,779	1,180
94.05	1,927	1,273
94.10	2,075	1,373
94.15	2,222	1,481
94.20	2,370	1,595
94.25	2,518	1,718
94.30	2,666	1,847
94.35	2,814	1,984
94.40	2,961	2,129
94.45	3,109	2,280
94.50	3,257	2,440
94.55	3,405	2,606
94.60	3,553	2,780
94.65	3,700	2,961
94.70	3,848	3,150
94.75	3,996	3,346
94.80	4,144	3,550
94.85	4,292	3,761
94.90	4,439	3,979
94.95	4,587	4,204
95.00	4,735	4,438
95.05	5,052	4,682
95.10	5,369	4,943
95.15	5,686	5,219
95.20	6,003	5,511
95.25	6,320	5,819
95.30	6,637	6,143
95.35	6,954	6,483
95.40	7,271	6,839
95.45	7,588	7,210
95.50	7,905	7,598
95.55	8,222	8,001
95.60	8,539	8,420
95.65	8,856	8,855
95.70	9,173	9,305
95.75	9,490	9,772
95.80	9,807	10,254
95.85	10,124	10,753
95.90	10,441	11,267
95.95	10,758	11,797
96.00	**11,075**	**12,343**

Summary for Link SP-1:

Inflow Area = 12.095 ac, 7.69% Impervious, Inflow Depth = 3.37" for 25-YR event
Inflow = 25.86 cfs @ 12.44 hrs, Volume= 3.396 af
Primary = 25.86 cfs @ 12.44 hrs, Volume= 3.396 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link SP-2:

Inflow Area = 0.442 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.94 cfs @ 12.26 hrs, Volume= 0.098 af
Primary = 0.94 cfs @ 12.26 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

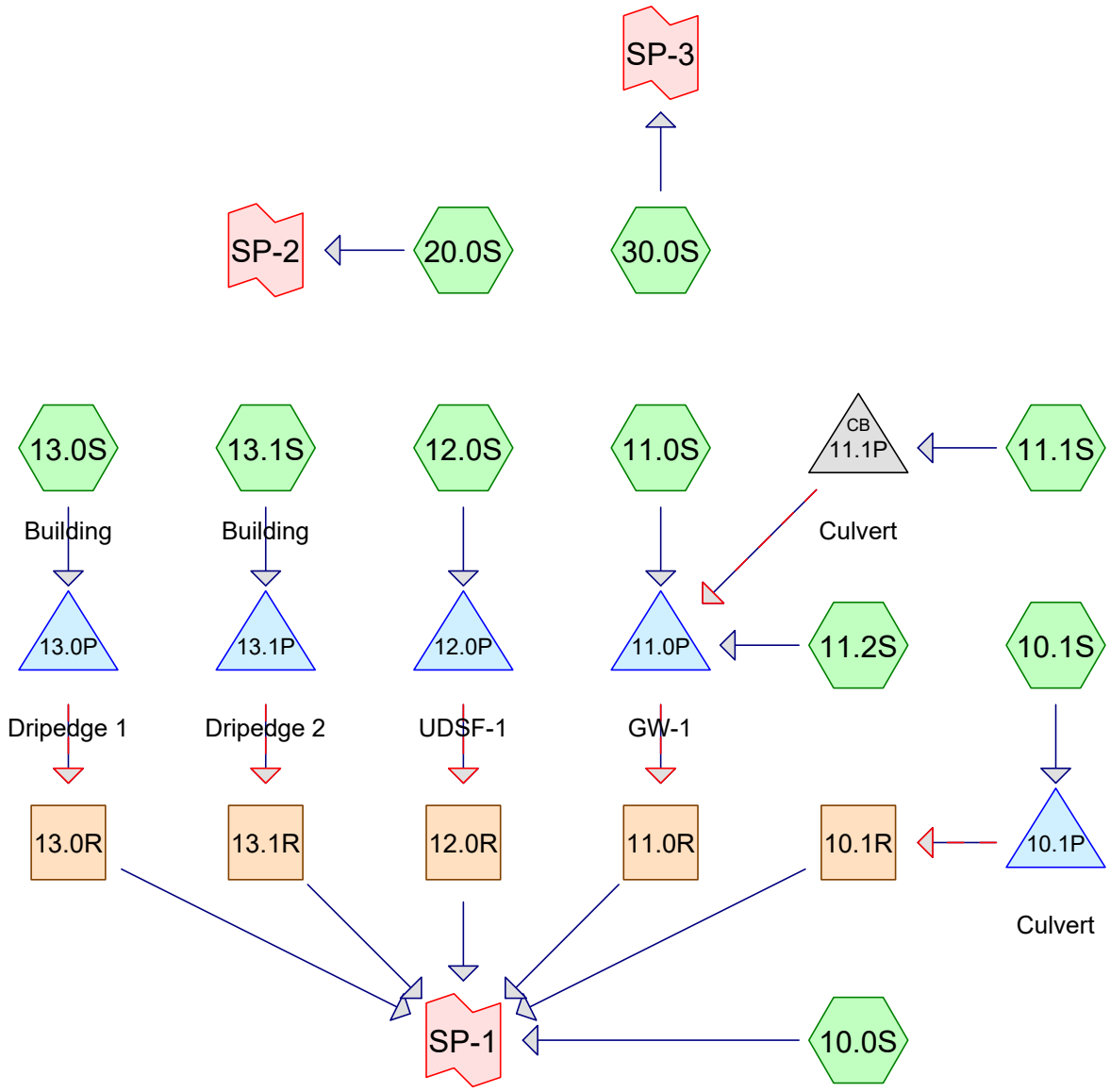
Summary for Link SP-3:

Inflow Area = 0.921 ac, 3.67% Impervious, Inflow Depth = 2.83" for 25-YR event
Inflow = 2.24 cfs @ 12.22 hrs, Volume= 0.217 af
Primary = 2.24 cfs @ 12.22 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Appendix 3B
POSTDEVELOPMENT

POST-DEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 18347 POST-DEVELOPMENT 2019-11-07
Prepared by Sebago Technics, Printed 11/11/2019
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.801	74	>75% Grass cover, Good, HSG C (10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 30.0S)
3.495	80	>75% Grass cover, Good, HSG D (10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 30.0S)
1.136	98	Paved parking, HSG C (10.1S, 11.0S, 11.2S, 12.0S)
0.810	98	Paved parking, HSG D (10.0S, 10.1S, 11.0S, 12.0S)
0.903	98	Roofs, HSG C (10.0S, 10.1S, 11.0S, 11.2S, 13.0S, 13.1S)
0.809	98	Roofs, HSG D (10.0S, 10.1S, 11.0S, 13.0S, 13.1S)
1.269	70	Woods, Good, HSG C (10.0S, 10.1S, 11.2S, 12.0S, 20.0S, 30.0S)
3.236	77	Woods, Good, HSG D (10.0S, 10.1S, 30.0S)
13.458	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.108	HSG C	10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, 13.1S, 20.0S, 30.0S
8.350	HSG D	10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 13.0S, 13.1S, 30.0S
0.000	Other	
13.458		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=1.26"
Flow Length=626' Tc=28.5 min CN=79 Runoff=3.80 cfs 0.477 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.52 cfs 0.290 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=2.26"
Flow Length=254' Tc=11.7 min CN=92 Runoff=4.15 cfs 0.362 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=1.08"
Flow Length=266' Tc=18.0 min CN=76 Runoff=0.46 cfs 0.048 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=1.39"
Flow Length=100' Tc=15.0 min CN=81 Runoff=0.76 cfs 0.072 af

Subcatchment12.0S: Runoff Area=56,194 sf 48.58% Impervious Runoff Depth=1.83"
Flow Length=436' Tc=17.3 min CN=87 Runoff=1.98 cfs 0.196 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.19 cfs 0.094 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.17 cfs 0.093 af

Subcatchment20.0S: Runoff Area=12,129 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.15 cfs 0.018 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=0.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=0.62 cfs 0.065 af

Reach 10.1R: Avg. Flow Depth=0.11' Max Vel=0.45 fps Inflow=2.52 cfs 0.290 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=1.95 cfs 0.290 af

Reach 11.0R: Avg. Flow Depth=0.06' Max Vel=0.19 fps Inflow=0.64 cfs 0.310 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.87 cfs Outflow=0.58 cfs 0.305 af

Reach 12.0R: Avg. Flow Depth=0.03' Max Vel=0.15 fps Inflow=0.48 cfs 0.160 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.08 cfs Outflow=0.25 cfs 0.153 af

Reach 13.0R: Avg. Flow Depth=0.03' Max Vel=0.17 fps Inflow=0.40 cfs 0.094 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.05 cfs Outflow=0.31 cfs 0.094 af

Reach 13.1R: Avg. Flow Depth=0.03' Max Vel=0.18 fps Inflow=0.33 cfs 0.093 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.88 cfs Outflow=0.32 cfs 0.093 af

Pond 10.1P: Culvert Peak Elev=91.00' Storage=0 cf Inflow=2.52 cfs 0.290 af
Primary=2.52 cfs 0.290 af Secondary=0.00 cfs 0.000 af Outflow=2.52 cfs 0.290 af

Pond 11.0P: GW-1 Peak Elev=82.65' Storage=11,986 cf Inflow=5.23 cfs 0.483 af
Primary=0.64 cfs 0.310 af Secondary=0.00 cfs 0.000 af Outflow=0.64 cfs 0.310 af

Pond 11.1P: Culvert Peak Elev=84.04' Inflow=0.46 cfs 0.048 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=0.46 cfs 0.048 af

Pond 12.0P: UDSF-1 Peak Elev=89.10' Storage=4,061 cf Inflow=1.98 cfs 0.196 af
Primary=0.48 cfs 0.160 af Secondary=0.00 cfs 0.000 af Outflow=0.48 cfs 0.160 af

Pond 13.0P: Dripedge 1 Peak Elev=100.10' Storage=969 cf Inflow=1.19 cfs 0.094 af
Primary=0.40 cfs 0.094 af Secondary=0.00 cfs 0.000 af Outflow=0.40 cfs 0.094 af

Pond 13.1P: Dripedge 2 Peak Elev=87.00' Storage=742 cf Inflow=1.17 cfs 0.093 af
Primary=0.33 cfs 0.093 af Secondary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.093 af

Link SP-1: Inflow=6.26 cfs 1.413 af
Primary=6.26 cfs 1.413 af

Link SP-2: Inflow=0.15 cfs 0.018 af
Primary=0.15 cfs 0.018 af

Link SP-3: Inflow=0.62 cfs 0.065 af
Primary=0.62 cfs 0.065 af

Total Runoff Area = 13.458 ac Runoff Volume = 1.717 af Average Runoff Depth = 1.53"
72.82% Pervious = 9.801 ac 27.18% Impervious = 3.658 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=2.63"
Flow Length=626' Tc=28.5 min CN=79 Runoff=8.10 cfs 0.995 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.24 cfs 0.596 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=3.89"
Flow Length=254' Tc=11.7 min CN=92 Runoff=6.97 cfs 0.625 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=2.37"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.05 cfs 0.106 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=2.81"
Flow Length=100' Tc=15.0 min CN=81 Runoff=1.55 cfs 0.146 af

Subcatchment12.0S: Runoff Area=56,194 sf 48.58% Impervious Runoff Depth=3.38"
Flow Length=436' Tc=17.3 min CN=87 Runoff=3.61 cfs 0.363 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.85 cfs 0.150 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.83 cfs 0.148 af

Subcatchment20.0S: Runoff Area=12,129 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.42 cfs 0.044 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.12"
Flow Length=292' Tc=16.1 min CN=73 Runoff=1.54 cfs 0.150 af

Reach 10.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.23 cfs 0.596 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=4.38 cfs 0.596 af

Reach 11.0R: Avg. Flow Depth=0.17' Max Vel=0.37 fps Inflow=4.39 cfs 0.701 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.87 cfs Outflow=3.87 cfs 0.696 af

Reach 12.0R: Avg. Flow Depth=0.09' Max Vel=0.30 fps Inflow=2.89 cfs 0.323 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.08 cfs Outflow=1.53 cfs 0.316 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.48 cfs 0.150 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.05 cfs Outflow=0.42 cfs 0.150 af

Reach 13.1R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.37 cfs 0.148 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.88 cfs Outflow=0.36 cfs 0.148 af

Pond 10.1P: Culvert Peak Elev=91.35' Storage=49 cf Inflow=5.24 cfs 0.596 af
Primary=5.23 cfs 0.596 af Secondary=0.00 cfs 0.000 af Outflow=5.23 cfs 0.596 af

Pond 11.0P: GW-1 Peak Elev=83.12' Storage=16,258 cf Inflow=9.34 cfs 0.877 af
Primary=4.39 cfs 0.701 af Secondary=0.00 cfs 0.000 af Outflow=4.39 cfs 0.701 af

Pond 11.1P: Culvert Peak Elev=84.23' Inflow=1.05 cfs 0.106 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.05 cfs 0.106 af

Pond 12.0P: UDSF-1 Peak Elev=89.37' Storage=4,904 cf Inflow=3.61 cfs 0.363 af
Primary=2.89 cfs 0.323 af Secondary=0.00 cfs 0.000 af Outflow=2.89 cfs 0.323 af

Pond 13.0P: Dripedge 1 Peak Elev=100.76' Storage=1,731 cf Inflow=1.85 cfs 0.150 af
Primary=0.48 cfs 0.150 af Secondary=0.00 cfs 0.000 af Outflow=0.48 cfs 0.150 af

Pond 13.1P: Dripedge 2 Peak Elev=87.85' Storage=1,574 cf Inflow=1.83 cfs 0.148 af
Primary=0.37 cfs 0.148 af Secondary=0.00 cfs 0.000 af Outflow=0.37 cfs 0.148 af

Link SP-1: Inflow=17.18 cfs 2.901 af
Primary=17.18 cfs 2.901 af

Link SP-2: Inflow=0.42 cfs 0.044 af
Primary=0.42 cfs 0.044 af

Link SP-3: Inflow=1.54 cfs 0.150 af
Primary=1.54 cfs 0.150 af

Total Runoff Area = 13.458 ac Runoff Volume = 3.324 af Average Runoff Depth = 2.96"
72.82% Pervious = 9.801 ac 27.18% Impervious = 3.658 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=3.50"
Flow Length=626' Tc=28.5 min CN=79 Runoff=10.80 cfs 1.325 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=6.92 cfs 0.789 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=4.87"
Flow Length=254' Tc=11.7 min CN=92 Runoff=8.62 cfs 0.782 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=3.21"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.42 cfs 0.144 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=3.70"
Flow Length=100' Tc=15.0 min CN=81 Runoff=2.04 cfs 0.192 af

Subcatchment12.0S: Runoff Area=56,194 sf 48.58% Impervious Runoff Depth=4.33"
Flow Length=436' Tc=17.3 min CN=87 Runoff=4.58 cfs 0.465 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.24 cfs 0.183 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.21 cfs 0.181 af

Subcatchment20.0S: Runoff Area=12,129 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.60 cfs 0.061 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=2.14 cfs 0.207 af

Reach 10.1R: Avg. Flow Depth=0.21' Max Vel=0.64 fps Inflow=6.90 cfs 0.789 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=5.92 cfs 0.789 af

Reach 11.0R: Avg. Flow Depth=0.21' Max Vel=0.42 fps Inflow=5.98 cfs 0.941 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.87 cfs Outflow=5.57 cfs 0.936 af

Reach 12.0R: Avg. Flow Depth=0.12' Max Vel=0.36 fps Inflow=4.14 cfs 0.425 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.08 cfs Outflow=2.46 cfs 0.418 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.20 fps Inflow=0.86 cfs 0.183 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.05 cfs Outflow=0.48 cfs 0.183 af

Reach 13.1R: Avg. Flow Depth=0.05' Max Vel=0.22 fps Inflow=0.89 cfs 0.181 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.88 cfs Outflow=0.56 cfs 0.181 af

Pond 10.1P: Culvert Peak Elev=91.81' Storage=137 cf Inflow=6.92 cfs 0.789 af
Primary=6.90 cfs 0.789 af Secondary=0.00 cfs 0.000 af Outflow=6.90 cfs 0.789 af

Pond 11.0P: GW-1 Peak Elev=83.42' Storage=19,185 cf Inflow=11.79 cfs 1.118 af
Primary=5.98 cfs 0.941 af Secondary=0.00 cfs 0.000 af Outflow=5.98 cfs 0.941 af

Pond 11.1P: Culvert Peak Elev=84.37' Inflow=1.42 cfs 0.144 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.42 cfs 0.144 af

Pond 12.0P: UDSF-1 Peak Elev=89.47' Storage=5,242 cf Inflow=4.58 cfs 0.465 af
Primary=4.14 cfs 0.425 af Secondary=0.00 cfs 0.000 af Outflow=4.14 cfs 0.425 af

Pond 13.0P: Dripedge 1 Peak Elev=101.01' Storage=2,064 cf Inflow=2.24 cfs 0.183 af
Primary=0.51 cfs 0.178 af Secondary=0.35 cfs 0.005 af Outflow=0.86 cfs 0.183 af

Pond 13.1P: Dripedge 2 Peak Elev=88.02' Storage=1,791 cf Inflow=2.21 cfs 0.181 af
Primary=0.37 cfs 0.172 af Secondary=0.52 cfs 0.008 af Outflow=0.89 cfs 0.181 af

Link SP-1: Inflow=24.66 cfs 3.831 af
Primary=24.66 cfs 3.831 af

Link SP-2: Inflow=0.60 cfs 0.061 af
Primary=0.60 cfs 0.061 af

Link SP-3: Inflow=2.14 cfs 0.207 af
Primary=2.14 cfs 0.207 af

Total Runoff Area = 13.458 ac Runoff Volume = 4.329 af Average Runoff Depth = 3.86"
72.82% Pervious = 9.801 ac 27.18% Impervious = 3.658 ac

Summary for Subcatchment 10.0S:

Runoff = 10.80 cfs @ 12.38 hrs, Volume= 1.325 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
1,470	98	Paved parking, HSG D
1,693	74	>75% Grass cover, Good, HSG C
83,115	80	>75% Grass cover, Good, HSG D
273	98	Roofs, HSG C
6,933	98	Roofs, HSG D
411	70	Woods, Good, HSG C
103,867	77	Woods, Good, HSG D
197,762	79	Weighted Average
189,086		95.61% Pervious Area
8,676		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0850	0.14		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	66	0.0300	0.87		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
28.5	626	Total			

Summary for Subcatchment 10.1S:

Runoff = 6.92 cfs @ 12.33 hrs, Volume= 0.789 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,274	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,713	74	>75% Grass cover, Good, HSG C
17,290	80	>75% Grass cover, Good, HSG D
11,653	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,039	70	Woods, Good, HSG C
31,568	77	Woods, Good, HSG D
114,524	80	Weighted Average
89,610		78.25% Pervious Area
24,914		21.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Summary for Subcatchment 11.0S:

Runoff = 8.62 cfs @ 12.16 hrs, Volume= 0.782 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
30,453	98	Paved parking, HSG C
19,414	98	Paved parking, HSG D
913	74	>75% Grass cover, Good, HSG C
27,299	80	>75% Grass cover, Good, HSG D
4,300	98	Roofs, HSG C
1,500	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
83,879	92	Weighted Average
28,212		33.63% Pervious Area
55,667		66.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	62	0.0150	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	67	0.0200	2.87		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
0.5	125	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
11.7	254	Total			

Summary for Subcatchment 11.1S:

Runoff = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,653	74	>75% Grass cover, Good, HSG C
7,754	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
23,407	76	Weighted Average
23,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0120	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.2	20	0.0120	1.64		**Shallow Concentrated Flow, B** Grassed Waterway Kv= 15.0 fps
0.6	146	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
18.0	266	Total			

Summary for Subcatchment 11.2S:

Runoff = 2.04 cfs @ 12.20 hrs, Volume= 0.192 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
3,092	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,185	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
5,497	98	Roofs, HSG C
0	98	Roofs, HSG D
3,390	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
27,164	81	Weighted Average
18,575		68.38% Pervious Area
8,589		31.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	50	0.0100	0.08		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
4.4	50	0.2600	0.19		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
15.0	100	Total			

Summary for Subcatchment 12.0S:

Runoff = 4.58 cfs @ 12.23 hrs, Volume= 0.465 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
13,655	98	Paved parking, HSG C
13,643	98	Paved parking, HSG D
14,137	74	>75% Grass cover, Good, HSG C
12,539	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
2,220	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
56,194	87	Weighted Average
28,896		51.42% Pervious Area
27,298		48.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0150	0.11		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	114	0.0500	4.54		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
1.1	222	0.0050	3.47	2.73	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
17.3	436	Total			

Summary for Subcatchment 13.0S: Building

Runoff = 2.24 cfs @ 12.08 hrs, Volume= 0.183 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
9,791	98	Roofs, HSG C
7,413	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
17,204	98	Weighted Average
17,204		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 13.1S: Building

Runoff = 2.21 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
7,807	98	Roofs, HSG C
9,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
16,974	98	Weighted Average
16,974		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 20.0S:

Runoff = 0.60 cfs @ 12.26 hrs, Volume= 0.061 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
12,129	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
12,129	70	Weighted Average
12,129		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	100	0.0300	0.09		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 30.0S:

Runoff = 2.14 cfs @ 12.22 hrs, Volume= 0.207 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
8,150	74	>75% Grass cover, Good, HSG C
4,260	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,072	70	Woods, Good, HSG C
5,523	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
37,005	73	Weighted Average
37,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Summary for Reach 10.1R:

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.90 cfs @ 12.35 hrs, Volume= 0.789 af
Outflow = 5.92 cfs @ 12.48 hrs, Volume= 0.789 af, Atten= 14%, Lag= 8.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.64 fps, Min. Travel Time= 12.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 43.6 min

Peak Storage= 4,508 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.49 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'



‡

Stage-Area-Storage for Reach 10.1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
89.00	0.0	0
89.01	0.3	149
89.02	0.6	305
89.03	1.0	467
89.04	1.3	636
89.05	1.7	812
89.06	2.1	995
89.07	2.4	1,185
89.08	2.8	1,381
89.09	3.3	1,584
89.10	3.7	1,795
89.11	4.1	2,011
89.12	4.6	2,235
89.13	5.1	2,465
89.14	5.6	2,702
89.15	6.1	2,946
89.16	6.6	3,197
89.17	7.1	3,455
89.18	7.7	3,719
89.19	8.2	3,990
89.20	8.8	4,268
89.21	9.4	4,553
89.22	10.0	4,844
89.23	10.6	5,142
89.24	11.2	5,448
89.25	11.9	5,759
89.26	12.5	6,078
89.27	13.2	6,403
89.28	13.9	6,736
89.29	14.6	7,075
89.30	15.3	7,420
89.31	16.0	7,773
89.32	16.8	8,132
89.33	17.5	8,499
89.34	18.3	8,872
89.35	19.1	9,251
89.36	19.9	9,638
89.37	20.7	10,031
89.38	21.5	10,431
89.39	22.3	10,838
89.40	23.2	11,252
89.41	24.1	11,672
89.42	24.9	12,100
89.43	25.8	12,534
89.44	26.8	12,975
89.45	27.7	13,422
89.46	28.6	13,877
89.47	29.6	14,338
89.48	30.5	14,806
89.49	31.5	15,281
89.50	32.5	15,763
89.51	33.5	16,251
89.52	34.5	16,746
89.53	35.6	17,248
89.54	36.6	17,757
89.55	37.7	18,272
89.56	38.8	18,795
89.57	39.8	19,324
89.58	40.9	19,860
89.59	42.1	20,402
89.60	43.2	20,952
89.61	44.3	21,508
89.62	45.5	22,071
89.63	46.7	22,641
89.64	47.9	23,218
89.65	49.1	23,801
89.66	50.3	24,392
89.67	51.5	24,989
89.68	52.8	25,592
89.69	54.0	26,203
89.70	55.3	26,821
89.71	56.6	27,445
89.72	57.9	28,076
89.73	59.2	28,713
89.74	60.5	29,358
89.75	61.9	30,009
89.76	63.2	30,668
89.77	64.6	31,332
89.78	66.0	32,004
89.79	67.4	32,683
89.80	68.8	33,368
89.81	70.2	34,060
89.82	71.7	34,759
89.83	73.1	35,465
89.84	74.6	36,177
89.85	76.1	36,896
89.86	77.6	37,622
89.87	79.1	38,355
89.88	80.6	39,095
89.89	82.1	39,841
89.90	83.7	40,595
89.91	85.3	41,354
89.92	86.8	42,121
89.93	88.4	42,895
89.94	90.1	43,675
89.95	91.7	44,462
89.96	93.3	45,256
89.97	95.0	46,057
89.98	96.6	46,865
89.99	98.3	47,679
90.00	**100.0**	**48,500**

Summary for Reach 11.0R:

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth > 3.66" for 25-YR event
Inflow = 5.98 cfs @ 12.44 hrs, Volume= 0.941 af
Outflow = 5.57 cfs @ 12.62 hrs, Volume= 0.936 af, Atten= 7%, Lag= 11.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.42 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 39.7 min

Peak Storage= 3,842 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 121.87 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 290.0' Slope= 0.0086 '/'
Inlet Invert= 81.00', Outlet Invert= 78.50'



‡

Stage-Area-Storage for Reach 11.0R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
81.00	0.0	0
81.01	0.5	147
81.02	1.0	298
81.03	1.6	453
81.04	2.1	612
81.05	2.7	776
81.06	3.3	943
81.07	3.8	1,114
81.08	4.4	1,290
81.09	5.1	1,469
81.10	5.7	1,653
81.11	6.3	1,841
81.12	7.0	2,032
81.13	7.7	2,228
81.14	8.4	2,428
81.15	9.1	2,632
81.16	9.8	2,840
81.17	10.5	3,052
81.18	11.3	3,268
81.19	12.0	3,488
81.20	12.8	3,712
81.21	13.6	3,940
81.22	14.4	4,173
81.23	15.2	4,409
81.24	16.0	4,649
81.25	16.9	4,894
81.26	17.7	5,142
81.27	18.6	5,395
81.28	19.5	5,652
81.29	20.4	5,912
81.30	21.3	6,177
81.31	22.2	6,446
81.32	23.2	6,719
81.33	24.1	6,996
81.34	25.1	7,277
81.35	26.1	7,562
81.36	27.1	7,851
81.37	28.1	8,144
81.38	29.1	8,441
81.39	30.1	8,743
81.40	31.2	9,048
81.41	32.3	9,357
81.42	33.3	9,671
81.43	34.4	9,988
81.44	35.6	10,310
81.45	36.7	10,636
81.46	37.8	10,965
81.47	39.0	11,299
81.48	40.1	11,637
81.49	41.3	11,979
81.50	42.5	12,325
81.51	43.7	12,675
81.52	44.9	13,029
81.53	46.2	13,387
81.54	47.4	13,749
81.55	48.7	14,116
81.56	50.0	14,486
81.57	51.2	14,860
81.58	52.5	15,239
81.59	53.9	15,621
81.60	55.2	16,008
81.61	56.5	16,399
81.62	57.9	16,793
81.63	59.3	17,192
81.64	60.7	17,595
81.65	62.1	18,002
81.66	63.5	18,413
81.67	64.9	18,828
81.68	66.4	19,247
81.69	67.8	19,670
81.70	69.3	20,097
81.71	70.8	20,528
81.72	72.3	20,964
81.73	73.8	21,403
81.74	75.3	21,846
81.75	76.9	22,294
81.76	78.4	22,745
81.77	80.0	23,201
81.78	81.6	23,661
81.79	83.2	24,124
81.80	84.8	24,592
81.81	86.4	25,064
81.82	88.1	25,540
81.83	89.7	26,020
81.84	91.4	26,504
81.85	93.1	26,992
81.86	94.8	27,484
81.87	96.5	27,980
81.88	98.2	28,480
81.89	99.9	28,985
81.90	101.7	29,493
81.91	103.5	30,005
81.92	105.2	30,522
81.93	107.0	31,042
81.94	108.9	31,567
81.95	110.7	32,096
81.96	112.5	32,628
81.97	114.4	33,165
81.98	116.2	33,706
81.99	118.1	34,251
82.00	**120.0**	**34,800**

Summary for Reach 12.0R:

Inflow Area = 1.290 ac, 48.58% Impervious, Inflow Depth > 3.95" for 25-YR event
Inflow = 4.14 cfs @ 12.31 hrs, Volume= 0.425 af
Outflow = 2.46 cfs @ 12.59 hrs, Volume= 0.418 af, Atten= 41%, Lag= 17.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.36 fps, Min. Travel Time= 25.5 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 82.9 min

Peak Storage= 3,765 cf @ 12.59 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 143.08 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 547.0' Slope= 0.0119 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'



‡

Stage-Area-Storage for Reach 12.0R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
85.00	0.0	0
85.01	0.5	277
85.02	1.0	562
85.03	1.6	855
85.04	2.1	1,155
85.05	2.7	1,463
85.06	3.3	1,779
85.07	3.8	2,102
85.08	4.4	2,433
85.09	5.1	2,772
85.10	5.7	3,118
85.11	6.3	3,472
85.12	7.0	3,833
85.13	7.7	4,203
85.14	8.4	4,579
85.15	9.1	4,964
85.16	9.8	5,356
85.17	10.5	5,756
85.18	11.3	6,164
85.19	12.0	6,579
85.20	12.8	7,002
85.21	13.6	7,432
85.22	14.4	7,870
85.23	15.2	8,316
85.24	16.0	8,770
85.25	16.9	9,231
85.26	17.7	9,699
85.27	18.6	10,176
85.28	19.5	10,660
85.29	20.4	11,152
85.30	21.3	11,651
85.31	22.2	12,158
85.32	23.2	12,673
85.33	24.1	13,195
85.34	25.1	13,725
85.35	26.1	14,263
85.36	27.1	14,808
85.37	28.1	15,361
85.38	29.1	15,922
85.39	30.1	16,490
85.40	31.2	17,066
85.41	32.3	17,650
85.42	33.3	18,241
85.43	34.4	18,840
85.44	35.6	19,447
85.45	36.7	20,061
85.46	37.8	20,683
85.47	39.0	21,313
85.48	40.1	21,950
85.49	41.3	22,595
85.50	42.5	23,248
85.51	43.7	23,908
85.52	44.9	24,576
85.53	46.2	25,251
85.54	47.4	25,934
85.55	48.7	26,625
85.56	50.0	27,324
85.57	51.2	28,030
85.58	52.5	28,744
85.59	53.9	29,465
85.60	55.2	30,194
85.61	56.5	30,931
85.62	57.9	31,676
85.63	59.3	32,428
85.64	60.7	33,188
85.65	62.1	33,955
85.66	63.5	34,730
85.67	64.9	35,513
85.68	66.4	36,303
85.69	67.8	37,101
85.70	69.3	37,907
85.71	70.8	38,720
85.72	72.3	39,542
85.73	73.8	40,370
85.74	75.3	41,207
85.75	76.9	42,051
85.76	78.4	42,902
85.77	80.0	43,762
85.78	81.6	44,629
85.79	83.2	45,503
85.80	84.8	46,386
85.81	86.4	47,276
85.82	88.1	48,173
85.83	89.7	49,078
85.84	91.4	49,991
85.85	93.1	50,912
85.86	94.8	51,840
85.87	96.5	52,776
85.88	98.2	53,720
85.89	99.9	54,671
85.90	101.7	55,630
85.91	103.5	56,596
85.92	105.2	57,571
85.93	107.0	58,553
85.94	108.9	59,542
85.95	110.7	60,539
85.96	112.5	61,544
85.97	114.4	62,557
85.98	116.2	63,577
85.99	118.1	64,605
86.00	**120.0**	**65,640**

Summary for Reach 13.0R:

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.86 cfs @ 12.31 hrs, Volume= 0.183 af
Outflow = 0.48 cfs @ 12.85 hrs, Volume= 0.183 af, Atten= 44%, Lag= 32.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.20 fps, Min. Travel Time= 43.2 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 94.8 min

Peak Storage= 1,253 cf @ 12.85 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 146.05 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 525.0' Slope= 0.0124 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'



‡

Stage-Area-Storage for Reach 13.0R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
85.00	0.0	0
85.01	0.5	266
85.02	1.0	540
85.03	1.6	821
85.04	2.1	1,109
85.05	2.7	1,404
85.06	3.3	1,707
85.07	3.8	2,018
85.08	4.4	2,335
85.09	5.1	2,660
85.10	5.7	2,993
85.11	6.3	3,332
85.12	7.0	3,679
85.13	7.7	4,034
85.14	8.4	4,395
85.15	9.1	4,764
85.16	9.8	5,141
85.17	10.5	5,525
85.18	11.3	5,916
85.19	12.0	6,314
85.20	12.8	6,720
85.21	13.6	7,133
85.22	14.4	7,554
85.23	15.2	7,982
85.24	16.0	8,417
85.25	16.9	8,859
85.26	17.7	9,309
85.27	18.6	9,767
85.28	19.5	10,231
85.29	20.4	10,703
85.30	21.3	11,183
85.31	22.2	11,669
85.32	23.2	12,163
85.33	24.1	12,665
85.34	25.1	13,173
85.35	26.1	13,689
85.36	27.1	14,213
85.37	28.1	14,744
85.38	29.1	15,282
85.39	30.1	15,827
85.40	31.2	16,380
85.41	32.3	16,940
85.42	33.3	17,508
85.43	34.4	18,083
85.44	35.6	18,665
85.45	36.7	19,254
85.46	37.8	19,851
85.47	39.0	20,456
85.48	40.1	21,067
85.49	41.3	21,686
85.50	42.5	22,313
85.51	43.7	22,946
85.52	44.9	23,587
85.53	46.2	24,236
85.54	47.4	24,891
85.55	48.7	25,554
85.56	50.0	26,225
85.57	51.2	26,903
85.58	52.5	27,588
85.59	53.9	28,280
85.60	55.2	28,980
85.61	56.5	29,687
85.62	57.9	30,402
85.63	59.3	31,124
85.64	60.7	31,853
85.65	62.1	32,589
85.66	63.5	33,333
85.67	64.9	34,085
85.68	66.4	34,843
85.69	67.8	35,609
85.70	69.3	36,383
85.71	70.8	37,163
85.72	72.3	37,951
85.73	73.8	38,747
85.74	75.3	39,549
85.75	76.9	40,359
85.76	78.4	41,177
85.77	80.0	42,002
85.78	81.6	42,834
85.79	83.2	43,673
85.80	84.8	44,520
85.81	86.4	45,374
85.82	88.1	46,236
85.83	89.7	47,105
85.84	91.4	47,981
85.85	93.1	48,864
85.86	94.8	49,755
85.87	96.5	50,654
85.88	98.2	51,559
85.89	99.9	52,472
85.90	101.7	53,393
85.91	103.5	54,320
85.92	105.2	55,255
85.93	107.0	56,198
85.94	108.9	57,147
85.95	110.7	58,104
85.96	112.5	59,069
85.97	114.4	60,041
85.98	116.2	61,020
85.99	118.1	62,006
86.00	**120.0**	**63,000**

Summary for Reach 13.1R:

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.89 cfs @ 12.29 hrs, Volume= 0.181 af
Outflow = 0.56 cfs @ 12.47 hrs, Volume= 0.181 af, Atten= 37%, Lag= 11.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.22 fps, Min. Travel Time= 23.5 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 52.8 min

Peak Storage= 791 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 156.88 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 315.0' Slope= 0.0143 '/'
Inlet Invert= 83.00', Outlet Invert= 78.50'



‡

Stage-Area-Storage for Reach 13.1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
83.00	0.0	0
83.01	0.5	160
83.02	1.0	324
83.03	1.6	492
83.04	2.1	665
83.05	2.7	843
83.06	3.3	1,024
83.07	3.8	1,211
83.08	4.4	1,401
83.09	5.1	1,596
83.10	5.7	1,796
83.11	6.3	1,999
83.12	7.0	2,208
83.13	7.7	2,420
83.14	8.4	2,637
83.15	9.1	2,859
83.16	9.8	3,084
83.17	10.5	3,315
83.18	11.3	3,549
83.19	12.0	3,789
83.20	12.8	4,032
83.21	13.6	4,280
83.22	14.4	4,532
83.23	15.2	4,789
83.24	16.0	5,050
83.25	16.9	5,316
83.26	17.7	5,586
83.27	18.6	5,860
83.28	19.5	6,139
83.29	20.4	6,422
83.30	21.3	6,710
83.31	22.2	7,002
83.32	23.2	7,298
83.33	24.1	7,599
83.34	25.1	7,904
83.35	26.1	8,214
83.36	27.1	8,528
83.37	28.1	8,846
83.38	29.1	9,169
83.39	30.1	9,496
83.40	31.2	9,828
83.41	32.3	10,164
83.42	33.3	10,505
83.43	34.4	10,850
83.44	35.6	11,199
83.45	36.7	11,553
83.46	37.8	11,911
83.47	39.0	12,273
83.48	40.1	12,640
83.49	41.3	13,012
83.50	42.5	13,388
83.51	43.7	13,768
83.52	44.9	14,152
83.53	46.2	14,541
83.54	47.4	14,935
83.55	48.7	15,333
83.56	50.0	15,735
83.57	51.2	16,142
83.58	52.5	16,553
83.59	53.9	16,968
83.60	55.2	17,388
83.61	56.5	17,812
83.62	57.9	18,241
83.63	59.3	18,674
83.64	60.7	19,112
83.65	62.1	19,554
83.66	63.5	20,000
83.67	64.9	20,451
83.68	66.4	20,906
83.69	67.8	21,366
83.70	69.3	21,830
83.71	70.8	22,298
83.72	72.3	22,771
83.73	73.8	23,248
83.74	75.3	23,730
83.75	76.9	24,216
83.76	78.4	24,706
83.77	80.0	25,201
83.78	81.6	25,700
83.79	83.2	26,204
83.80	84.8	26,712
83.81	86.4	27,225
83.82	88.1	27,741
83.83	89.7	28,263
83.84	91.4	28,788
83.85	93.1	29,319
83.86	94.8	29,853
83.87	96.5	30,392
83.88	98.2	30,936
83.89	99.9	31,483
83.90	101.7	32,036
83.91	103.5	32,592
83.92	105.2	33,153
83.93	107.0	33,719
83.94	108.9	34,288
83.95	110.7	34,863
83.96	112.5	35,441
83.97	114.4	36,024
83.98	116.2	36,612
83.99	118.1	37,204
84.00	**120.0**	**37,800**

Summary for Pond 10.1P: Culvert

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.92 cfs @ 12.33 hrs, Volume= 0.789 af
Outflow = 6.90 cfs @ 12.35 hrs, Volume= 0.789 af, Atten= 0%, Lag= 1.3 min
Primary = 6.90 cfs @ 12.35 hrs, Volume= 0.789 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.81' @ 12.35 hrs Surf.Area= 224 sf Storage= 137 cf
Flood Elev= 93.00' Surf.Area= 500 sf Storage= 558 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (832.2 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.00'	3,993 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.00	115	0	0
92.00	250	183	183
93.00	500	375	558
94.00	2,580	1,540	2,098
94.50	5,000	1,895	3,993

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**18.0" Round 18" PIPE** L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 88.00' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	93.00'	**40.0' long x 2.0' breadth Overflow at Driveway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=6.90 cfs @ 12.35 hrs HW=91.81' TW=89.19' (Dynamic Tailwater)
↑—**1=18" PIPE** (Inlet Controls 6.90 cfs @ 3.91 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.00' TW=89.00' (Dynamic Tailwater)
↑—**2=Overflow at Driveway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 10.1P: Culvert

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
91.00	115	0
91.05	122	6
91.10	128	12
91.15	135	19
91.20	142	26
91.25	149	33
91.30	155	41
91.35	162	49
91.40	169	57
91.45	176	65
91.50	183	74
91.55	189	84
91.60	196	93
91.65	203	103
91.70	210	114
91.75	216	124
91.80	223	135
91.85	230	147
91.90	237	158
91.95	243	170
92.00	250	183
92.05	262	195
92.10	275	209
92.15	288	223
92.20	300	238
92.25	313	253
92.30	325	269
92.35	337	285
92.40	350	303
92.45	363	320
92.50	375	339
92.55	387	358
92.60	400	377
92.65	413	398
92.70	425	419
92.75	438	440
92.80	450	462
92.85	462	485
92.90	475	509
92.95	488	533
93.00	500	558
93.05	604	585
93.10	708	618
93.15	812	656
93.20	916	699
93.25	1,020	748
93.30	1,124	801
93.35	1,228	860
93.40	1,332	924
93.45	1,436	993
93.50	1,540	1,068
93.55	1,644	1,147
93.60	1,748	1,232
93.65	1,852	1,322
93.70	1,956	1,417
93.75	2,060	1,518
93.80	2,164	1,623
93.85	2,268	1,734
93.90	2,372	1,850
93.95	2,476	1,971
94.00	2,580	2,098
94.05	2,822	2,233
94.10	3,064	2,380
94.15	3,306	2,539
94.20	3,548	2,710
94.25	3,790	2,894
94.30	4,032	3,089
94.35	4,274	3,297
94.40	4,516	3,517
94.45	4,758	3,749
94.50	**5,000**	**3,993**

Summary for Pond 11.0P: GW-1

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth = 4.35" for 25-YR event
Inflow = 11.79 cfs @ 12.17 hrs, Volume= 1.118 af
Outflow = 5.98 cfs @ 12.44 hrs, Volume= 0.941 af, Atten= 49%, Lag= 16.1 min
Primary = 5.98 cfs @ 12.44 hrs, Volume= 0.941 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 83.42' @ 12.44 hrs Surf.Area= 9,949 sf Storage= 19,185 cf
Flood Elev= 84.80' Surf.Area= 10,850 sf Storage= 25,208 cf

Plug-Flow detention time= 210.1 min calculated for 0.941 af (84% of inflow)
Center-of-Mass det. time= 143.5 min (940.3 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	81.00'	25,208 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.00	6,175	0	0
82.00	7,400	6,788	6,788
83.00	9,295	8,348	15,135
84.00	10,850	10,073	25,208

Device	Routing	Invert	Outlet Devices
#1	Primary	80.67'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.67' / 80.50' S= 0.0085 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	80.67'	**1.6" Vert. Orifice** C= 0.600
#3	Device 1	82.50'	**36.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#4	Secondary	83.50'	**25.0' long x 6.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.98 cfs @ 12.44 hrs HW=83.42' TW=81.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.98 cfs of 8.62 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.10 cfs @ 7.19 fps)
  └**3=WQV Orifice** (Orifice Controls 5.88 cfs @ 3.92 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=81.00' TW=81.00' (Dynamic Tailwater)
└**4=Emergency Spillway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 11.0P: GW-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
81.00	6,175	0
81.05	6,236	310
81.10	6,297	624
81.15	6,359	940
81.20	6,420	1,260
81.25	6,481	1,582
81.30	6,542	1,908
81.35	6,604	2,236
81.40	6,665	2,568
81.45	6,726	2,903
81.50	6,788	3,241
81.55	6,849	3,582
81.60	6,910	3,925
81.65	6,971	4,273
81.70	7,033	4,623
81.75	7,094	4,976
81.80	7,155	5,332
81.85	7,216	5,691
81.90	7,278	6,054
81.95	7,339	6,419
82.00	7,400	6,788
82.05	7,495	7,160
82.10	7,589	7,537
82.15	7,684	7,919
82.20	7,779	8,305
82.25	7,874	8,697
82.30	7,968	9,093
82.35	8,063	9,494
82.40	8,158	9,899
82.45	8,253	10,309
82.50	8,348	10,724
82.55	8,442	11,144
82.60	8,537	11,569
82.65	8,632	11,998
82.70	8,727	12,432
82.75	8,821	12,870
82.80	8,916	13,314
82.85	9,011	13,762
82.90	9,106	14,215
82.95	9,200	14,673
83.00	9,295	15,135
83.05	9,373	15,602
83.10	9,450	16,072
83.15	9,528	16,547
83.20	9,606	17,025
83.25	9,684	17,507
83.30	9,761	17,993
83.35	9,839	18,483
83.40	9,917	18,977
83.45	9,995	19,475
83.50	10,073	19,977
83.55	10,150	20,482
83.60	10,228	20,992
83.65	10,306	21,505
83.70	10,384	22,022
83.75	10,461	22,544
83.80	10,539	23,069
83.85	10,617	23,597
83.90	10,695	24,130
83.95	10,772	24,667
84.00	**10,850**	**25,208**
84.05	10,850	25,208
84.10	10,850	25,208
84.15	10,850	25,208
84.20	10,850	25,208
84.25	10,850	25,208
84.30	10,850	25,208
84.35	10,850	25,208
84.40	10,850	25,208
84.45	10,850	25,208
84.50	10,850	25,208
84.55	10,850	25,208
84.60	10,850	25,208
84.65	10,850	25,208
84.70	10,850	25,208
84.75	10,850	25,208
84.80	10,850	25,208

Summary for Pond 11.1P: Culvert

Inflow Area = 0.537 ac, 0.00% Impervious, Inflow Depth = 3.21" for 25-YR event
Inflow = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af
Outflow = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 84.37' @ 12.27 hrs
Flood Elev= 87.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	83.70'	**12.0" Round 12" PIPE** L= 146.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 83.70' / 82.50' S= 0.0082 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 12.25 hrs HW=84.37' TW=83.28' (Dynamic Tailwater)
1=12" PIPE (Outlet Controls 1.42 cfs @ 3.60 fps)

Stage-Area-Storage for Pond 11.1P: Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
83.70	**0**	86.30	0
83.75	0	86.35	0
83.80	0	86.40	0
83.85	0	86.45	0
83.90	0	86.50	0
83.95	0	86.55	0
84.00	0	86.60	0
84.05	0	86.65	0
84.10	0	86.70	0
84.15	0	86.75	0
84.20	0	86.80	0
84.25	0	86.85	0
84.30	0	86.90	0
84.35	0	86.95	0
84.40	0	87.00	0
84.45	0		
84.50	0		
84.55	0		
84.60	0		
84.65	0		
84.70	0		
84.75	0		
84.80	0		
84.85	0		
84.90	0		
84.95	0		
85.00	0		
85.05	0		
85.10	0		
85.15	0		
85.20	0		
85.25	0		
85.30	0		
85.35	0		
85.40	0		
85.45	0		
85.50	0		
85.55	0		
85.60	0		
85.65	0		
85.70	0		
85.75	0		
85.80	0		
85.85	0		
85.90	0		
85.95	0		
86.00	0		
86.05	0		
86.10	0		
86.15	0		
86.20	0		
86.25	0		

Summary for Pond 12.0P: UDSF-1

Inflow Area = 1.290 ac, 48.58% Impervious, Inflow Depth = 4.33" for 25-YR event
Inflow = 4.58 cfs @ 12.23 hrs, Volume= 0.465 af
Outflow = 4.14 cfs @ 12.31 hrs, Volume= 0.425 af, Atten= 10%, Lag= 4.7 min
Primary = 4.14 cfs @ 12.31 hrs, Volume= 0.425 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 89.47' @ 12.31 hrs Surf.Area= 3,386 sf Storage= 5,242 cf
Flood Elev= 90.80' Surf.Area= 4,200 sf Storage= 9,144 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 144.1 min (950.4 - 806.3)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	9,144 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
87.50	1,955	0	0
88.00	2,304	1,065	1,065
89.00	3,050	2,677	3,742
90.00	3,770	3,410	7,152
90.50	4,200	1,993	9,144

Device	Routing	Invert	Outlet Devices
#1	Primary	85.30'	**12.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 84.30' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	85.30'	**1.0" Vert. Controlling Orifice** C= 0.600
#3	Device 2	85.30'	**4.0" Round UD Header** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 85.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 1	89.00'	**48.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#5	Secondary	89.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.14 cfs @ 12.31 hrs HW=89.47' TW=85.08' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.14 cfs of 5.72 cfs potential flow)
  - **2=Controlling Orifice** (Orifice Controls 0.05 cfs @ 9.78 fps)
    - **3=UD Header** (Passes 0.05 cfs of 0.36 cfs potential flow)
  - **4=WQV Orifice** (Orifice Controls 4.09 cfs @ 2.19 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=87.50' TW=85.00' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 12.0P: UDSF-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
87.50	1,955	0
87.55	1,990	99
87.60	2,025	199
87.65	2,060	301
87.70	2,095	405
87.75	2,130	511
87.80	2,164	618
87.85	2,199	727
87.90	2,234	838
87.95	2,269	950
88.00	2,304	1,065
88.05	2,341	1,181
88.10	2,379	1,299
88.15	2,416	1,419
88.20	2,453	1,540
88.25	2,491	1,664
88.30	2,528	1,790
88.35	2,565	1,917
88.40	2,602	2,046
88.45	2,640	2,177
88.50	2,677	2,310
88.55	2,714	2,445
88.60	2,752	2,581
88.65	2,789	2,720
88.70	2,826	2,860
88.75	2,864	3,003
88.80	2,901	3,147
88.85	2,938	3,293
88.90	2,975	3,440
88.95	3,013	3,590
89.00	3,050	3,742
89.05	3,086	3,895
89.10	3,122	4,050
89.15	3,158	4,207
89.20	3,194	4,366
89.25	3,230	4,527
89.30	3,266	4,689
89.35	3,302	4,853
89.40	3,338	5,019
89.45	3,374	5,187
89.50	3,410	5,357
89.55	3,446	5,528
89.60	3,482	5,701
89.65	3,518	5,876
89.70	3,554	6,053
89.75	3,590	6,232
89.80	3,626	6,412
89.85	3,662	6,594
89.90	3,698	6,778
89.95	3,734	6,964
90.00	3,770	7,152
90.05	3,813	7,341
90.10	3,856	7,533
90.15	3,899	7,727
90.20	3,942	7,923
90.25	3,985	8,121
90.30	4,028	8,321
90.35	4,071	8,524
90.40	4,114	8,729
90.45	4,157	8,935
90.50	**4,200**	**9,144**
90.55	4,200	9,144
90.60	4,200	9,144
90.65	4,200	9,144
90.70	4,200	9,144
90.75	4,200	9,144
90.80	4,200	9,144

Summary for Pond 13.0P: Dripedge 1

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.24 cfs @ 12.08 hrs, Volume= 0.183 af
Outflow = 0.86 cfs @ 12.31 hrs, Volume= 0.183 af, Atten= 62%, Lag= 13.6 min
Primary = 0.51 cfs @ 12.31 hrs, Volume= 0.178 af
Secondary = 0.35 cfs @ 12.31 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 101.01' @ 12.31 hrs Surf.Area= 3,843 sf Storage= 2,064 cf
Flood Elev= 101.20' Surf.Area= 10,000 sf Storage= 2,660 cf

Plug-Flow detention time= 40.4 min calculated for 0.183 af (100% of inflow)
Center-of-Mass det. time= 40.1 min (785.7 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	2,660 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	2,850	0.0	0	0
98.51	2,850	20.0	6	6
99.00	2,850	20.0	279	285
99.99	2,850	20.0	564	849
100.00	2,850	40.0	11	861
100.99	2,850	40.0	1,129	1,989
101.00	2,850	100.0	29	2,018
101.10	10,000	100.0	642	2,660

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**4.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.50' / 82.30' S= 0.5400 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	101.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.51 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.51 cfs @ 5.82 fps)

Secondary OutFlow Max=0.35 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.35 cfs @ 0.32 fps)

Stage-Area-Storage for Pond 13.0P: Dripedge 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
98.50	2,850	0
98.55	2,850	28
98.60	2,850	57
98.65	2,850	86
98.70	2,850	114
98.75	2,850	143
98.80	2,850	171
98.85	2,850	199
98.90	2,850	228
98.95	2,850	257
99.00	2,850	285
99.05	2,850	313
99.10	2,850	342
99.15	2,850	371
99.20	2,850	399
99.25	2,850	428
99.30	2,850	456
99.35	2,850	484
99.40	2,850	513
99.45	2,850	542
99.50	2,850	570
99.55	2,850	598
99.60	2,850	627
99.65	2,850	656
99.70	2,850	684
99.75	2,850	713
99.80	2,850	741
99.85	2,850	769
99.90	2,850	798
99.95	2,850	827
100.00	2,850	861
100.05	2,850	918
100.10	2,850	975
100.15	2,850	1,032
100.20	2,850	1,089
100.25	2,850	1,146
100.30	2,850	1,203
100.35	2,850	1,260
100.40	2,850	1,317
100.45	2,850	1,374
100.50	2,850	1,431
100.55	2,850	1,488
100.60	2,850	1,545
100.65	2,850	1,602
100.70	2,850	1,659
100.75	2,850	1,716
100.80	2,850	1,773
100.85	2,850	1,830
100.90	2,850	1,887
100.95	2,850	1,944
101.00	2,850	2,018
101.05	6,425	2,250
101.10	**10,000**	**2,660**
101.15	10,000	2,660
101.20	10,000	2,660

Summary for Pond 13.1P: Dripedge 2

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.21 cfs @ 12.08 hrs, Volume= 0.181 af
Outflow = 0.89 cfs @ 12.29 hrs, Volume= 0.181 af, Atten= 60%, Lag= 12.5 min
Primary = 0.37 cfs @ 12.27 hrs, Volume= 0.172 af
Secondary = 0.52 cfs @ 12.29 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.02' @ 12.29 hrs Surf.Area= 3,810 sf Storage= 1,791 cf
Flood Elev= 88.20' Surf.Area= 10,000 sf Storage= 2,357 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.9 min (770.6 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	85.50'	2,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.50	2,450	0.0	0	0
85.51	2,450	20.0	5	5
86.00	2,450	20.0	240	245
86.99	2,450	20.0	485	730
87.00	2,450	40.0	10	740
87.99	2,450	40.0	970	1,710
88.00	2,450	100.0	25	1,735
88.10	10,000	100.0	622	2,357

Device	Routing	Invert	Outlet Devices
#1	Primary	84.00'	**4.0" Round Culvert** L= 135.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 84.00' / 80.70' S= 0.0244 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	88.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.37 cfs @ 12.27 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.37 cfs @ 4.28 fps)

Secondary OutFlow Max=0.52 cfs @ 12.29 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.52 cfs @ 0.36 fps)

Stage-Area-Storage for Pond 13.1P: Dripedge 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
85.50	2,450	0
85.55	2,450	24
85.60	2,450	49
85.65	2,450	74
85.70	2,450	98
85.75	2,450	123
85.80	2,450	147
85.85	2,450	171
85.90	2,450	196
85.95	2,450	221
86.00	2,450	245
86.05	2,450	269
86.10	2,450	294
86.15	2,450	319
86.20	2,450	343
86.25	2,450	368
86.30	2,450	392
86.35	2,450	416
86.40	2,450	441
86.45	2,450	466
86.50	2,450	490
86.55	2,450	514
86.60	2,450	539
86.65	2,450	564
86.70	2,450	588
86.75	2,450	613
86.80	2,450	637
86.85	2,450	661
86.90	2,450	686
86.95	2,450	711
87.00	2,450	740
87.05	2,450	789
87.10	2,450	838
87.15	2,450	887
87.20	2,450	936
87.25	2,450	985
87.30	2,450	1,034
87.35	2,450	1,083
87.40	2,450	1,132
87.45	2,450	1,181
87.50	2,450	1,230
87.55	2,450	1,279
87.60	2,450	1,328
87.65	2,450	1,377
87.70	2,450	1,426
87.75	2,450	1,475
87.80	2,450	1,524
87.85	2,450	1,573
87.90	2,450	1,622
87.95	2,450	1,671
88.00	2,450	1,735
88.05	6,225	1,951
88.10	**10,000**	**2,357**
88.15	10,000	2,357
88.20	10,000	2,357

Summary for Link SP-1:

Inflow Area = 12.330 ac, 29.66% Impervious, Inflow Depth > 3.73" for 25-YR event
Inflow = 24.66 cfs @ 12.47 hrs, Volume= 3.831 af
Primary = 24.66 cfs @ 12.47 hrs, Volume= 3.831 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link SP-2:

Inflow Area = 0.278 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.60 cfs @ 12.26 hrs, Volume= 0.061 af
Primary = 0.60 cfs @ 12.26 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link SP-3:

Inflow Area = 0.850 ac, 0.00% Impervious, Inflow Depth = 2.92" for 25-YR event
Inflow = 2.14 cfs @ 12.22 hrs, Volume= 0.207 af
Primary = 2.14 cfs @ 12.22 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Pond 11.0P: GW-1

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth = 6.55" for 100-YR event
Inflow = 17.44 cfs @ 12.17 hrs, Volume= 1.684 af
Outflow = 16.28 cfs @ 12.22 hrs, Volume= 1.226 af, Atten= 7%, Lag= 3.1 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 16.28 cfs @ 12.22 hrs, Volume= 1.226 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 83.91' @ 12.22 hrs Surf.Area= 10,704 sf Storage= 24,196 cf
Flood Elev= 84.80' Surf.Area= 10,850 sf Storage= 25,208 cf

Plug-Flow detention time= 160.6 min calculated for 1.226 af (73% of inflow)
Center-of-Mass det. time= 71.7 min (858.7 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1	81.00'	25,208 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.00	6,175	0	0
82.00	7,400	6,788	6,788
83.00	9,295	8,348	15,135
84.00	10,850	10,073	25,208

Device	Routing	Invert	Outlet Devices
#1	Primary	80.67'	**15.0" Round Culvert X 0.00** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.67' / 80.50' S= 0.0085 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	80.67'	**1.6" Vert. Orifice** C= 0.600
#3	Device 1	82.50'	**36.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#4	Secondary	83.50'	**25.0' long x 6.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=81.00' TW=81.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  └**2=Orifice** (Controls 0.00 cfs)
  └**3=WQV Orifice** (Controls 0.00 cfs)

Secondary OutFlow Max=16.28 cfs @ 12.22 hrs HW=83.91' TW=81.27' (Dynamic Tailwater)
└**4=Emergency Spillway** (Weir Controls 16.28 cfs @ 1.60 fps)

Summary for Pond 12.0P: UDSF-1

Inflow Area = 1.290 ac, 48.58% Impervious, Inflow Depth = 6.55" for 100-YR event
Inflow = 6.80 cfs @ 12.23 hrs, Volume= 0.704 af
Outflow = 6.60 cfs @ 12.27 hrs, Volume= 0.581 af, Atten= 3%, Lag= 2.3 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 6.60 cfs @ 12.27 hrs, Volume= 0.581 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 89.90' @ 12.27 hrs Surf.Area= 3,700 sf Storage= 6,789 cf
Flood Elev= 90.80' Surf.Area= 4,200 sf Storage= 9,144 cf

Plug-Flow detention time= 119.9 min calculated for 0.581 af (83% of inflow)
Center-of-Mass det. time= 50.0 min (845.1 - 795.1)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	9,144 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
87.50	1,955	0	0
88.00	2,304	1,065	1,065
89.00	3,050	2,677	3,742
90.00	3,770	3,410	7,152
90.50	4,200	1,993	9,144

Device	Routing	Invert	Outlet Devices
#1	Primary	85.30'	**12.0" Round Culvert X 0.00** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 84.30' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	85.30'	**1.0" Vert. Controlling Orifice** C= 0.600
#3	Device 2	85.30'	**4.0" Round UD Header** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 85.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 1	89.00'	**48.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#5	Secondary	89.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=87.50' TW=85.00' (Dynamic Tailwater)
- **1=Culvert** (Controls 0.00 cfs)
  - **2=Controlling Orifice** (Passes 0.00 cfs of 0.04 cfs potential flow)
    - **3=UD Header** (Passes 0.00 cfs of 0.25 cfs potential flow)
  - **4=WQV Orifice** (Controls 0.00 cfs)

Secondary OutFlow Max=6.60 cfs @ 12.27 hrs HW=89.90' TW=85.14' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Weir Controls 6.60 cfs @ 1.64 fps)

Appendix 4

Inspection, Maintenance and Housekeeping Plan

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

FALLBROOK COMMONS
PORTLAND, MAINE

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site by the contractor during construction and by the owner/homeowner association after construction. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section and the erosion and sedimentation control plan for the project. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Correction action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or

washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation. A Spill, Prevention, Control and Countermeasures Plan is created for the project and is to be kept onsite at all times.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from

trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the owner or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

   A. Vegetated Areas:

   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Winter Sanding:

   - Clear accumulations of winter sand along access road at least once a year, preferably in the spring.
   - Accumulations of sand along road shoulders may be removed by grading excess

sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Underdrained Soil Filters:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. Removed sediments should be disposed of in an acceptable manner.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Mowing: If mowing is desired, only handheld string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.

F. Level Spreader:

- The level spreader pool should be inspected after rainfall events for sediment accumulation and debris that may reduce its capacity. Sediment and debris buildup should be removed once the volume of the pool has been reduced by 25%. The level berm must be constructed so that flows slowly seep across the berm as

sheet flow to the receiving downstream drainage way. Repair or reconstruction of the berm is required when flow from the spreader becomes channelized.

G. Gravel Wetland:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good vegetative cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The gravel wetland should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
- Removal any decaying vegetation, litter, and debris that may be found.
- Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.
- Plant biomass shall be harvested annually.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 2 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. Duration of Maintenance: Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Stormwater Inspection and Maintenance Log Form

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

FALLBROOK COMMONS
PORTLAND, MAINE

This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the proposed Institute for Local Food Systems Innovation. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the municipality. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Level Spreader			
Remove sediment			Monthly
Check for evidence of channelized flow over berm			Monthly
Erosion (side slopes, embankment)			Monthly
Mowed			Semi-Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

Underdrained Soil Filters				
	Remove sediment & debris			Monthly
	Remove weeds			Monthly (during growing season)
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
Gravel Wetland				
	Remove sediment & debris			Monthly
	Check and clean the risers			Monthly
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
	Remove decaying vegetation, litter and debris			As-needed

Appendix 5

Web Soil Survey

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine
(18347 Fallbrook Commons - Web Soil Survey)



Map Scale: 1:2,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	C	4.2	15.4%
BuB	Lamoine silt loam, 3 to 8 percent slopes	C/D	3.0	11.0%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	D	2.2	8.1%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	D	6.0	22.0%
HsB	Lyman-Abram complex, 0 to 8 percent slopes, very rocky	D	2.3	8.6%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	9.6	35.0%
Totals for Area of Interest			**27.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix 6

FEMA Map



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by federal flood protection system under construction; no base flood elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 — Base Flood Elevation Line; Elevation in Feet*

(EL. 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM 7$_{\times}$ — Elevation Reference Mark

•M1.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated or additional flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 (NGVD), and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross-sections and interpolated between cross-sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY:
City of Portland Zoning and Building Inspection Office, 389 Congress Street,Room 315, Portland, Maine 04101 (Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION:
APRIL 26, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 17, 1989

FLOOD INSURANCE RATE MAP REVISIONS:
December 8, 1998 – to change Base Flood elevations, to add base flood elevations, to change zone designations, to update map format, and to change floodways.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE
400 0 400/800

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 2 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0002 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

Appendix 7

Form F: Soil Profile/Classification Information

FORM F 18347

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-101** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
SILT LOAM		5Y 4/1 DARK GRAY	
SILTY CLAY LOAM	VERY FIRM	5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 96"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	10"	■	☐	☐

C.S.S. Soil Series / phase name: **ROUNDABOUT** **SWPD** (Drainage Class) **D** (Hydrologic Group)

L.S.E. Soil Classification: _____ (Profile) _____ (Drainage Class) _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-102** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM		
SILTY CLAY LOAM	VERY FIRM	5Y 4/2	

LIMIT OF EXCAVATION = 84"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	7"	■	☐	☐

C.S.S. Soil Series / phase name: **ROUNDABOUT** **SWPD** (Drainage Class) **D** (Hydrologic Group)

L.S.E. Soil Classification: _____ (Profile) _____ (Drainage Class) _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-103** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 3/2 VERY DARK GRAYISH BROWN	
SILTY CLAY LOAM		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
	VERY FIRM		

LIMIT OF EXCAVATION = 84"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	9"	■	☐	☐

C.S.S. Soil Series / phase name: **ROUNDABOUT** **SWPD** (Drainage Class) **D** (Hydrologic Group)

L.S.E. Soil Classification: _____ (Profile) _____ (Drainage Class) _____ (Design Class)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-104** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
VERY FINE SANDY LOAM		5Y 5/2 OLIVE GRAY	
			COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/1 DARK GRAY	
LOAMY VERY FINE SAND	FRIABLE	2.5Y 5/2 GRAYISH BROWN	

LIMIT OF EXCAVATION = 96"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	16"	■	☐	☐

C.S.S. Soil Series / phase name: **NICHOLVILLE** **MWD** (Drainage Class) **B** (Hydrologic Group)

L.S.E. Soil Classification: _____ (Profile) _____ (Drainage Class) _____ (Design Class)

Professional Endorsements *(as applicable)*

C.S.S. signature: [signature] Date: **11/7/19**

name printed/typed: **Gary M. Fullerton** Lic.#: **462**

L.S.E. signature: Date:

name printed/typed: Lic.#:

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-105** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
			COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM	5Y 5/2 OLIVE GRAY	
LEDGE @ 33"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	3-8	12"	■ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: **ROUNDABOUT VARIANT** | **SWPD** Drainage Class | **D** Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-106** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
SILT LOAM		5Y 5/2 OLIVE GRAY	
	FIRM		COMMON, MEDIUM, DISTINCT
LEDGE @ 23"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	3-8	16"	■ ground water ■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: **NICHOLVILLE VARIANT** | **MWD** Drainage Class | **B** Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ☐ non-hydric	_____	_____	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ☐ non-hydric	_____	_____	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 11/7/19
	name printed/typed: **Gary M. Fullerton**	Lic.#: 462
L.S.E.	signature:	Date:
	name printed/typed:	Lic.#:



affix professional seal

Section 13

Urban Impaired Stream Submissions

Section 13

Urban Impaired Stream Standard

Not applicable. The proposed project is within the watershed of an unnamed stream that is a tributary of the Presumpscot River, which is not classified as most-at-risk in the Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development, And Urban Impaired Streams. Chapter 500 Stormwater Phosphorus Standards do not apply.

Section 14

Basic Standards Submissions

Section 14

Basic Standards

Erosion & Sediment Control

The design of the Fallbrook Commons facility has incorporated best management practices to minimize the potential for erosion and the transport of sediments from the construction activities. An Erosion and Sediment Control Plan has been prepared and is included in this section of the application and includes provisions for inspection, maintenance, and winter erosion control measures. Specific erosion control measures and their associated construction details are included on the design plans for the proposed development.

The site contractor for the project will be responsible for the maintenance of all erosion and sedimentation control measures during the construction of the project, and the keeping of records. At a minimum, the appropriate and relevant activities for each of the erosion and sedimentation control measures will be performed on the prescribed schedule.

A. Siltation fencing needs to be inspected every seven days or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Any breeches in the siltation fencing should be repaired immediately. Any sediment which leaves the project site must be removed immediately. Siltation fencing shall be repaired in accordance with installation instruction shown on the project plan set.

B. Stabilized construction entrances shall be maintained in a condition which will prevent tacking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled dropped washed or tracked onto public right-of-way must be removed immediately.

C. Following the temporary and/or final seeding the contractor shall inspect the work area semimonthly until the seeding has been established. Established means a minimum 85%-90% of areas vegetated with vigorous growth. Reseeding shall be carried out by the contractor with follow-up inspections in the event of any failures until vegetation is adequately established.

D. The contractor must install any added measures which may be necessary to control erosion/sedimentation from the site dependent on the site and actual weather conditions.

E. Maintenance measures shall be applied as needed during the entire construction cycle. After each rainfall, snow storm or period of thawing and runoff or at least every seven days, the contractor shall perform a visual inspection of all installed erosion control measures. The contractor shall perform repairs as needed to allow continued and proper functioning of the erosion control measure. The contractor shall provide the necessary regulating agencies with written documentation describing dates of inspections and any necessary follow up work to maintain erosion control measures meeting the requirements of the plan set.

F. Care should be taken not to disturb erosion control measures during snowplowing. Any damage to erosion control measures during plowing should be repaired immediately.

Section 15

Groundwater

Section 15

Groundwater

A. Narrative and Report

1. Location

   See this Section for a copy of a Bedrock & Surficial Geology map and a Sand & Gravel Aquifers map with the project location depicted.

2. Quantity

   There will be no groundwater use or underground wastewater disposal. Potable water will be provided by the Portland Water District. It is estimated that approximately 16,000 gallons per day (gpd) will be required to service this facility.

3. Sources

   The project does not involve any new facilities that would result in an increase in quantities of wastewater, solid waste, fuel or solvents to the project area groundwater. The project will be serviced by municipal sewer and no discharging to the groundwater is proposed other than from stormwater runoff and discharge from infiltration basins.

4. Measures to Prevent Degradation

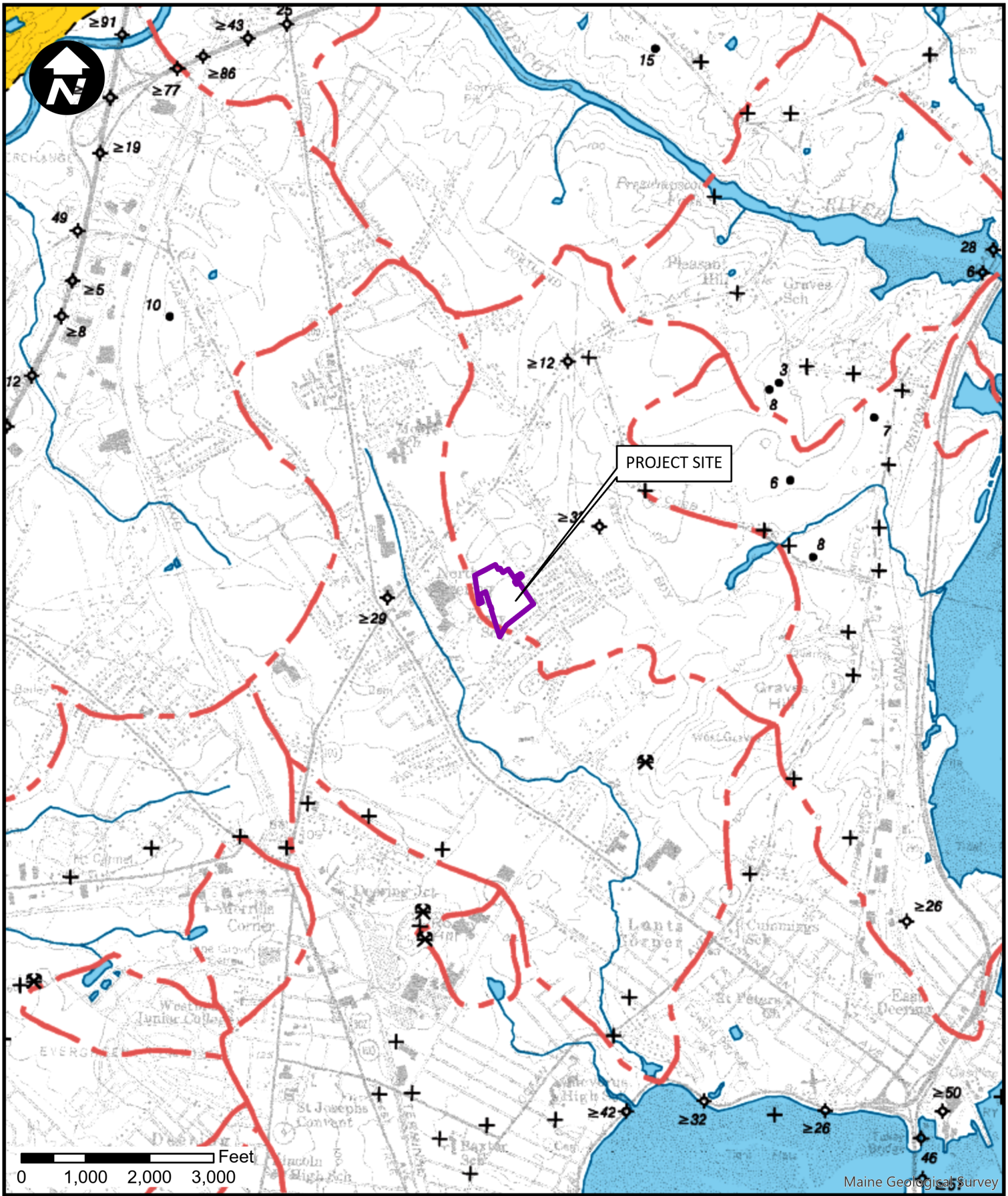
   All impervious drainage areas associated with streets, drives and walkways are directed to stormwater management facilities designed to current DEP treatment standards. Please see the plan set for more detailed information.

B. Groundwater Protection Plan

There are no development plans to store or use petroleum products, pesticides, herbicides, road salt, solvents, acids or other materials with the potential to contaminate groundwater.

C. Monitoring Plan

Not applicable.



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

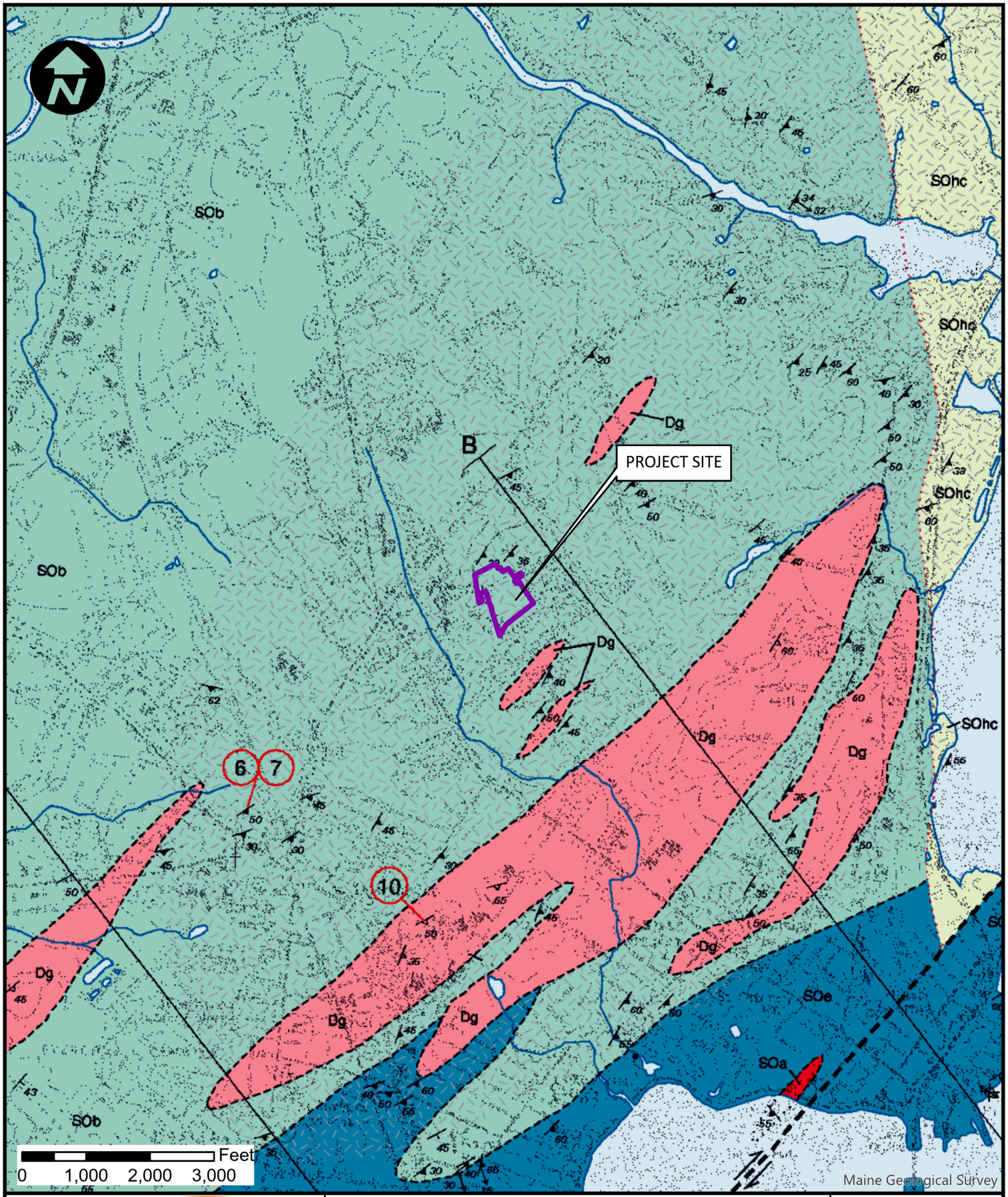
SIGNIFICANT SAND AND GRAVEL AQUIFERS MAP FOR: FALLBROOK NURSING CENTER

SCALE: 1:24,000

DATE: 11/21/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
Maine Geological Survey_
Significant Sand and Gravel Aquifer Maps: Portland West Quad



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

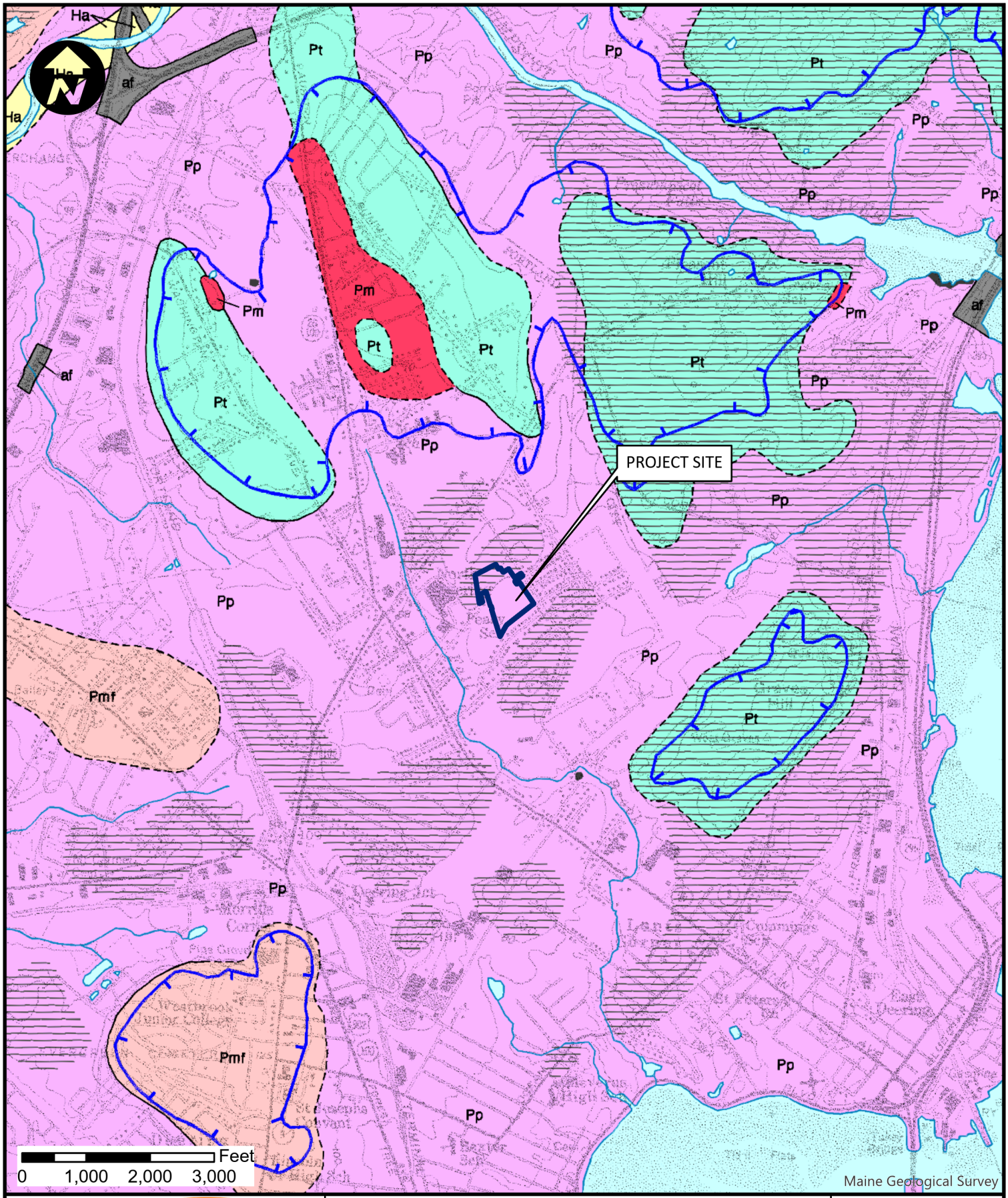
BEDROCK GEOLOGY MAP
FOR: FALLBROOK NURSING CENTER

SCALE: 1:24,000

DATE: 11/21/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
Maine Geological Survey_
Bedrock Geology Maps: Portland West Quad



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SURFICIAL GEOLOGY MAP
FOR: FALLBROOK NURSING CENTER

SCALE: 1:24,000

DATE: 11/21/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
Maine Geological Survey_
Surficial Geology Maps: Portland West Quad

Section 16

Water Supply

Section 16

Water Supply

A. **Water Supply Method**

The development will be serviced by municipal water supplied by the Portland Water District. It is anticipated that the facility will require approximately 16,000 gpd of water.

The Portland Water District has been contacted for confirmation of capacity. Please see this Section for the correspondence to the Portland Water District.

B. Subsurface Wastewater Disposal

Not applicable. The development will be serviced by municipal sanitary sewer.

C. Total Usage

The proposed improvements will result in approximately 16,000 gpd total water usage for the site.

D. Other

Not applicable.

October 2019
18347

MEANS
Portland Water District
225 Douglas Street
PO Box 3553
Portland, ME 04104

Request for Ability to Serve Letter
MEANS, Portland, Maine

Dear MEANS,

Sebago Technics has been retained as the civil engineer and landscape architect for a senior care facility in Portland named Fallbrook Health Center. This licensed facility will provide services in an assisted living environment. As depicted on the attached location map, the project site is located on Ray Street next to Fallbrook Woods assisted living facility. We anticipate extending the water main under Merrymeeting drive, to serve our project.

I am writing to request a capacity to serve letter for this project to submit to the Portland Planning Board as part of our site plan review application. The design flow for the new facility is expected to produce approximately 16,000 Gallons Per Day.

Please let me know if you have any questions or concerns; we look forward to working with the District as the project moves forward. Thank you.

Sincerely,

SEBAGO TECHNICS, Inc.

Daniel M. Danvers, RLA
Maine Licensed Landscape Architect

DMD/llg
Enc.

cc: Daniel Maguire, Sandy River II

Section 17

Wastewater Disposal

Section 17

Wastewater Disposal

A. On-Site Subsurface Wastewater Disposal Systems

Not applicable. The project will not be serviced by individual on-site sewage disposal systems.

B. Nitrate-Nitrogen Impact Assessment

Not applicable. As no individual or common subsurface sewage disposal systems are proposed for this project, no hydrogeological or nitrate-nitrogen impact assessment is required.

C. Municipal Facility or Utility Company Letter

The proposed project involves the construction of a 90-bed nursing care canter. The project site has not been previously developed. It is anticipated that the proposed development will require wastewater disposal needs of approximately 16,000 gpd.

The City of Portland has been contacted. Please see this Section for a copy of the correspondence to date and for the proposed pump station design

D. Wastewater Discharge Information

The proposed development will not discharge any liquid waste into any stream, river, pond, lake or other body of water.

E. Storage or Treatment Lagoons

The proposed development will not include any lagoons, impoundments, ponds or similar structures for storage involving liquid waste other than stormwater.

SEBAGO TECHNICS
75 John Roberts Road, Suite 4A
South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB Fallbrook Nursing
SHEET NO. 1 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

Pump Station Design

Building/Phase	Type of Use	# of units/SF	flow/unit		Total	
Site						
	50	employees	12	gpd/employee	600	gpd
	90	beds	125	gpd/bed	11,250	gpd
				Total	11,850	gpd
	Project flow from Mechanical Engineer				16,000	gpd
	Higher Total Flow				16,000	gpd
	Peak Factor, Peak Day				3.0	
	Peak Day = 3.0 x Average Daily Flow (ADF) =				48,000	gpd
	Peak Factor, Peak Hour				5.6	
	Operating hours per day				16	hr
	Peak Hour = 5.6 x ADF/ 720 min/day (16 hour day) =				93.3333	gpm
	Inflow/ Infiltration (I/I) Allowance					
	Gravity main size:	8 inches				
	Approximately	0 linear feet (0 miles) of 8" sewer line				
	I/I Allowance	= 250 gpd/inch diameter of pipe in inches/mile of sewer				
			Flow from Inflow/Infiltration =		0	gpd
				Peak Hour =	0.00	gpm

STATE OF MAINE
ROBERT A. McSORLEY
No. 8588
LICENSED PROFESSIONAL ENGINEER

11/1/19

SEBAGO TECHNICS
75 John Roberts Road, Suite 4A
South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB Fallbrook Nursing
SHEET NO. 2 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

Cycle times for given flow rates and wetwell size: Buildout

		Average wastewater flow =			16,000	GPD, or	16.67	GPM					
		Peak Flow =			100.00	GPM =	6000	GPH					
		Minimum Flow =			2.3	GPM =	140	GPH					
	Proposed Forcemain size =			4	inches	HPDE DR 11			minimum velocity			3	fps
Min. pump rate (larger of 1.50 x peak or min fm flow) =						GPM	150	GPM					
						Use	150	GPM	50%	more than peak			
	Diameter of wet well =				6	feet, so radius=		3	ft				
	Travel (pump on to pump off) =				24	inches, or		2	ft				
		So working volume =			56.5	cubic feet, or		423.0	gal.				
	Is pump station for a septic field?			**no**									
	For average design flow:												
		Effective pumping rate =		150	gpm -	16.67	gpm =	133.33	gpm				
		Pump cycle =		423.0	gal /	133.3	gpm =	3.17	min				
		Fill time =		423.0	gal /	16.67	gpm =	25.38	min				
					Total cycle =			28.56	min or	0.48	hours		
		Summary: Pump starts 2x/hour. Using alternating pumps											
	Peak on Maximum Day (Average x 6.0)												
		Effective pumping rate =		150	gpm -	100.00	gpm =	50.00	gpm				
		Pump cycle =		423.0	gal /	50.0	gpm =	8.46	min				
		Fill time =		423.0	gal /	100.00	gpm =	4.23	min				
					Total cycle =			12.69	min or	0.21	hours		
	Extreme minimum on minimum day (Average x 0.14)												
		Effective pumping rate =		150	gpm -	2.33	gpm =	147.67	gpm				
		Pump cycle =		423.0	gal /	147.7	gpm =	2.86	min				
		Fill time =		423.0	gal /	2.33	gpm =	181.30	min				
					Total cycle =			184.17	min or	3.07	hours		

SEBAGO TECHNICS
75 John Roberts Road, Suite 4A
South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB Fallbrook Nursing
SHEET NO. 3 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

HAZEN-WILLIAMS COEFFICIENTS

100	Average 15 year old cast iron pipe	140	Very straight & smooth cast iron pipe
110	Vitrified sewer pipe	140	New steel pipe; cement asbestos pipe
120	New wrought iron pipe	150	New cl pipe w/cent. Bituminous lining
120	Average 5 year old cast iron pipe	150	Schedule 40 PVC pipe & HDPE
130	Average new cast iron pipe		

EQUIVALENT LENGTHS (NOTE: Enter # of each fitting, d is smaller diameter)

SIZE(IN)	1.25	1.5	2	2.5	3	4	6	8
Gate valve					1			
Butterfly valve	X	X						
Globe Valve								
90° elbow					3			
45° elbow or long sweep 90° elbow					1			
Tee, thru								
Tee, branch					1			
Reducer, d/D = 0.5								
Reducer, d/D = 0.75								
Increaser, d/D = 0.5								
Increaser, d/D = 0.75					1			
Check Valve					1			
TOTAL	0	0	0	0	73	0	0	0

Flow: 150 gpm

Additional flow in forcemain? N

Use standard pressure value for minor loses, H_{SL}? Y

H_{SL}: 3 ft

Highest Forcemain Elevation: 90.3

H_{ST}: 11.8 ft

Discharge Elevation: 85

Wet Well Low Elevation: 78.5

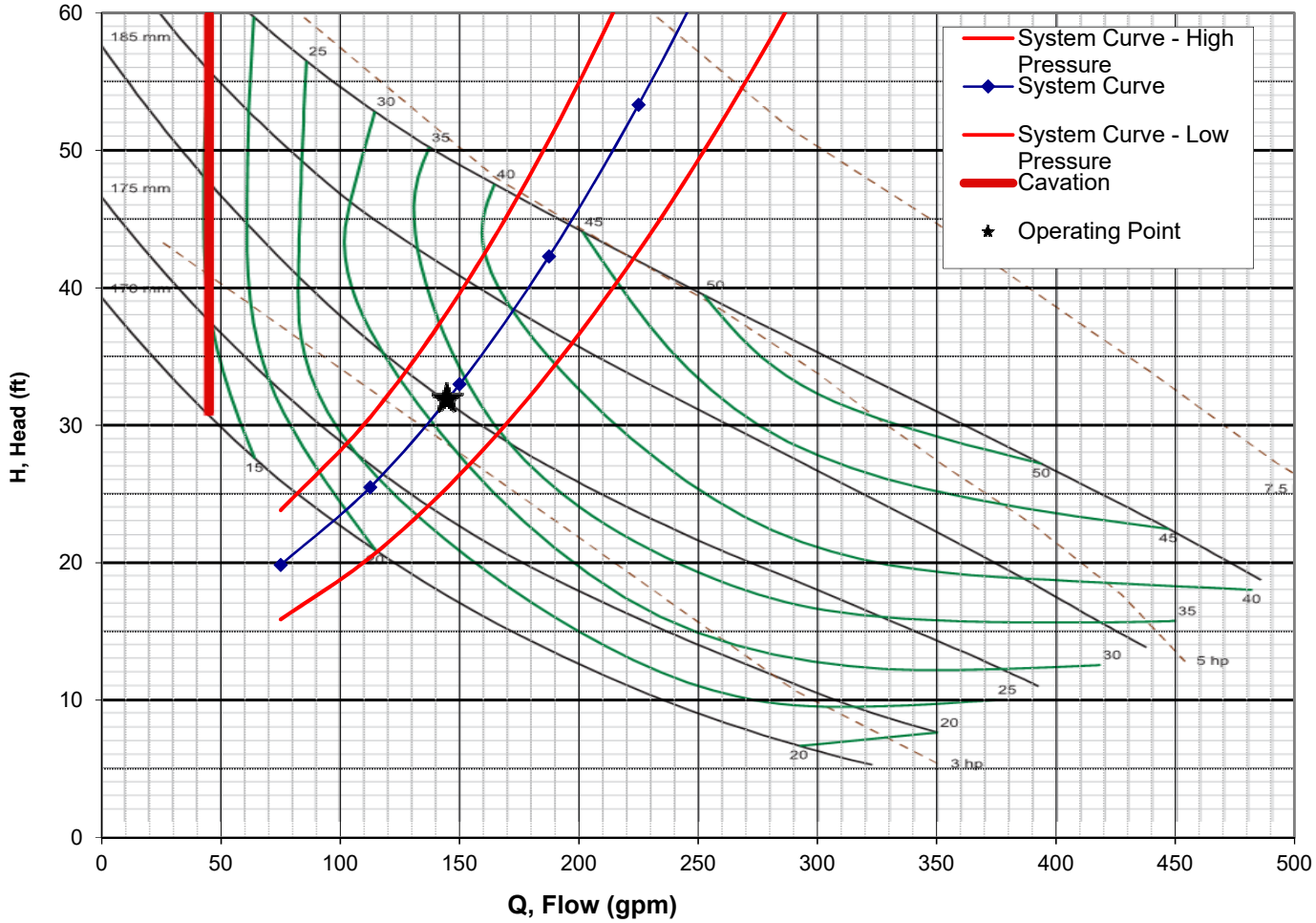
Tie in Pressure, H_{EX}: 0 ft

Size (in)	Pipe Type	C	Length (ft)	Add Eq. Length	Eq. Length (ft)	Add. Flow	H_f (ft) 0.50xQ 75	0.75xQ 112.5	1.00xQ 150	1.25xQ 187.5	1.50xQ 225	1.75xQ 262.5	2.00xQ 300	2.25xQ 337.5
3	Sch. 80 PVC	130	6.50	y	73	n	1.68	3.55	6.05	9.14	12.81	17.03	21.81	27.12
4	HPDE DR 11	130	475	n		n	3.37	7.13	12.14	18.35	25.71	34.20	43.78	54.44
					H_{TOTAL}:		19.8	25.5	33.0	42.3	53.3	66.0	80.4	96.4
					$H_{TOTAL\ (PSI)}$:		8.6	11.0	14.3	18.3	23.1	28.6	34.9	41.8
					Velocity, V:		3.40	5.11	6.81	8.51	10.21	11.92	13.62	15.32

SEBAGO TECHNICS
75 John Roberts Road, Suite 4A
South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB	Fallbrook Nursing		
SHEET NO.	4	OF	5
CALCULATED BY	BAW	DATE	10/30/2019
CHECKED BY	RAM	DATE	10/30/2019
FILE NAME	18347 Pump Station 2019-10-30		

Fallbrook Nursing



Duplex Barnes Sithe chopper, Model 3XSCMPA50N4, pump will flow 145 gpm at 32 ft TDH

5.0 H.P., 15.0 A, 230 Volt, 3 Phase, 60 Hz motor operating at 1750 RPM with 185mm impellor.

Velocity in 4 (in) HPDE DR 11 force main will be 4.5 ft/s

	Flow	Pump	Fill	Total			
	Low	2.97	181.3	184.3	min	3.07	hrs
Check cycle times	Avg	3.30	25.38	28.68	min	0.48	hrs
	Peak	9.40	4.23	13.63	min	0.23	hrs

SEBAGO TECHNICS
75 John Roberts Road, Suite 4A
South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB Fallbrook Nursing
SHEET NO. 5 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

FLOATATION CALCULATIONS

PARAMETERS:

1.	STATION TYPE(TREMIE/MONO/PACKAGE) =	MONO	
2.	DENSITY OF CONCRETE =	150.00	#/C.F.
3.	GRANULAR BACKFILL =	120.00	#/C.F.
4.	WETWELL DIAMETER =	6.00	FEET
5.	WALL THICKNESS =	7.00	INCHES
6.	TOP OF STATION ELEVATION =	90.50	N.A.V.D.
7.	FINISHED GROUND ELEVATION (-8")=	89.83	N.A.V.D.
8.	TOP OF BASE ELEVATION =	77.00	N.A.V.D.
9.	THICKNESS OF TOP =	8.00	INCHES
10.	THICKNESS OF BASE(MONO/PACKAGE) =	8.00	INCHES
11.	WIDTH OF MONO SLAB = 12.00 IN BASE DIAMETER =	110.00	INCHES
12.	THICKNESS OF TREMIE/FLOOR =		INCHES
13.	AREA OF HATCH =	10.00	SQ. FEET

BOUYANCY OF STRUCTURE:

CYLINDER =	544.58	CUBIC FEET
BASE =	44.00	CUBIC FEET
TOTAL =	588.57	CUBIC FEET

BOUYANCY FORCE = VOLUME OF STRUCTURE x WEIGHT OF WATER(62.4 #/C.F.)

BOUYANCY FORCE = 36,726.91 POUNDS

WEIGHT OF STRUCTURE:

BASE/TREMIE =	44.00	CUBIC FEET
CYLINDER =	154.83	CUBIC FEET
FILLET =	20.55	CUBIC FEET
TOP =	26.89	CUBIC FEET
HATCH =	-6.67	CUBIC FEET
TOTAL =	239.60	CUBIC FEET

WEIGHT OF STRUCTURE = VOLUME OF CONCRETE x WEIGHT OF CONCRETE(150 #/C.F.)

WEIGHT OF STRUCTURE = 35,940.44 POUNDS

WEIGHT OF OVERBURDEN:

VOLUME OF OVERBURDEN = 329.26 CUBIC FEET

WEIGHT OF OVERBURDEN = VOLUME OF OVERBURDEN x DRY WEIGHT OF SOIL(120 #/C.F.)

WEIGHT OF OVERBURDEN = 18,965.17 POUNDS

TOTAL DOWNWARD FORCES = 54,905.61 POUNDS

FACTOR OF SAFETY = 1.49 OK

Section 18

Solid Waste

Section 18

Solid Waste

A. Estimated Quantities of Solid Waste

The proposed development involves the construction of a 90-bed nursing care center. The proposed facility is expected to generate average quantities of waste as follows:

Construction Phase: The proposed improvements will result in approximately 488.85 c.y. of construction waste.

58,197 s.f. facility X 4.2 lbs waste = 244,427 lbs of waste
244,427 lbs/500 lbs = 488.85 c.y. of waste

Municipal Solid Waste: Municipal solid waste (MSW) will be collected by a private hauler. The proposed facility has been designed to accommodate 90-beds and is anticipated to generate approximately 450 lbs of MSW a day.

Proposed solid waste:
90 beds x 5 lbs per day = 450 lbs of waste per day.

Source - National Solid Waste Management Association
https://www.wastecare.com/usefulinfo/Waste_Generated_by_Industry.htm

B. Off-Site Disposal of Construction/Demolition Debris

Construction debris associated with building construction, including clean wood, material packaging, cardboard, etc. will be collected in onsite construction dumpsters. It is recommended that the contractor separate waste into 3 or 4 roll-off dumpsters. The waste material should be separated into the following types: wood, metal, all other material, and possibly cardboard (for recycling). Construction debris, waste generation is anticipated to be approximately 488.85 cubic yards. It will be the responsibility of the site contractor to remove this building waste from the site during construction. All construction waste will be transported and disposed of off-site by a licensed hauler to a local construction material recycling facility.

C. On-Site Disposal of Wood Waste/Land Clearing Debris

Any stumps or grubbing from the site will be ground on-site by a portable stump grinder and used as mulch in the stabilization of back slopes and for erosion control. It is acknowledged that the grinding must be completed within a 30-day time period if a DEP permit has not been obtained. Material that has been ground and is not being used on-site must be hauled off-site within a time-period of 30 days from the end of the grinding process by a licensed Non-Hazardous Waste Transporter.

D. **Special or Hazardous Waste**

Not applicable. Past use of the site does not indicate that contaminated soils or other potential hazards to human health or the environment will be found during grading and excavation of the site, nor were any hazards visually apparent during the environmental site assessment field visits. Any hazardous material used during construction should be disposed of per applicable Federal and State laws regarding the detection, identification, handling, storage, transportation and disposal of special wastes and hazardous wastes.

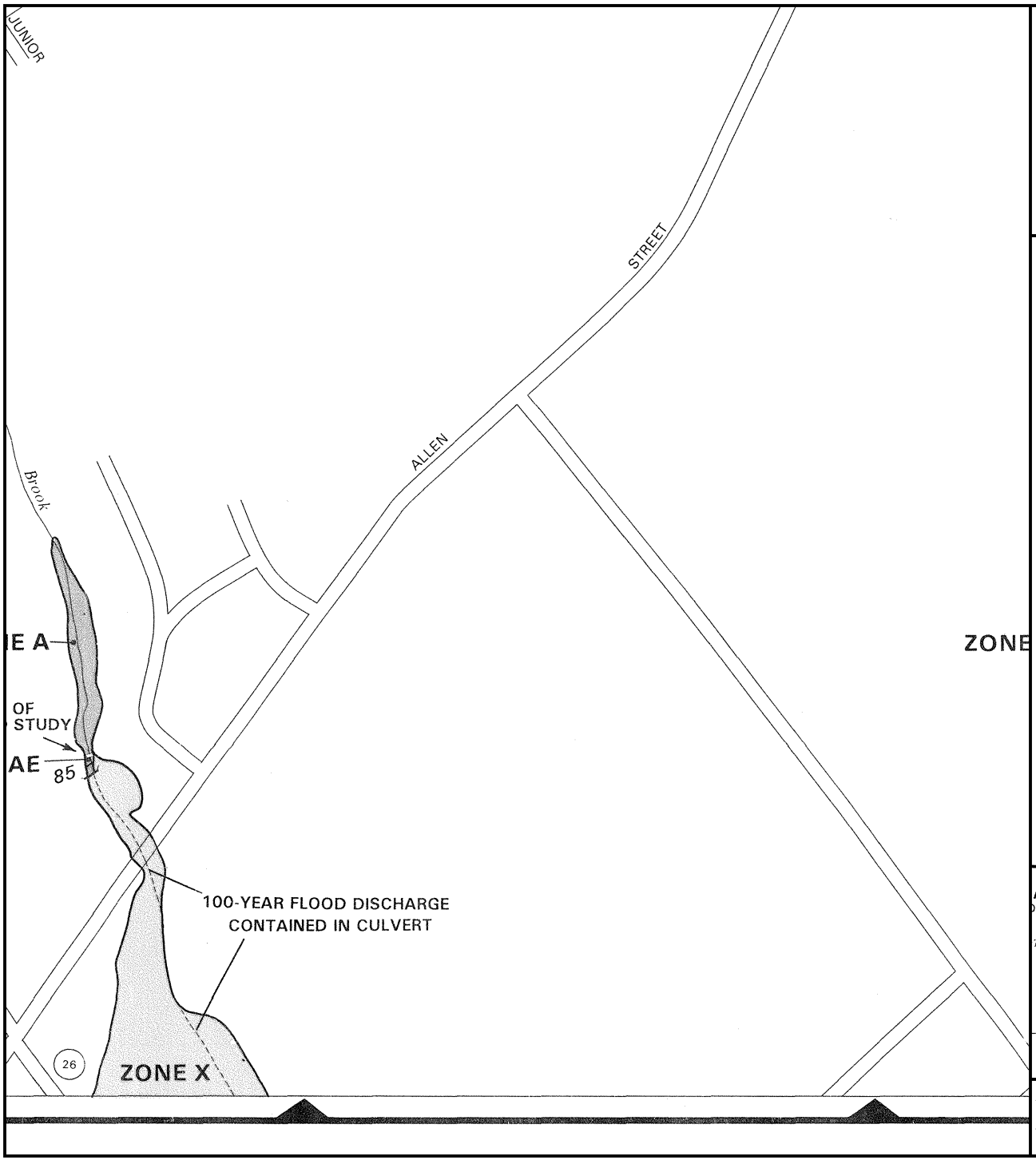
Section 19

Flooding

Section 19

Flooding

The Flood Insurance Rate Map (FIRM) for the City of Portland (Community Panel 230051 0002C, dated December 8, 1998) identifies the majority of the project site to be in an area of minimal flooding. It is not anticipated that the proposed project will cause or increase flooding, or create any flood hazard areas.



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 2 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0002 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Section 20

Blasting

Section 20

Blasting

Given the nature of the site it is anticipated that blasting will be required. Should ledge be encountered during construction, a blasting plan will be submitted for approval that has been developed to be in compliance with the accepted limit for safe levels of blasting vibrations as developed by the U.S. Bureau of Mines as presented in Appendix B of the U.S. Bureau of Mines, RI 8507.

Blasting Requirements

Should blasting be necessary, we recommend that the following controls be implemented for the project:

The Contractor should comply with all applicable laws, rules, ordinances, and regulations of the federal government, the State of Maine, and the City of Portland governing transportation, storage, handling and use of explosives.

Prior to the start of rock excavation or blasting work, notices should be sent to residents and businesses in the area describing the blasting and rock excavation work, indicating the approximate schedule of work, and describing blasting procedures, mitigation measures, and blast warning signals.

Prior to the start of blasting work, pre-blast condition surveys should be conducted of all existing structures and conditions on the site, adjacent to the site, or in the vicinity of the site. These surveys should extend to such structures, wells, or an item that may be affected by the Contractor's blasting operations. As a minimum, condition surveys should be performed on all structures within a half-mile of anticipated blasting areas.

Prior to the start of blasting work, the Contractor should submit to the engineer for review a blasting plan containing details of proposed blasting and construction operations including:

A. Sequence and schedule of blasting rounds including the general sequence of drilling, blasting, excavating, etc.

B. Specifics of typical blast rounds and open cut blast rounds in deepest rock cut areas and areas closest to existing structures.

C. In each area specified, include the following blast round details:

- Diameter, spacing, burden, depth and orientation of each blast hole for each round design.
- Nomenclature and amount (in terms of weight and number of cartridges) of explosives and distribution of charge to be used within each hole, on each delay,

and the total for the blast.

- Nomenclature and type of detonators and delay pattern for the round.
- Type and location of stemming to be used in holes.
- Calculations of anticipated vibration levels at nearest adjacent structure or well.

D. Specifics of Test Blasts to check effectiveness and vibration characteristics of typical trench and open cut blasting rounds.

E. Methods of matting or covering the blast area to prevent fly rock and excessive air blast overpressure.

F. Name and qualifications of licensed blaster who will be on site at all times directly supervising the loading and detonation of each blast.

G. Name and qualifications of the person responsible for conducting pre-blast condition surveys.

H. Name and qualifications of the person responsible for monitoring and reporting blast vibrations.

I. Details of an audible advance signal system to be employed at the job site as a means of informing workers, Engineer, Architect, Owner, and the general public that a blast is about to occur. Details of access control during blasting.

The Contractor should conduct all blasting activity in such a manner that the peak particle velocity of ground vibration measured at the locations of the nearest structures or wells to the blast does not exceed the "safe limits" recommended by the U.S. Bureau of Mines as presented in Figure B-1 of Appendix B of U.S. Bureau of Mines, RI 8507.

The Contractor should conduct all blasting activities in such a way that sound levels from blasting shall not exceed the limits given in the Maine Department of Environmental Protection Rules, Chapter 375.10 (c)(4)(c).

# of Blasts Per Day	Sound Level Limit
1	129 dBL
2	126 dBL
3	124 dBL
4	123 dBL

Blast monitoring should be conducted by an independent firm trained in the use of a seismograph, and records should be analyzed and results reported by persons familiar with analyzing and reporting the frequency content of a seismograph record. A minimum of two (2) engineering seismographs shall be used for each blast, one each adjacent to the nearest off-site structures or wells which lie within a 300-foot radius of blasting activities.

Blast Monitoring Equipment: All instrumentation proposed for use on the project shall have been calibrated within the previous six (6) months to a standard traceable to the National Bureau of Standards. Characteristics of required instrumentation are listed below:

- Measure the three (3) mutually perpendicular components of particle velocity in the directions vertical, radial and perpendicular to the vibration source.

- Measure and display the maximum peak particle velocity component and air blast overpressure. These readings must be displayed and be able to be read in the field, immediately after each blast.

- Furnish a permanent time history record of particle velocity waveforms and air blast overpressure waveforms, so that frequency and time of maximum peak particle velocity or air blast overpressure can be determined.

Blast Monitoring Reports: Within 24 hours following each blast, the Contractor should submit to the Engineer a Blast Monitoring Report. Each Blast Monitoring Report should include all of the following applicable items:

- Blast round design data, as indicate in Section C of the Blasting Requirements.

- Blast Monitoring Location Plan, indicating the location of the blast, the monitoring locations, and the distances from the blast to monitoring locations.

- Vibration and air blast overpressure data from each seismograph, including a copy of the strip chart (or other permanent record of velocity/time waveform) with calibration and monitoring record marked with the date, time and location of the blast.

- In the event that the Contractor's design round results in ground vibrations and/or air blast overpressures exceed the blasting limit criteria presented herein, the Contractor should immediately revise the round design appropriately and submit the revised round design to the Engineer for review. Allow sufficient time for review.

- The Contractor should report to the Engineer in writing all blasting complaints received by the Contractor within 24 hours of receipt. Each blast complaint report should include the name and address of the complaint, time received, date and time of blast complained about, and a description of the circumstances, which led to the complaint. Upon receipt of a written complaint from a resident alleging damage from the blasting, the Contractor's representative or a representative of the Blaster's Insurance Company should investigate the claim and a written report should be issued to the homeowner, with a copy to the Engineer, of the results of the investigation and the response of the Contractor. This written report should be received by the resident and the Engineer within 15 work days of receipt of the written complaint.

Review by the owner and the owner's consultant of the blast designs and techniques shall not relieve the Contractor of his responsibility for the accuracy, adequacy and safety of the blasting, exercising proper supervision and field judgment and producing the results within the blasting limits required by the requirements.

Blasting shall be limited to between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

Blasting mats shall be utilized for all blast rounds detonated to prevent the throw of fly rock from the blasting area, unless the Contractor's independent professional engineer/seismologist determines that the overburden is sufficient enough to prevent fly rock.

Ammonium Nitrate Fuel Oil (ANFO) shall not be permitted for blasting.

At the start of blasting, the Contractor shall perform a series of test blast to establish a site-specific relationship between the charge weight per millisecond delay and peak ground vibration levels at various distances from the blast. The results of the test blasts will form the basis for selection of maximum permissible charge weights during production blasting.

Section 21

Air Emissions

Section 21

Air Emissions

The proposed development is not anticipated to generate adverse air emissions which could impact the developed area or abutting properties. Temporary emissions may occur during the construction of the project due to earth moving activities and construction equipment. These emissions are expected to be limited in nature and of short duration. Provisions for dust control, if needed during construction, have been included in the Erosion and Sediment Control Plan attached to Section 14 of this application.

Section 22

Odors

Section 22

Odors

Odor generation is expected to be insignificant and consistent with surrounding areas. Temporary limited odors may arise during construction as a result of construction equipment working on the site. This odor potential is short-term and also not expected to be significant.

Section 23

Water Vapor

Section 23

Water Vapor

This proposed site improvements will not generate water vapor emissions impacting the developed area or abutting properties.

Section 24

Sunlight

Section 24

Sunlight

The proposed project will not result in a sunlight impact to abutting properties.

Section 25

Notices

Section 25

Notices

A. Evidence That a Notice Has Been Sent

Please see this Section for a copy of Form B.

The public notice was published in the Portland Press Herald on February 3, 2020.

A public informational meeting was held on February 18, 2020.

Please see this Section for a copy of Form C.

B. List of Abutters

See attached.

Public Notice
Notice of Intent to File

Please take notice that Fallbrook Senior Care Development, LLC is intending to file a Natural Resource Protection Act and an amended Site Location of Development Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 480-A thru 480-BB and §§ 481 thru 490 on or about February 20, 2020.

A Public Informational Meeting will be held at **6 P.M** on **February 18th** at **Fallbrook Woods, 60 Merrymeeting Drive, Portland**.

The applicant is proposing to construct a new two-story 58,197 s.f. senior care facility. Improvements will result in approximately 37,787 s.f of wetland impacts, the creation of approximately 2.7 acres of new impervious surface, and 5.6 acres of developed area.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in Portland during normal working hours. A copy of the application may also be seen at the City of Portland municipal offices.

Written public comments may be sent to the Southern Maine Regional Office in Portland at MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103 where the application is filed for public inspection.

FORM C

PUBLIC NOTICE FILING AND CERTIFICATION

The DEP Rules, Chapter 2, require an applicant to provide public notice for all Site Location projects with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. **"Abutter"** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.

2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

ATTACH a list of the names and addresses of the owners of abutting property.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on February 18,2020.
Date

Approximately 30 members of the public attended the Public Informational Meeting.

Signature of Applicant or Authorized Agent

2/20/20
Date

Public Notice

Notice of Intent to File

Please take notice that Fallbrook Senior Care Development, LLC is intending to file a Natural Resource Protection Act and an amended Site Location of Development Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 480-A thru 480-BB and §§ 481 thru 490 on or about February 20, 2020.

A Public Informational Meeting will be held at 6 P.M on February 18th at Fallbrook Woods, 60 Merrymeeting Drive, Portland.

The applicant is proposing to construct a new two-story 58,197 s.f. senior care facility. Improvements will result in approximately 37,787 s.f of wetland impacts, the creation of approximately 2.7 acres of new impervious surface, and 5.6 acres of developed area.

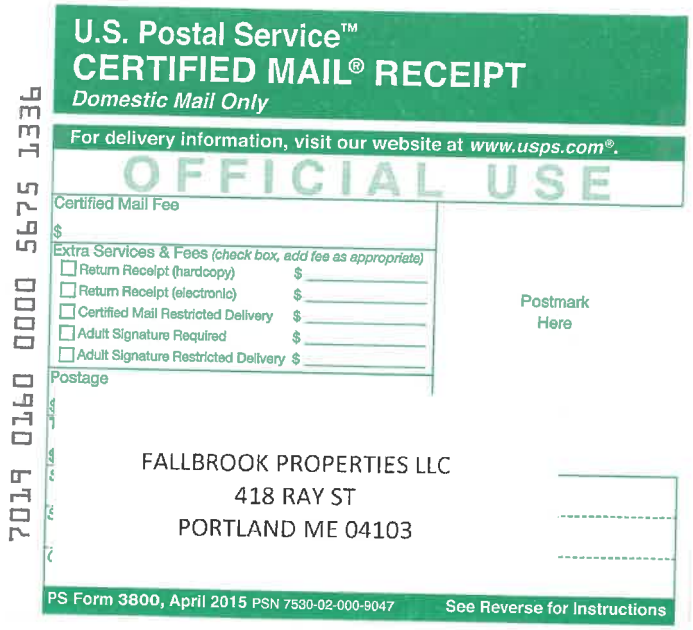
A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in Portland during normal working hours. A copy of the application may also be seen at the City of Portland municipal offices.

Written public comments may be sent to the Southern Maine Regional Office in Portland at MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103 where the application is filed for public inspection.

From: Lori Gunn <lgunn@sebagotechnics.com>
Sent: Monday, February 03, 2020 9:17 AM
To: Joan Jensen <jjensen@pressherald.com>

18347



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

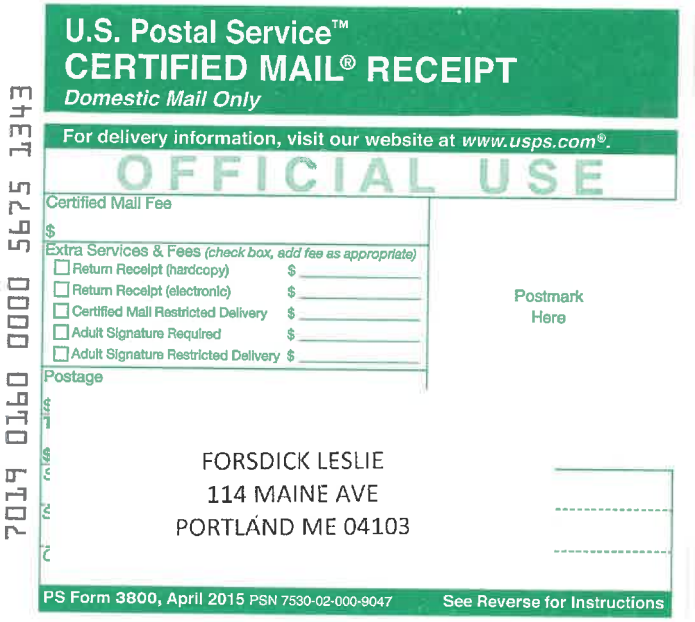
Postage

Postmark Here

7019 0160 0000 5675 1336

FALLBROOK PROPERTIES LLC
418 RAY ST
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage

Postmark Here

7019 0160 0000 5675 1343

FORSDICK LESLIE
114 MAINE AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

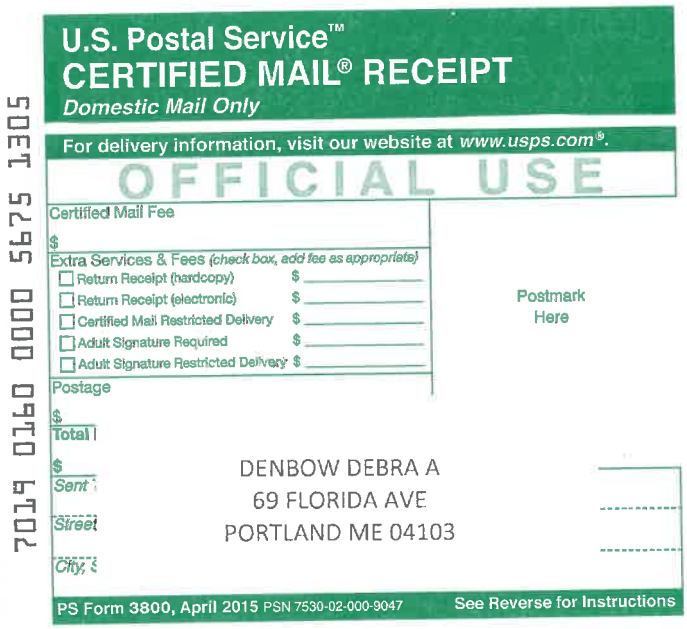
Postage

Postmark Here

7019 0160 0000 5675 1350

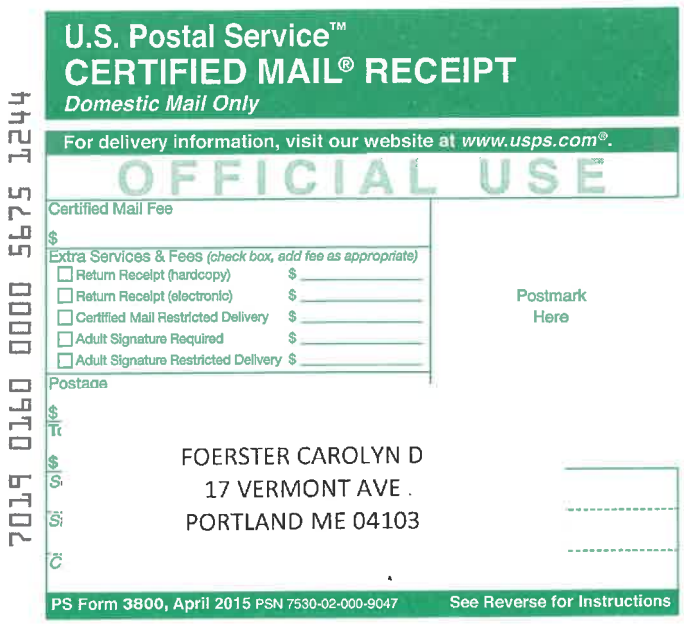
GAUDET MONIQUE R
59 GERTRUDE AVE
PORTLAND ME 04103

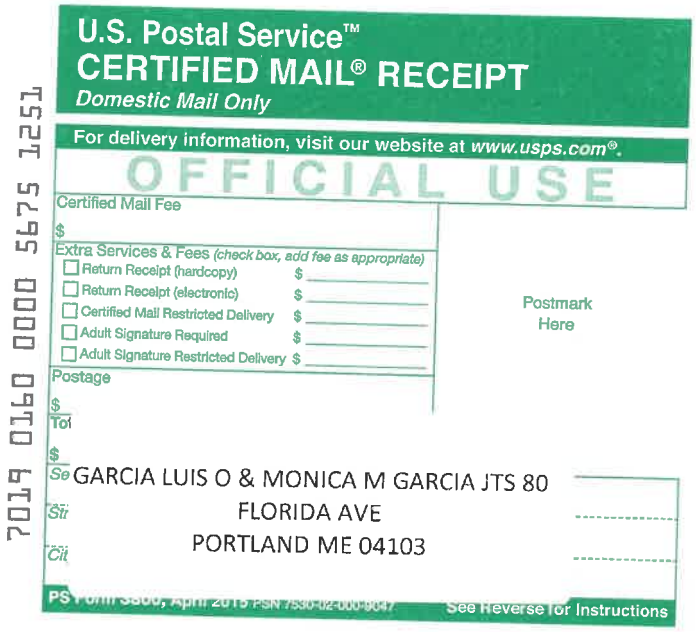
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

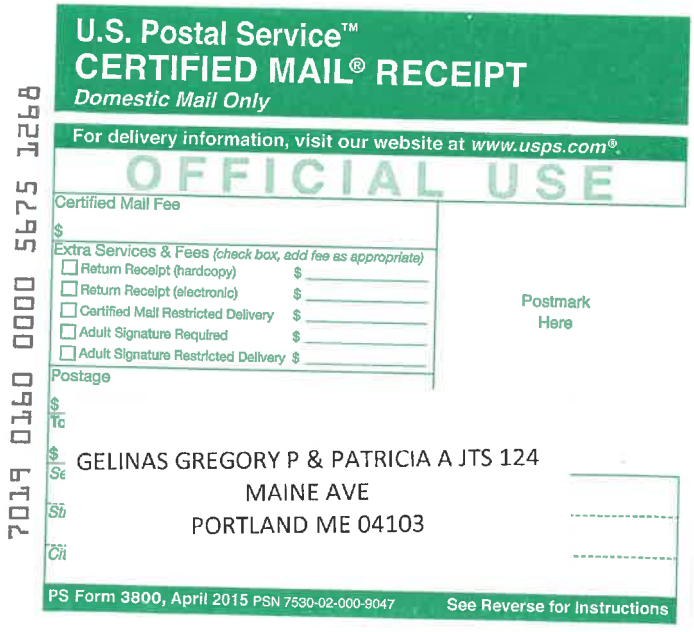

7019 0160 0000 5675 1305
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City, S
Postmark Here
DENBOW DEBRA A
69 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

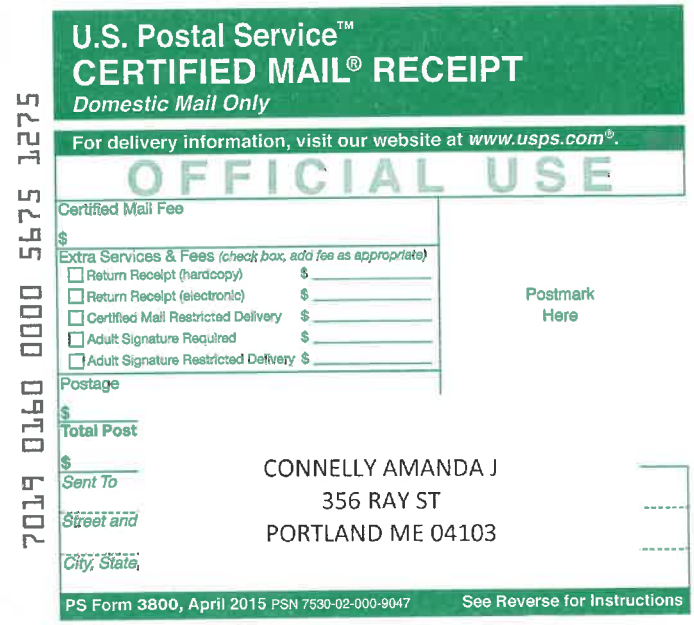

7019 0160 0000 5675 1312
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tota
$
Sent
Stree
City,
Postmark Here
DOUGHTY BEN HILTON & CAROL N DOUGHTY
JTS
54 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

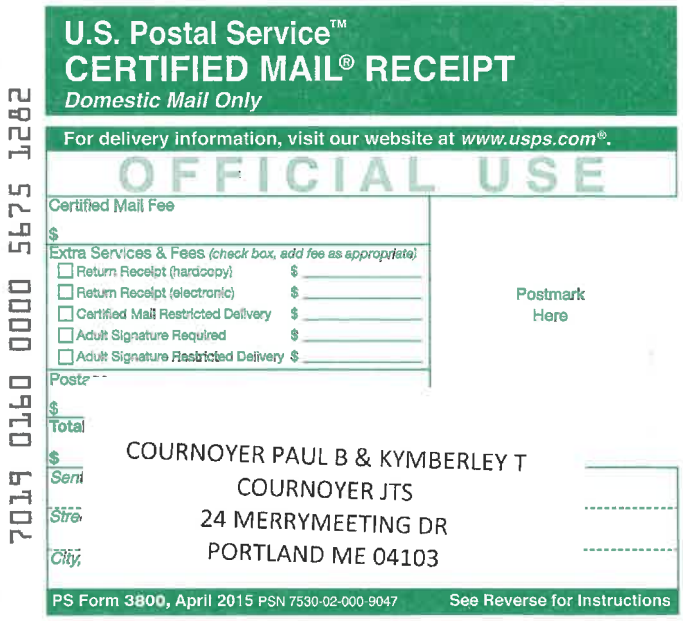

7019 0160 0000 5675 1329
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
$
St
Ci
Postmark Here
DUNCAN JORDAN TYLER & KATHERINE ELISE
DUNCAN JTS
365 RAY ST
PORTLAND ME 04103
See Reverse for Instructions

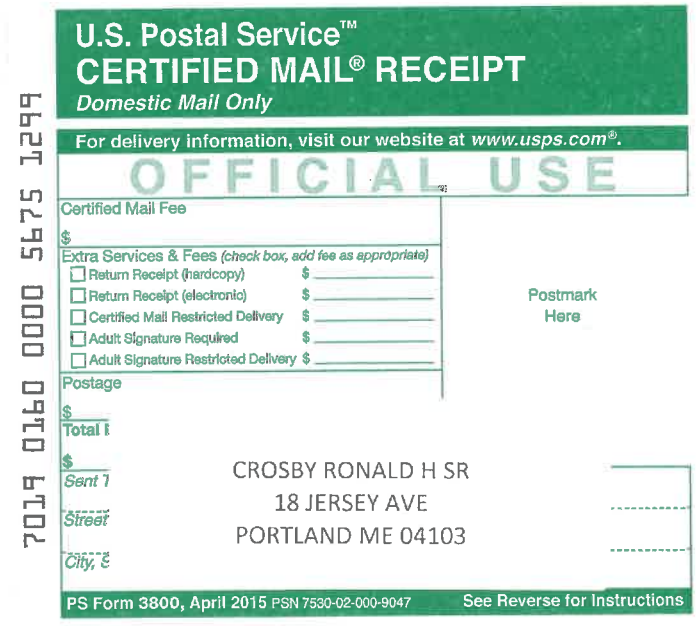

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 1244
FOERSTER CAROLYN D
17 VERMONT AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 1251
GARCIA LUIS O & MONICA M GARCIA JTS 80
FLORIDA AVE
PORTLAND ME 04103
See Reverse for Instructions

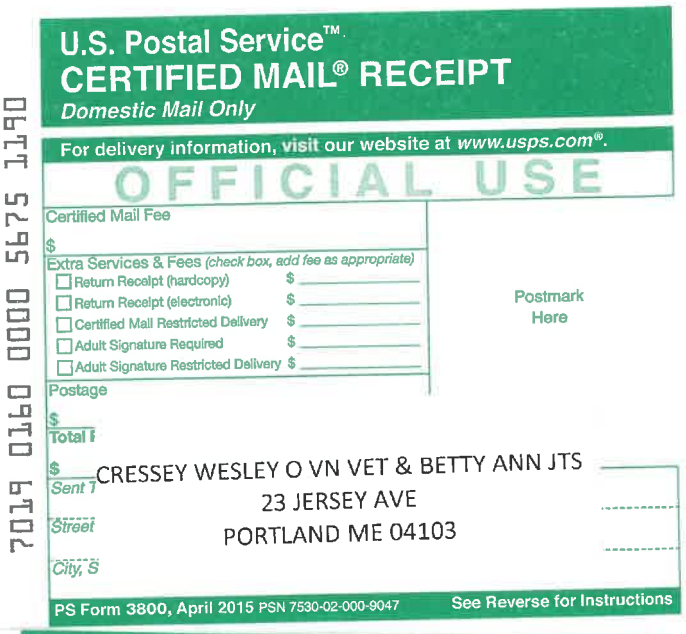

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 1268
GELINAS GREGORY P & PATRICIA A JTS 124
MAINE AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Post
$
Sent To
Street and
City, State,
Postmark Here
CONNELLY AMANDA J
356 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1275

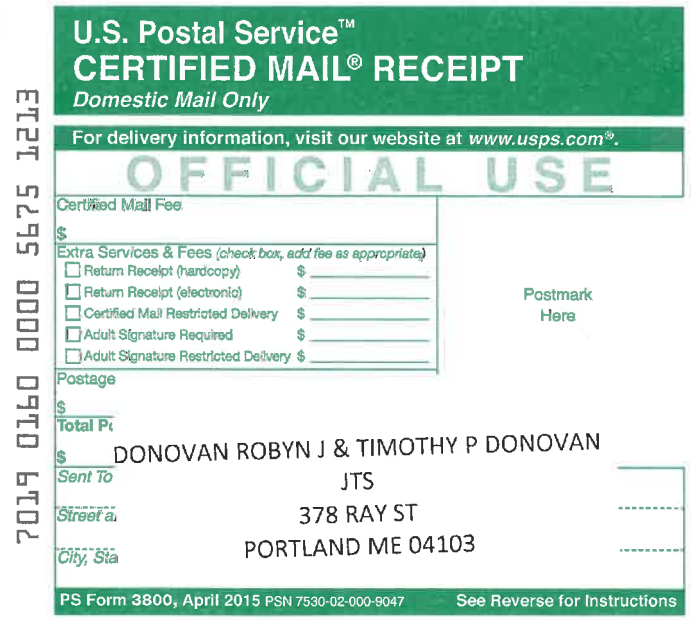

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Postmark Here
COURNOYER PAUL B & KYMBERLEY T
COURNOYER JTS
24 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1282


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
$
Postmark Here
CROSBY RONALD H SR
18 JERSEY AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1299


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street a
City, St
Postmark Here
7019 0160 0000 5675 1183
COTE ELIZABETH M
14 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street
City, S
Postmark Here
7019 0160 0000 5675 1190
CRESSEY WESLEY O VN VET & BETTY ANN JTS
23 JERSEY AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City,
Postmark Here
7019 0160 0000 5675 1206
DEARBORN CAROL A & DAVID L DUMONT JTS
2 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

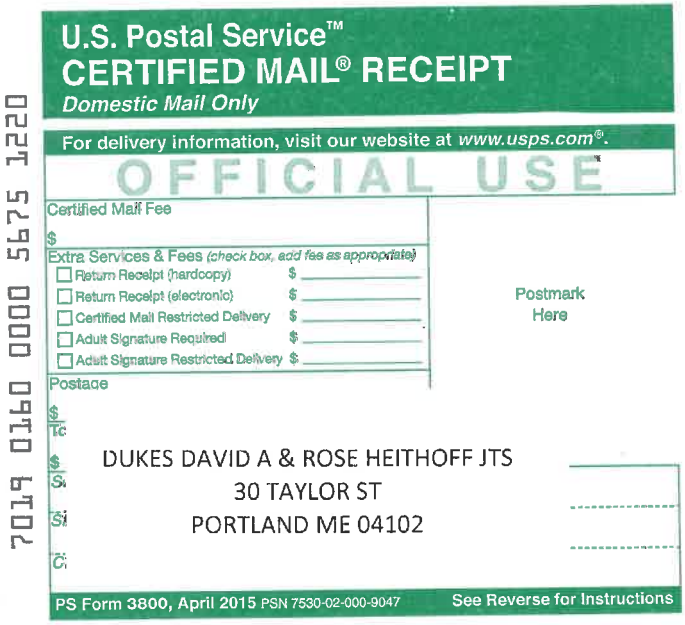
Postage
$
Total P
$
Sent To
Street a
City, Sta

Postmark Here

DONOVAN ROBYN J & TIMOTHY P DONOVAN
JTS
378 RAY ST
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1213



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

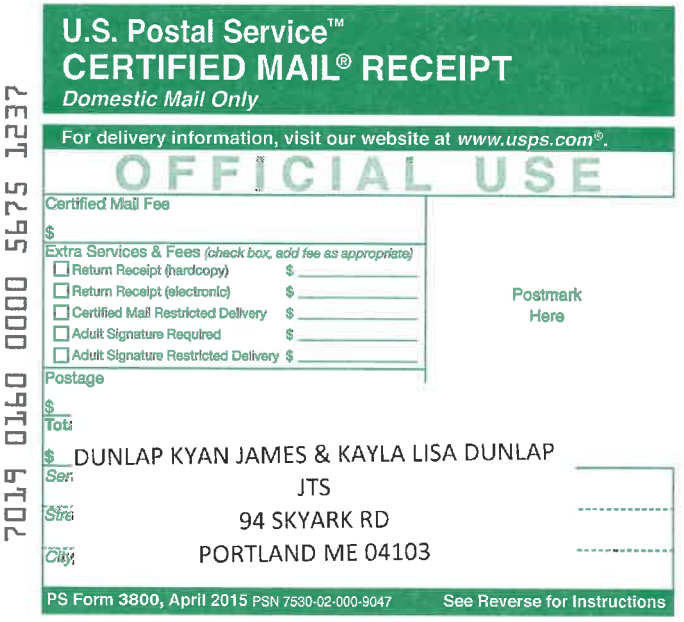
Postage
$
To
$
S
Si
C

Postmark Here

DUKES DAVID A & ROSE HEITHOFF JTS
30 TAYLOR ST
PORTLAND ME 04102

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1220



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

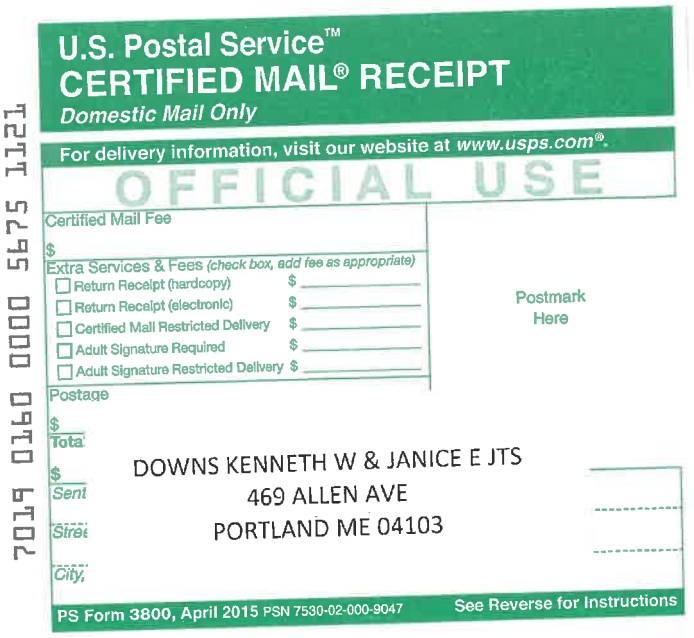
Postage
$
Tot
$
Ser
Stre
City

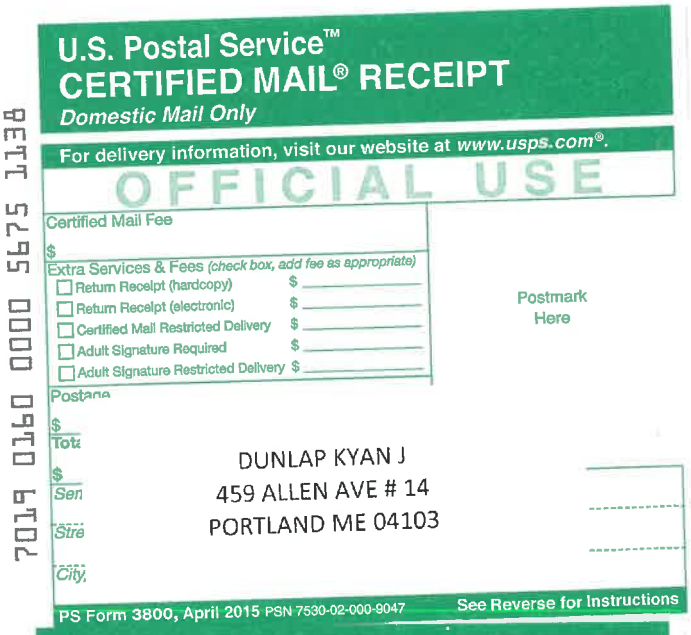
Postmark Here

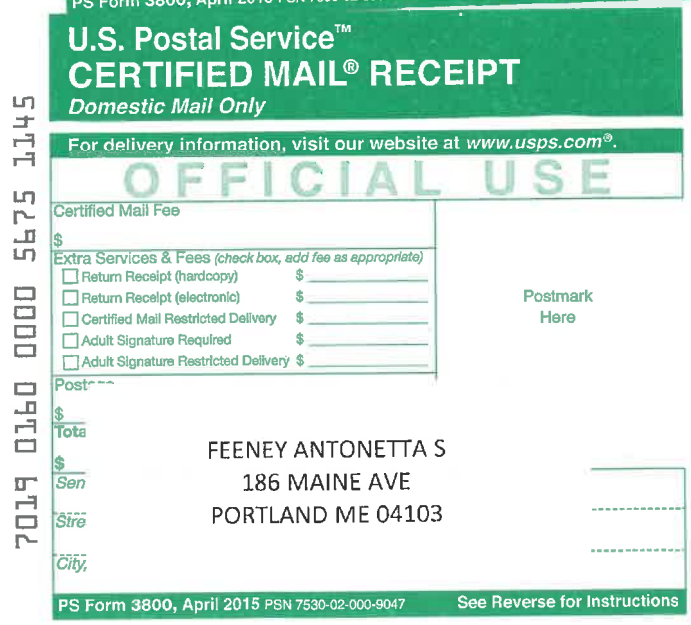
DUNLAP KYAN JAMES & KAYLA LISA DUNLAP
JTS
94 SKYARK RD
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1237

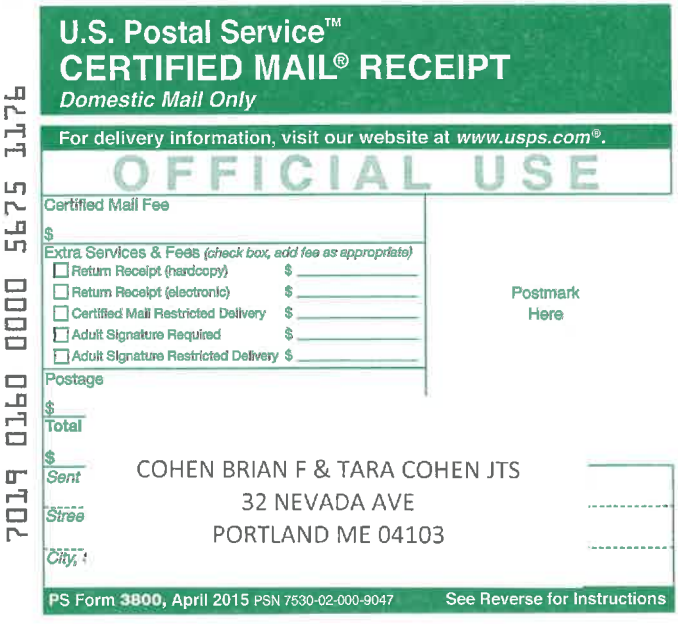

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City,
Postmark Here
DOWNS KENNETH W & JANICE E JTS
469 ALLEN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1121


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City,
Postmark Here
DUNLAP KYAN J
459 ALLEN AVE # 14
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1138


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City,
Postmark Here
FEENEY ANTONETTA S
186 MAINE AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1145


7019 0160 0000 5675 1152
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Postage and Fees
$
Sent To
Street and Apt. No., or PO Box No.
City, State, ZIP+4®
Postmark Here
FROZEN PIPE PROPERTY LLC
2 WASHINGTON AVE
SCARBOROUGH ME 04074
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 1169
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Postage and Fees
$
Sent To
Street and Apt. No., or PO Box No.
City, State, ZIP+4®
Postmark Here
GEE BRANNEN M & KAITLIN M GEE JTS
75 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 1176
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Postage and Fees
$
Sent To
Street and Apt. No., or PO Box No.
City, State, ZIP+4®
Postmark Here
COHEN BRIAN F & TARA COHEN JTS
32 NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

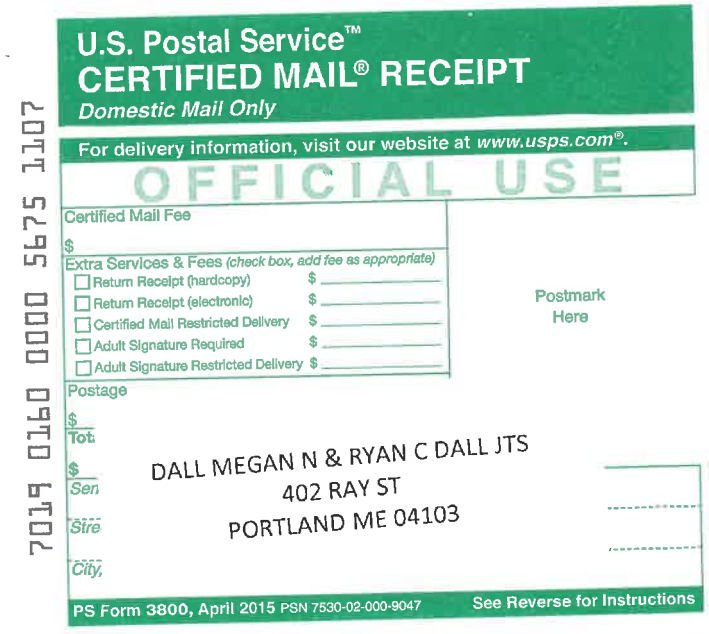
Sent To
Street
City, S

CRABTREE VIRGINIA A
152 MAINE AVE
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1091



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Tot
$
Sen
Stre
City,

DALL MEGAN N & RYAN C DALL JTS
402 RAY ST
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1107



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

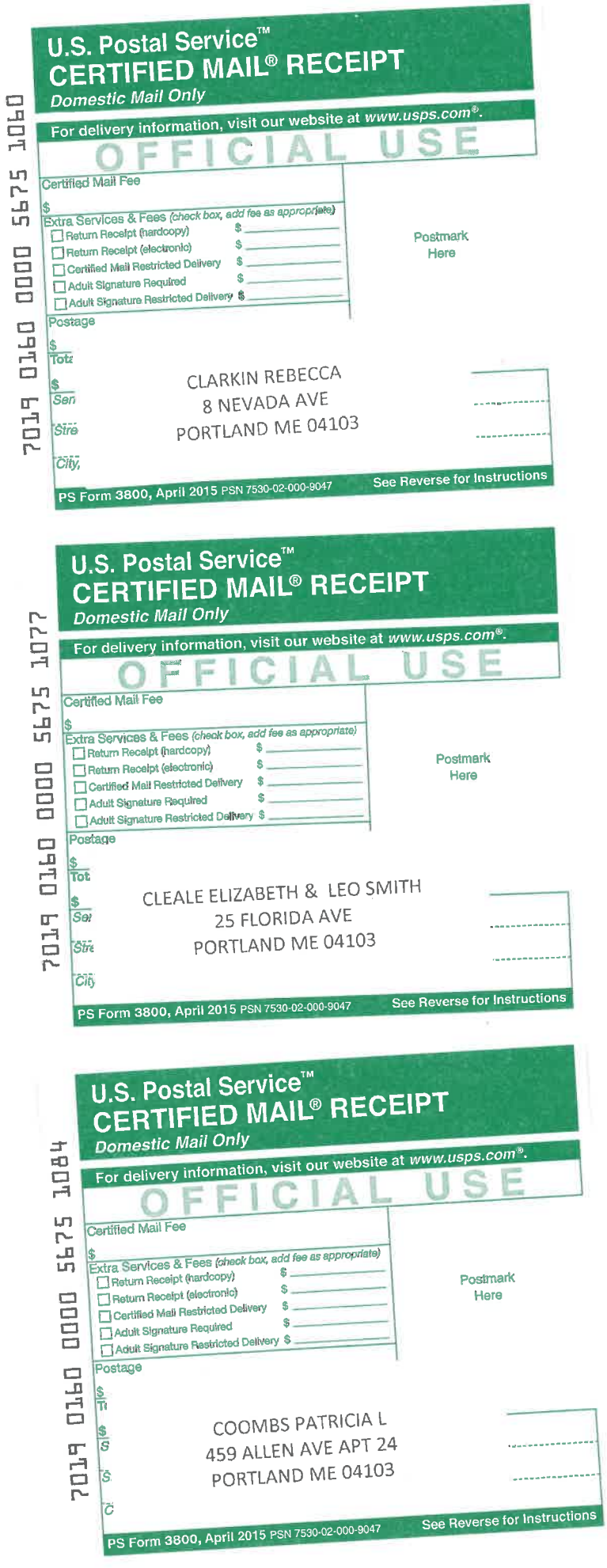
Total P
$
Sent To
Street
City, St

DIPIETRO DAVID
326 RAY ST
PORTLAND ME 04103

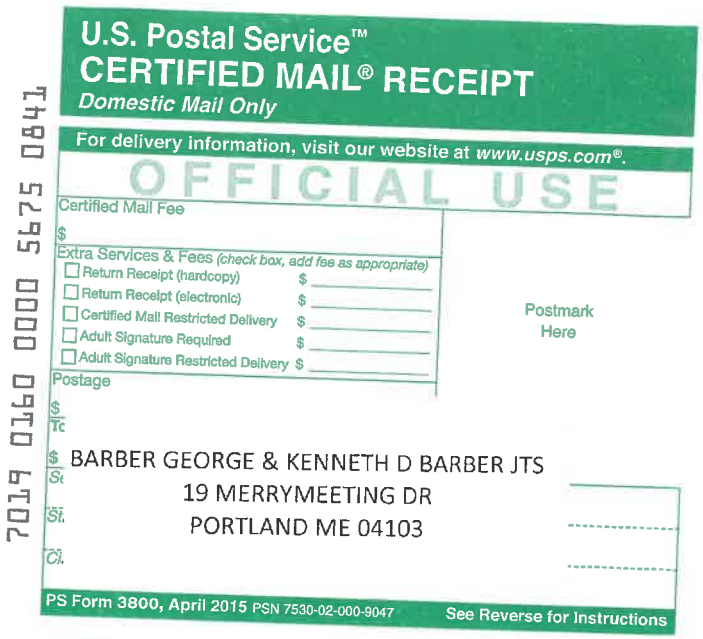
Postmark Here

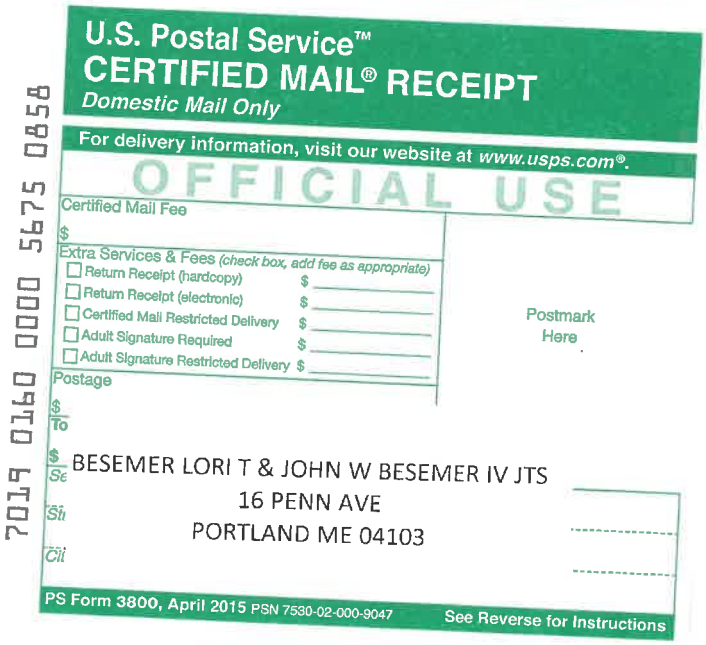
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

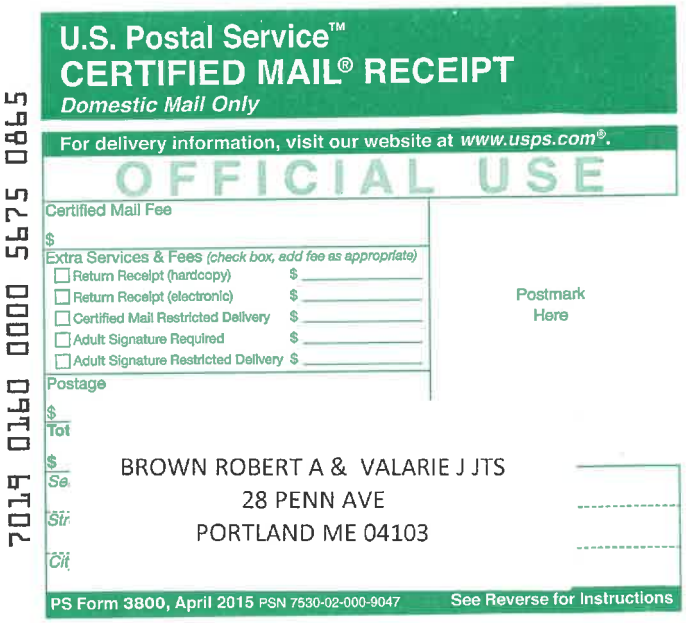
7019 0160 0000 5675 1114



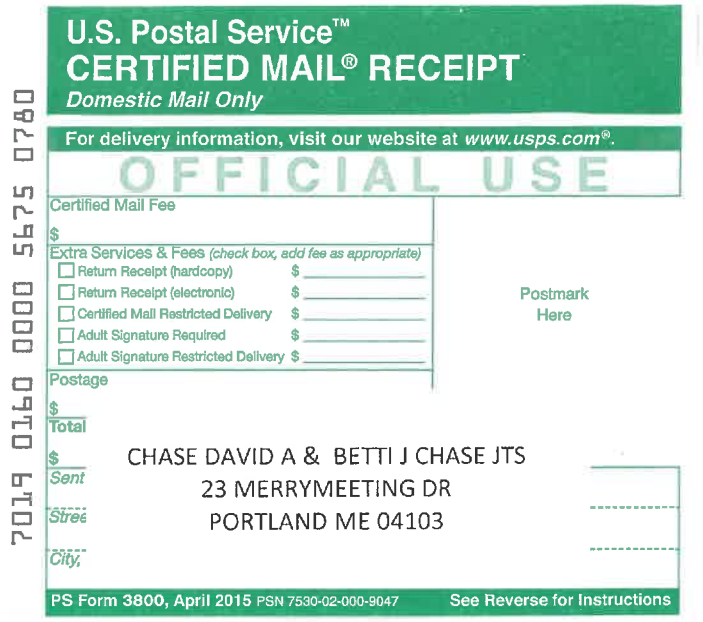
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tota
$
Sen
Stre
City,
Postmark Here
7019 0160 0000 5675 1060
CLARKIN REBECCA
8 NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Sen
Stre
City
Postmark Here
7019 0160 0000 5675 1077
CLEALE ELIZABETH & LEO SMITH
25 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
T
$
S
S
C
Postmark Here
7019 0160 0000 5675 1084
COOMBS PATRICIA L
459 ALLEN AVE APT 24
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 0841
BARBER GEORGE & KENNETH D BARBER JTS
19 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 0858
BESEMER LORI T & JOHN W BESEMER IV JTS
16 PENN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 0865
BROWN ROBERT A & VALARIE J JTS
28 PENN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Se
Str
Cit
CARTER JENNELL A & ALICIA M MENARD JTS
146 MAINE AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
Postmark Here
7019 0160 0000 5675 0872
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Ser
Str
Cit
CHRISTIAN SABRINA KATHRYN
110 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
Postmark Here
7019 0160 0000 5675 0889
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Ser
Str
Cit
CHRISTY KEVIN R & DAWN M JTS
160 MAINE AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
Postmark Here
7019 0160 0000 5675 0896



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

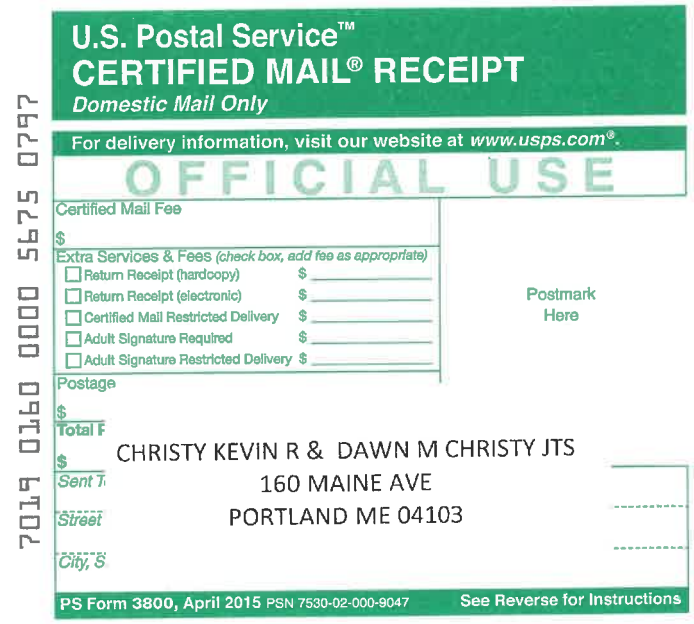
Sent
Stree
City,

Postmark Here

7019 0160 0000 5675 0780

CHASE DAVID A & BETTI J CHASE JTS
23 MERRYMEETING DR
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total F
$

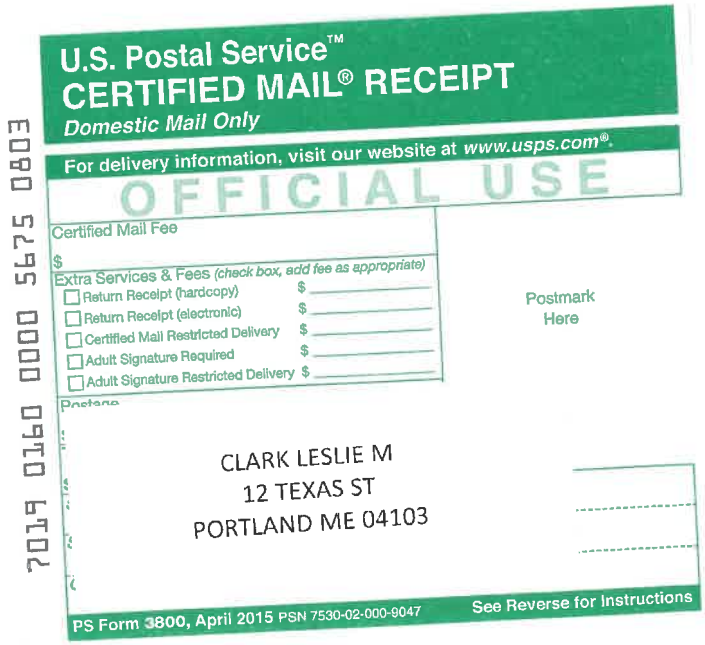
Sent T
Street
City, S

Postmark Here

7019 0160 0000 5675 0797

CHRISTY KEVIN R & DAWN M CHRISTY JTS
160 MAINE AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

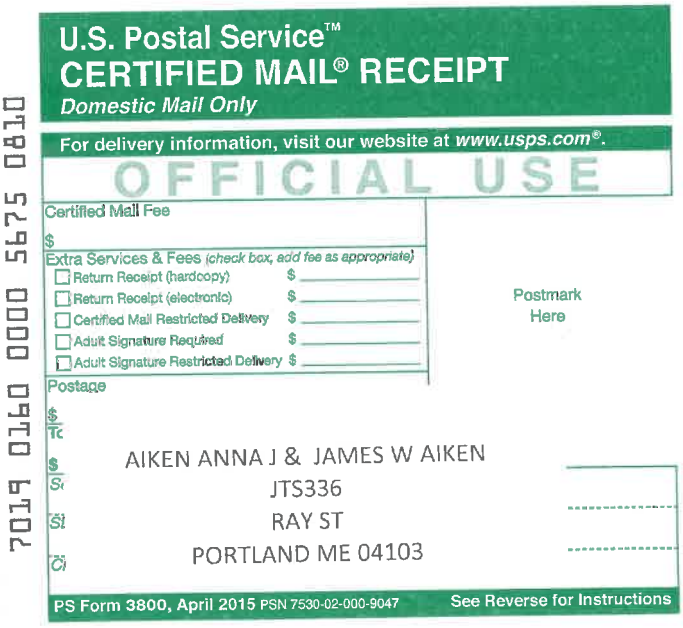
Postage

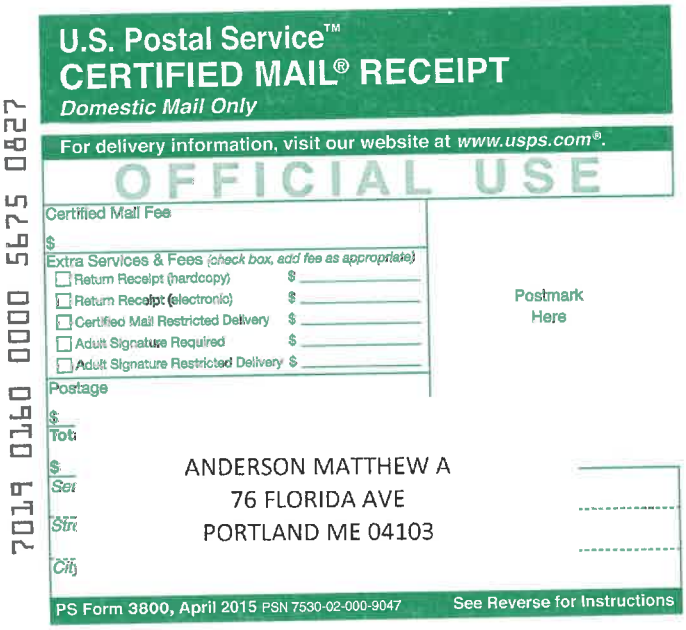
Postmark Here

7019 0160 0000 5675 0803

CLARK LESLIE M
12 TEXAS ST
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
AIKEN ANNA J & JAMES W AIKEN
JTS336
RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0810


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
ANDERSON MATTHEW A
76 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0827


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
ANDERSON-CHRISTIE SUZAN F & MARGERY C
SUDBAY JTS
21 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0834



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent
Stree
City,

Postmark Here

7019 0160 0000 5675 1015

ANASTOS ELLEN B
459 ALLEN AVE # 25
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage

Postmark Here

7019 0160 0000 5675 1022

ANDERSON ROBERTA R
455 ALLEN AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total Po
$

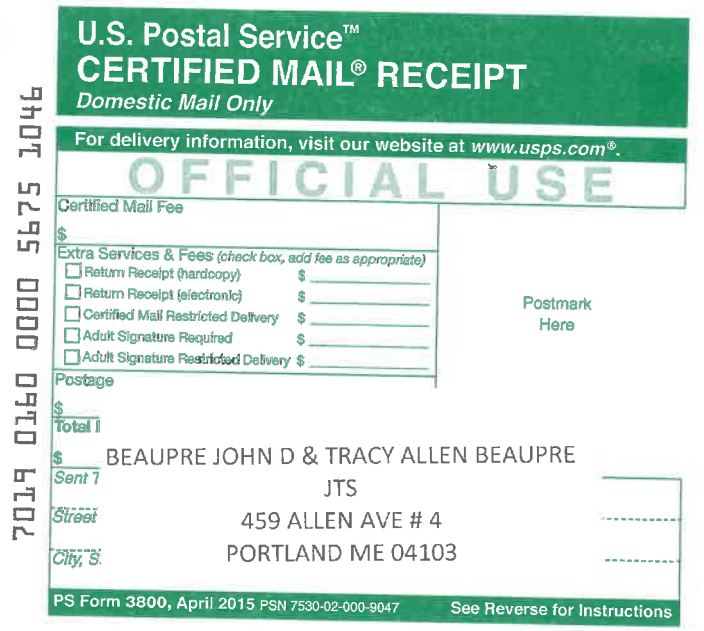
Sent To
Street ar
City, Sta

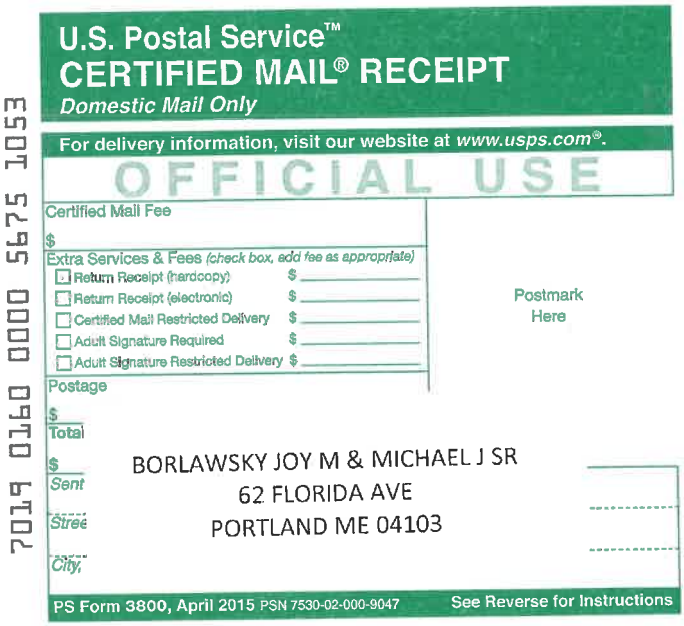
Postmark Here

7019 0160 0000 5675 1039

AUTO EUROPE LLC
39 COMMERCIAL ST
PORTLAND ME 04101

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions


7019 0160 0000 5675 1046
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
Postmark Here
BEAUPRE JOHN D & TRACY ALLEN BEAUPRE
JTS
459 ALLEN AVE # 4
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 1053
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
Postmark Here
BORLAWSKY JOY M & MICHAEL J SR
62 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 0723
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
CARR HILARY
11 QUAIL TRL
BUXTON ME 04093
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent T

Street

City, S

Postmark Here

7019 0160 0000 5675 0957

BLUE WAGON LLC
41 GORE RD
RAYMOND ME 04071

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Tot
$

Ser

Stre

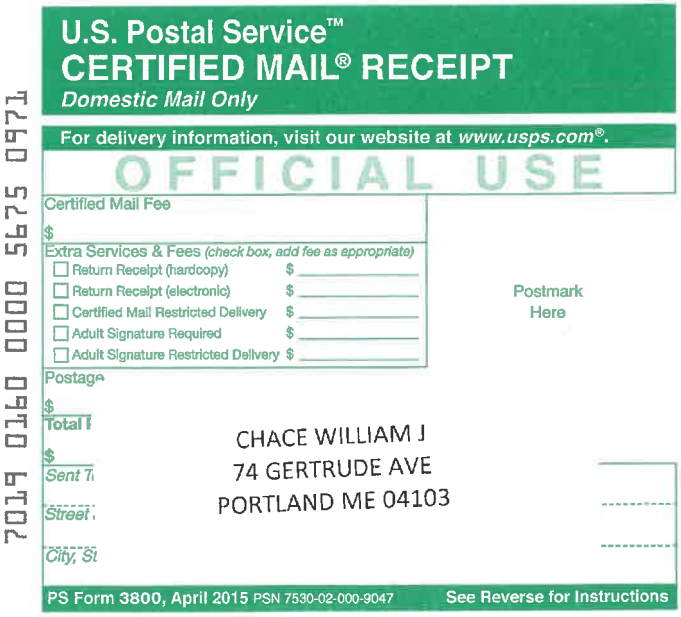
City

Postmark Here

7019 0160 0000 5675 0964

CAETANO VASCO
3 MERRYMEETING DR
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent T

Street

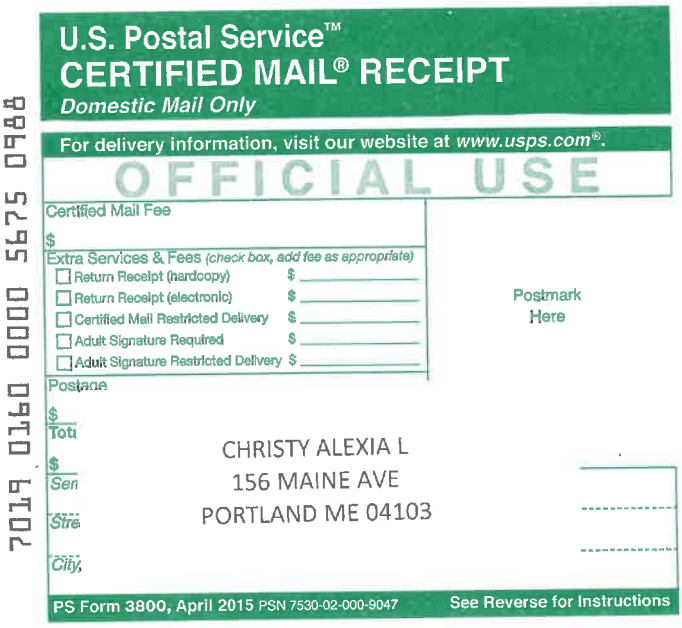
City, St

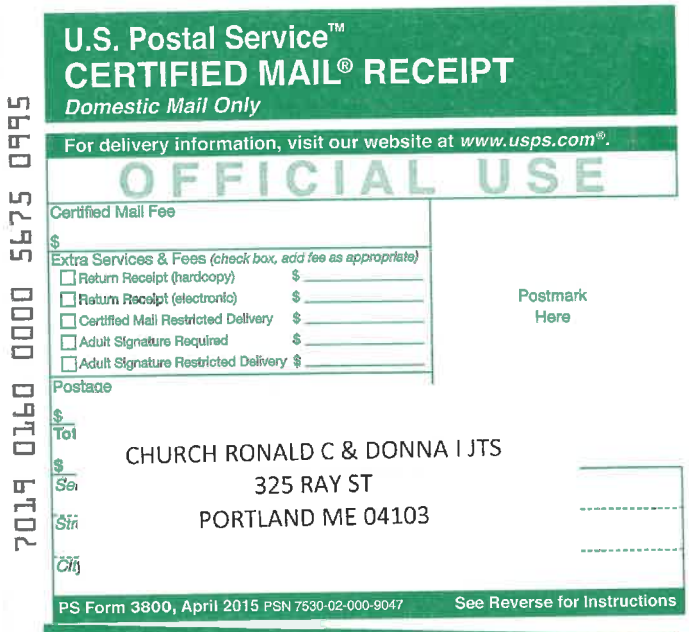
Postmark Here

7019 0160 0000 5675 0971

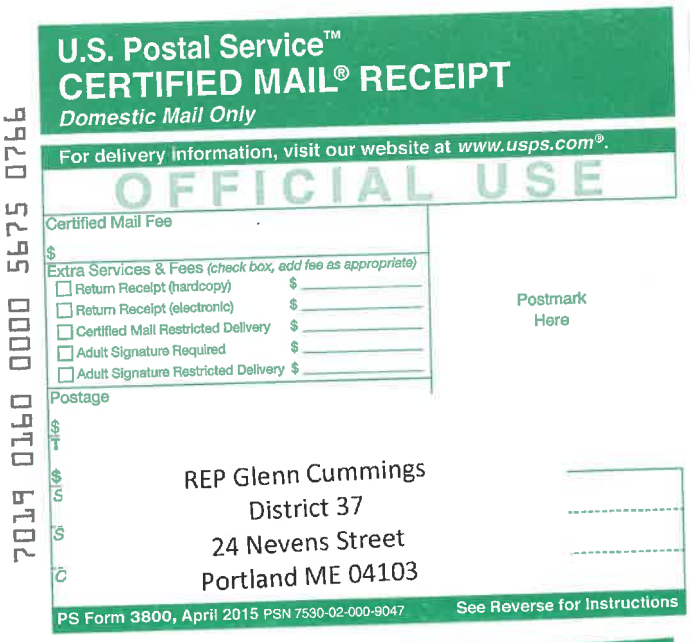
CHACE WILLIAM J
74 GERTRUDE AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

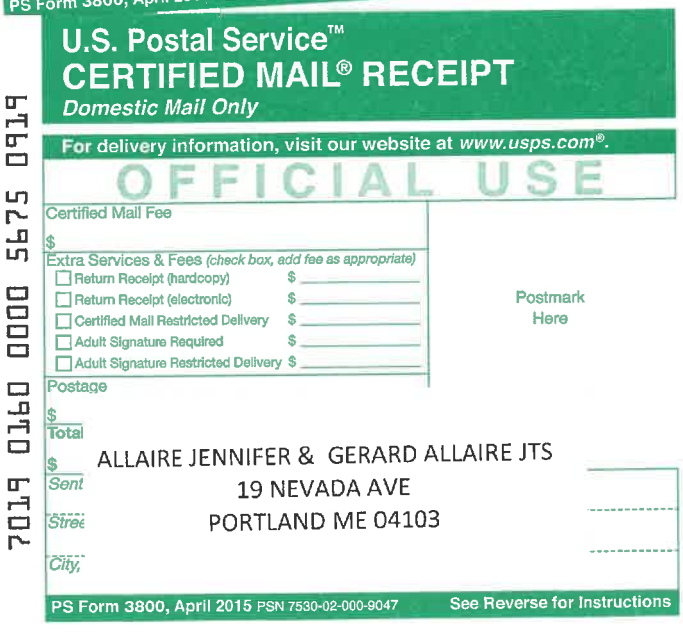

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Sen
Stre
City,
Postmark Here
CHRISTY ALEXIA L
156 MAINE AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0988


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Sen
Stre
City
Postmark Here
CHURCH RONALD C & DONNA I JTS
325 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0995


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
ACHESON ANN W & JAMES M ACHESON
JTS28
MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1008


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Postmark Here
REP Glenn Cummings
District 37
24 Nevens Street
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0766


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Postmark Here
9 NEVADA LLC
111 POND RD
NEW GLOUCESTER ME 04260
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0902


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Postmark Here
ALLAIRE JENNIFER & GERARD ALLAIRE JTS
19 NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0919

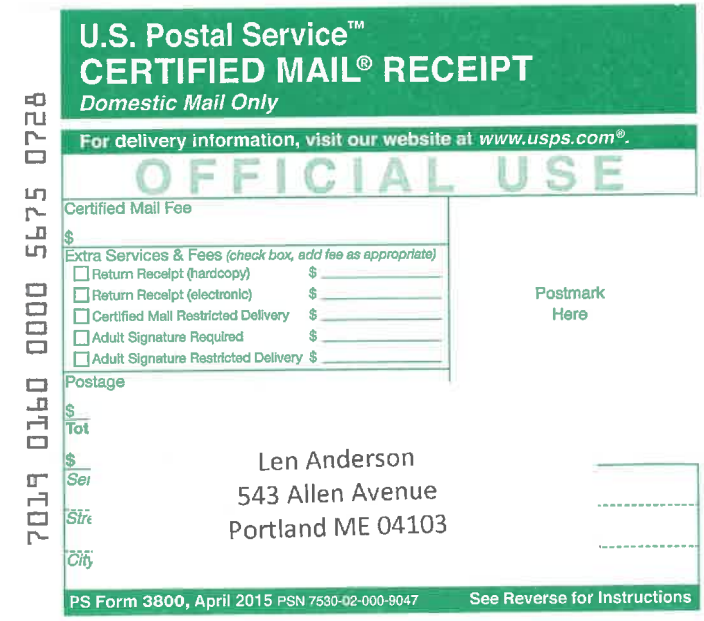

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Total
Sent
Street
City, S
Postmark Here
ANDERSON PATTI J & RICHARD E JR
JTS
97 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0926


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Total
Sent
Street
City, S
Postmark Here
ATTIX LEE & SUSAN ROWAN JTS
18 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0933

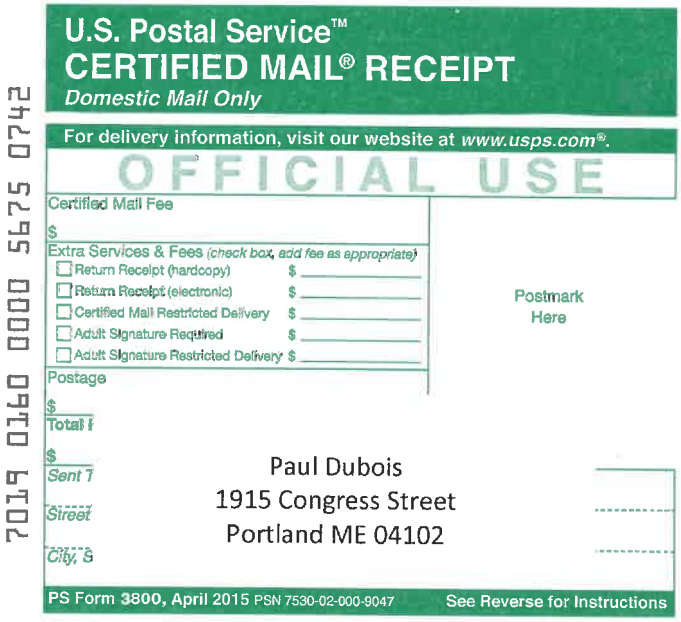

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Total
Sent
Street
City, S
Postmark Here
BASSETT SANDRA J
12 VERMONT AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0940

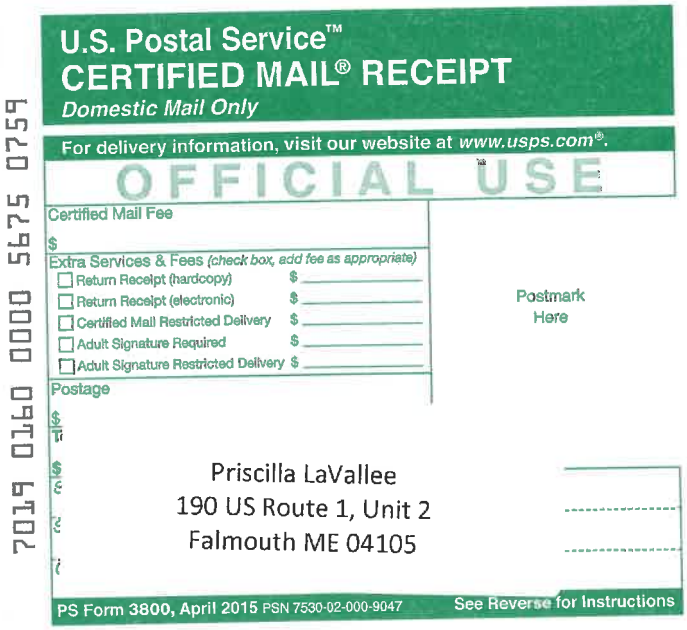

7019 0160 0000 5675 0704
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
Devon Platte
26 North Street, #3
Portland ME 04101
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

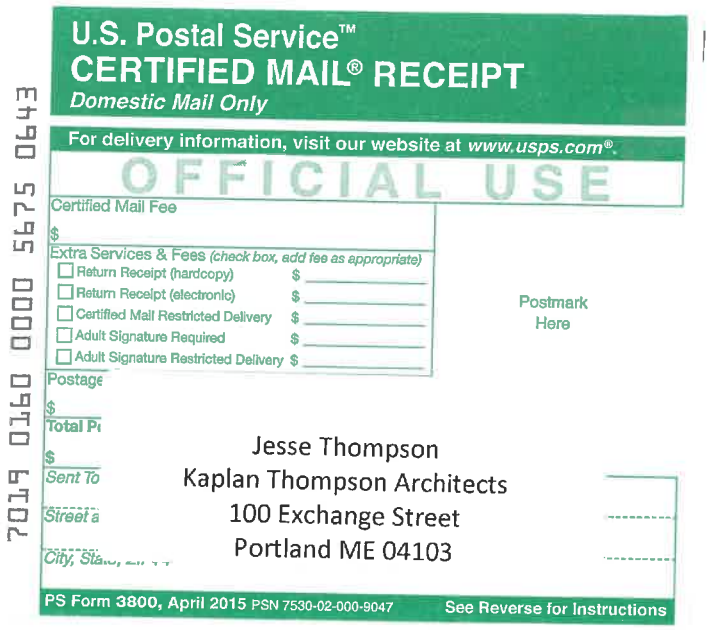

7019 0160 0000 5675 0711
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
Postage
Janice Carpenter
9 W. Commonwealth Drive
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 0728
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
Postage
Len Anderson
543 Allen Avenue
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

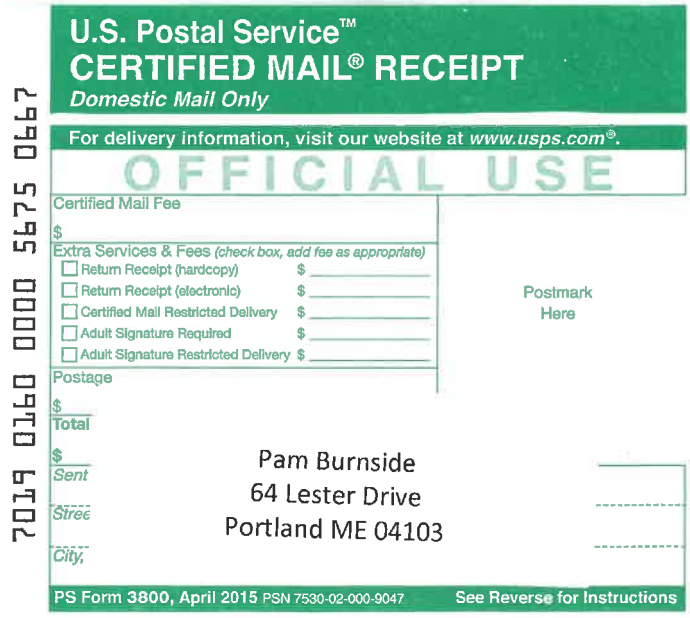

7019 0160 0000 5675 0735
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
Vahan Tufankijan
Seaside Healthcare
850 Baxter Boulevard
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 0742
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
Paul Dubois
1915 Congress Street
Portland ME 04102
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

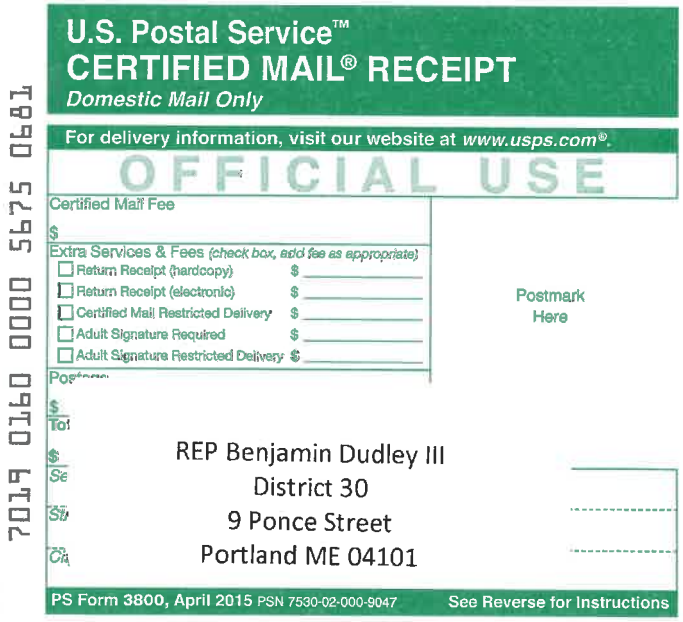

7019 0160 0000 5675 0759
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
Priscilla LaVallee
190 US Route 1, Unit 2
Falmouth ME 04105
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street a
City, Sta
Postmark Here
Jesse Thompson
Kaplan Thompson Architects
100 Exchange Street
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0643


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tota
$
Sent
Stree
City,
Postmark Here
Mary Griffity
6 E. Prom, Unit #2
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0650

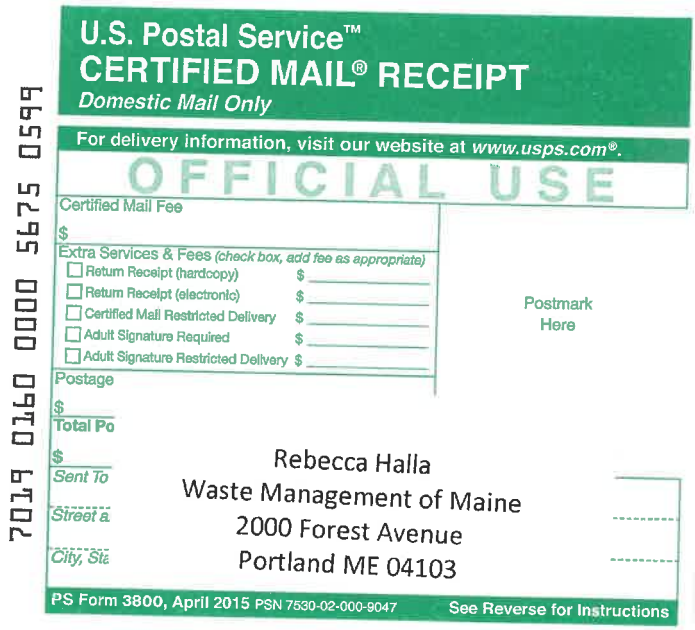

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
Pam Burnside
64 Lester Drive
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0667


7019 0160 0000 5675 0674
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Se
Str
Cit
Philip Haughey
1660 Soldiers Field Road
Boston MA 02135
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

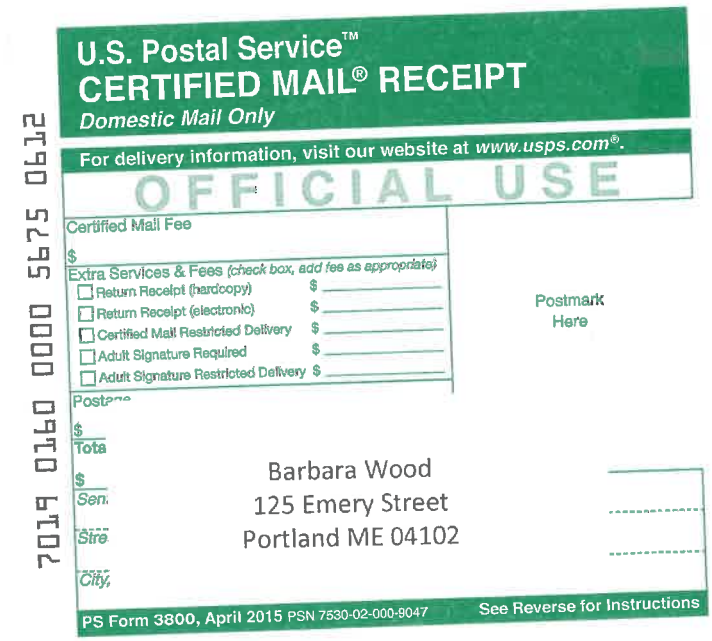

7019 0160 0000 5675 0681
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Se
Str
Cit
REP Benjamin Dudley III
District 30
9 Ponce Street
Portland ME 04101
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 0698
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total F
$
Sent T
Street
City, St
Chris Castelsky
Fairpoint Communications
521 East Morehead Street
Charlotte NC 28202
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
7019 0160 0000 5675 0582
Peggy Morin
66 Farnham Street
Portland ME 04101
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Po
$
Sent To
Street a
City, Sta
Postmark Here
7019 0160 0000 5675 0599
Rebecca Halla
Waste Management of Maine
2000 Forest Avenue
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

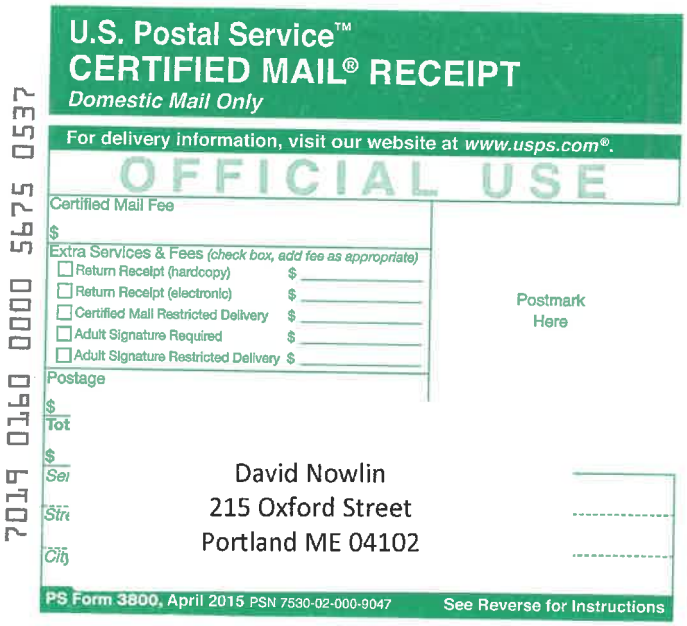

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
7019 0160 0000 5675 0605
Robert Hains
250 Holm Avenue
Portland ME 04102-1208
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

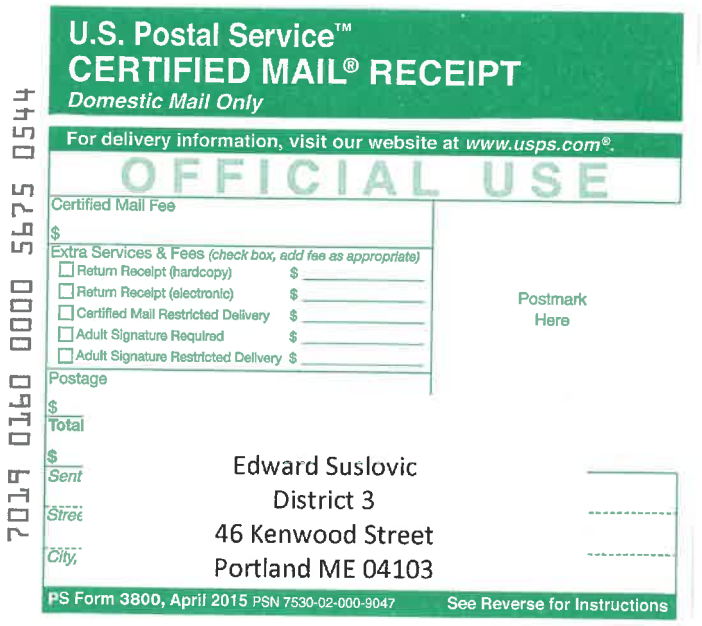

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Total
Sent
Street
City,
Postmark Here
Barbara Wood
125 Emery Street
Portland ME 04102
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0612


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Total
Sent
Street
City,
Postmark Here
Deb Keenan
28 Dorothy Street
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0629

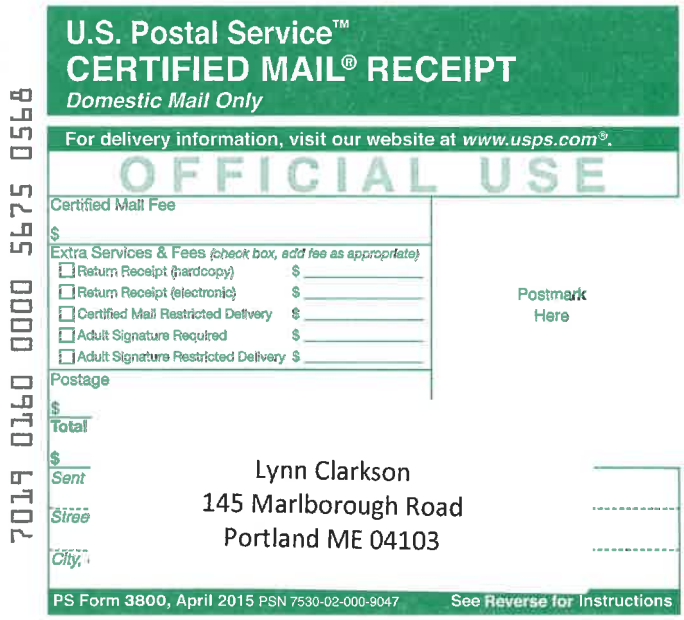

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Total
Sent
Street
City,
Postmark Here
Greater Portland Council of Governments
970 Baxter Blvd., 2nd Floor
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0636


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
7019 0160 0000 5675 0018
Anthony Donovan
27 Riverview Street
Portland ME 04102
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

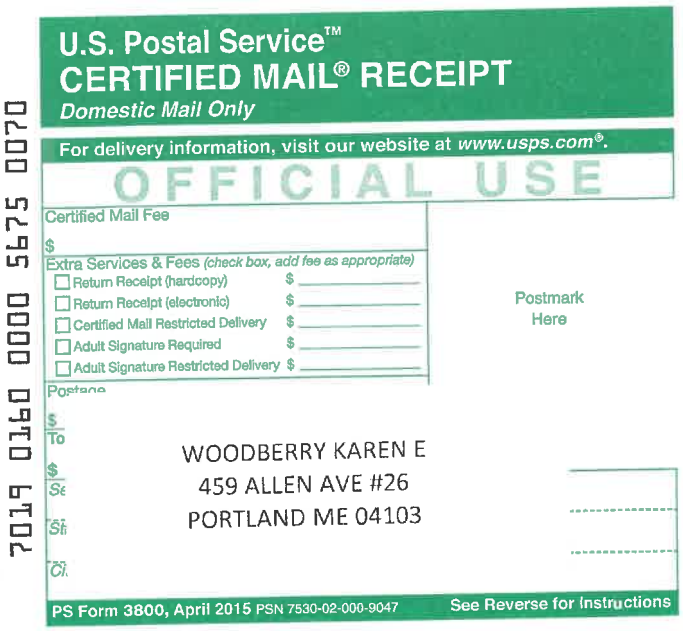

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
7019 0160 0000 5675 0537
David Nowlin
215 Oxford Street
Portland ME 04102
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

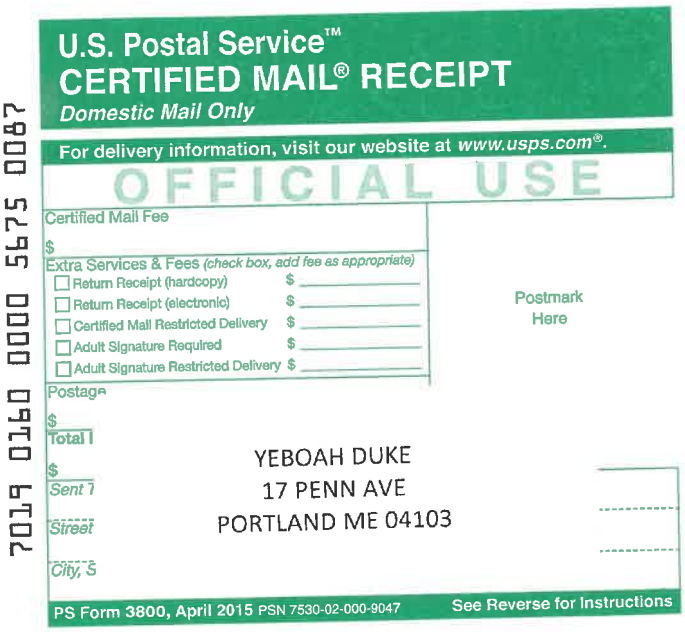

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
7019 0160 0000 5675 0544
Edward Suslovic
District 3
46 Kenwood Street
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

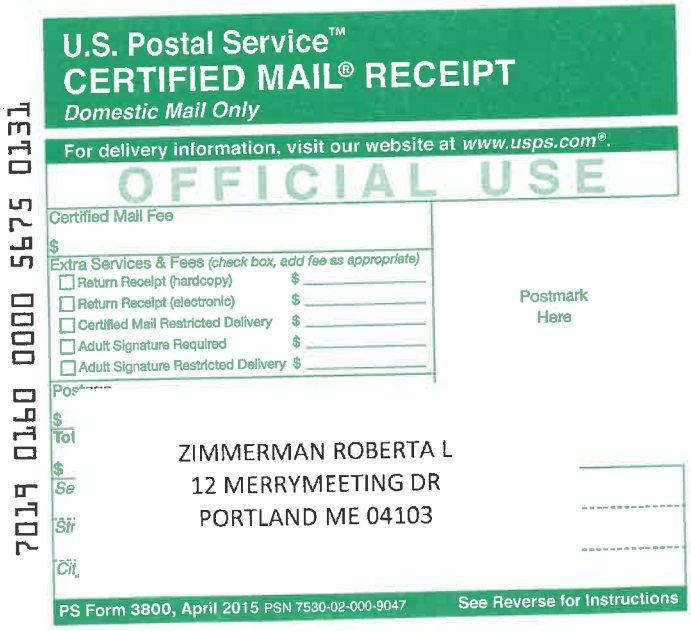

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
7019 0160 0000 5675 0551
Jennifer Munson
City of Portland
389 Congress Street
Portland ME 04101
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

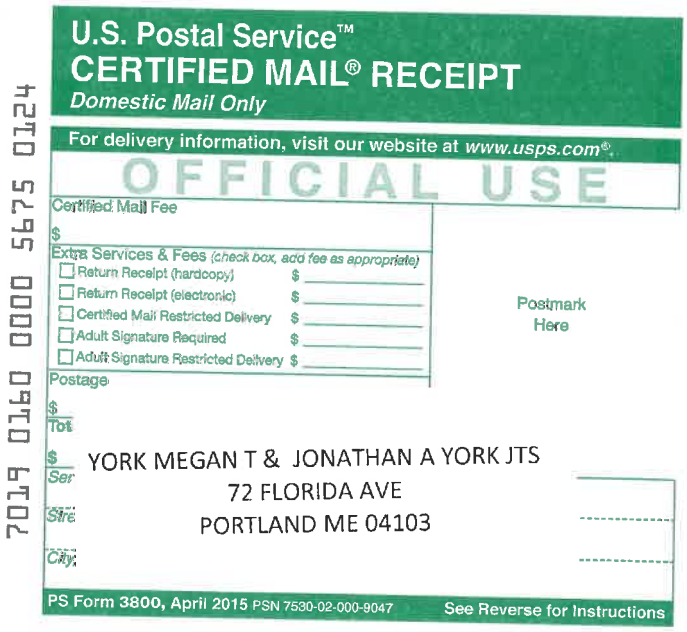

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
7019 0160 0000 5675 0568
Lynn Clarkson
145 Marlborough Road
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tota
$
Sen
Stre
City,
Postmark Here
7019 0160 0000 5675 0575
Nancy Bartlett
PO Box 7965
Portland ME 04112
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

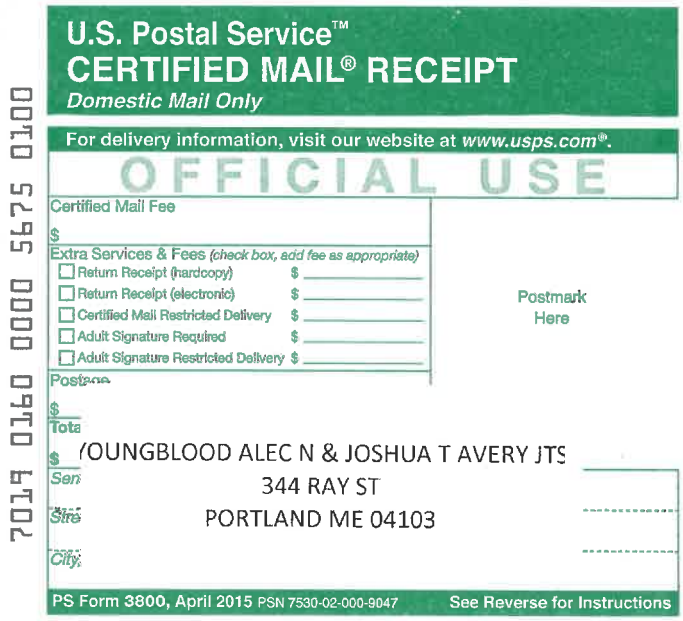

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
$
St
Sti
Ci
Postmark
Here
WOODBERRY KAREN E
459 ALLEN AVE #26
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0070

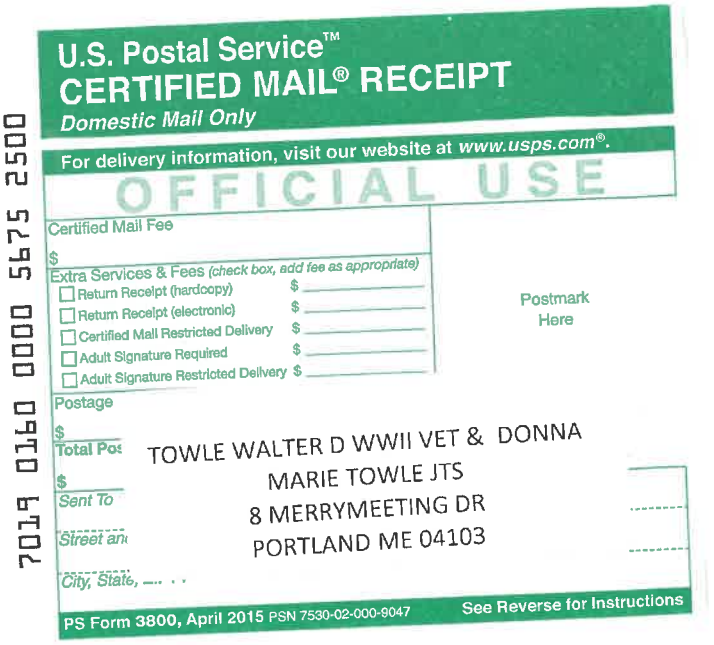

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City, S
Postmark
Here
YEBOAH DUKE
17 PENN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0087

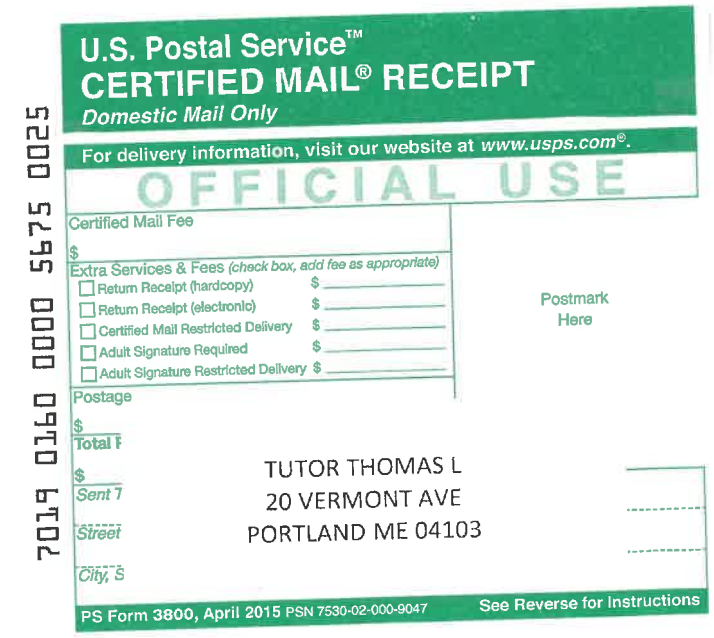

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Pos
$
Tot
$
Se
Str
Cit
Postmark
Here
ZIMMERMAN ROBERTA L
12 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0131

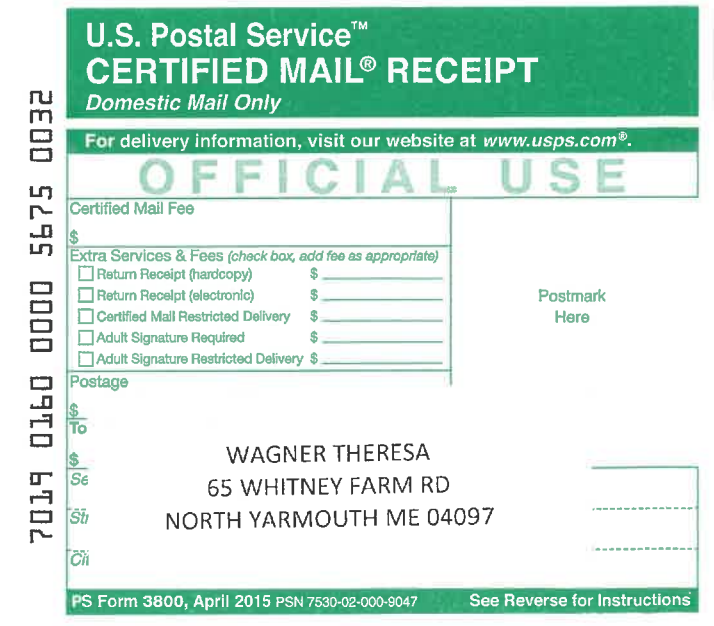

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postage
Postmark Here
7019 0160 0000 5675 0124
YORK MEGAN T & JONATHAN A YORK JTS
72 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

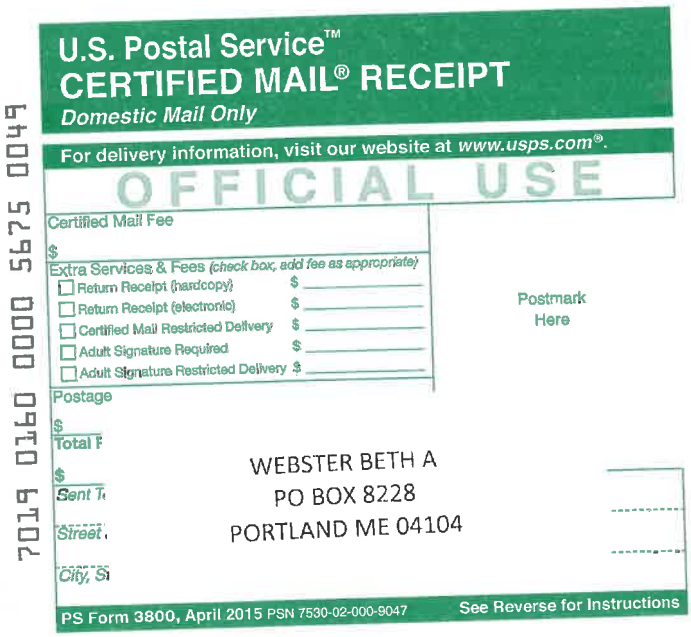

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postmark Here
7019 0160 0000 5675 0117
ZUB PATRICIA A
308 E 120TH AVE
TAMPA FL 33612
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

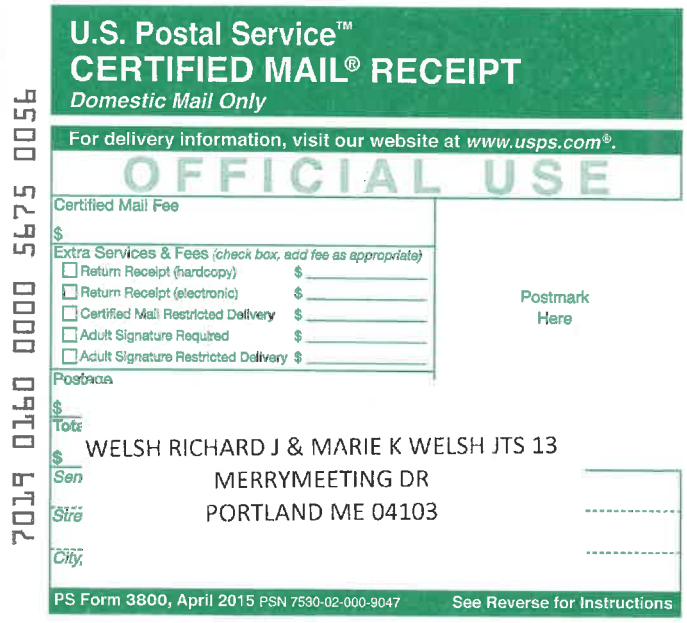

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postmark Here
7019 0160 0000 5675 0100
YOUNGBLOOD ALEC N & JOSHUA T AVERY JTS
344 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

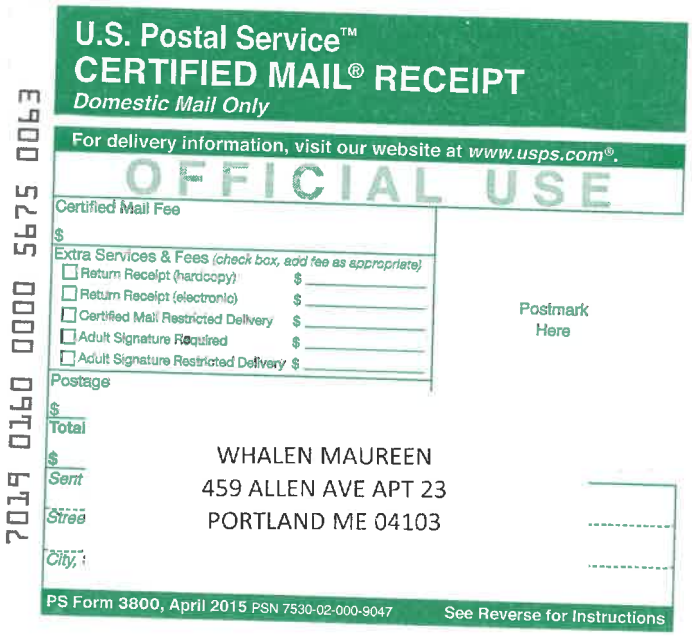

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Pos
$
Sent To
Street an
City, State,
TOWLE WALTER D WWII VET & DONNA
MARIE TOWLE JTS
8 MERRYMEETING DR
PORTLAND ME 04103
Postmark
Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2500


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total F
$
Sent T
Street
City, S
TUTOR THOMAS L
20 VERMONT AVE
PORTLAND ME 04103
Postmark
Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0025

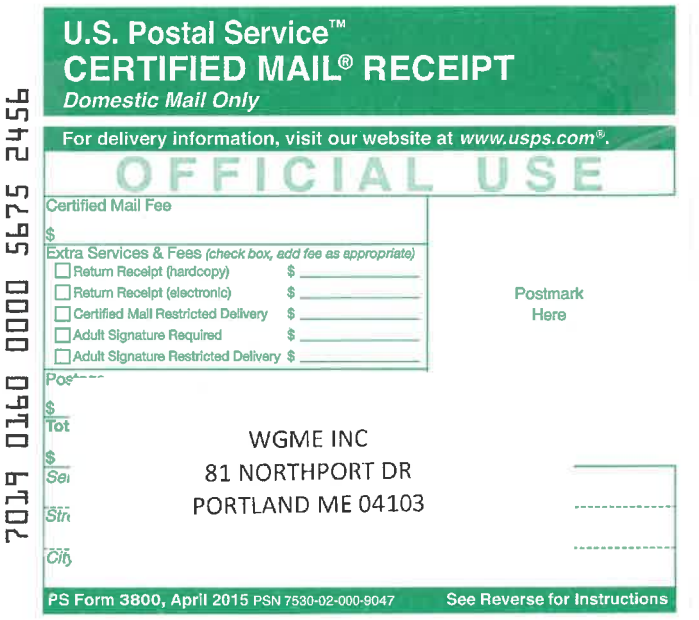

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
$
Se
Sti
Cit
WAGNER THERESA
65 WHITNEY FARM RD
NORTH YARMOUTH ME 04097
Postmark
Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0032

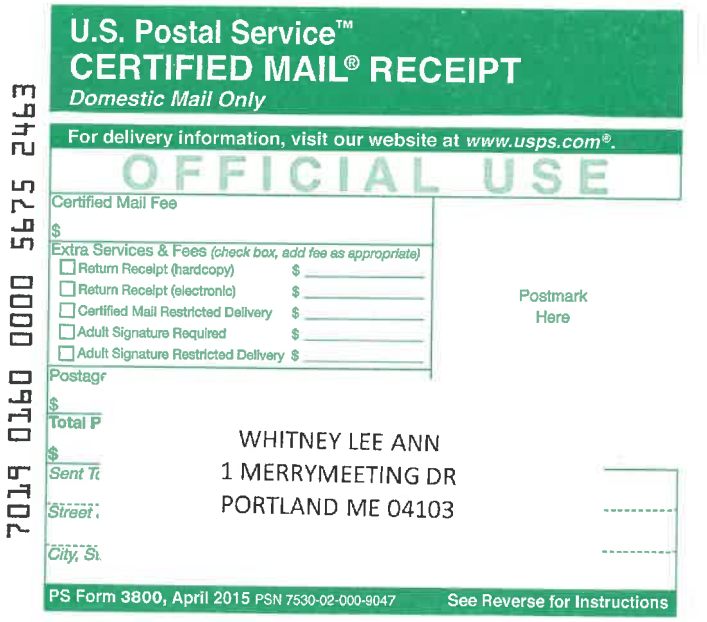

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent T
Street
City, St
Postmark Here
WEBSTER BETH A
PO BOX 8228
PORTLAND ME 04104
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0049


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tota
$
Sen
Stre
City,
Postmark Here
WELSH RICHARD J & MARIE K WELSH JTS 13
MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0056

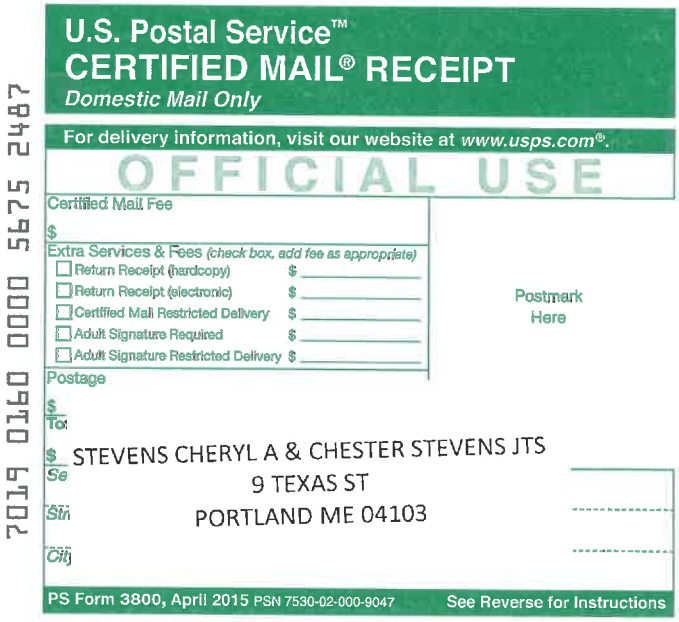

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
WHALEN MAUREEN
459 ALLEN AVE APT 23
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 0063

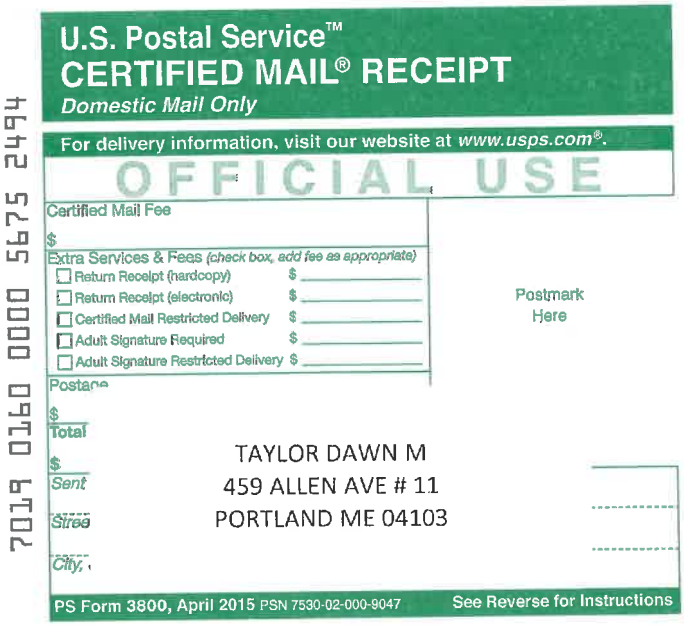

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total F
$
Sent T
Street
City, S
Postmark Here
7019 0160 0000 5675 2449
WELSH RICHARD E & SUSAN WELSH JTS
5 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

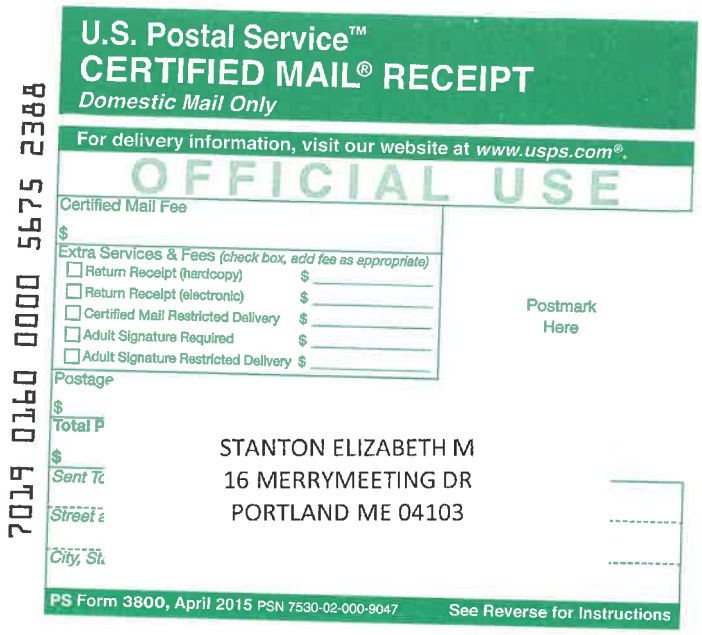

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Pos
$
Tot
$
Sei
Stre
City
Postmark Here
7019 0160 0000 5675 2456
WGME INC
81 NORTHPORT DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street
City, St
Postmark Here
7019 0160 0000 5675 2463
WHITNEY LEE ANN
1 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

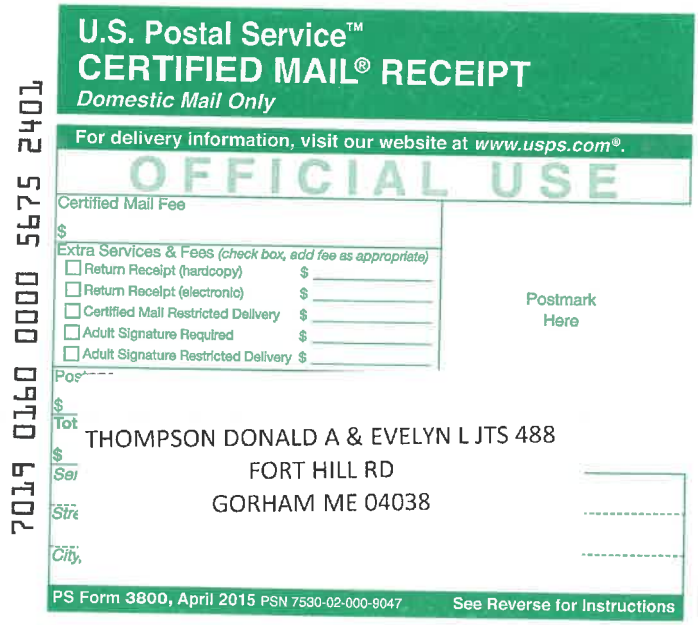

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City, S
Postmark Here
7019 0160 0000 5675 2470
SNOW CORY & SHEILA J SULLIVAN JTS
398 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

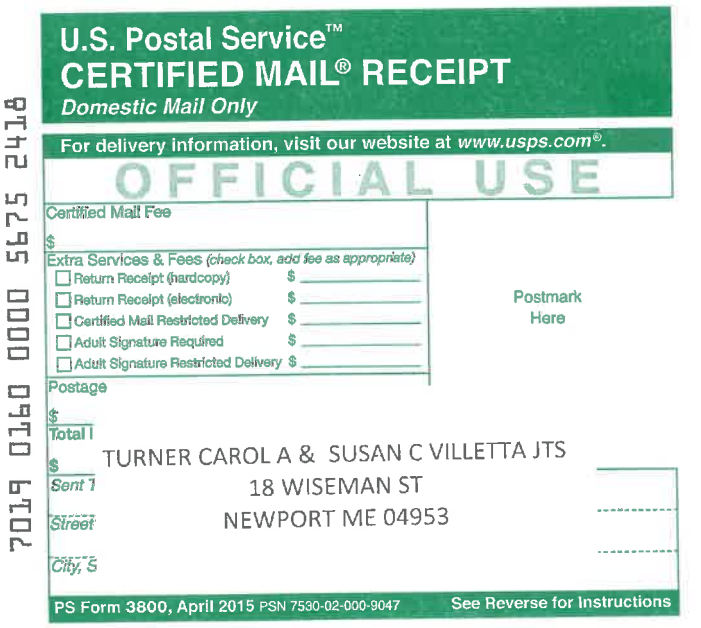

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
$
Se
Str
City
Postmark Here
7019 0160 0000 5675 2487
STEVENS CHERYL A & CHESTER STEVENS JTS
9 TEXAS ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
7019 0160 0000 5675 2494
TAYLOR DAWN M
459 ALLEN AVE # 11
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street a
City, St
Postmark Here
STANTON ELIZABETH M
16 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2388


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total F
$
Sent To
Street
City, St
Postmark Here
TALBOT JOSEPH F & JUDITH A HARRIS JTS
16 NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2395


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Pos
$
Tot
$
Sen
Stre
City,
Postmark Here
THOMPSON DONALD A & EVELYN L JTS 488
FORT HILL RD
GORHAM ME 04038
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2401



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total I
$

Sent T

Street

City, S

Postmark Here

7019 0160 0000 5675 2418

TURNER CAROL A & SUSAN C VILLETTA JTS
18 WISEMAN ST
NEWPORT ME 04953

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total Po
$

Sent To

Street an

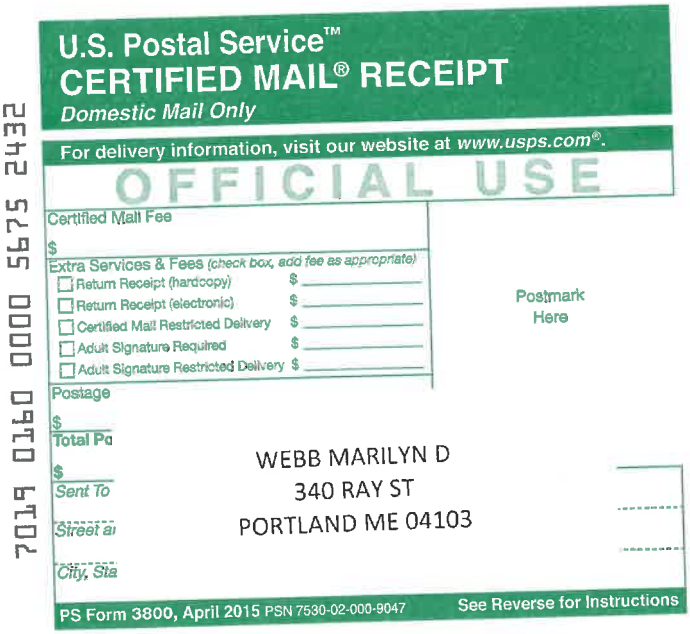
City, Stat

Postmark Here

7019 0160 0000 5675 2425

URBACH PAULA M
92 FLORIDA AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total Po
$

Sent To

Street a

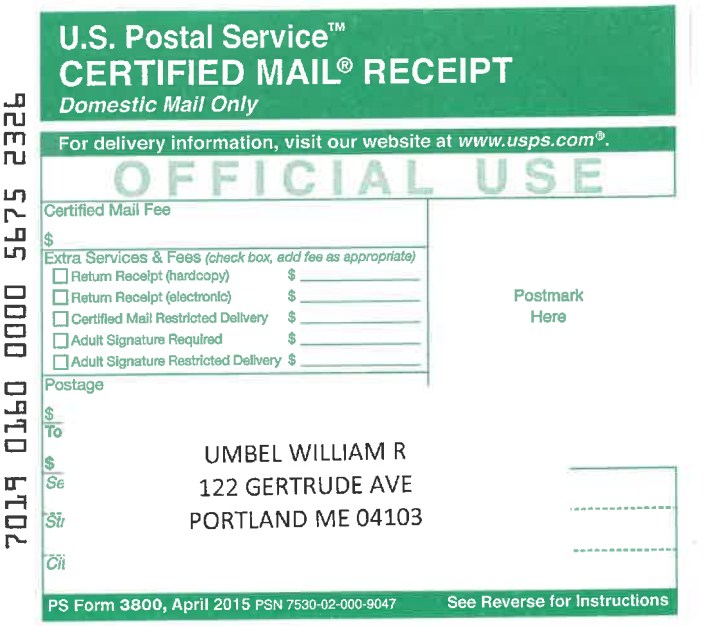
City, Sta

Postmark Here

7019 0160 0000 5675 2432

WEBB MARILYN D
340 RAY ST
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

To
$

Se

Str

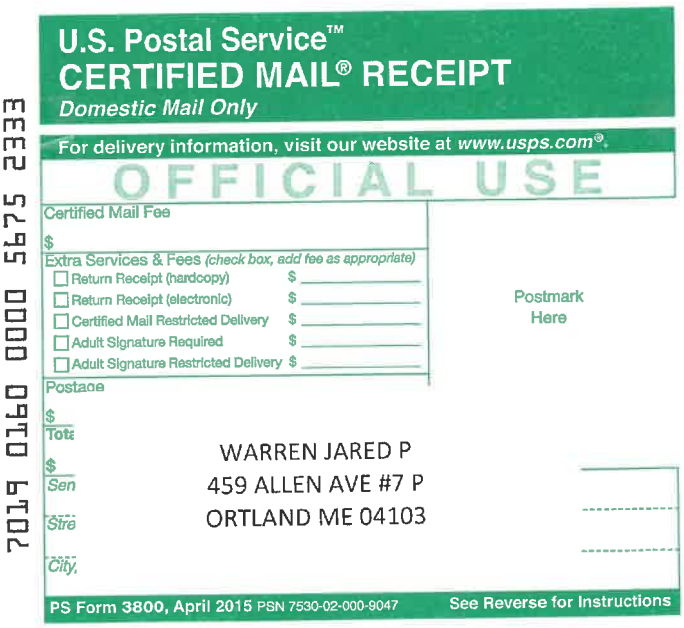
Cit

UMBEL WILLIAM R
122 GERTRUDE AVE
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2326



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Tota
$

Sen

Stre

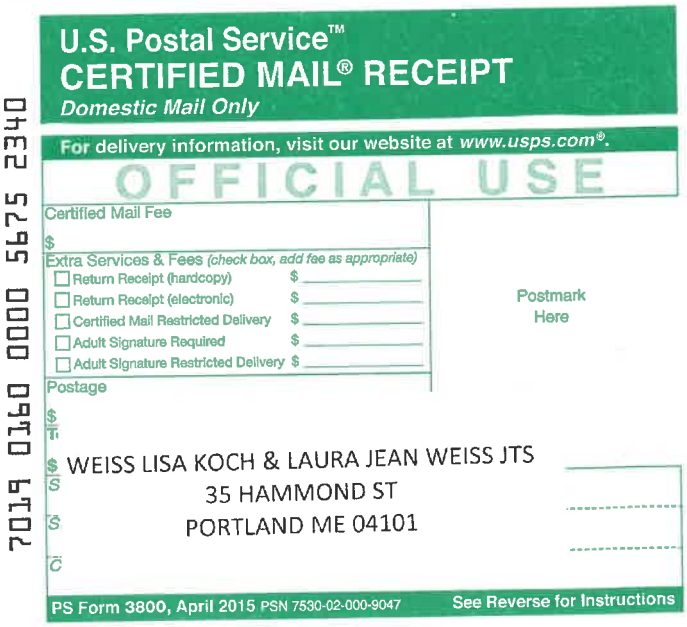
City,

WARREN JARED P
459 ALLEN AVE #7 P
ORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2333



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

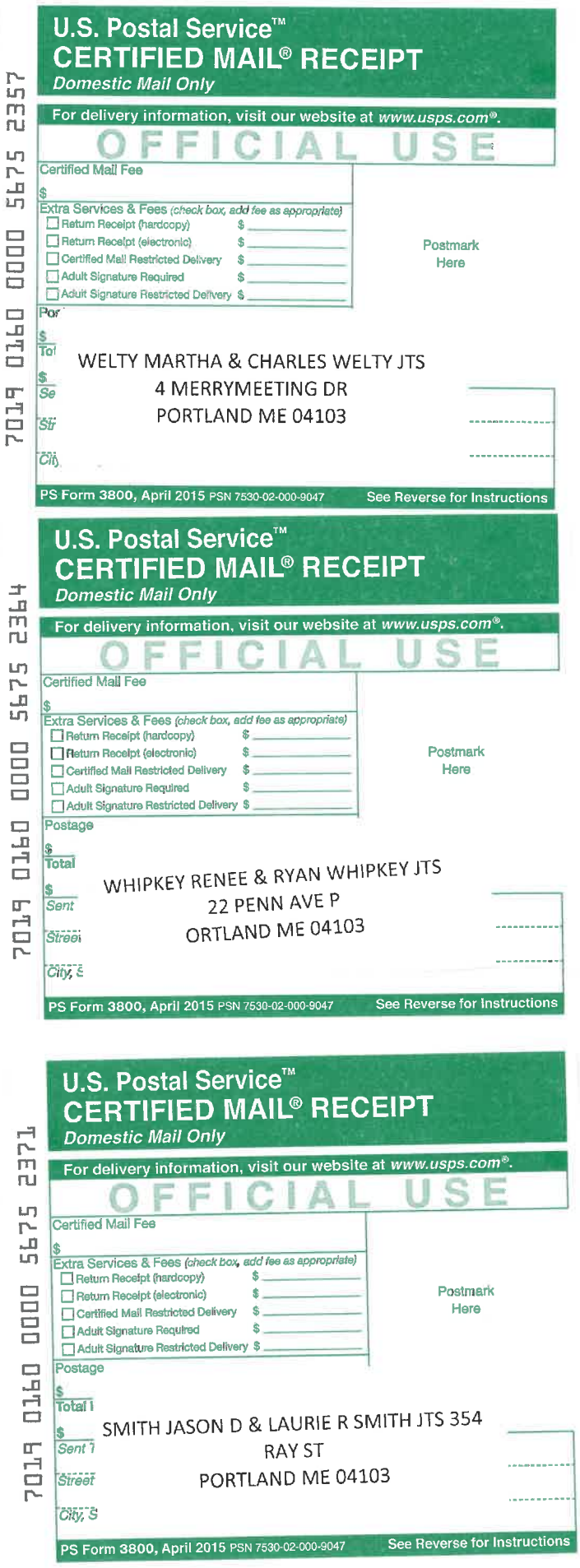
T

$ WEISS LISA KOCH & LAURA JEAN WEISS JTS
S
35 HAMMOND ST
S
PORTLAND ME 04101
C

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2340



7019 0160 0000 5675 2357

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postmark Here
Por
$
Tot
$
Se
Str
Cit

WELTY MARTHA & CHARLES WELTY JTS
4 MERRYMEETING DR
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2364

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postmark Here
Postage
$
Total
$
Sent
Street
City, S

WHIPKEY RENEE & RYAN WHIPKEY JTS
22 PENN AVE P
ORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2371

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

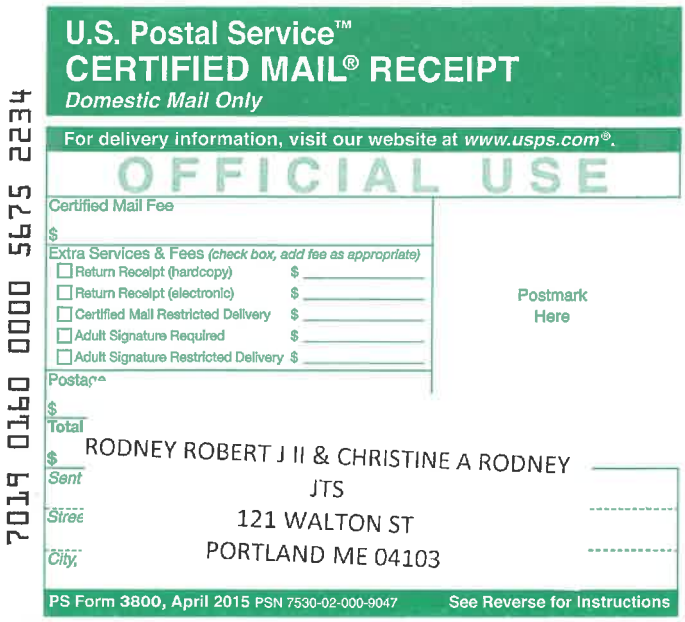
For delivery information, visit our website at www.usps.com®.

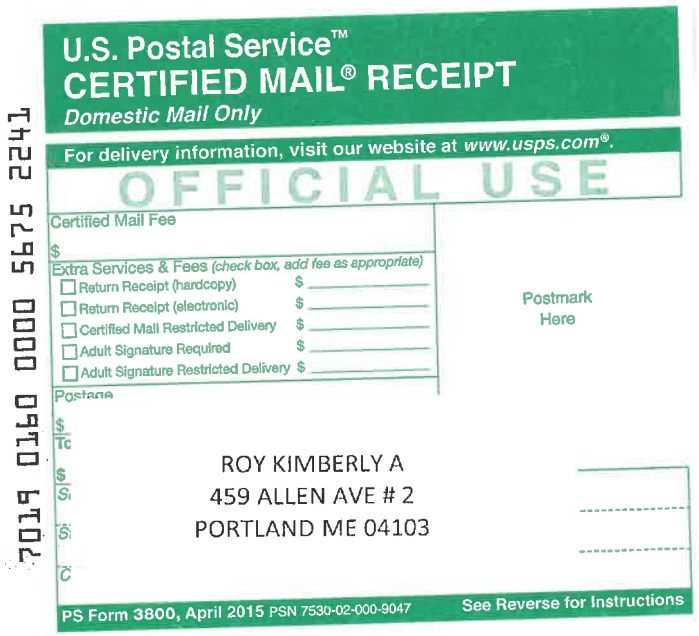
OFFICIAL USE

Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postmark Here
Postage
$
Total
$
Sent
Street
City, S

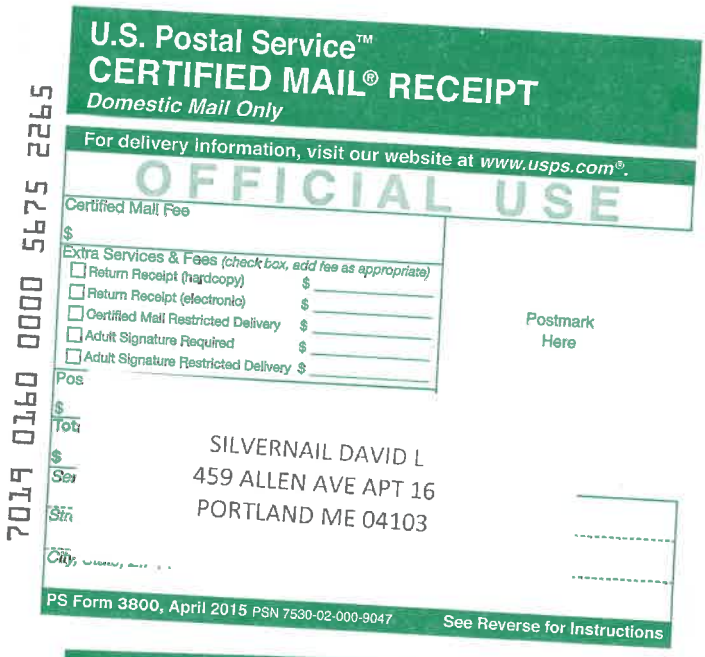
SMITH JASON D & LAURIE R SMITH JTS 354
RAY ST
PORTLAND ME 04103

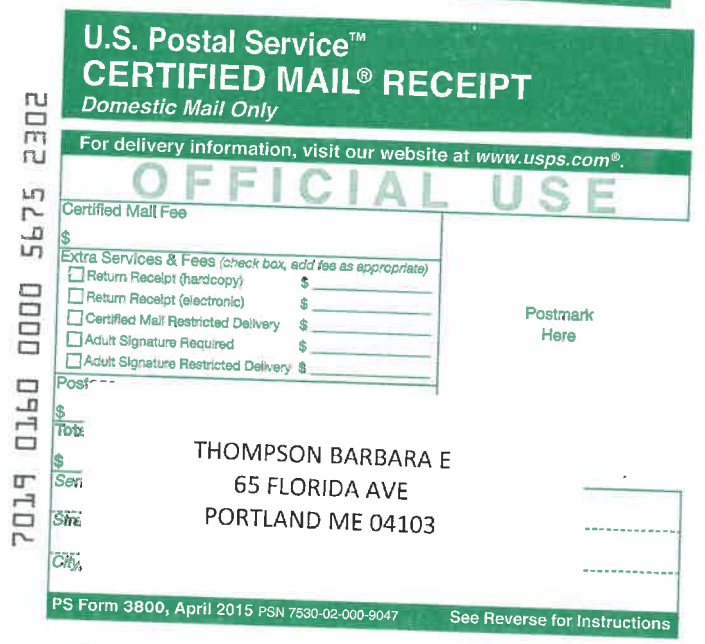
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

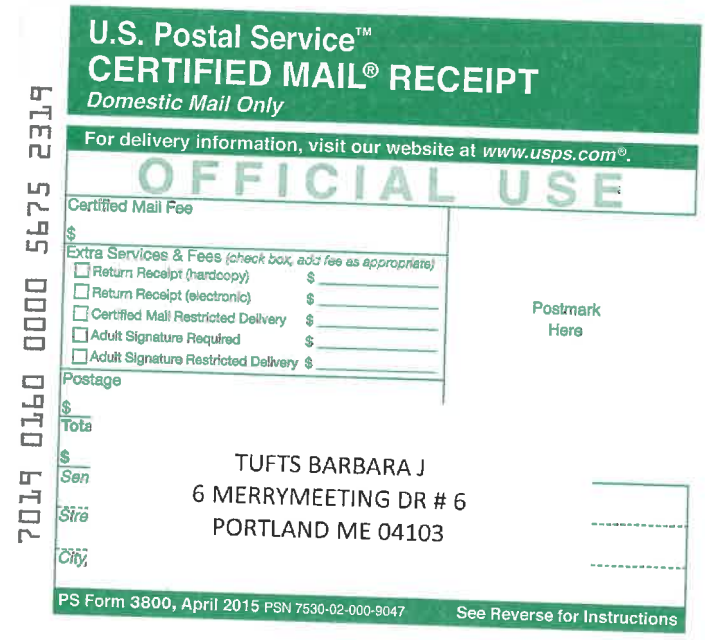

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postmark Here
Total
Sent
Street
City,
7019 0160 0000 5675 2234
RODNEY ROBERT J II & CHRISTINE A RODNEY
JTS
121 WALTON ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postmark Here
7019 0160 0000 5675 2241
ROY KIMBERLY A
459 ALLEN AVE # 2
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
Return Receipt (electronic)
Certified Mail Restricted Delivery
Adult Signature Required
Adult Signature Restricted Delivery
Postmark Here
7019 0160 0000 5675 2258
SCHOLZ JOHN M
334 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 2265
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
SILVERNAIL DAVID L
459 ALLEN AVE APT 16
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 2302
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
THOMPSON BARBARA E
65 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 2319
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
TUFTS BARBARA J
6 MERRYMEETING DR # 6
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

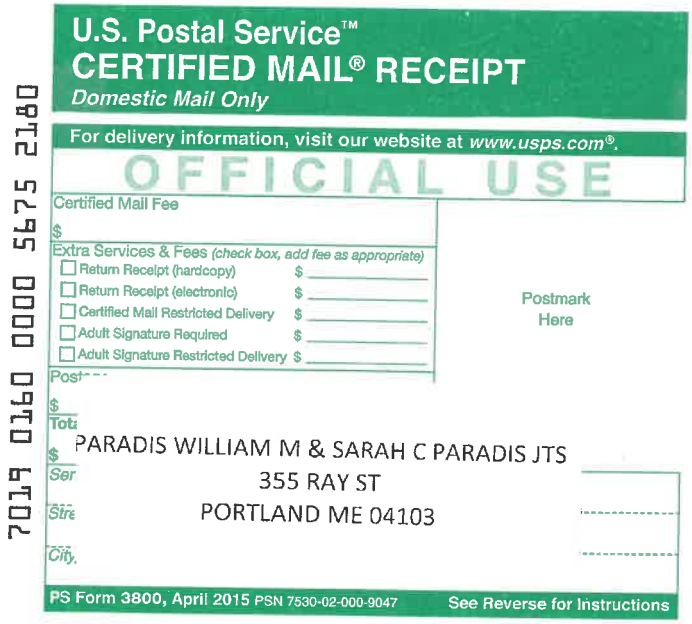
Postmark Here

Post
$
Tota
$
Sent
Stre
City,

OAKES RYAN E
34 JERSEY AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2173



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

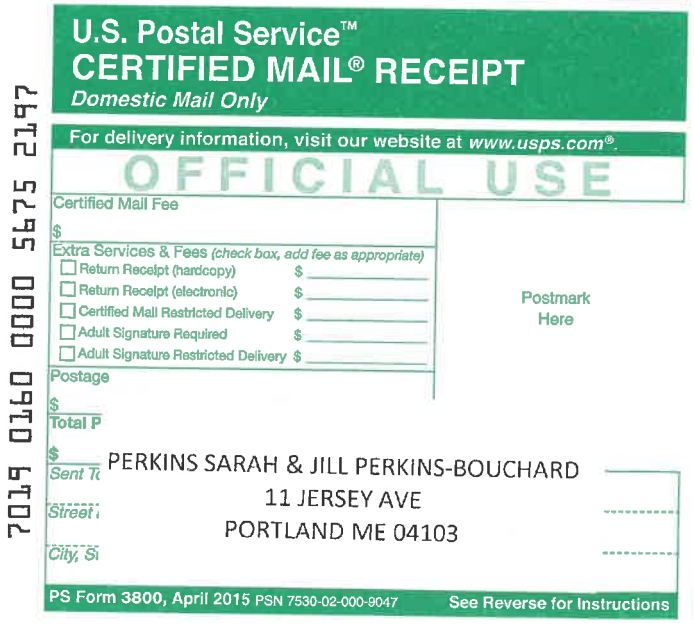
Postmark Here

Post
$
Tota
$
Ser
Stre
City,

PARADIS WILLIAM M & SARAH C PARADIS JTS
355 RAY ST
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2180



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

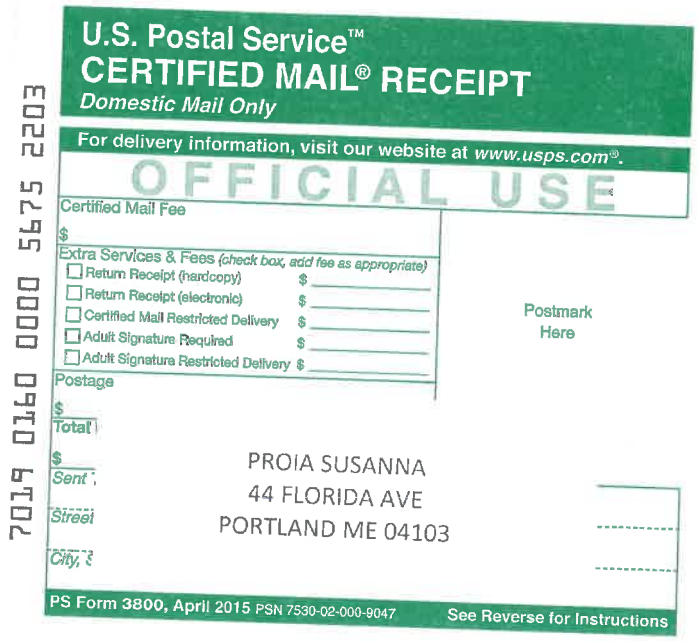
Postmark Here

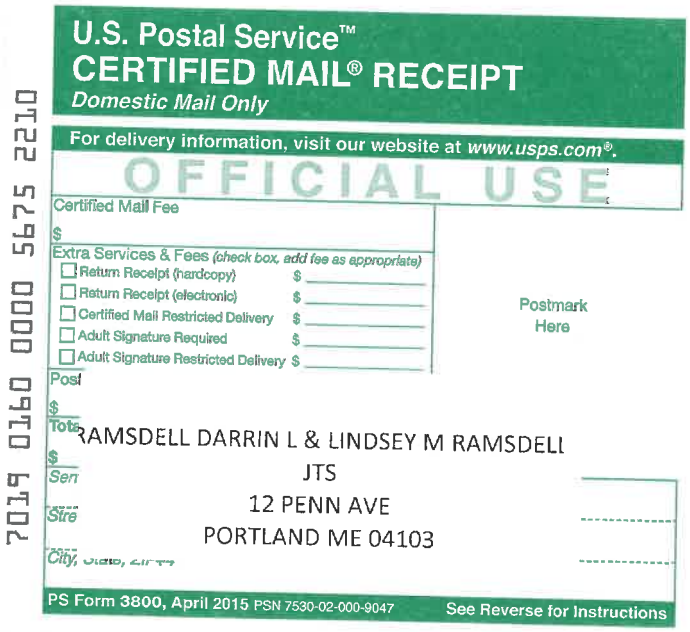
Postage
$
Total P
$
Sent T
Street
City, St

PERKINS SARAH & JILL PERKINS-BOUCHARD
11 JERSEY AVE
PORTLAND ME 04103

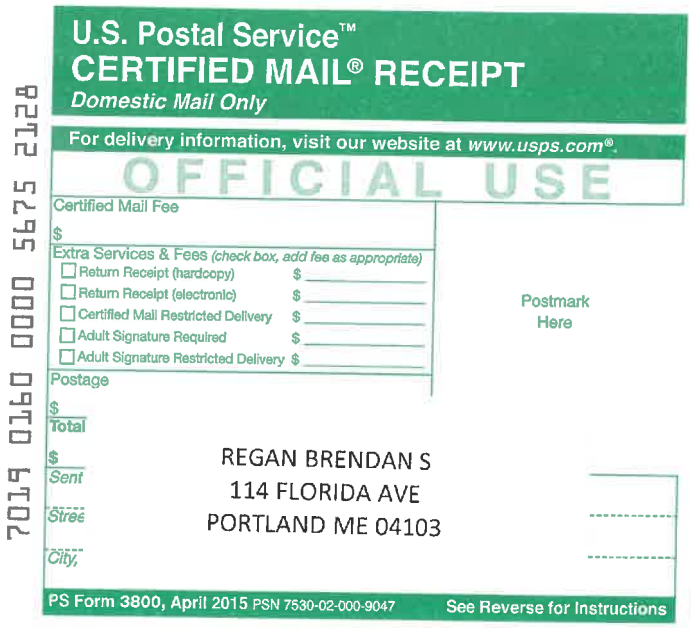
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2197


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City,
Postmark Here
7019 0160 0000 5675 2203
PROIA SUSANNA
44 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

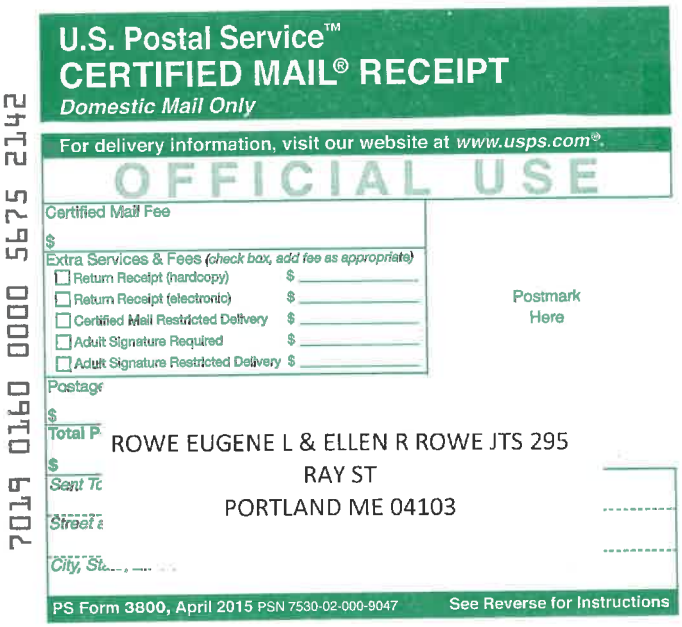

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
7019 0160 0000 5675 2210
RAMSDELL DARRIN L & LINDSEY M RAMSDELL
JTS
12 PENN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

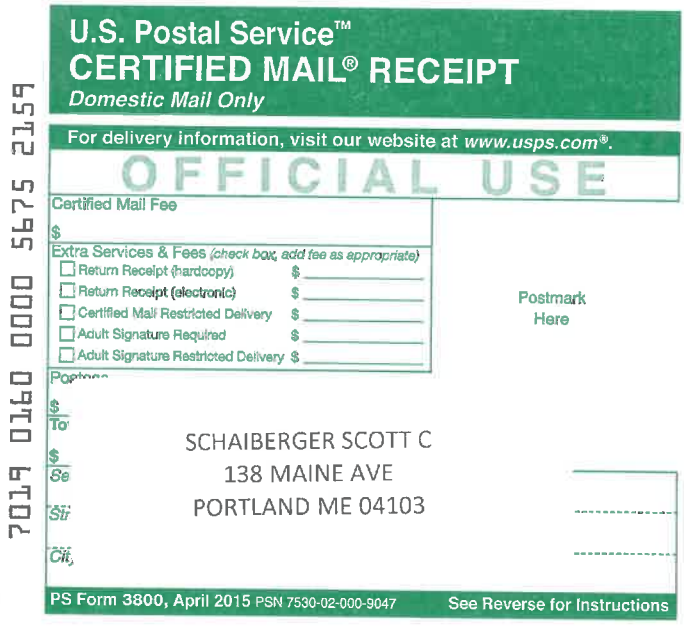

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City,
Postmark Here
7019 0160 0000 5675 2227
RICE JULIANNE L
459 ALLEN AVE # 17
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

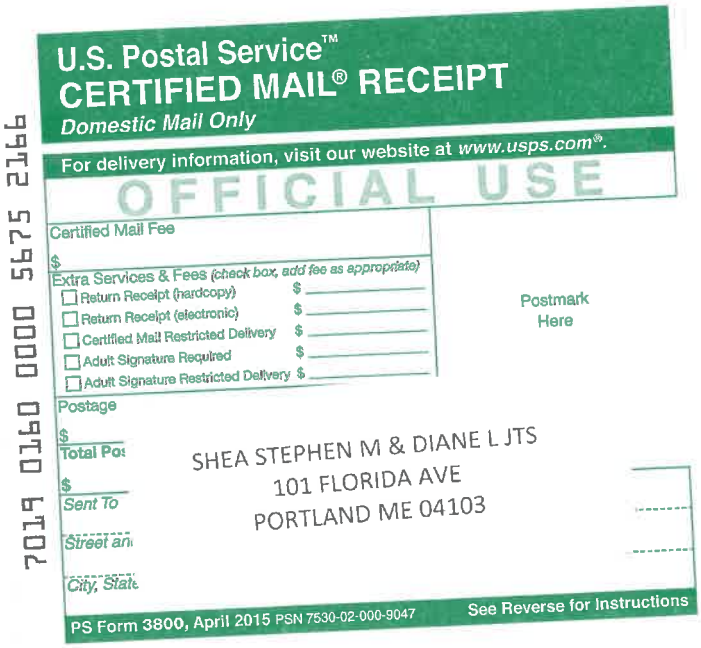

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
REGAN BRENDAN S
114 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2128


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
QUINN SUSAN LOUISE
35 NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2111


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Street
City, S
Postmark Here
ROBINSON BEVERLY D
459 ALLEN AVE # 3
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2135


7019 0160 0000 5675 2142
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street a
City, St
ROWE EUGENE L & ELLEN R ROWE JTS 295
RAY ST
PORTLAND ME 04103
Postmark
Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 2159
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
$
Se
Str
City
SCHAIBERGER SCOTT C
138 MAINE AVE
PORTLAND ME 04103
Postmark
Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 2166
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Pos
$
Sent To
Street an
City, Stat
SHEA STEPHEN M & DIANE L JTS
101 FLORIDA AVE
PORTLAND ME 04103
Postmark
Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Postmark Here

7019 0160 0000 5675 2050

RUTHERFORD PATRIIA A
28 JERSEY AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

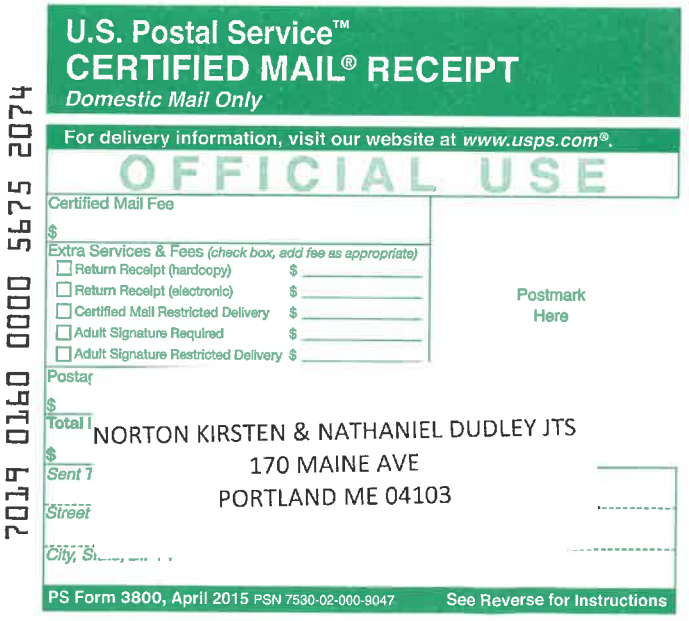
Postage
$

Postmark Here

7019 0160 0000 5675 2067

SENDZE KATIE
459 ALLEN AVE # 21
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Postmark Here

7019 0160 0000 5675 2074

NORTON KIRSTEN & NATHANIEL DUDLEY JTS
170 MAINE AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total Po
$

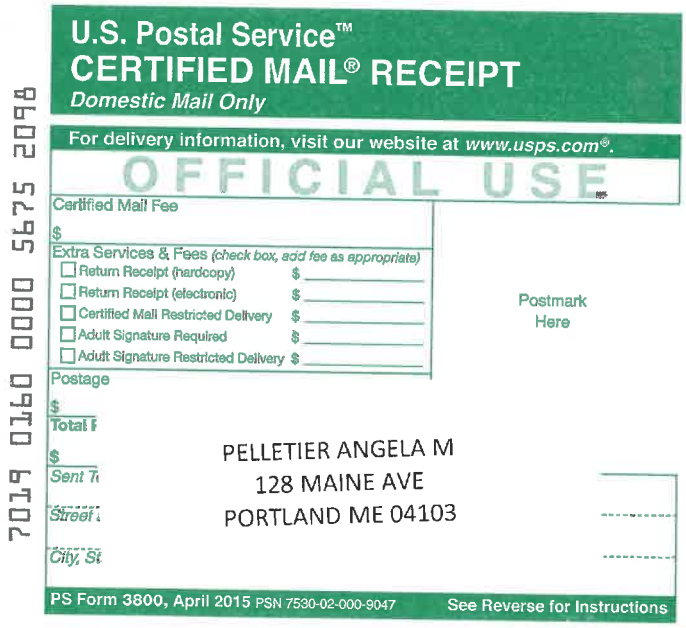
Sent To
Street a
City, Sta

PACKARD MARY A & AMANDA M & ALICIA L
PACKARD
106 FLORIDA AVE
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2081



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total F
$

Sent To
Street
City, St

PELLETIER ANGELA M
128 MAINE AVE
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2098



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total P
$

Sent To
Street
City, St

PRESTON SHANNON R & RYAN VICTOR
JAROCHYM JTS
12 JERSEY AVE
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 2104



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

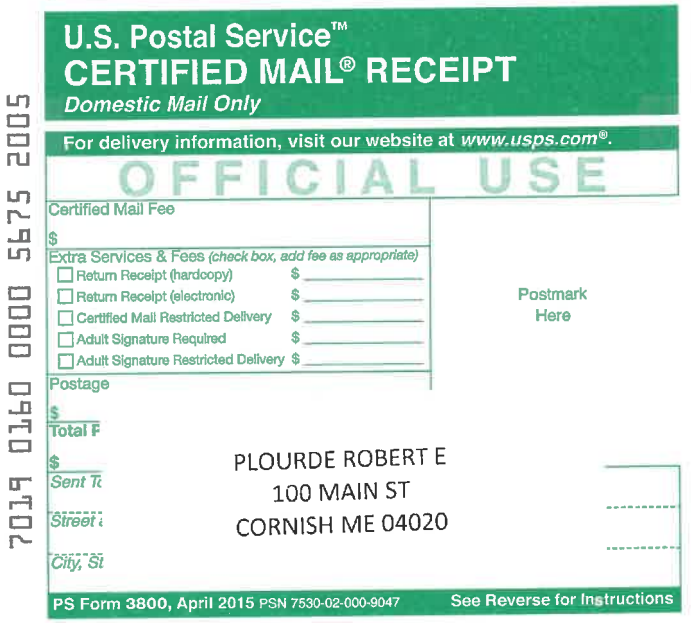
Sent
Street
City, S

Postmark Here

7019 0160 0000 5675 1985

O'SULLIVAN PADRAIG N & SARAH E GODFREY
JTS 406 RAY ST ~~PORTLAND ME 04103~~
Portland ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total F
$

Sent To
Street
City, St

Postmark Here

7019 0160 0000 5675 2005

PLOURDE ROBERT E
100 MAIN ST
CORNISH ME 04020

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

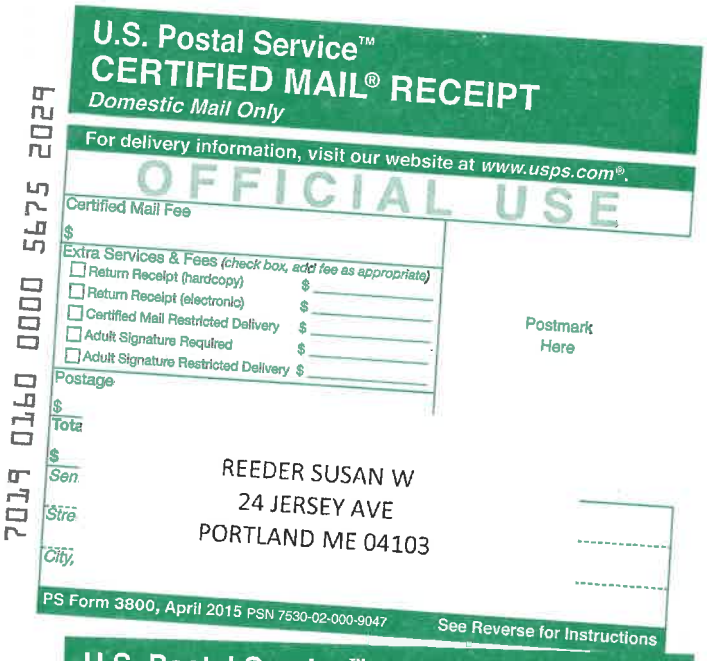
Ser
Stre
City

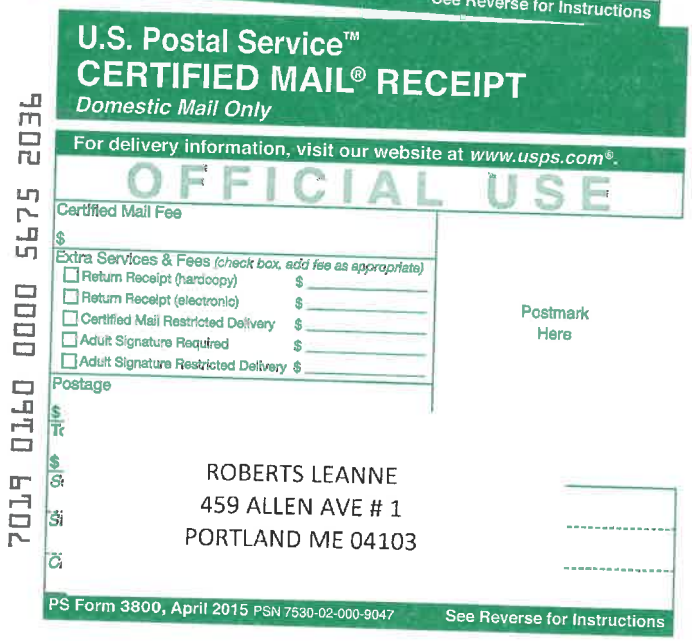
Postmark Here

7019 0160 0000 5675 2012

PURCELL LINNEA J
24 VERMONT AVE
PORTLAND ME 04103

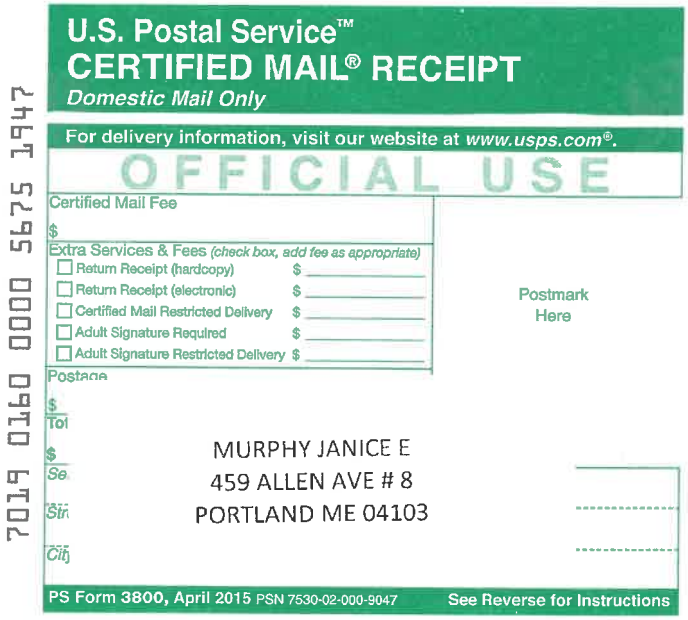
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tota
$
Sen
Stre
City,
Postmark Here
7019 0160 0000 5675 2029
REEDER SUSAN W
24 JERSEY AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

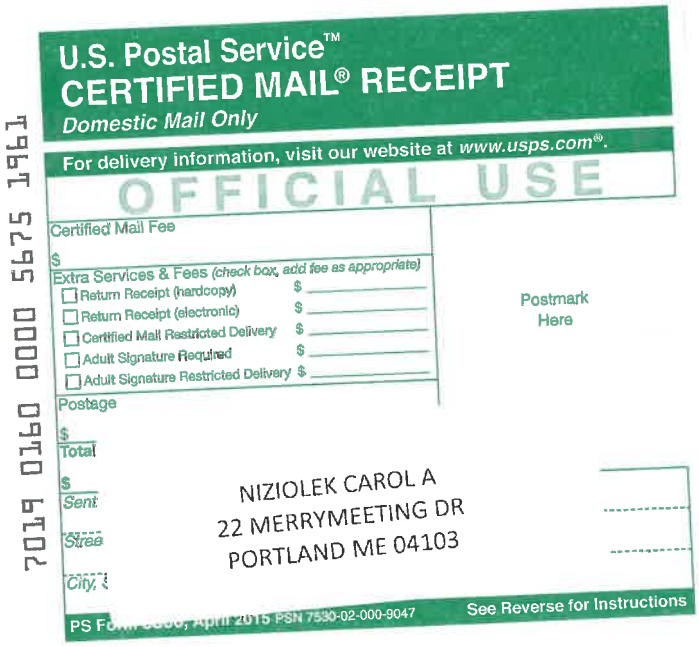

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tr
$
St
Si
Ci
Postmark Here
7019 0160 0000 5675 2036
ROBERTS LEANNE
459 ALLEN AVE # 1
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 2043
ROE LAURENCE L
160 MAINE AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
7019 0160 0000 5675 1930
MORGAN DEBORA
D3 52 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
7019 0160 0000 5675 1947
MURPHY JANICE E
459 ALLEN AVE # 8
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
7019 0160 0000 5675 1954
NEILL DONALD L & LINDA H LORD JTS
17 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent
Stree
City, S

NIZIOLEK CAROL A
22 MERRYMEETING DR
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1961



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total P
$

Sent To
Street a
City, St

NORMANDIN ADAM
459 ALLEN AVE # 22
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1978



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total I
$

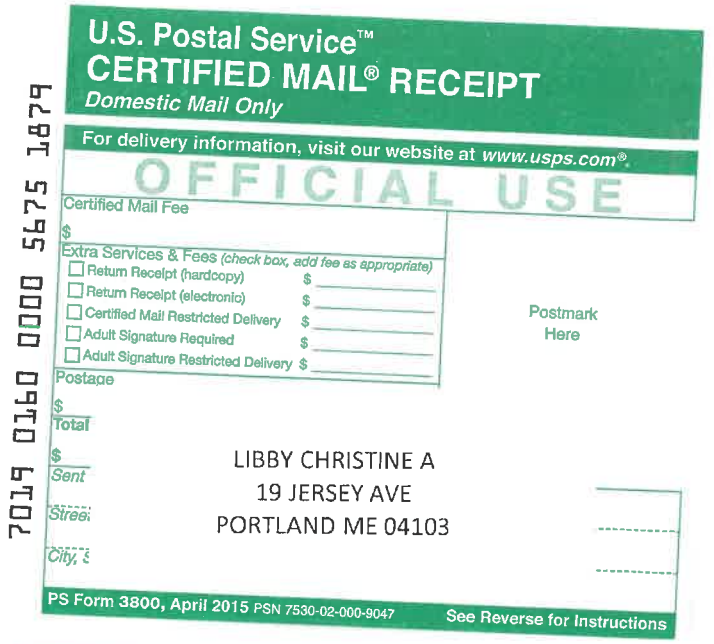
Sent T
Street
City, S

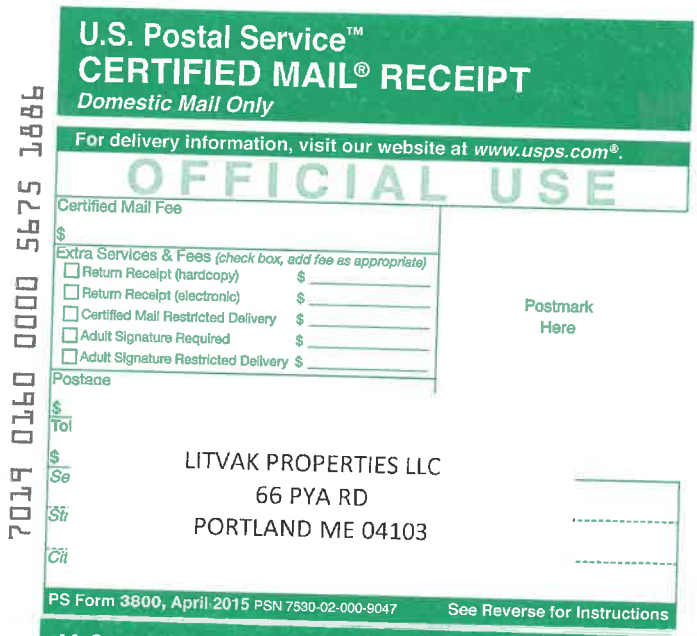
PARE MATTHEW P
142 MAINE AVE
PORTLAND ME 04103

Postmark Here

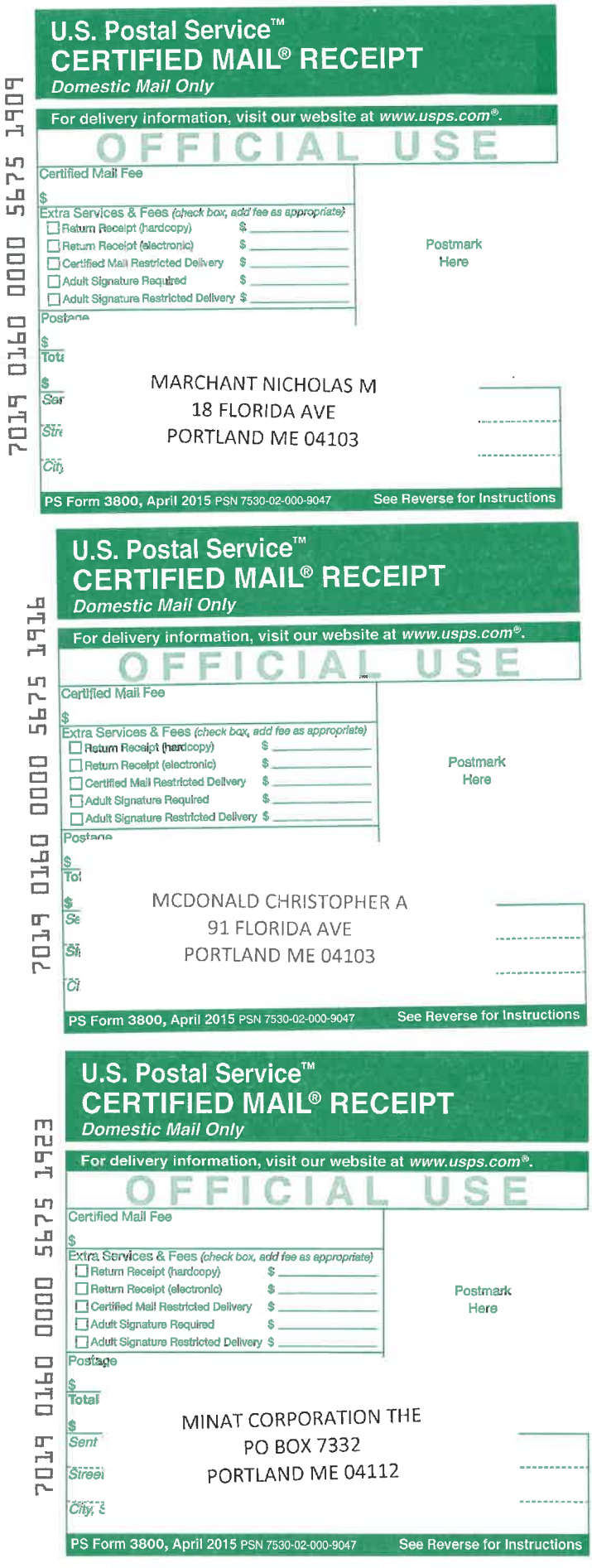
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1992


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City, S
Postmark Here
7019 0160 0000 5675 1879
LIBBY CHRISTINE A
19 JERSEY AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tol
$
Se
Sti
Cit
Postmark Here
7019 0160 0000 5675 1886
LITVAK PROPERTIES LLC
66 PYA RD
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
7019 0160 0000 5675 1893
LPS PROPERTIES LLC
117 FLORIDA AVE
PORTLAND ME 04103
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$
Total
$
Sent
Street
City, S

Postmark Here

7019 0160 0000 5675 1909

MARCHANT NICHOLAS M
18 FLORIDA AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$
Total
$
Sent
Street
City, S

Postmark Here

7019 0160 0000 5675 1916

MCDONALD CHRISTOPHER A
91 FLORIDA AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

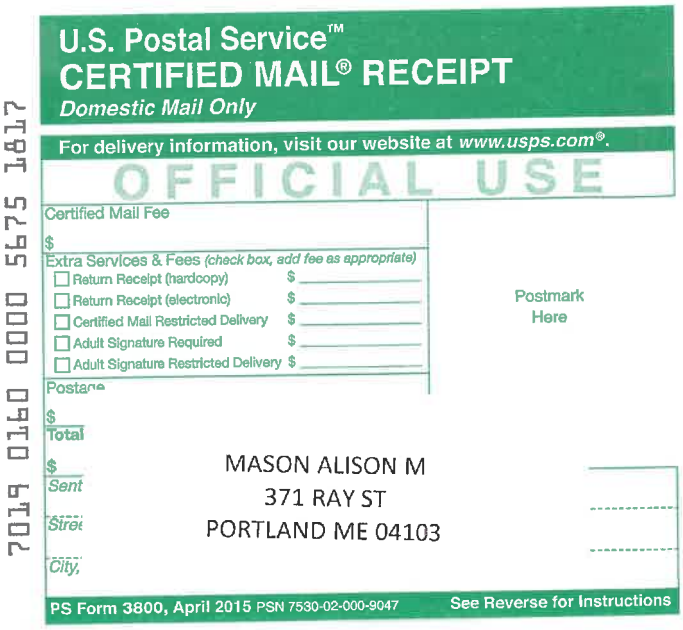
Postage
$
Total
$
Sent
Street
City, S

Postmark Here

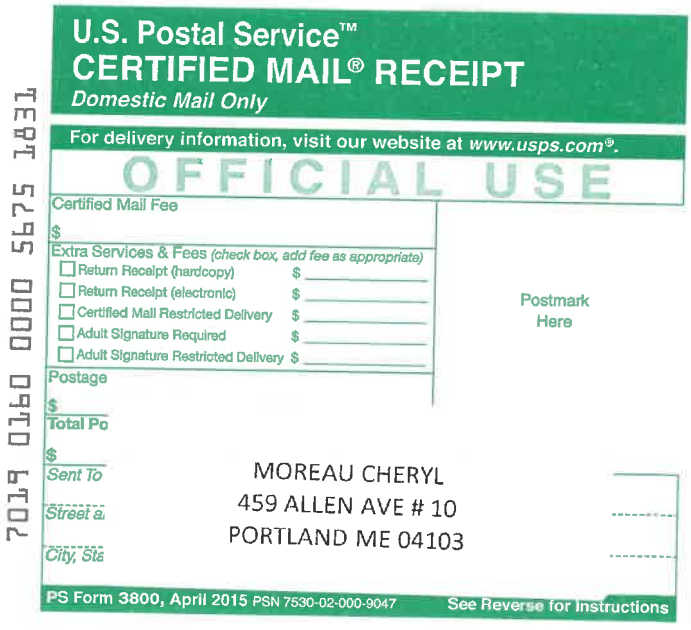
7019 0160 0000 5675 1923

MINAT CORPORATION THE
PO BOX 7332
PORTLAND ME 04112

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
MASON ALISON M
371 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1817


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Sen
Stre
City,
Postmark Here
MINAT CORPORATION
PO BOX 7332 PORTLAND ME 04112
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1824


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Po
$
Sent To
Street a
City, Sta
Postmark Here
MOREAU CHERYL
459 ALLEN AVE # 10
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1831



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- [illegible]

Postage
$

Total
$

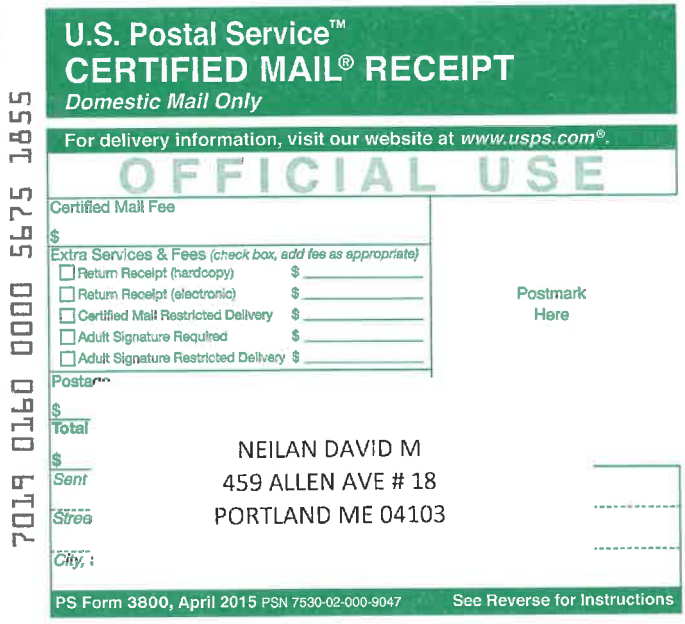
Sent
Street
City, State, ZIP+4®

MULLEN SUSAN L & JOHN H R MULLEN JTS
105 ALICE ST
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1848



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

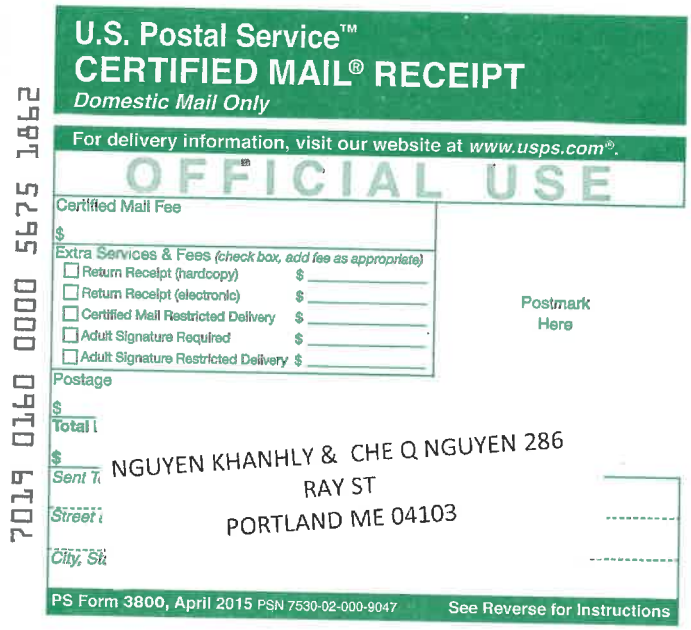
Sent
Street
City, State, ZIP+4®

NEILAN DAVID M
459 ALLEN AVE # 18
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1855



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent To
Street
City, St

NGUYEN KHANHLY & CHE Q NGUYEN 286
RAY ST
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1862



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postag
$

Sent To
MURRAY DAVID & NATALIE MURRAY JTS 53

Street and Ap
FLORIDA AVE

City, State, Zi
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1756



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total P
$

Sent To
NEWMAN PHOEBE J

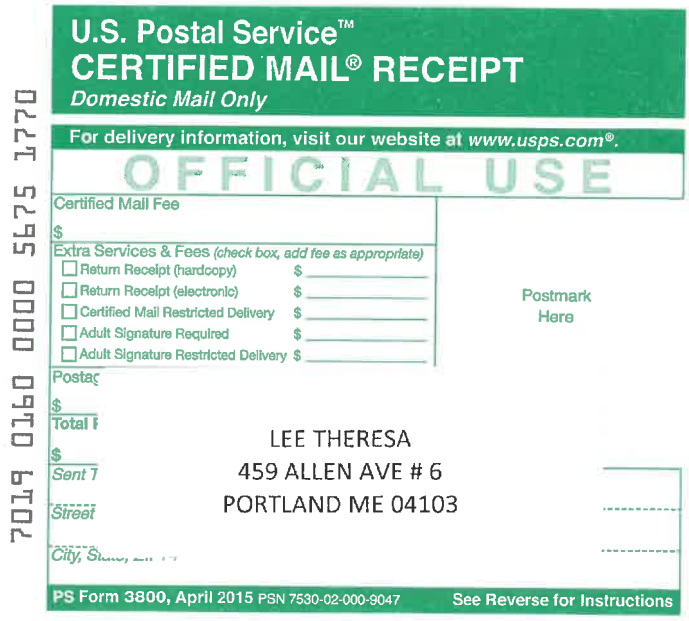
Street a
111 FLORIDA AVE

City, St
PORTLAND ME 04103

Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1763



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postag
$

Total F
$

Sent T
LEE THERESA

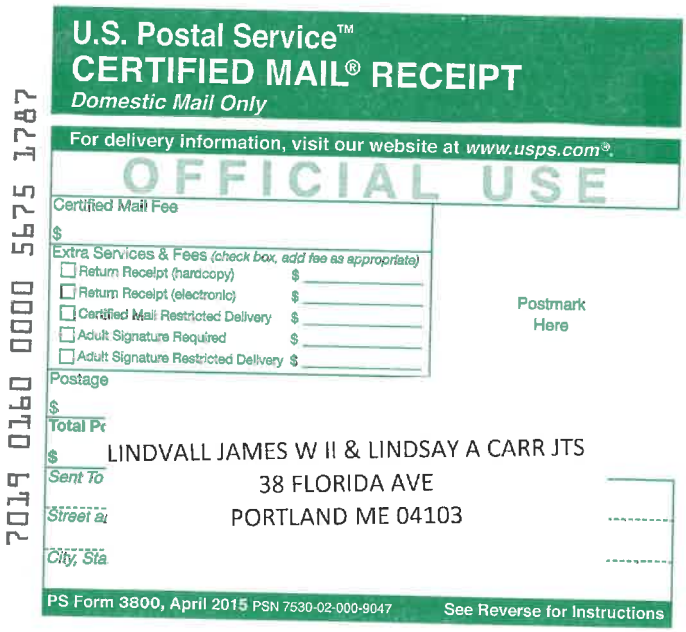
Street
459 ALLEN AVE # 6

City, St
PORTLAND ME 04103

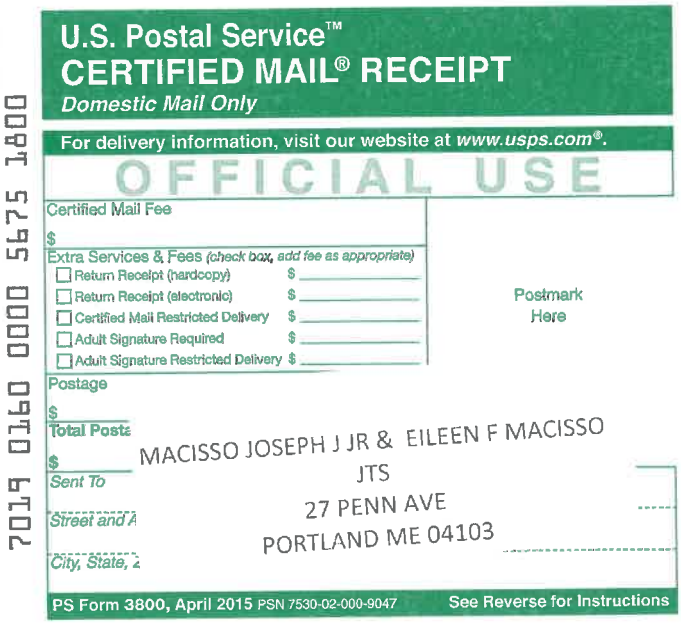
Postmark Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1770


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Pr
$
Sent To
Street a
City, Sta
Postmark Here
7019 0160 0000 5675 1787
LINDVALL JAMES W II & LINDSAY A CARR JTS
38 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Posta
$
Total
$
Sent
Street
City, S
Postmark Here
7019 0160 0000 5675 1794
LL BEAN INC
15 CASCO ST
FREEPORT ME 04033
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total Posta
$
Sent To
Street and A
City, State, Z
Postmark Here
7019 0160 0000 5675 1800
MACISSO JOSEPH J JR & EILEEN F MACISSO
JTS
27 PENN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

7019 0160 0000 5675 1695

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent
Stree
City,

Postmark Here

LITVAK PROPERTIES LLC
PO BOX 7332
PORTLAND ME 04112

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1701

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage

Postmark Here

LUTTON LAURA J
26 NEVADA AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1718

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

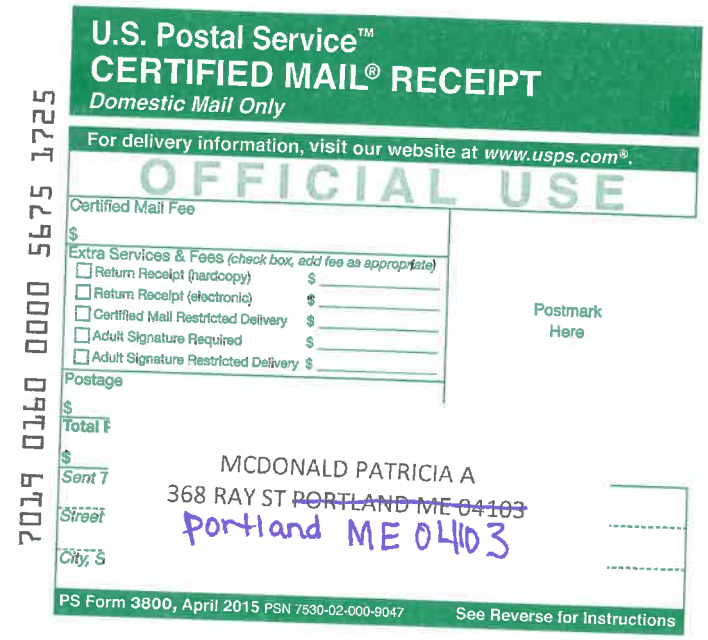
Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage

Postmark Here

MARTIN'S POINT HEALTH CARE INC
PO BOX 9746
PORTLAND ME 04112

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total P
$

Sent T

Street

City, S

Postmark Here

7019 0160 0000 5675 1725

MCDONALD PATRICIA A
368 RAY ST ~~PORTLAND ME 04103~~
Portland ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent

Street

City, S

Postmark Here

7019 0160 0000 5675 1732

MINVIELLE PETER M VN VET
25 MERRYMEETING DR
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent

Street

City, S

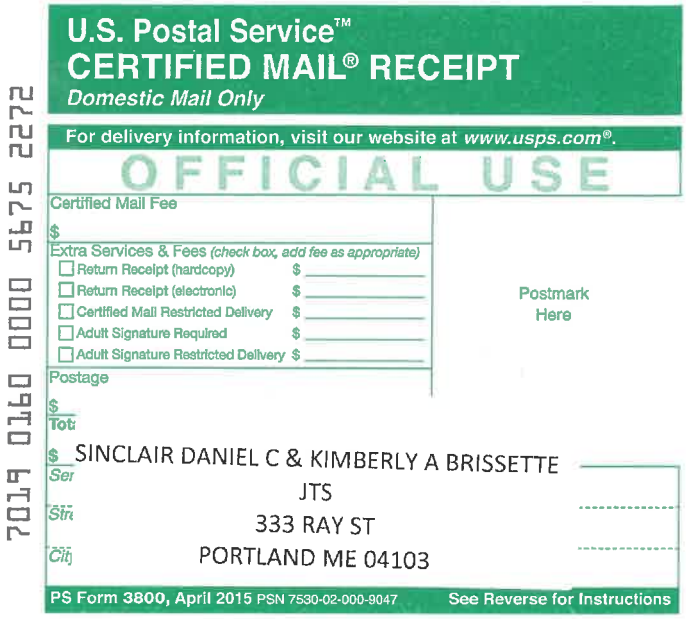
Postmark Here

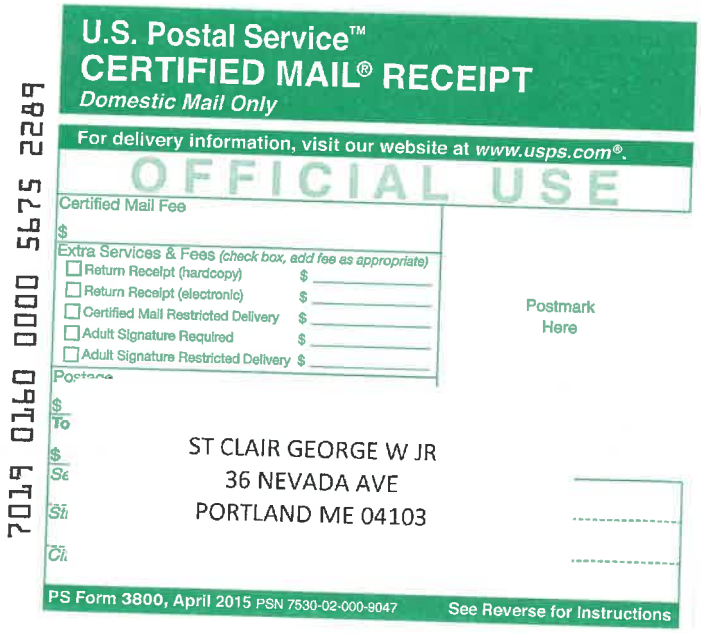
7019 0160 0000 5675 1749

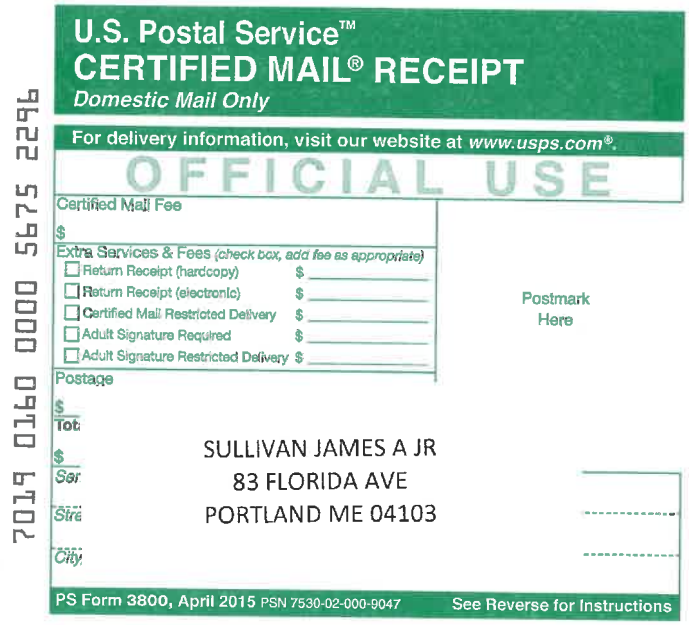
MORIN TERESA R
29 JERSEY AVE
PORTLAND ME 04103

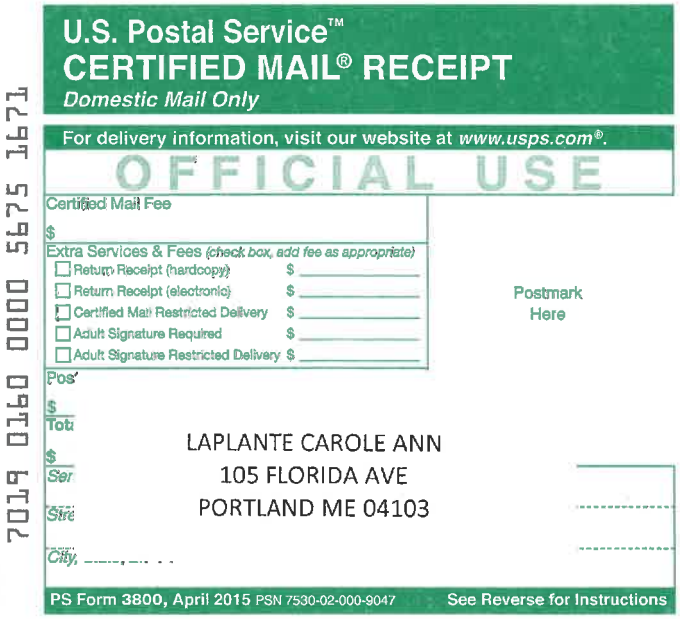
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

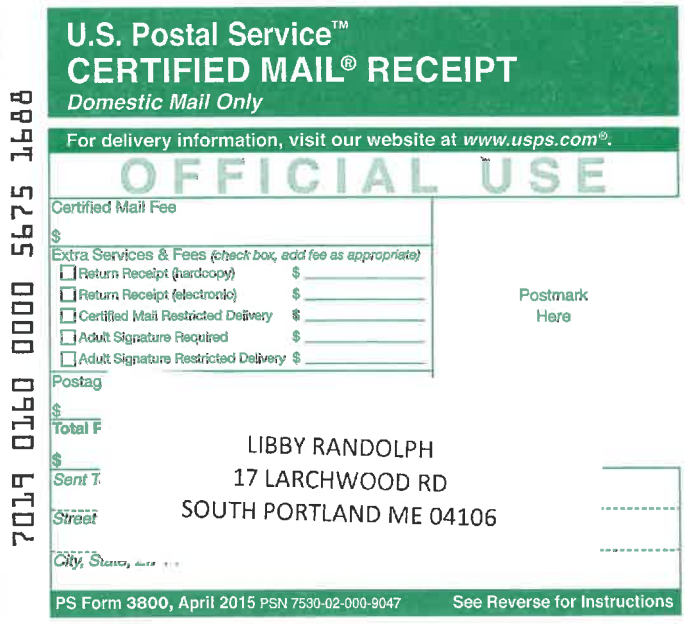

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Se
Str
City
Postmark Here
LAGERSTROM LYNN C
57 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1664

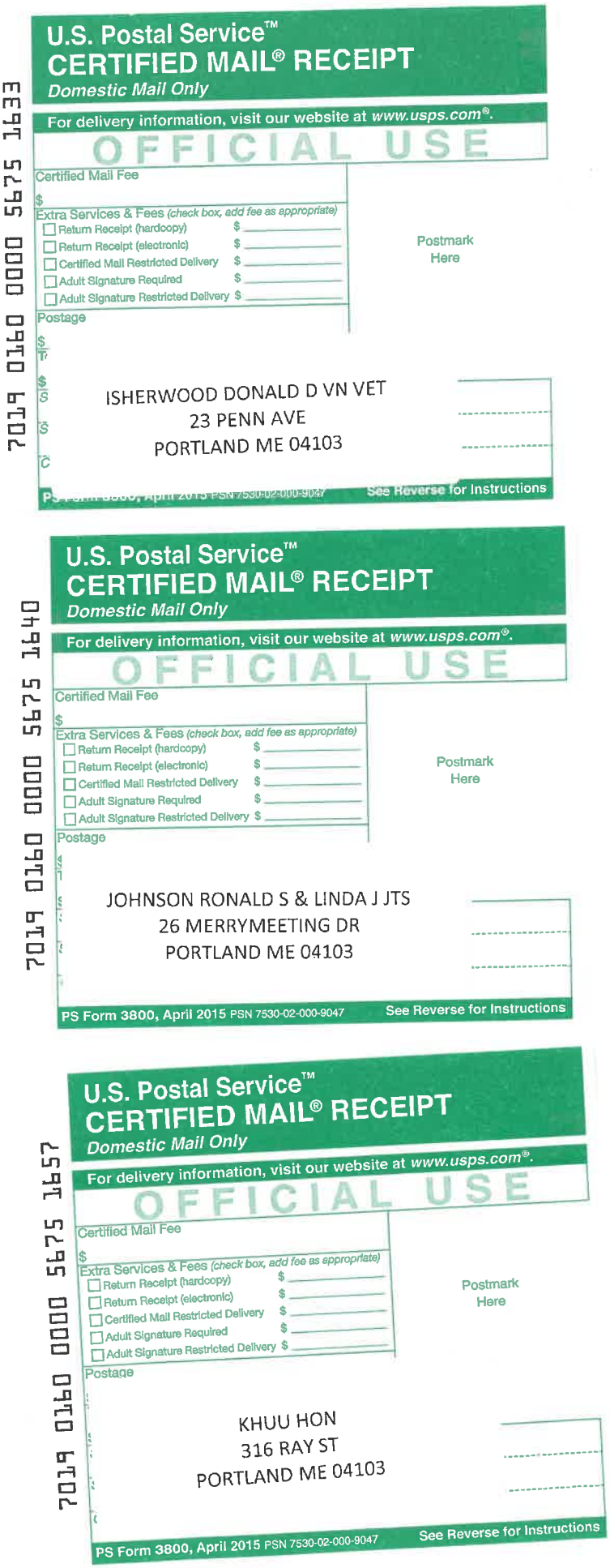

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Ser
Str
City
Postmark Here
SINCLAIR DANIEL C & KIMBERLY A BRISSETTE
JTS
333 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2272


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
$
Se
Str
Ci
Postmark Here
ST CLAIR GEORGE W JR
36 NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2289


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Ser
Stre
City,
Postmark Here
SULLIVAN JAMES A JR
83 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 2296


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Pos
$
Tota
$
Ser
Stre
City,
Postmark Here
LAPLANTE CAROLE ANN
105 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1671


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postag
$
Total F
$
Sent T
Street
City, State,
Postmark Here
LIBBY RANDOLPH
17 LARCHWOOD RD
SOUTH PORTLAND ME 04106
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1688



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage
$

Postmark Here

7019 0160 0000 5675 1633

ISHERWOOD DONALD D VN VET
23 PENN AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage

Postmark Here

7019 0160 0000 5675 1640

JOHNSON RONALD S & LINDA J JTS
26 MERRYMEETING DR
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage

Postmark Here

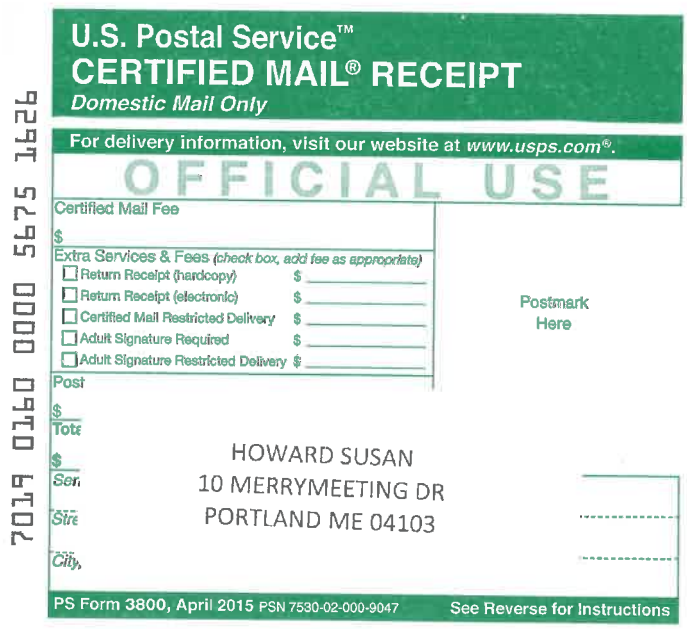
7019 0160 0000 5675 1657

KHUU HON
316 RAY ST
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

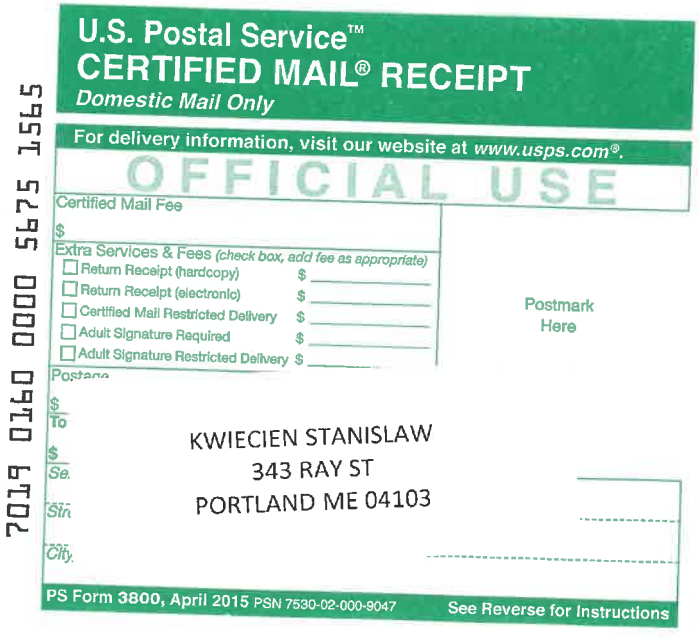

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Ser
Stre
City
Postmark Here
HEROUX KAREN J
304 RAY ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1602


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
$
$
C
Postmark Here
HOLMES MARK A & LORI A HOLMES JTS 56
QUALEY RD
GRAY ME 04039
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1619

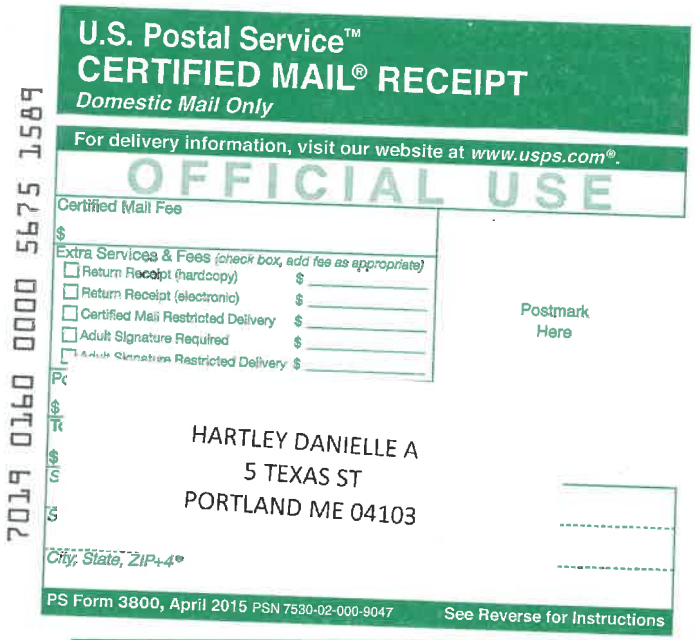

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Post
$
Tota
$
Sen
Stre
City,
Postmark Here
HOWARD SUSAN
10 MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1626

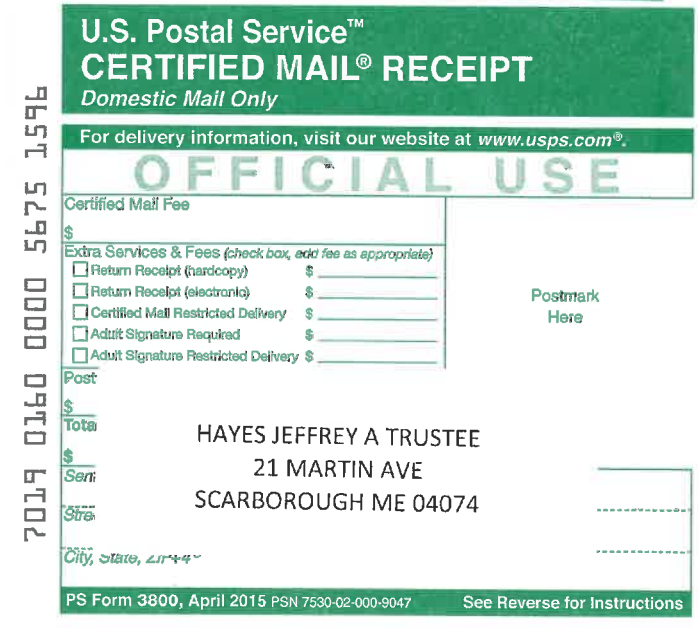

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
JOHNSON JOSEPH & CHRISTINA M JOHNSON
JTS
118 MAINE AVE
PORTLAND ME 04103
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1541

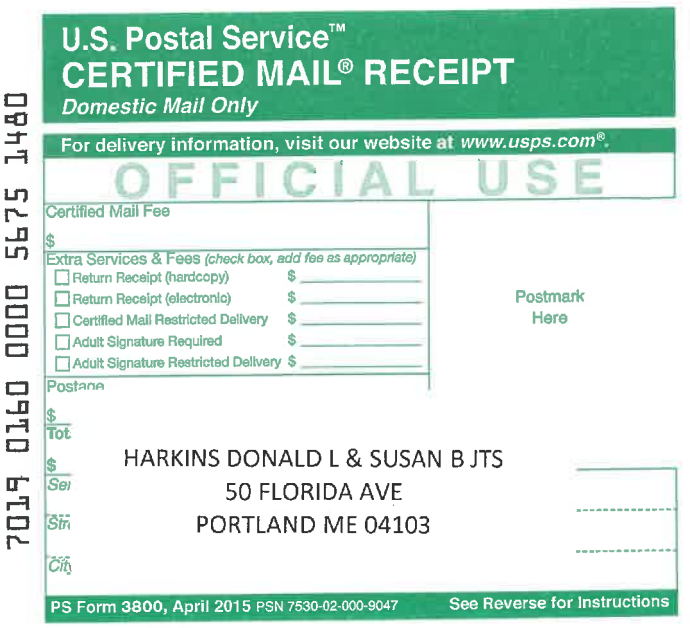

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
KANTROVITZ LARISA
166 MAINE AVE
PORTLAND ME 04103
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1558


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
KWIECIEN STANISLAW
343 RAY ST
PORTLAND ME 04103
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1565

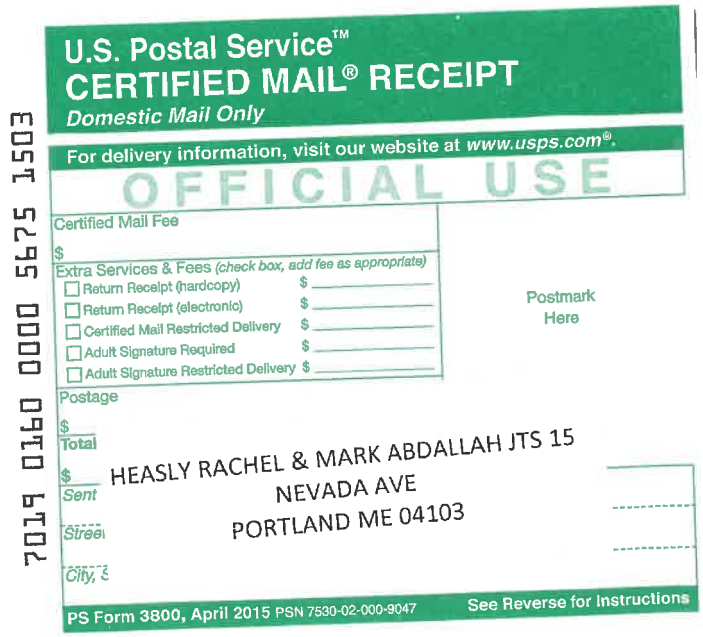

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
7019 0160 0000 5675 1572
GROVER KELSEY E
271 BATH RD
WISCASSET ME 04578
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Postmark Here
7019 0160 0000 5675 1589
HARTLEY DANIELLE A
5 TEXAS ST
PORTLAND ME 04103
City, State, ZIP+4®
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postmark Here
7019 0160 0000 5675 1596
HAYES JEFFREY A TRUSTEE
21 MARTIN AVE
SCARBOROUGH ME 04074
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Sen
Str
City
Postmark Here
HARKINS DONALD L & SUSAN B JTS
50 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1480


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
$
Sen
Stre
City
Postmark Here
HASSON HAYLEE E
100 FLORIDA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1497


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City, S
Postmark Here
HEASLY RACHEL & MARK ABDALLAH JTS 15
NEVADA AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
7019 0160 0000 5675 1503

7019 0160 0000 5675 1510

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ _____
- ☐ Return Receipt (electronic) $ _____
- ☐ Certified Mail Restricted Delivery $ _____
- ☐ Adult Signature Required $ _____
- ☐ Adult Signature Restricted Delivery $ _____

Postage
$

Postmark Here

HITZROT ANN H
459 ALLEN AVE # 13
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1527

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ _____
- ☐ Return Receipt (electronic) $ _____
- ☐ Certified Mail Restricted Delivery $ _____
- ☐ Adult Signature Required $ _____
- ☐ Adult Signature Restricted Delivery $ _____

Postmark Here

HOUSES OF HOGWARTS LLC
86 CRAIGIE ST
PORTLAND ME 04102

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0160 0000 5675 1534

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

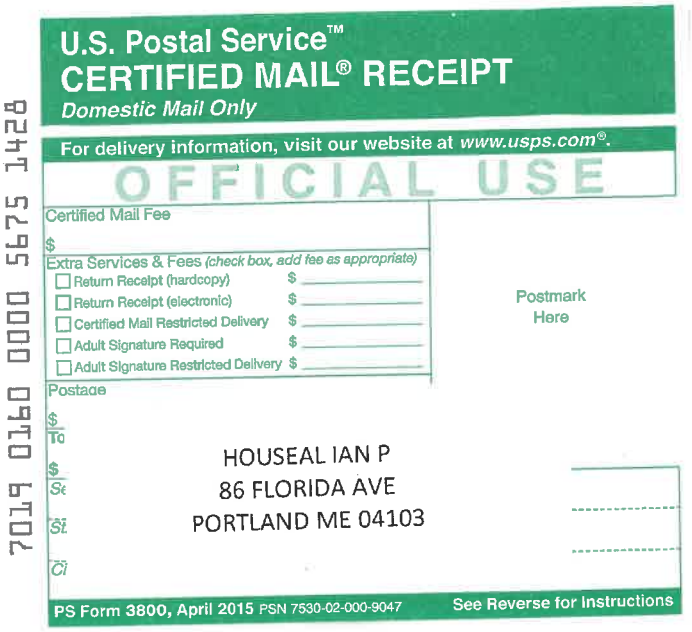
Certified Mail Fee
$

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ _____
- ☐ Return Receipt (electronic) $ _____
- ☐ Certified Mail Restricted Delivery $ _____
- ☐ Adult Signature Required $ _____
- ☐ Adult Signature Restricted Delivery $ _____

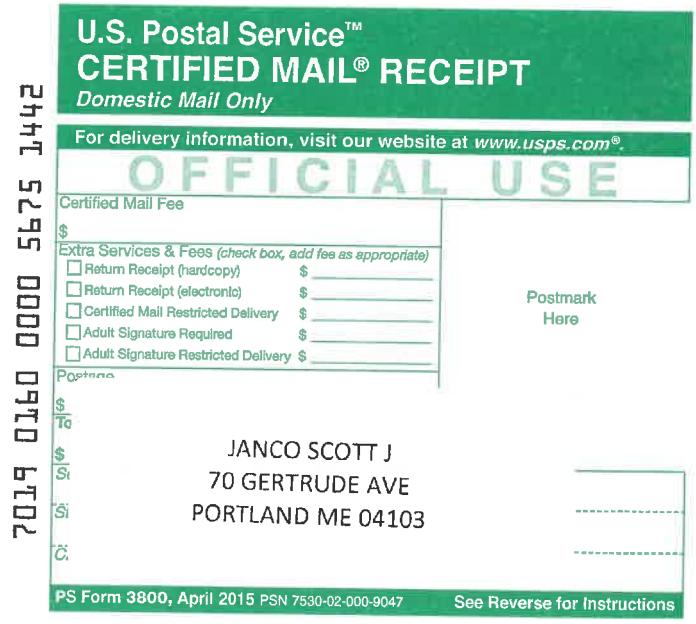
Postmark Here

HUNTLEY KENNETH VN VET & ELIZABETH A
HUNTLEY JTS
31 NEVADA AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions


7019 0160 0000 5675 1428
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
HOUSEAL IAN P
86 FLORIDA AVE
PORTLAND ME 04103
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 1435
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
HUNT DANIEL P
20 MERRYMEETING DR
PORTLAND ME 04103
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 1442
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
To
JANCO SCOTT J
70 GERTRUDE AVE
PORTLAND ME 04103
Postmark Here
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Postmark Here

7019 0160 0000 5675 1459

JUDKINS BERTHA L
127 PINE TREE LN
FARMINGTON ME 04938

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

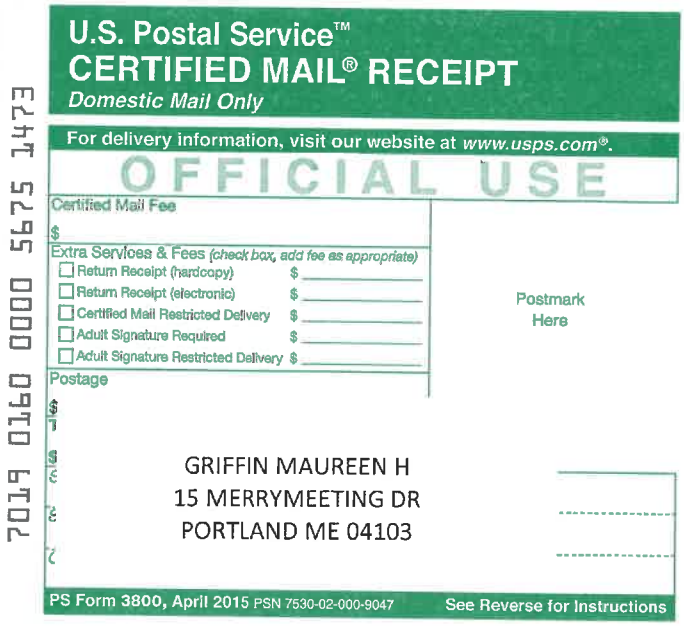
Postage

Postmark Here

7019 0160 0000 5675 1466

KONAN VIRGINIA J
22 NEVADA AVE
PORTLAND ME 04103

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

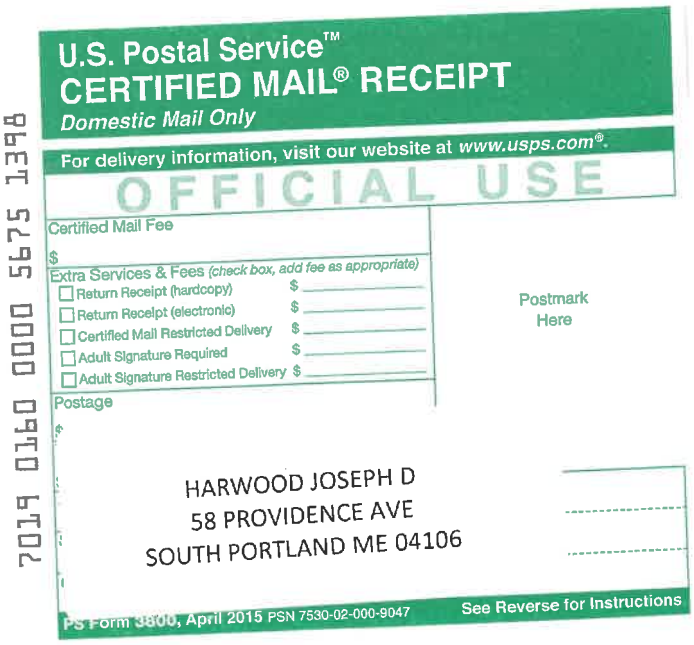
Postage

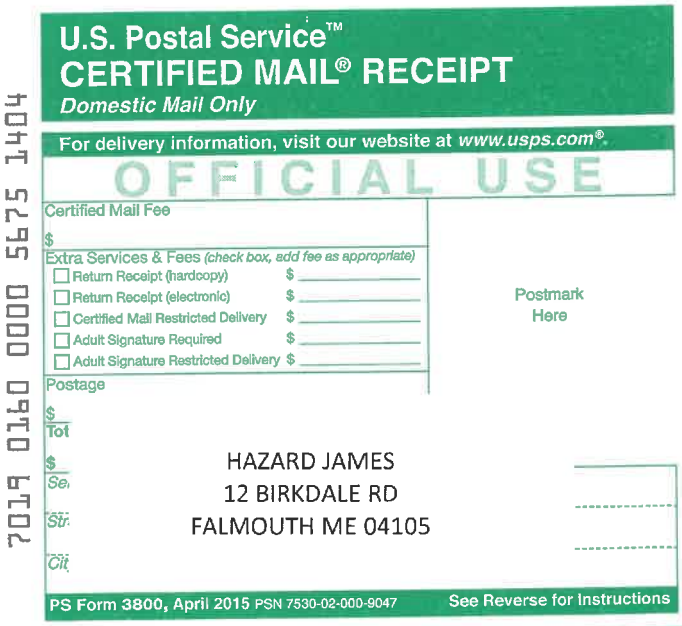
Postmark Here

7019 0160 0000 5675 1473

GRIFFIN MAUREEN H
15 MERRYMEETING DR
PORTLAND ME 04103

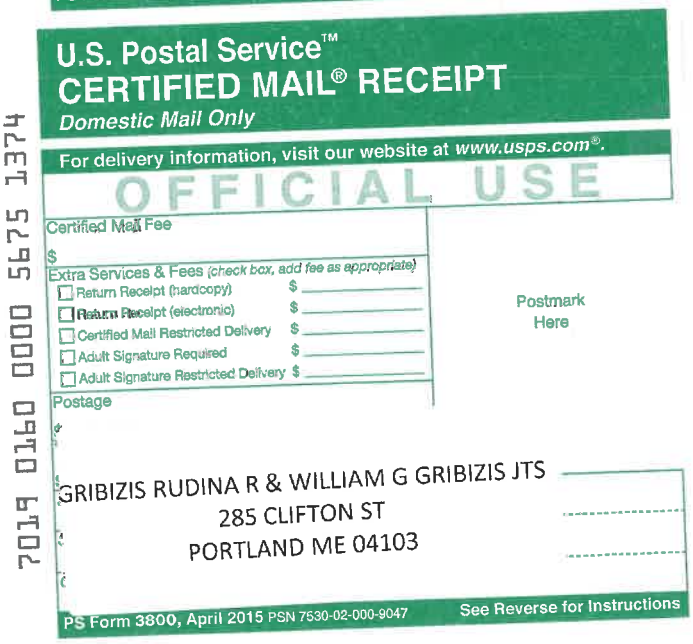
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
7019 0160 0000 5675 1398
HARWOOD JOSEPH D
58 PROVIDENCE AVE
SOUTH PORTLAND ME 04106
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
7019 0160 0000 5675 1404
HAZARD JAMES
12 BIRKDALE RD
FALMOUTH ME 04105
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
Postmark Here
7019 0160 0000 5675 1411
HILTZ JAIME L
11 BUNKER HILL TER
SCARBOROUGH ME 04074
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Tot
Postmark Here
7019 0160 0000 5675 1367
GELINAS KATIE L & PETER R ANDREWS JTS 27
MERRYMEETING DR
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 1374
GRIBIZIS RUDINA R & WILLIAM G GRIBIZIS JTS
285 CLIFTON ST
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Postmark Here
7019 0160 0000 5675 1381
HALLETT LORI
13 PENN AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions


7019 0160 0000 5675 0094
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OFFICIAL USE
Certified Mail Fee
$
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $
Return Receipt (electronic) $
Certified Mail Restricted Delivery $
Adult Signature Required $
Adult Signature Restricted Delivery $
Postage
$
Total
$
Sent
Stree
City,
Postmark Here
298 RAY LLC
LEIGHTON AVE
PORTLAND ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions

Anthony Donovan
27 Riverview Street
Portland ME 04102

Barbara Wood
125 Emery Street
Portland ME 04102

Chris Castelsky
Fairpoint Communications
521 East Morehead Street
Charlotte NC 28202

David Nowlin
215 Oxford Street
Portland ME 04102

Deb Keenan
28 Dorothy Street
Portland ME 04103

Devon Platte
26 North Street, #3
Portland ME 04101

Edward Suslovic
District 3
46 Kenwood Street
Portland ME 04103

Greater Portland Council of Governments
970 Baxter Blvd., 2nd Floor
Portland ME 04103

Janice Carpenter
9 W. Commonwealth Drive
Portland ME 04103

Jennifer Munson
City of Portland
389 Congress Street
Portland ME 04101

Jesse Thompson
Kaplan Thompson Architects
100 Exchange Street
Portland ME 04103

Len Anderson
543 Allen Avenue
Portland ME 04103

Lynn Clarkson
145 Marlborough Road
Portland ME 04103

Mary Griffity
6 E. Prom, Unit #2
Portland ME 04103

Vahan Tufankijan
Seaside Healthcare
850 Baxter Boulevard
Portland ME 04103

Nancy Bartlett
PO Box 7965
Portland ME 04112

Pam Burnside
64 Lester Drive
Portland ME 04103

Paul Dubois
1915 Congress Street
Portland ME 04102

Peggy Morin
66 Farnham Street
Portland ME 04101

Philip Haughey
1660 Soldiers Field Road
Boston MA 02135

Priscilla LaVallee
190 US Route 1, Unit 2
Falmouth ME 04105

Rebecca Halla
Waste Management of Maine
2000 Forest Avenue
Portland ME 04103

REP Benjamin Dudley III
District 30
9 Ponce Street
Portland ME 04101

REP Glenn Cummings
District 37
24 Nevens Street
Portland ME 04103

Robert Hains
250 Holm Avenue
Portland ME 04102-1208

9 NEVADA LLC
111 POND RD
NEW GLOUCESTER ME 04260

ACHESON ANN W & JAMES M ACHESON JTS28
MERRYMEETING DR
PORTLAND ME 04103

AIKEN ANNA J & JAMES W AIKEN JTS336
RAY ST
PORTLAND ME 04103

ALLAIRE JENNIFER & GERARD ALLAIRE JTS
19 NEVADA AVE
PORTLAND ME 04103

ANASTOS ELLEN B
459 ALLEN AVE # 25
PORTLAND ME 04103

ANDERSON MATTHEW A
76 FLORIDA AVE
PORTLAND ME 04103

ANDERSON PATTI J & RICHARD E JR JTS
97 FLORIDA AVE
PORTLAND ME 04103

ANDERSON ROBERTA R
455 ALLEN AVE
PORTLAND ME 04103

ANDERSON-CHRISTIE SUZAN F & MARGERY C SUDBAY JTS
21 MERRYMEETING DR
PORTLAND ME 04103

ATTIX LEE & SUSAN ROWAN JTS
18 MERRYMEETING DR
PORTLAND ME 04103

AUTO EUROPE LLC
39 COMMERCIAL ST
PORTLAND ME 04101

BARBER GEORGE & KENNETH D BARBER JTS
19 MERRYMEETING DR
PORTLAND ME 04103

BASSETT SANDRA J
12 VERMONT AVE
PORTLAND ME 04103

BEAUPRE JOHN D & TRACY ALLEN BEAUPRE JTS
459 ALLEN AVE # 4
PORTLAND ME 04103

BESEMER LORI T & JOHN W BESEMER IV JTS
16 PENN AVE
PORTLAND ME 04103

BLUE WAGON LLC
41 GORE RD
RAYMOND ME 04071

BORLAWSKY JOY M & MICHAEL J SR
62 FLORIDA AVE
PORTLAND ME 04103

BROWN ROBERT A & VALARIE J JTS
28 PENN AVE
PORTLAND ME 04103

CAETANO VASCO
3 MERRYMEETING DR
PORTLAND ME 04103

CARR HILARY
11 QUAIL TRL
BUXTON ME 04093

CARTER JENNELL A & ALICIA M MENARD JTS
146 MAINE AVE
PORTLAND ME 04103

CHACE WILLIAM J
74 GERTRUDE AVE
PORTLAND ME 04103

CHASE DAVID A & BETTI J CHASE JTS
23 MERRYMEETING DR
PORTLAND ME 04103

CHRISTIAN SABRINA KATHRYN
110 FLORIDA AVE
PORTLAND ME 04103

CHRISTY ALEXIA L
156 MAINE AVE
PORTLAND ME 04103

CHRISTY KEVIN R & DAWN M CHRISTY JTS
160 MAINE AVE
PORTLAND ME 04103

CHRISTY KEVIN R & DAWN M JTS
160 MAINE AVE
PORTLAND ME 04103

CHURCH RONALD C & DONNA I JTS
325 RAY ST
PORTLAND ME 04103

CLARK LESLIE M
12 TEXAS ST
PORTLAND ME 04103

CLARKIN REBECCA
8 NEVADA AVE
PORTLAND ME 04103

CLEALE ELIZABETH & LEO SMITH
25 FLORIDA AVE
PORTLAND ME 04103

COHEN BRIAN F & TARA COHEN JTS
32 NEVADA AVE
PORTLAND ME 04103

CONNELLY AMANDA J
356 RAY ST
PORTLAND ME 04103

COOMBS PATRICIA L
459 ALLEN AVE APT 24
PORTLAND ME 04103

COTE ELIZABETH M
14 MERRYMEETING DR
PORTLAND ME 04103

COURNOYER PAUL B & KYMBERLEY T COURNOYER JTS
24 MERRYMEETING DR
PORTLAND ME 04103

CRABTREE VIRGINIA A
152 MAINE AVE
PORTLAND ME 04103

CRESSEY WESLEY O VN VET & BETTY ANN JTS
23 JERSEY AVE
PORTLAND ME 04103

CROSBY RONALD H SR
18 JERSEY AVE
PORTLAND ME 04103

DALL MEGAN N & RYAN C DALL JTS
402 RAY ST
PORTLAND ME 04103

DEARBORN CAROL A & DAVID L DUMONT JTS
2 MERRYMEETING DR
PORTLAND ME 04103

DENBOW DEBRA A
69 FLORIDA AVE
PORTLAND ME 04103

DIPIETRO DAVID
326 RAY ST
PORTLAND ME 04103

DONOVAN ROBYN J & TIMOTHY P DONOVAN JTS
378 RAY ST
PORTLAND ME 04103

DOUGHTY BEN HILTON & CAROL N DOUGHTY JTS
54 FLORIDA AVE
PORTLAND ME 04103

DOWNS KENNETH W & JANICE E JTS
469 ALLEN AVE
PORTLAND ME 04103

DUKES DAVID A & ROSE HEITHOFF JTS
30 TAYLOR ST
PORTLAND ME 04102

DUNCAN JORDAN TYLER & KATHERINE ELISE DUNCAN JTS
365 RAY ST
PORTLAND ME 04103

DUNLAP KYAN J
459 ALLEN AVE # 14
PORTLAND ME 04103

DUNLAP KYAN JAMES & KAYLA LISA DUNLAP JTS
94 SKYARK RD
PORTLAND ME 04103

FALLBROOK PROPERTIES LLC
418 RAY ST
PORTLAND ME 04103

FEENEY ANTONETTA S
186 MAINE AVE
PORTLAND ME 04103

FOERSTER CAROLYN D
17 VERMONT AVE
PORTLAND ME 04103

FORSDICK LESLIE
114 MAINE AVE
PORTLAND ME 04103

FROZEN PIPE PROPERTY LLC
2 WASHINGTON AVE
SCARBOROUGH ME 04074

GARCIA LUIS O & MONICA M GARCIA JTS 80 FLORIDA AVE
PORTLAND ME 04103

GAUDET MONIQUE R
59 GERTRUDE AVE
PORTLAND ME 04103

GEE BRANNEN M & KAITLIN M GEE JTS
75 FLORIDA AVE
PORTLAND ME 04103

GELINAS GREGORY P & PATRICIA A JTS 124 MAINE AVE
PORTLAND ME 04103

GELINAS KATIE L & PETER R ANDREWS JTS 27 MERRYMEETING DR
PORTLAND ME 04103

GRIBIZIS RUDINA R & WILLIAM G GRIBIZIS JTS
285 CLIFTON ST
PORTLAND ME 04103

GRIFFIN MAUREEN H
15 MERRYMEETING DR
PORTLAND ME 04103

GROVER KELSEY E
271 BATH RD
WISCASSET ME 04578

HALLETT LORI
13 PENN AVE
PORTLAND ME 04103

HARKINS DONALD L & SUSAN B JTS
50 FLORIDA AVE
PORTLAND ME 04103

HARTLEY DANIELLE A
5 TEXAS ST
PORTLAND ME 04103

HARWOOD JOSEPH D
58 PROVIDENCE AVE
SOUTH PORTLAND ME 04106

HASSON HAYLEE E
100 FLORIDA AVE
PORTLAND ME 04103

HAYES JEFFREY A TRUSTEE
21 MARTIN AVE
SCARBOROUGH ME 04074

HAZARD JAMES
12 BIRKDALE RD
FALMOUTH ME 04105

HEASLY RACHEL & MARK ABDALLAH JTS 15
NEVADA AVE
PORTLAND ME 04103

HEROUX KAREN J
304 RAY ST
PORTLAND ME 04103

HILTZ JAIME L
11 BUNKER HILL TER
SCARBOROUGH ME 04074

HITZROT ANN H
459 ALLEN AVE # 13
PORTLAND ME 04103

HOLMES MARK A & LORI A HOLMES JTS 56
QUALEY RD
GRAY ME 04039

HOUSEAL IAN P
86 FLORIDA AVE
PORTLAND ME 04103

HOUSES OF HOGWARTS LLC
86 CRAIGIE ST
PORTLAND ME 04102

HOWARD SUSAN
10 MERRYMEETING DR
PORTLAND ME 04103

HUNT DANIEL P
20 MERRYMEETING DR
PORTLAND ME 04103

HUNTLEY KENNETH VN VET & ELIZABETH A
HUNTLEY JTS
31 NEVADA AVE
PORTLAND ME 04103

ISHERWOOD DONALD D VN VET
23 PENN AVE
PORTLAND ME 04103

JANCO SCOTT J
70 GERTRUDE AVE
PORTLAND ME 04103

JOHNSON JOSEPH & CHRISTINA M JOHNSON
JTS
118 MAINE AVE
PORTLAND ME 04103

JOHNSON RONALD S & LINDA J JTS
26 MERRYMEETING DR
PORTLAND ME 04103

JUDKINS BERTHA L
127 PINE TREE LN
FARMINGTON ME 04938

KANTROVITZ LARISA
166 MAINE AVE
PORTLAND ME 04103

KHUU HON
316 RAY ST
PORTLAND ME 04103

KONAN VIRGINIA J
22 NEVADA AVE
PORTLAND ME 04103

KWIECIEN STANISLAW
343 RAY ST
PORTLAND ME 04103

LAGERSTROM LYNN C
57 FLORIDA AVE
PORTLAND ME 04103

LAPLANTE CAROLE ANN
105 FLORIDA AVE
PORTLAND ME 04103

LEE THERESA
459 ALLEN AVE # 6
PORTLAND ME 04103

LIBBY CHRISTINE A
19 JERSEY AVE
PORTLAND ME 04103

LIBBY RANDOLPH
17 LARCHWOOD RD
SOUTH PORTLAND ME 04106

LINDVALL JAMES W II & LINDSAY A CARR JTS
38 FLORIDA AVE
PORTLAND ME 04103

LITVAK PROPERTIES LLC
66 PYA RD
PORTLAND ME 04103

LITVAK PROPERTIES LLC
PO BOX 7332
PORTLAND ME 04112

LL BEAN INC
15 CASCO ST
FREEPORT ME 04033

LPS PROPERTIES LLC
117 FLORIDA AVE
PORTLAND ME 04103

LUTTON LAURA J
26 NEVADA AVE
PORTLAND ME 04103

MACISSO JOSEPH J JR & EILEEN F MACISSO JTS
27 PENN AVE
PORTLAND ME 04103

MARCHANT NICHOLAS M
18 FLORIDA AVE
PORTLAND ME 04103

MARTIN'S POINT HEALTH CARE INC
PO BOX 9746
PORTLAND ME 04112

MASON ALISON M
371 RAY ST
PORTLAND ME 04103

MCDONALD CHRISTOPHER A
91 FLORIDA AVE
PORTLAND ME 04103

MCDONALD PATRICIA A
368 RAY ST PORTLAND ME 04103

MINAT CORPORATION
PO BOX 7332 PORTLAND ME 04112

MINAT CORPORATION THE
PO BOX 7332
PORTLAND ME 04112

MINVIELLE PETER M VN VET
25 MERRYMEETING DR
PORTLAND ME 04103

MOREAU CHERYL
459 ALLEN AVE # 10
PORTLAND ME 04103

MORGAN DEBORA
D3 52 RAY ST
PORTLAND ME 04103

MORIN TERESA R
29 JERSEY AVE
PORTLAND ME 04103

MULLEN SUSAN L & JOHN H R MULLEN JTS
105 ALICE ST
PORTLAND ME 04103

MURPHY JANICE E
459 ALLEN AVE # 8
PORTLAND ME 04103

MURRAY DAVID & NATALIE MURRAY JTS 53
FLORIDA AVE
PORTLAND ME 04103

NEILAN DAVID M
459 ALLEN AVE # 18
PORTLAND ME 04103

NEILL DONALD L & LINDA H LORD JTS
17 MERRYMEETING DR
PORTLAND ME 04103

NEWMAN PHOEBE J
111 FLORIDA AVE
PORTLAND ME 04103

NGUYEN KHANHLY & CHE Q NGUYEN 286
RAY ST
PORTLAND ME 04103

NIZIOLEK CAROL A
22 MERRYMEETING DR
PORTLAND ME 04103

NORMANDIN ADAM
459 ALLEN AVE # 22
PORTLAND ME 04103

NORTON KIRSTEN & NATHANIEL DUDLEY JTS
170 MAINE AVE
PORTLAND ME 04103

OAKES RYAN E
34 JERSEY AVE
PORTLAND ME 04103

O'SULLIVAN PADRAIG N & SARAH E GODFREY JTS 406 RAY ST PORTLAND ME 04103

PACKARD MARY A & AMANDA M & ALICIA L PACKARD
106 FLORIDA AVE
PORTLAND ME 04103

PARADIS WILLIAM M & SARAH C PARADIS JTS
355 RAY ST
PORTLAND ME 04103

PARE MATTHEW P
142 MAINE AVE
PORTLAND ME 04103

PELLETIER ANGELA M
128 MAINE AVE
PORTLAND ME 04103

PERKINS SARAH & JILL PERKINS-BOUCHARD
11 JERSEY AVE
PORTLAND ME 04103

PLOURDE ROBERT E
100 MAIN ST
CORNISH ME 04020

PRESTON SHANNON R & RYAN VICTOR JAROCHYM JTS
12 JERSEY AVE
PORTLAND ME 04103

PROIA SUSANNA
44 FLORIDA AVE
PORTLAND ME 04103

PURCELL LINNEA J
24 VERMONT AVE
PORTLAND ME 04103

QUINN SUSAN LOUISE
35 NEVADA AVE
PORTLAND ME 04103

RAMSDELL DARRIN L & LINDSEY M RAMSDELL JTS
12 PENN AVE
PORTLAND ME 04103

REEDER SUSAN W
24 JERSEY AVE
PORTLAND ME 04103

REGAN BRENDAN S
114 FLORIDA AVE
PORTLAND ME 04103

RICE JULIANNE L
459 ALLEN AVE # 17
PORTLAND ME 04103

ROBERTS LEANNE
459 ALLEN AVE # 1
PORTLAND ME 04103

ROBINSON BEVERLY D
459 ALLEN AVE # 3
PORTLAND ME 04103

RODNEY ROBERT J II & CHRISTINE A RODNEY JTS
121 WALTON ST
PORTLAND ME 04103

ROE LAURENCE L
160 MAINE AVE
PORTLAND ME 04103

ROWE EUGENE L & ELLEN R ROWE JTS 295 RAY ST
PORTLAND ME 04103

ROY KIMBERLY A
459 ALLEN AVE # 2
PORTLAND ME 04103

RUTHERFORD PATRIIA A
28 JERSEY AVE
PORTLAND ME 04103

SCHAIBERGER SCOTT C
138 MAINE AVE
PORTLAND ME 04103

SCHOLZ JOHN M
334 RAY ST
PORTLAND ME 04103

SENDZE KATIE
459 ALLEN AVE # 21
PORTLAND ME 04103

SHEA STEPHEN M & DIANE L JTS
101 FLORIDA AVE
PORTLAND ME 04103

SILVERNAIL DAVID L
459 ALLEN AVE APT 16
PORTLAND ME 04103

SINCLAIR DANIEL C & KIMBERLY A BRISSETTE JTS
333 RAY ST
PORTLAND ME 04103

SMITH JASON D & LAURIE R SMITH JTS 354 RAY ST
PORTLAND ME 04103

SNOW CORY & SHEILA J SULLIVAN JTS
398 RAY ST
PORTLAND ME 04103

ST CLAIR GEORGE W JR
36 NEVADA AVE
PORTLAND ME 04103

STANTON ELIZABETH M
16 MERRYMEETING DR
PORTLAND ME 04103

STEVENS CHERYL A & CHESTER STEVENS JTS
9 TEXAS ST
PORTLAND ME 04103

SULLIVAN JAMES A JR
83 FLORIDA AVE
PORTLAND ME 04103

TALBOT JOSEPH F & JUDITH A HARRIS JTS
16 NEVADA AVE
PORTLAND ME 04103

TAYLOR DAWN M
459 ALLEN AVE # 11
PORTLAND ME 04103

THOMPSON BARBARA E
65 FLORIDA AVE
PORTLAND ME 04103

THOMPSON DONALD A & EVELYN L JTS 488 FORT HILL RD
GORHAM ME 04038

TOWLE WALTER D WWII VET & DONNA MARIE TOWLE JTS
8 MERRYMEETING DR
PORTLAND ME 04103

TUFTS BARBARA J
6 MERRYMEETING DR # 6
PORTLAND ME 04103

TURNER CAROL A & SUSAN C VILLETTA JTS
18 WISEMAN ST
NEWPORT ME 04953

TUTOR THOMAS L
20 VERMONT AVE
PORTLAND ME 04103

UMBEL WILLIAM R
122 GERTRUDE AVE
PORTLAND ME 04103

URBACH PAULA M
92 FLORIDA AVE
PORTLAND ME 04103

WAGNER THERESA
65 WHITNEY FARM RD
NORTH YARMOUTH ME 04097

WARREN JARED P
459 ALLEN AVE #7 P
ORTLAND ME 04103

WEBB MARILYN D
340 RAY ST
PORTLAND ME 04103

WEBSTER BETH A
PO BOX 8228
PORTLAND ME 04104

WEISS LISA KOCH & LAURA JEAN WEISS JTS
35 HAMMOND ST
PORTLAND ME 04101

WELSH RICHARD E & SUSAN WELSH JTS
5 MERRYMEETING DR
PORTLAND ME 04103

WELSH RICHARD J & MARIE K WELSH JTS 13 MERRYMEETING DR
PORTLAND ME 04103

WELTY MARTHA & CHARLES WELTY JTS
4 MERRYMEETING DR
PORTLAND ME 04103

WGME INC
81 NORTHPORT DR
PORTLAND ME 04103

WHALEN MAUREEN
459 ALLEN AVE APT 23
PORTLAND ME 04103

WHIPKEY RENEE & RYAN WHIPKEY JTS
22 PENN AVE P
ORTLAND ME 04103

WHITNEY LEE ANN
1 MERRYMEETING DR
PORTLAND ME 04103

WOODBERRY KAREN E
459 ALLEN AVE #26
PORTLAND ME 04103

YEBOAH DUKE
17 PENN AVE
PORTLAND ME 04103

YORK MEGAN T & JONATHAN A YORK JTS
72 FLORIDA AVE
PORTLAND ME 04103

YOUNGBLOOD ALEC N & JOSHUA T AVERY JTS
344 RAY ST
PORTLAND ME 04103

ZIMMERMAN ROBERTA L
12 MERRYMEETING DR
PORTLAND ME 04103

ZUB PATRICIA A
308 E 120TH AVE
TAMPA FL 33612

298 RAY LLC
LEIGHTON AVE
PORTLAND ME 04103

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT PLAN

For

FALLBROOK COMMONS
PORTLAND, MAINE

Prepared for

Sandy River Company
217 Commercial Street
Portland, Maine 04112

Revised July 9, 2020

Table of Contents

Contents

I. Introduction 1
II. Existing Conditions 1
III. Soils 1
IV. Proposed Site Improvements 2
V. Pre-Development Conditions Model 2
VI. Post-Development Conditions Model 3
VII. Stormwater Management 4
Basic Standard - Chapter 500, Section 4(B) 4
General Standard - Chapter 500, Section 4(C) 5
Flooding Standard - Chapter 500, Section 4(F) 5
VIII. Summary 7

Appendices

Appendix 1: Watershed Plans and Stormwater Treatment Plans
Appendix 2: Stormwater Quality Calculations
Appendix 3A: Hydrologic Modeling – Pre-Development Model (HydroCAD) Summary
Appendix 3B: Hydrologic Modeling – Post-Development Model (HydroCAD) Summary
Appendix 4: Inspection, Maintenance and Housekeeping Plan
Appendix 5: Web Soil Survey
Appendix 6: FEMA Map
Appendix 7: Form F: Soil Profile/Classification Information

STORMWATER MANAGEMENT PLAN REPORT
Fallbrook Commons
Portland, Maine

I. Introduction

This Stormwater Management Plan Report has been prepared to present analyses performed to address the potential impacts associated with the project due to proposed modification to stormwater runoff characteristics and land cover changes. The stormwater management controls outlined in this report have been designed to suit the proposed development and to comply with applicable regulatory requirements.

II. Existing Conditions

The project site is comprised of undeveloped land consisting of mostly wooded land coverage with access from Ray Street and Merrymeeting Drive. The site is approximately 12.78 acres and is bounded by Florida Avenue and Ray Street residences to the south and east, Fallbrook Woods senior center to the north, and Topsham Street and undeveloped residential parcels to the west. Paper streets Wadco Street and Ash Street are located to the south and southeast of the site and are currently undeveloped.

Slopes on the site range from flat low-lying easterly wetland areas to undeveloped slopes ranging from 5-40% with exposed ledge areas located in the western portion of the parcel. Site drainage generally travels easterly toward the wetland area nearest the intersection and residences of Ray Street and Florida Avenue and enters a closed drainage system in the Ray Street right of way. Small portions of the site drain west to a wetland in the Topsham Street right of way.

The site is tributary to an unnamed stream draining northeasterly from the site and discharging at the mouth of the Presumpscot River, which is not classified as most-at-risk or urban impaired according to Chapter 502, Direct Watersheds of Lakes Most At-Risk From New Development, and Urban Impaired Stream Standards.

The proposed development area of the site is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Portland, community-panel number 230051 002 C. Please find a copy of the FEMA map attached as Appendix 6.

III. Soils

Soil information for the site was obtained via the USDA United States Department of Agriculture and Natural Resources Conservation Service's Web Soil Survey. The Hydrologic Soil Group (HSG) of the site soils are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Name	Soil Symbol	HSG	Slope (%)
BELGRADE	BgB	C	0-8
BUXTON	BuB	D	3-8
HOLLIS	HrB	C	0-8
HOLLIS	HrC	C	8-15
HOLLIS	HsB	C	0-8
SCANTIC	Sn	D	0-3

Hydrologic Soil Group boundaries are delineated on the Watershed Map. A copy of the Web Soil Survey is included as Appendix 5.

IV. Proposed Site Improvements

The project includes a new senior living facility located next to the existing Fallbrook Woods Assisted Living facility. The development includes the construction of a two story, 37,455 sf building that will house 90 bedrooms, a commercial kitchen, community areas, and two parking areas totaling 84 parking spaces. Fallbrook Health Center proposes an entrance off of Merrymeeting Drive, and an emergency connection off of Ray Street.

This project will happen as one phase, which will involve clearing the vegetation as required, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by 2021.

The property is 12.78 acres, exists within the Residential-3 zone, and has frontage along Ray Street. The proposed development will improve approximately 5.6 acres of undeveloped land, as shown on the General Standards worksheet attached as Appendix 2. This includes approximately 2.7 acres of new impervious area.

Improvements to the existing Fallbrook Woods Assisted Living Facility to include 16 new parking spaces, a proposed sidewalk to Merrymeeting Drive, and a sidewalk along Merrymeeting Drive to Ray Street.

V. Pre-Development Conditions Model

The pre-development watershed plan consists of eight subcatchments labeled 1.0S, 1.1S, 2.0S, 3.0S, OS-4.0S, OS-4.1S, OS-5.0S, and OS5.1S in the HydroCAD model. Five locations were identified as Study Points (SP) for comparing peak runoff rates.

SP-1 is located in the easterly corner of the lot where runoff leaves the site via a wetland. Watershed 1.0S directly contributes runoff to this study point with a tributary area of approximately 9.4 acres. Subcatchment 1.1S flows into to 1.0S through an existing 15" culvert with an inlet control structure identified as node 1.1P. The culvert crosses under an existing gravel access road draining an area of approximately 2.7 acres. SP-1 and the

associated drainage area are tributary to an offsite unnamed stream traveling northeasterly from the site and discharging to the Presumpscot River.

SP-2 is located in the undeveloped southerly corner of the lot where runoff leaves the site via overland flow into the paper street right of way of Wadco Street. Subcatchment 2.0S contributes runoff to this study point with a tributary area of approximately 0.4 acres. SP-2 and its associated drainage area drain to an offsite unnamed stream discharging to the Presumpscot River.

SP-3 is located in the westerly corner of the lot that is a majority undeveloped where runoff leaves the site into the undeveloped Topsham Street right of way. A small portion of this area includes previously developed grass and pavement area from the neighboring Fallbrook Woods facility. Watershed 3.0S contributes runoff to this study point with a tributary area of approximately 0.9 acres. SP-3 and the associated drainage area are also tributary to an offsite unnamed stream discharging to the Presumpscot River.

SP-4 is located in the western corner of the lot. A portion of the existing Fallbrook Woods Assisted Living Facility drains across the existing parking lot/access road to a wetland. The wetland drains through two existing 12-inch concrete culverts Watersheds OS-4.0S and OS-4.1S contribute runoff to this study point with tributary areas of approximately 2.13 acres. SP-4 and the associated drainage area are tributary to an offsite unnamed stream traveling westerly from the site and discharging to the Presumpscot River.

SP-5 is located in the northerly corner of the lot This portion of the site includes Merrymeeting Drive and adjacent properties southeasterly of Merrymeeting Drive. Watersheds OS-5.0S and OS-5.2S contribute runoff to this study point with tributary areas of approximately 2.70 acres. SP-5 and the associated drainage area are tributary to an offsite unnamed stream traveling westerly from the site and discharging to the Presumpscot River.

VI. Post-Development Conditions Model

The post-development watershed area consists of the same overall area as the pre-development plan, however, the subcatchments have been broken into smaller areas as a result of the proposed development.

SP-1: Post-development subcatchments 10.0S and 10.1S represent the existing undeveloped and developed land within pre-development subcatchments 1.0S and 1.1S respectively. Subcatchments 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, and 13.1S represent the majority of the proposed developed area including the building, parking areas, and landscaped islands.

Subcatchments 11.0S, 11.1S, and 11.2S represent approximately 3.1 acres of the developed site tributary to a proposed Gravel Wetland (GW-1) modeled as node 11.0P which provides both quantity and quality treatment of the stormwater runoff. Portions of subcatchment

11.1S include developed areas from the neighboring Fallbrook Woods facility and are directed to a proposed replacement culvert modeled as node 11.1P.

Subcatchment 12.0S represents approximately 1.3 acres of the developed area and is tributary to the proposed Underdrained Soil Filter (UDSF-1) modeled as node 12.0P which provides both quantity and quality treatment of the stormwater runoff.

Subcatchments 13.0S and 13.1S are approximately 0.8 acres of the proposed building roofline area and is tributary to the proposed Roof Drip Edge BMPs modeled as nodes 13.0P and 13.1P which provide quality treatment of the stormwater runoff.

SP-2: Post-development subcatchment 20.0S represents the remaining undeveloped land from pre-development subcatchment 2.0S.

SP-3: Post-development subcatchment 30.0S represents the remaining undeveloped land from pre-development subcatchment 3.0S and a small portion of developed landscape and pavement directed via constructed grassed swale and sheet flow to an existing wetland area.

SP-4: Post-development subcatchments OS-40S and OS-41S included proposed parking spaces and a proposed sidewalk to Merrymeeting Drive. Runoff from OS-41S is directed to an existing culvert running under the driveway.

SP-5: Post-development subcatchments OS-50S and OS-51S included the proposed sidewalk along Merrymeeting Drive to Ray Street.

The three Best Management Practices (gravel wetland, underdrained soil filter, and roof drip edge) have been designed and sized in accordance with MDEP BMP standards contained within Chapter 500 and the BMP Manual. The proposed BMPs treat runoff tributary to SP-1. The areas tributary to SP-2, SP-3, SP-4 and SP-5 are reduced in the post-development conditions due to site development. Sizing calculations can be found in Appendix 2.

VII. Stormwater Management

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. The project avoids adverse impacts by implementing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 4) during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply, which require a project's stormwater management system to include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The General Standards require treatment of no less than 95% of the site's created impervious area and no less than 80% of the site's created developed area (landscaped area and impervious area combined).

To mitigate the changes in hydrologic patterns due to the development of this project, an underdrained soil filter, a gravel wetland, and a roof drip edge filters have been included in the stormwater management infrastructure. Filtration BMPs are effective at removing a wide range of pollutants through the use of soil filter media.

BMP sizing and treatment calculations are provided as Appendix 2.

Through the use of the proposed BMP's, 106.5% of new impervious area and 91.8% of new developed area will be receiving treatment. This exceeds the requirements for the Maine DEP General Standards. The project exceeds 100% of the new impervious area treated by directing untreated offsite impervious area to the proposed gravel wetland.

Flooding Standard - Chapter 500, Section 4(F)

Since the planned project will create less than three (3) acres of impervious surface, MDEP Flooding Standards are not required to be met. However, the Flooding Standard has been met as a local requirement. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

A runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500: Stormwater Management (effective date August 2015). Rainfall values for York County are listed in the table below.

Storm Frequency Precipitation (in./24 hr) Cumberland County	
2-year	3.1
10-year	4.6
25-year	5.8

The following table presents the watershed data for pre- and post-development conditions, as delineated for the analysis.

Subcatchment (Watershed)	Pre-Development			Post-Development		
	Area (ac)	Cn	Tc (Min.)	Area (ac)	Cn	Tc (Min.)
1.0S	9.42	77	29.3			
1.1S	2.68	80	23.9			
2.0S	0.44	70	18.7			
3.0S	0.92	72	16.1			
OS-4.0S	1.22	81	9.3			
OS-4.1S	0.98	80	16.2			
OS-5.0S	2.48	78	6.0			
OS-5.1S	0.22	92	6.0			
10.0S				4.54	79	28.5
10.1S				2.63	80	23.9
11.0S				1.93	92	11.7
11.1S				0.54	76	18.0
11.2S				0.62	81	15.0
12.0S				1.32	85	17.2
13.0S				0.40	98	6.0
13.1S				0.39	98	6.0
20.0S				0.24	70	18.0
30.0S				0.85	73	16.1
OS-40S				1.22	83	6.2
OS-41S				0.98	81	15.9
OS-50S				2.48	78	6.0
OS-51S				0.22	92	6.0
Total	**18.37**			**18.37**		

The following table presents the results of the stormwater runoff calculations at the analysis points for the pre-development and post-developed conditions.

Stormwater Runoff Summary Table			
Study Point	**Storm Event**	**Pre-Development (cfs)**	**Post-Development (cfs)**
SP-1	2-year	8.4	6.3
	10-year	19.4	17.0
	25-year	25.9	24.5
SP-2	2-year	0.2	0.2
	10-year	0.7	0.4
	25-year	0.9	0.6
SP-3	2-year	0.6	0.6
	10-year	1.6	1.5
	25-year	2.2	2.1
SP-4	2-year	1.3	1.3
	10-year	2.4	2.4
	25-year	2.9	2.9
SP-5	2-year	4.0	4.0
	10-year	8.3	8.3
	25-year	11.1	11.1

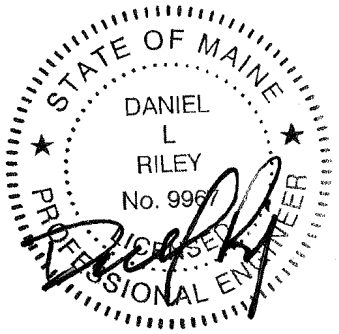
The HydroCAD Data output sheets from this analysis are appended to this report (Appendix 3) along with pre-development and post-development watershed maps (Appendix 1). The model predicts that the peak runoff rates in the post-development condition at Study Points 1, 2, 3, 4 and 5 are at or below pre-development runoff rates for the 2, 10, and 25-year storm events with implementation of the proposed stormwater management practices.

VIII. Summary

The proposed development has been designed to manage stormwater runoff through Best Management Practices approved by MDEP. Stormwater BMP's provide treatment to 100.19% (95% required) of impervious areas, and 89.07% (80% required) of the total developed area. Runoff discharging from the site will be at or below pre-development conditions for the 2, 10 and 25-year storm events at all five study points. Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping procedures have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

Prepared by:

SEBAGO TECHNICS, INC.



Daniel L. Riley, P.E.
Vice President, Engineering

DLR/BAW

07/09/2020

Appendix 1

Watershed Plans

(see plan set)

Appendix 2

Stormwater Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 18347 Fallbrook Commons **Date:** 6/30/2020

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10.0S	197,762	8,676	226	167,582	21,278	21,504	176,258	NO	0	0	0	
10.1S	114,524	24,914	0	85,730	3,880	3,880	110,644	NO	0	0	0	
11.0S	83,879	0	55,667	0	28,212	83,879	0	YES	55,667	28,212	83,879	GW-1
11.1S	23,407	0	0	0	23,407	23,407	0	YES	0	23,407	23,407	GW-1
11.2S	27,173	7,890	700	9,821	8,762	9,462	17,711	YES	8,590	18,583	27,173	GW-1
12.0S	57,628	0	23,776	0	33,852	57,628	0	YES	23,776	33,852	57,628	UDSF-1
13.0S	17,204	0	17,204	0	0	17,204	0	YES	17,204	0	17,204	DL
13.1S	16,974	0	16,974	0	0	16,974	0	YES	16,974	0	16,974	DL
20.0S	10,684	0	0	10,684	0	0	10,684	NO	0	0	0	
30.0S	37,005	0	0	24,501	12,504	12,504	24,501	NO	0	0	0	
OS-40S	53,510	17,041	3,120	33,349	0	3,120	50,390	NO	0	0	0	
OS-41S	39,122	10,996	2,045	26,081	0	2,045	37,077	NO	0	0	0	
OS-50S	107,926	29,442	771	77,713	0	771	107,155	NO	0	0	0	
OS-51S	9,601	4,072	1,485	4,044	0	1,485	8,116	NO	0	0	0	
TOTAL (S.F.)	**796,399**	**103,031**	**121,968**	**439,505**	**131,895**	**253,863**	**542,536**		**122,211**	**104,054**	**226,265**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**121,968**	**TOTAL DEVELOPED AREA (S.F.)**	**253,863**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**122,211**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**226,265**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**100.20%**	**% OF AREA RECEIVING TREATMENT**	**89.13%**

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	1
CALCULATED BY	BAW	DATE	7/9/2020
FILE NAME	18347 WQC.xlsx	PRNT DATE	7/9/2020

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system….holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to GRAVEL WETLAND

Landscaped Area	70,202.0	SF		
Impervious Area	64,257.0	SF		

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	70,202.00	SF	Area	1,404.0	SF	
Total Impervious Area	64,257.00	SF	Area	3,212.9	SF	
Required Minimum Surface Area				4,616.9	SF	
Provided Surface Area				6,175.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	70,202.00	SF	Volume	2,340.1			
Impervious Area	64,257.00	SF	Volume	5,354.8			
Treatment Volume Required				7,694.8	CF	0.177	AF
Minimum Treatment Cell Volume (45%)				3,462.7	CF	0.079	AF
Provided Treatment Volume (Bay 1)				4,790.0	CF		
Provided Treatment Volume (Bay 2)				5,860.0	CF		
Total Provided Treatment Volume				10,650.0	CF		
Minimum "Forebay" Cell Volume (10%)				769.5	CF		
Provided Treatment Volume (Forebay)				800.0	CF		

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	2
CALCULATED BY	BAW	DATE	7/9/2020
FILE NAME	18347 WQC.xlsx	PRNT DATE	7/9/2020

Gravel Wetland - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 10,650 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.12 \text{ cfs}$$

surface area of filter = 6,175 SF

h = 1.72 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.019 sf = 2.81 sq. in.

Max. Diam = 1.89 in

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	1
CALCULATED BY	BAW	DATE	7/9/2020
FILE NAME	18347 WQC.xlsx	PRNT DATE	7/9/2020

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References

1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1
   a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF-1

Landscaped Area	33,852.00	SF				
Impervious Area	23,776.00	SF				

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	33,852.00	SF	Area	677.0	SF	
Total Impervious Area	23,776.00	SF	Area	1,188.8	SF	
Required Minimum Surface Area				1,865.8	SF	
Provided Surface Area				1,955.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	33,852.00	SF	Volume	1,128.4				
Impervious Area	23,776.00	SF	Volume	1,981.3				
Treatment Volume Required				3,109.7	CF	0.071	AF	
Provided Treatment Volume				3,730.0	CF	0.086	AF	

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded:	23,776.00	SF						
Sediment Volume	30	CF						
Provided	160	CF	16	Inch Deep Forebay	with area of		120	sf

SEBAGO TECHNICS, INC.
75 John Roberts Road Suite 4A
South Portland, Maine 04106
Tel. (207) 200-2100

JOB	18347 Fallbrook Commons		
SHEET NO.	2	OF	2
CALCULATED BY	BAW	DATE	7/9/2020
FILE NAME	18347 WQC.xlsx	PRNT DATE	7/9/2020

Underdrained Soil Filter 1 - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 3,730 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.04 \text{ cfs}$$

surface area of filter = 1,955 SF

h = 1.91 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.006 sf = 0.93 sq. in.

Max. Diam = 1.09 in

SEBAGO TECHNICS, INC.
75 John Roberts Road, Suite 4A
South Portland, ME 04106
(207) 200-2100 FAX (207) 856-2206

JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	1
CALCULATED BY	BAW	DATE	7/9/2020
CHECKED BY	BJB		
FILE NAME	18347 WQC.xlsx	PRINT DATE	7/9/2020

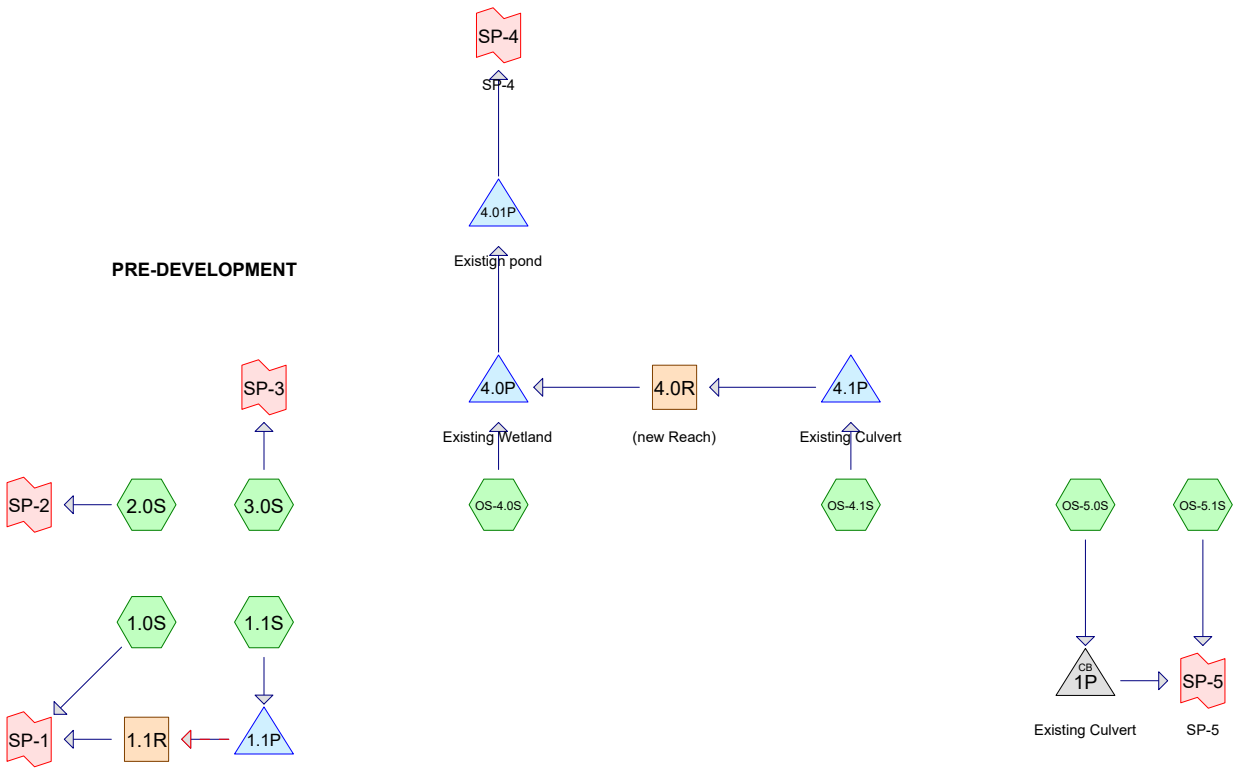
Treatment Calculations for Proposed Roof Drip Edge						
WQV Calculation						
(WQV = Water Quality Volume)						
Total Impervious Area =	34,180	sf				
WQV (MDEP)= 1" x Impervious Area =		2,848.3	cf =	0.065	acre-ft	
Length of Trench=		1510.0	ft.			
Width of Trench=		3.5	ft.			
Depth of Stone		12.0	in.	40% porosity		
Depth of Sand Media=		12.0	in.	20% porosity		
WQV Provided = Area of Trench * (Depth of stone*stone porosity + Depth of sand*sand porosity)						
WQV for first 1" =	2,114.0	cf				
Additional WQV Provided =	1,057.0	cf				
Total WQV Provided =	**3,171.0**	**cf**				

The stone reservoir volume for the drip edge filter was designed to provide the storage required to convey the water quality storm (storm that generates 1" of runoff over the roof) through the filter media under the stone. Additonal water quality is provided in the porosity of the underdrain sand.

Appendix 3

HydroCAD Output
Pre-Development and
Post-Development Models

Appendix 3A
PREDEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 18347 PRE-DEVELOPMENT
Prepared by {enter your company name here}, Printed 7/9/2020
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.272	80	1/2 acre lots, 25% imp, HSG C (OS-5.0S)
2.022	74	>75% Grass cover, Good, HSG C (1.0S, 1.1S, 3.0S, OS-4.0S, OS-4.1S)
1.899	80	>75% Grass cover, Good, HSG D (1.0S, 1.1S)
0.139	96	Gravel surface, HSG C (1.0S, 3.0S)
0.063	96	Gravel surface, HSG D (1.0S)
0.581	98	Paved parking, HSG C (1.0S, 1.1S, 3.0S, OS-4.0S, OS-4.1S)
0.046	98	Paved parking, HSG D (1.0S, 1.1S)
0.578	92	Paved roads w/open ditches, 50% imp, HSG C (OS-5.0S, OS-5.1S)
0.587	98	Roofs, HSG C (1.0S, 1.1S, OS-4.0S, OS-4.1S)
0.394	98	Roofs, HSG D (1.0S, 1.1S)
4.754	70	Woods, Good, HSG C (1.0S, 1.1S, 2.0S, 3.0S, OS-4.0S, OS-4.1S, OS-5.0S)
5.947	77	Woods, Good, HSG D (1.0S, 1.1S, 3.0S)
18.282	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
9.933	HSG C	1.0S, 1.1S, 2.0S, 3.0S, OS-4.0S, OS-4.1S, OS-5.0S, OS-5.1S
8.350	HSG D	1.0S, 1.1S, 3.0S
0.000	Other	
18.282		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=1.14"
Flow Length=740' Tc=29.3 min CN=77 Runoff=7.0 cfs 0.895 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.6 cfs 0.296 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.2 cfs 0.028 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=0.87"
Flow Length=292' Tc=16.1 min CN=72 Runoff=0.6 cfs 0.067 af

SubcatchmentOS-4.0S: Runoff Area=53,510 sf 31.85% Impervious Runoff Depth=1.39"
Flow Length=86' Tc=9.3 min CN=81 Runoff=1.8 cfs 0.142 af

SubcatchmentOS-4.1S: Runoff Area=39,122 sf 28.11% Impervious Runoff Depth=1.33"
Flow Length=207' Tc=16.2 min CN=80 Runoff=1.0 cfs 0.099 af

SubcatchmentOS-5.0S: Runoff Area=107,926 sf 20.06% Impervious Runoff Depth=1.20"
Flow Length=543' Tc=6.0 min CN=78 Runoff=3.4 cfs 0.248 af

SubcatchmentOS-5.1S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=2.26"
Flow Length=342' Tc=6.0 min CN=92 Runoff=0.6 cfs 0.041 af

Reach 1.1R: Avg. Flow Depth=0.11' Max Vel=0.44 fps Inflow=2.4 cfs 0.294 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=1.8 cfs 0.294 af

Reach 4.0R: (new Reach) Avg. Flow Depth=0.18' Max Vel=0.46 fps Inflow=1.0 cfs 0.099 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=0.9 cfs 0.099 af

Pond 1.1P: Peak Elev=93.92' Storage=1,040 cf Inflow=2.6 cfs 0.296 af
Primary=2.4 cfs 0.294 af Secondary=0.0 cfs 0.000 af Outflow=2.4 cfs 0.294 af

Pond 1P: Existing Culvert Peak Elev=96.93' Inflow=3.4 cfs 0.248 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=3.4 cfs 0.248 af

Pond 4.01P: Existign pond Peak Elev=106.11' Storage=1,406 cf Inflow=1.6 cfs 0.238 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=1.3 cfs 0.235 af

Pond 4.0P: Existing Wetland Peak Elev=106.51' Storage=2,029 cf Inflow=2.3 cfs 0.242 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=1.6 cfs 0.238 af

Pond 4.1P: Existing Culvert Peak Elev=108.82' Storage=49 cf Inflow=1.0 cfs 0.099 af
15.0" Round Culvert n=0.012 L=38.0' S=0.0042 '/' Outflow=1.0 cfs 0.099 af

Link SP-1: Inflow=8.4 cfs 1.190 af
Primary=8.4 cfs 1.190 af

Link SP-2: Inflow=0.2 cfs 0.028 af
Primary=0.2 cfs 0.028 af

Link SP-3: Inflow=0.6 cfs 0.067 af
Primary=0.6 cfs 0.067 af

Link SP-4: SP-4 Inflow=1.3 cfs 0.235 af
Primary=1.3 cfs 0.235 af

Link SP-5: SP-5 Inflow=4.0 cfs 0.289 af
Primary=4.0 cfs 0.289 af

Total Runoff Area = 18.282 ac Runoff Volume = 1.817 af Average Runoff Depth = 1.19"
87.89% Pervious = 16.068 ac 12.11% Impervious = 2.215 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=2.46"
Flow Length=740' Tc=29.3 min CN=77 Runoff=15.5 cfs 1.928 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.3 cfs 0.606 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.7 cfs 0.070 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.05"
Flow Length=292' Tc=16.1 min CN=72 Runoff=1.6 cfs 0.157 af

SubcatchmentOS-4.0S: Runoff Area=53,510 sf 31.85% Impervious Runoff Depth=2.81"
Flow Length=86' Tc=9.3 min CN=81 Runoff=3.6 cfs 0.288 af

SubcatchmentOS-4.1S: Runoff Area=39,122 sf 28.11% Impervious Runoff Depth=2.72"
Flow Length=207' Tc=16.2 min CN=80 Runoff=2.1 cfs 0.204 af

SubcatchmentOS-5.0S: Runoff Area=107,926 sf 20.06% Impervious Runoff Depth=2.54"
Flow Length=543' Tc=6.0 min CN=78 Runoff=7.4 cfs 0.525 af

SubcatchmentOS-5.1S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=3.89"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.0 cfs 0.072 af

Reach 1.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.2 cfs 0.605 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=4.3 cfs 0.605 af

Reach 4.0R: (new Reach) Avg. Flow Depth=0.28' Max Vel=0.61 fps Inflow=2.1 cfs 0.204 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.0 cfs 0.204 af

Pond 1.1P: Peak Elev=94.16' Storage=1,502 cf Inflow=5.3 cfs 0.606 af
Primary=5.2 cfs 0.605 af Secondary=0.0 cfs 0.000 af Outflow=5.2 cfs 0.605 af

Pond 1P: Existing Culvert Peak Elev=98.91' Inflow=7.4 cfs 0.525 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=7.4 cfs 0.525 af

Pond 4.01P: Existign pond Peak Elev=106.61' Storage=2,783 cf Inflow=3.2 cfs 0.488 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.4 cfs 0.484 af

Pond 4.0P: Existing Wetland Peak Elev=106.86' Storage=3,724 cf Inflow=4.8 cfs 0.491 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=3.2 cfs 0.488 af

Pond 4.1P: Existing Culvert Peak Elev=109.09' Storage=109 cf Inflow=2.1 cfs 0.204 af
15.0" Round Culvert n=0.012 L=38.0' S=0.0042 '/' Outflow=2.1 cfs 0.204 af

Link SP-1: Inflow=19.4 cfs 2.533 af
Primary=19.4 cfs 2.533 af

Link SP-2: Inflow=0.7 cfs 0.070 af
Primary=0.7 cfs 0.070 af

Link SP-3: Inflow=1.6 cfs 0.157 af
Primary=1.6 cfs 0.157 af

Link SP-4: SP-4 Inflow=2.4 cfs 0.484 af
Primary=2.4 cfs 0.484 af

Link SP-5: SP-5 Inflow=8.3 cfs 0.597 af
Primary=8.3 cfs 0.597 af

Total Runoff Area = 18.282 ac Runoff Volume = 3.849 af Average Runoff Depth = 2.53"
87.89% Pervious = 16.068 ac 12.11% Impervious = 2.215 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=3.31"
Flow Length=740' Tc=29.3 min CN=77 Runoff=20.9 cfs 2.594 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=7.0 cfs 0.803 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.9 cfs 0.098 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.83"
Flow Length=292' Tc=16.1 min CN=72 Runoff=2.2 cfs 0.217 af

SubcatchmentOS-4.0S: Runoff Area=53,510 sf 31.85% Impervious Runoff Depth=3.70"
Flow Length=86' Tc=9.3 min CN=81 Runoff=4.7 cfs 0.379 af

SubcatchmentOS-4.1S: Runoff Area=39,122 sf 28.11% Impervious Runoff Depth=3.60"
Flow Length=207' Tc=16.2 min CN=80 Runoff=2.8 cfs 0.270 af

SubcatchmentOS-5.0S: Runoff Area=107,926 sf 20.06% Impervious Runoff Depth=3.40"
Flow Length=543' Tc=6.0 min CN=78 Runoff=9.9 cfs 0.703 af

SubcatchmentOS-5.1S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=4.87"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.2 cfs 0.090 af

Reach 1.1R: Avg. Flow Depth=0.21' Max Vel=0.63 fps Inflow=6.3 cfs 0.802 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=5.8 cfs 0.802 af

Reach 4.0R: (new Reach) Avg. Flow Depth=0.33' Max Vel=0.67 fps Inflow=2.7 cfs 0.270 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.6 cfs 0.270 af

Pond 1.1P: Peak Elev=94.42' Storage=2,183 cf Inflow=7.0 cfs 0.803 af
Primary=6.3 cfs 0.802 af Secondary=0.0 cfs 0.000 af Outflow=6.3 cfs 0.802 af

Pond 1P: Existing Culvert Peak Elev=100.89' Inflow=9.9 cfs 0.703 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=9.9 cfs 0.703 af

Pond 4.01P: Existign pond Peak Elev=106.89' Storage=3,705 cf Inflow=4.1 cfs 0.645 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.9 cfs 0.641 af

Pond 4.0P: Existing Wetland Peak Elev=107.08' Storage=4,959 cf Inflow=6.4 cfs 0.648 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=4.1 cfs 0.645 af

Pond 4.1P: Existing Culvert Peak Elev=109.24' Storage=168 cf Inflow=2.8 cfs 0.270 af
15.0" Round Culvert n=0.012 L=38.0' S=0.0042 '/' Outflow=2.7 cfs 0.270 af

Link SP-1: Inflow=25.9 cfs 3.396 af
Primary=25.9 cfs 3.396 af

Link SP-2: Inflow=0.9 cfs 0.098 af
Primary=0.9 cfs 0.098 af

Link SP-3: Inflow=2.2 cfs 0.217 af
Primary=2.2 cfs 0.217 af

Link SP-4: SP-4 Inflow=2.9 cfs 0.641 af
Primary=2.9 cfs 0.641 af

Link SP-5: SP-5 Inflow=11.1 cfs 0.792 af
Primary=11.1 cfs 0.792 af

Total Runoff Area = 18.282 ac Runoff Volume = 5.153 af Average Runoff Depth = 3.38"
87.89% Pervious = 16.068 ac 12.11% Impervious = 2.215 ac

Summary for Subcatchment 1.0S:

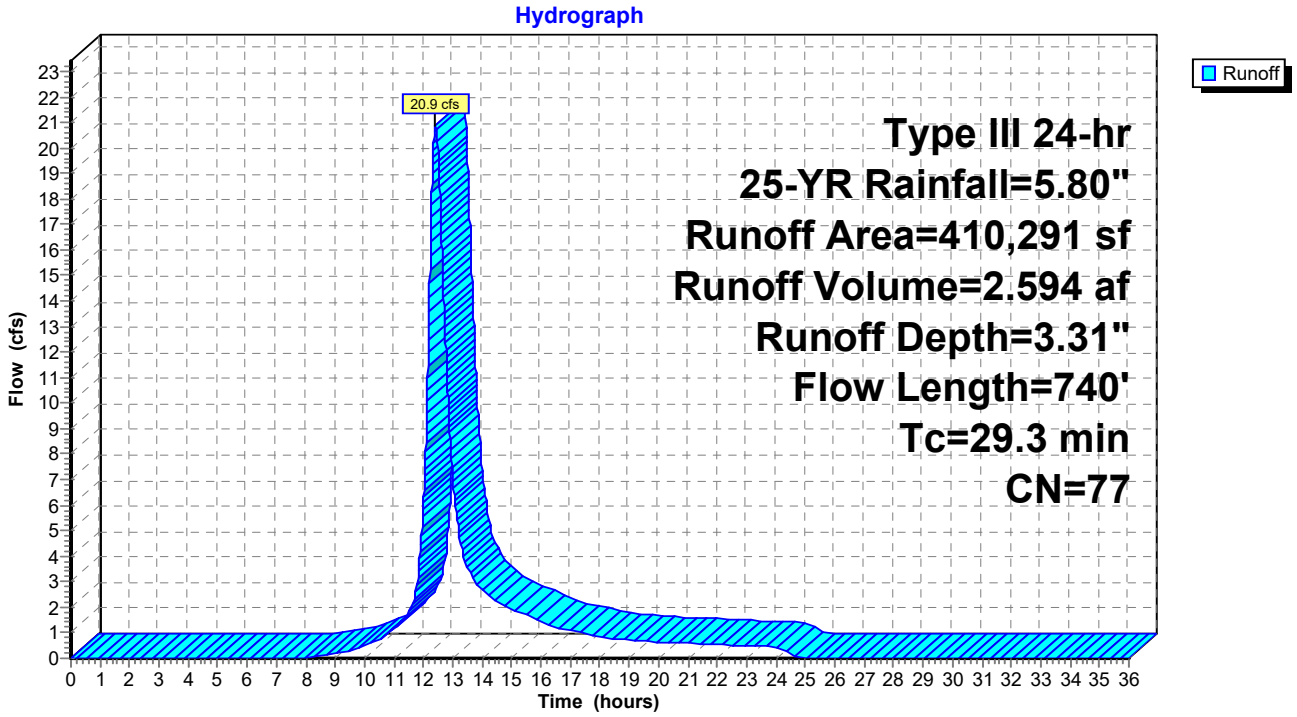
Runoff = 20.9 cfs @ 12.40 hrs, Volume= 2.594 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,649	98	Paved parking, HSG C
1,243	98	Paved parking, HSG D
12,810	74	>75% Grass cover, Good, HSG C
65,319	80	>75% Grass cover, Good, HSG D
5,779	98	Roofs, HSG C
6,933	98	Roofs, HSG D
85,234	70	Woods, Good, HSG C
223,398	77	Woods, Good, HSG D
5,175	96	Gravel surface, HSG C
2,751	96	Gravel surface, HSG D
410,291	77	Weighted Average
394,687		96.20% Pervious Area
15,604		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0930	0.15		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.6	180	0.0550	1.17		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
29.3	740	Total			

Subcatchment 1.0S:



Summary for Subcatchment 1.1S:

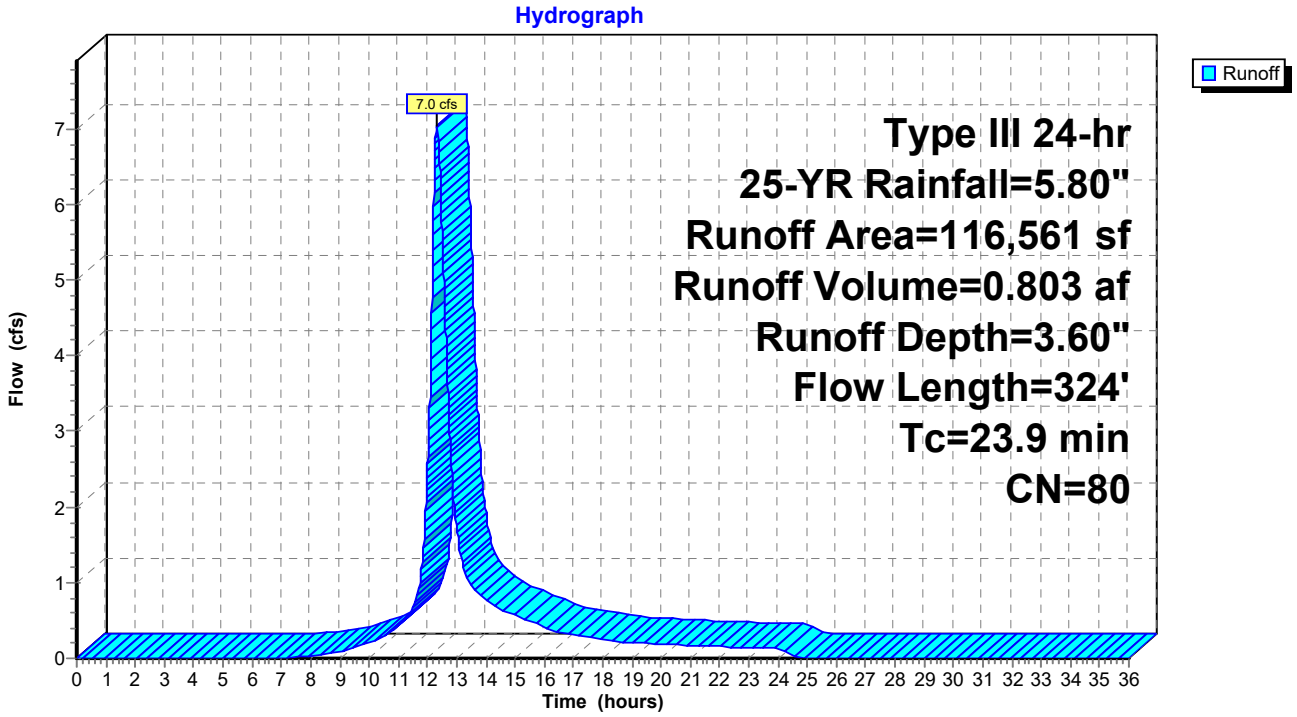
Runoff = 7.0 cfs @ 12.33 hrs, Volume= 0.803 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,275	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,695	74	>75% Grass cover, Good, HSG C
17,419	80	>75% Grass cover, Good, HSG D
11,644	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,088	70	Woods, Good, HSG C
33,453	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
116,561	80	Weighted Average
91,655		78.63% Pervious Area
24,906		21.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Subcatchment 1.1S:



Summary for Subcatchment 2.0S:

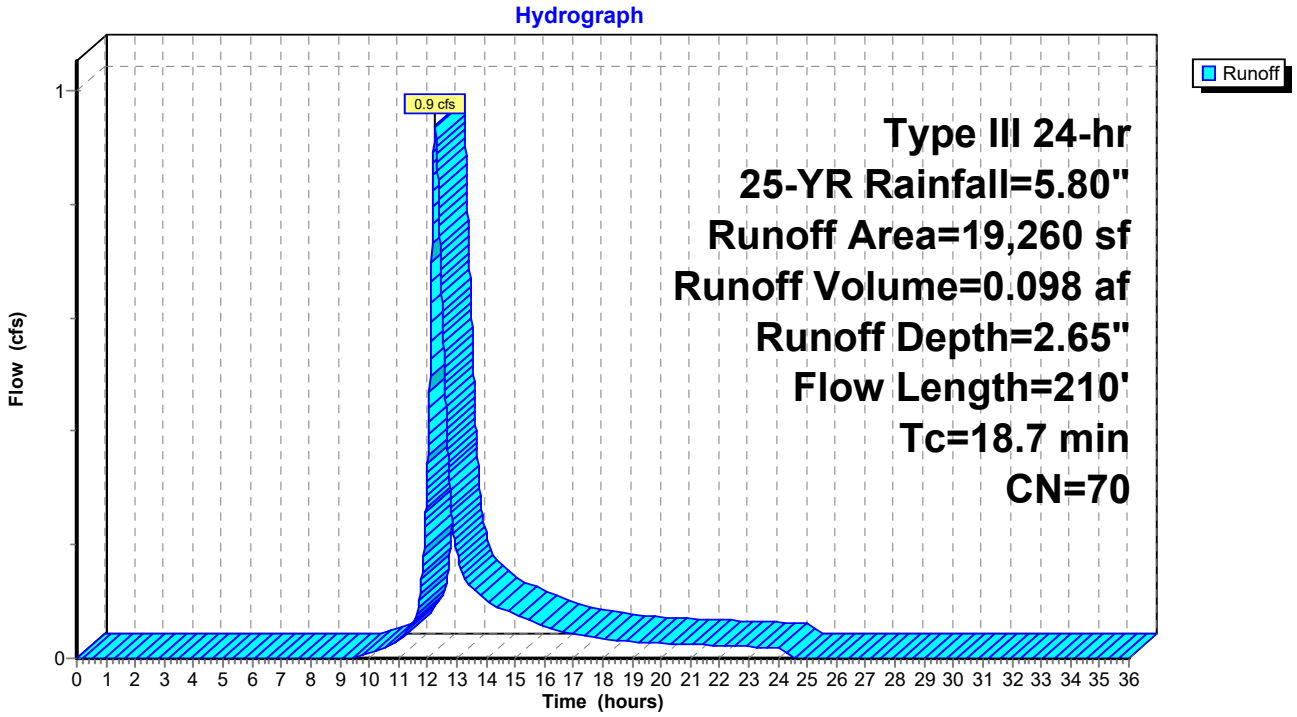
Runoff = 0.9 cfs @ 12.26 hrs, Volume= 0.098 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,260	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
19,260	70	Weighted Average
19,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.8	110	0.0400	1.00		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
18.7	210	Total			

Subcatchment 2.0S:



Summary for Subcatchment 3.0S:

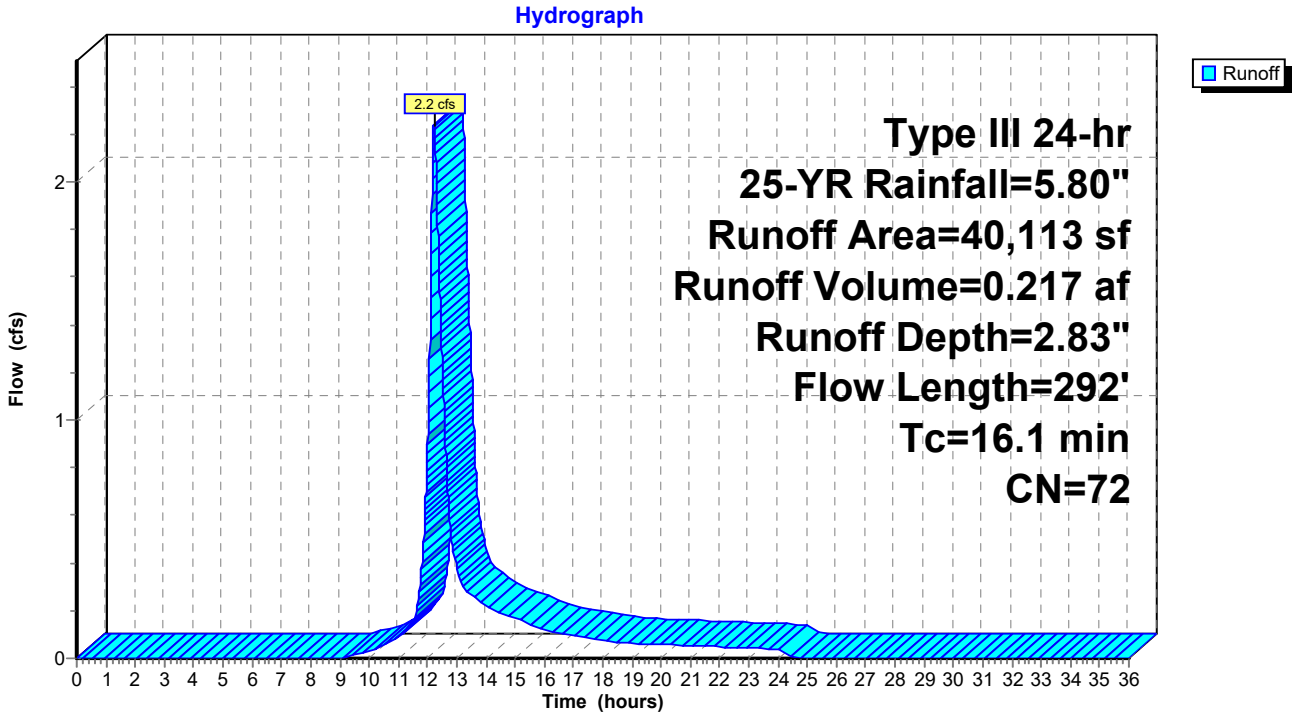
Runoff = 2.2 cfs @ 12.22 hrs, Volume= 0.217 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,473	98	Paved parking, HSG C
0	98	Paved parking, HSG D
4,421	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
31,125	70	Woods, Good, HSG C
2,219	77	Woods, Good, HSG D
875	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
40,113	72	Weighted Average
38,640		96.33% Pervious Area
1,473		3.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Subcatchment 3.0S:



Summary for Subcatchment OS-4.0S:

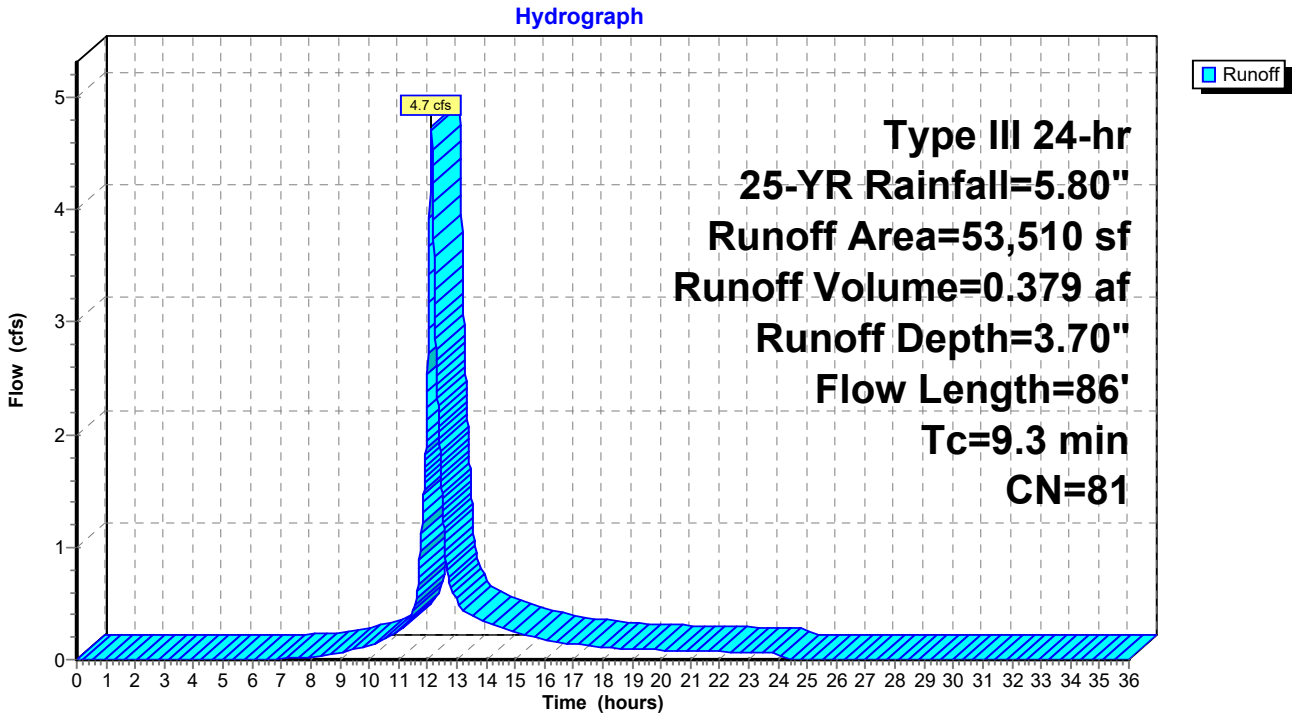
Runoff = 4.7 cfs @ 12.13 hrs, Volume= 0.379 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
13,355	98	Paved parking, HSG C
31,929	74	>75% Grass cover, Good, HSG C
3,686	98	Roofs, HSG C
4,540	70	Woods, Good, HSG C
53,510	81	Weighted Average
36,469		68.15% Pervious Area
17,041		31.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	40	0.0100	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.30"
0.1	17	0.0250	3.21		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.3	29	0.0600	1.71		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
9.3	86	Total			

Subcatchment OS-4.0S:



Summary for Subcatchment OS-4.1S:

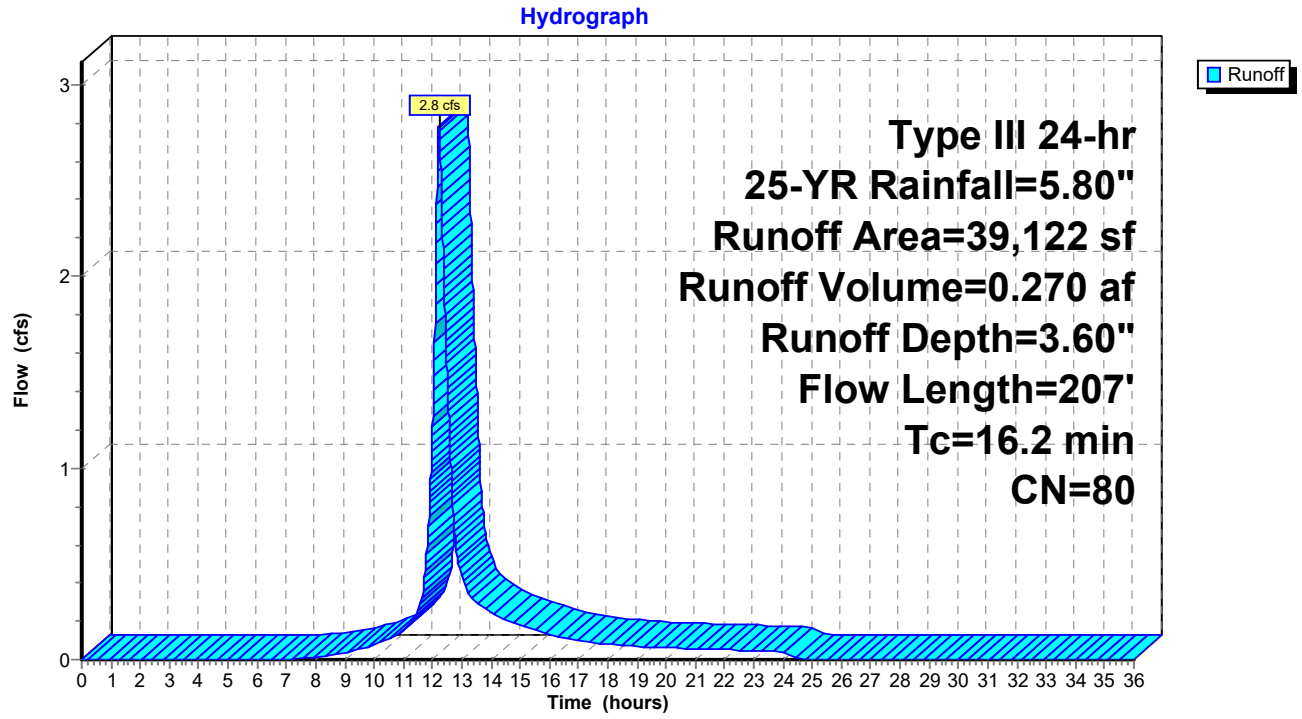
Runoff = 2.8 cfs @ 12.22 hrs, Volume= 0.270 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
6,547	98	Paved parking, HSG C
16,225	74	>75% Grass cover, Good, HSG C
4,449	98	Roofs, HSG C
11,901	70	Woods, Good, HSG C
39,122	80	Weighted Average
28,126		71.89% Pervious Area
10,996		28.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	14	0.2100	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.30"
12.2	86	0.0580	0.12		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.30"
2.3	107	0.0250	0.79		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
16.2	207	Total			

Subcatchment OS-4.1S:



Summary for Subcatchment OS-5.0S:

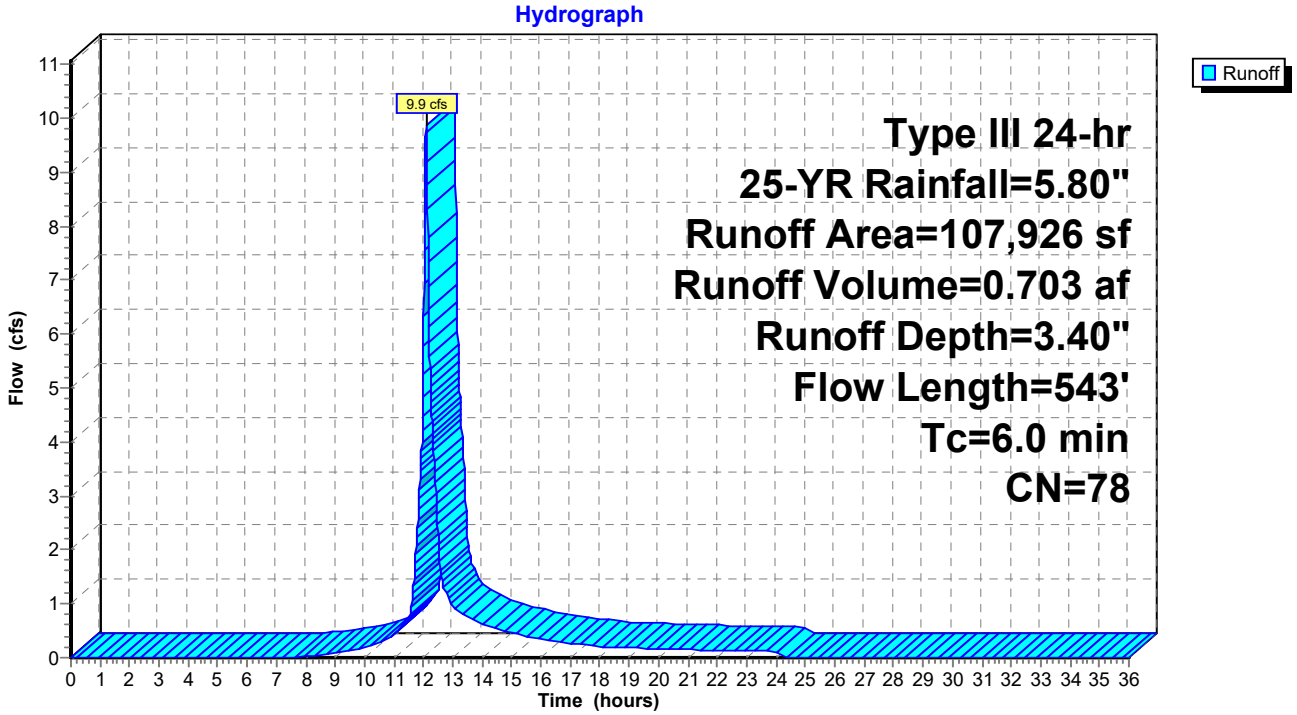
Runoff = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
15,592	92	Paved roads w/open ditches, 50% imp, HSG C
55,403	80	1/2 acre lots, 25% imp, HSG C
36,931	70	Woods, Good, HSG C
107,926	78	Weighted Average
86,279		79.94% Pervious Area
21,647		20.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	477	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.9	66	0.0300	1.21		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
2.8					**Direct Entry,**
6.0	543	Total			

Subcatchment OS-5.0S:



Summary for Subcatchment OS-5.1S:

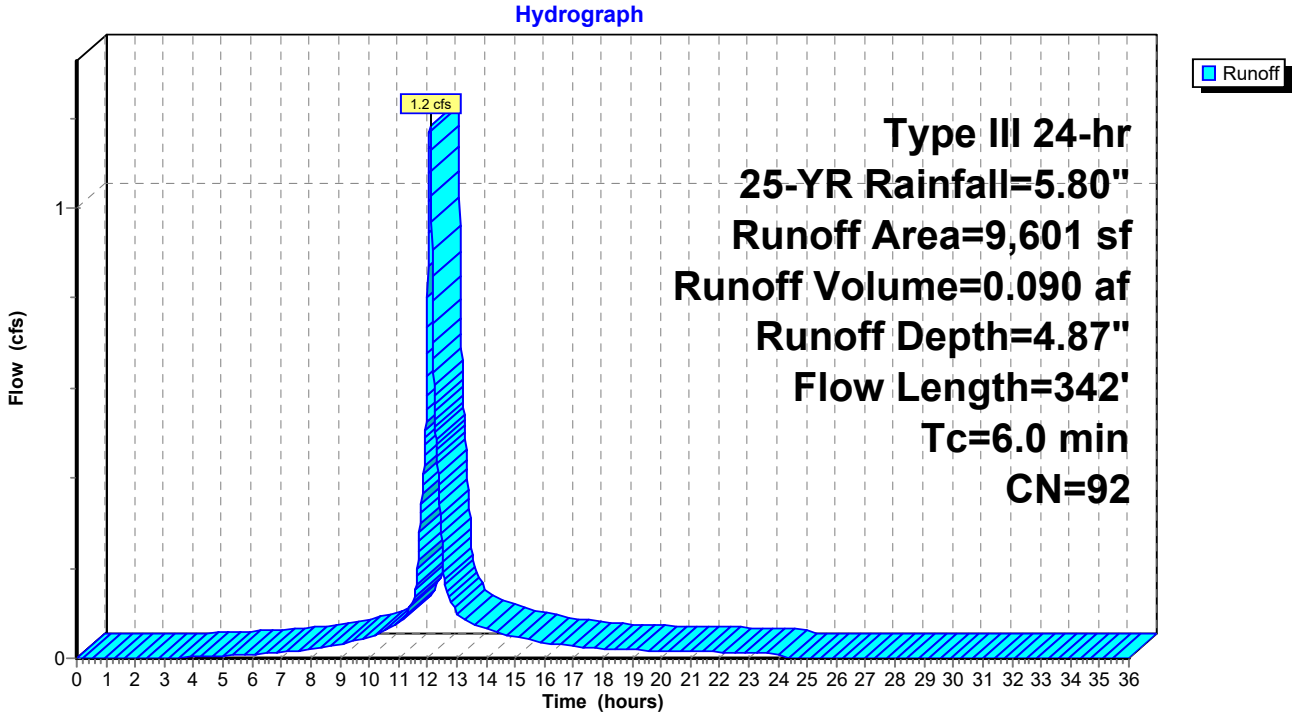
Runoff = 1.2 cfs @ 12.08 hrs, Volume= 0.090 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
9,601	92	Paved roads w/open ditches, 50% imp, HSG C
4,801		50.00% Pervious Area
4,801		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	320	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.1	22	0.1300	2.52		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
4.4					**Direct Entry,**
6.0	342	Total			

Subcatchment OS-5.1S:



Summary for Reach 1.1R:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.3 cfs @ 12.44 hrs, Volume= 0.802 af
Outflow = 5.8 cfs @ 12.60 hrs, Volume= 0.802 af, Atten= 9%, Lag= 9.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.63 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 42.6 min

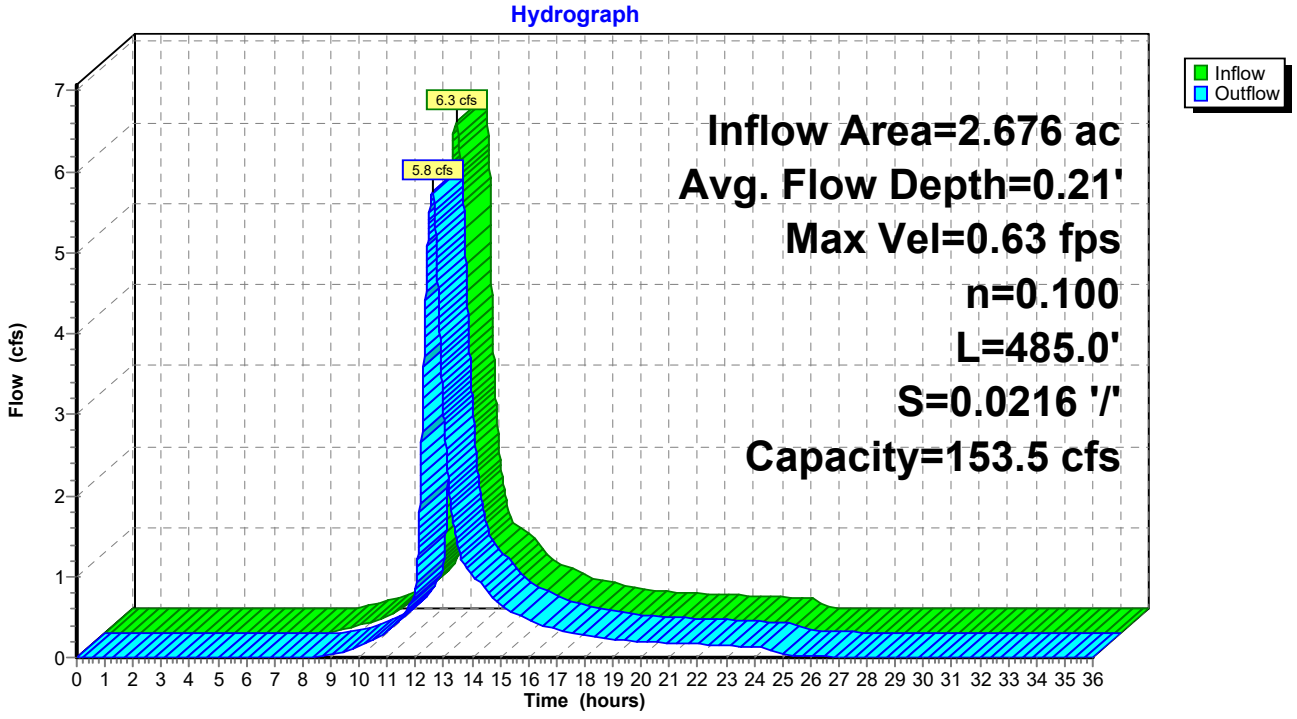
Peak Storage= 4,419 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.5 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'



‡

Reach 1.1R:



Summary for Reach 4.0R: (new Reach)

Inflow Area = 0.898 ac, 28.11% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 2.7 cfs @ 12.25 hrs, Volume= 0.270 af
Outflow = 2.6 cfs @ 12.30 hrs, Volume= 0.270 af, Atten= 4%, Lag= 3.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.67 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 18.1 min

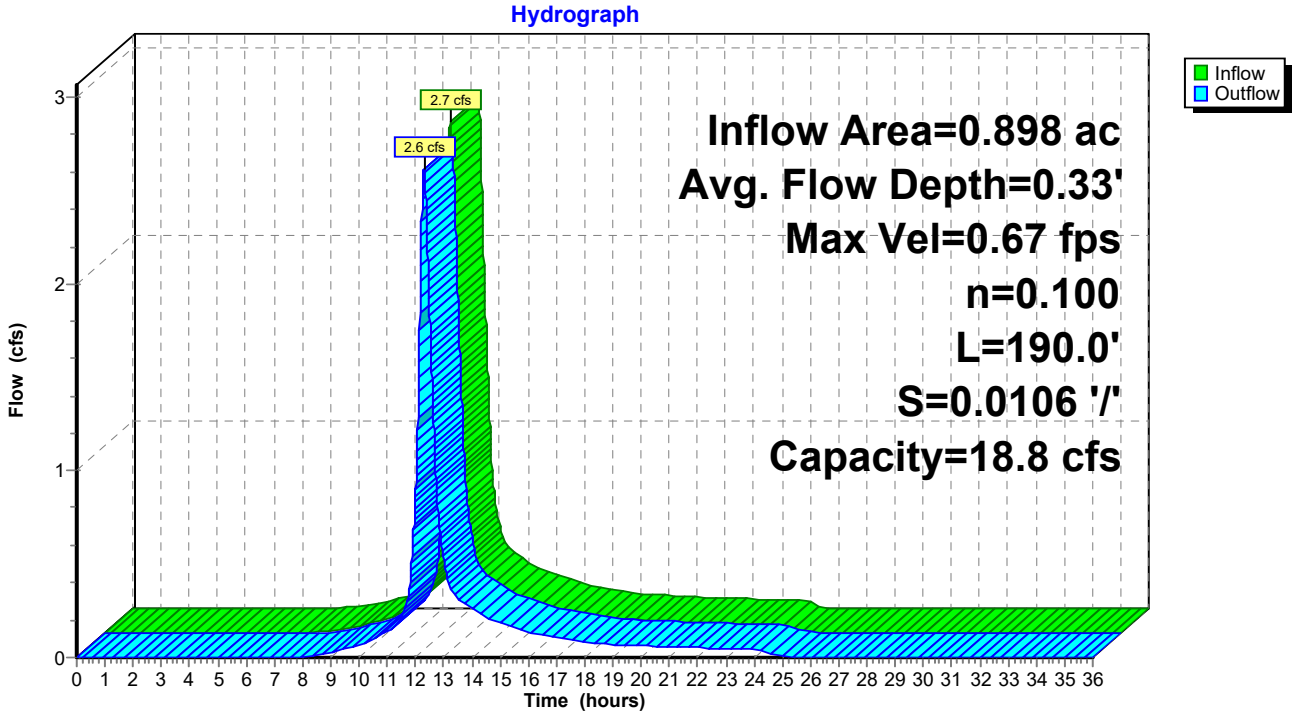
Peak Storage= 741 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 18.8 cfs

10.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 20.00'
Length= 190.0' Slope= 0.0106 '/'
Inlet Invert= 108.04', Outlet Invert= 106.03'



‡

Reach 4.0R: (new Reach)



Summary for Pond 1.1P:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 7.0 cfs @ 12.33 hrs, Volume= 0.803 af
Outflow = 6.3 cfs @ 12.44 hrs, Volume= 0.802 af, Atten= 10%, Lag= 6.9 min
Primary = 6.3 cfs @ 12.44 hrs, Volume= 0.802 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 94.42' @ 12.44 hrs Surf.Area= 3,015 sf Storage= 2,183 cf
Flood Elev= 95.01' Surf.Area= 4,798 sf Storage= 4,485 cf

Plug-Flow detention time= 6.8 min calculated for 0.802 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (837.9 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.70'	12,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

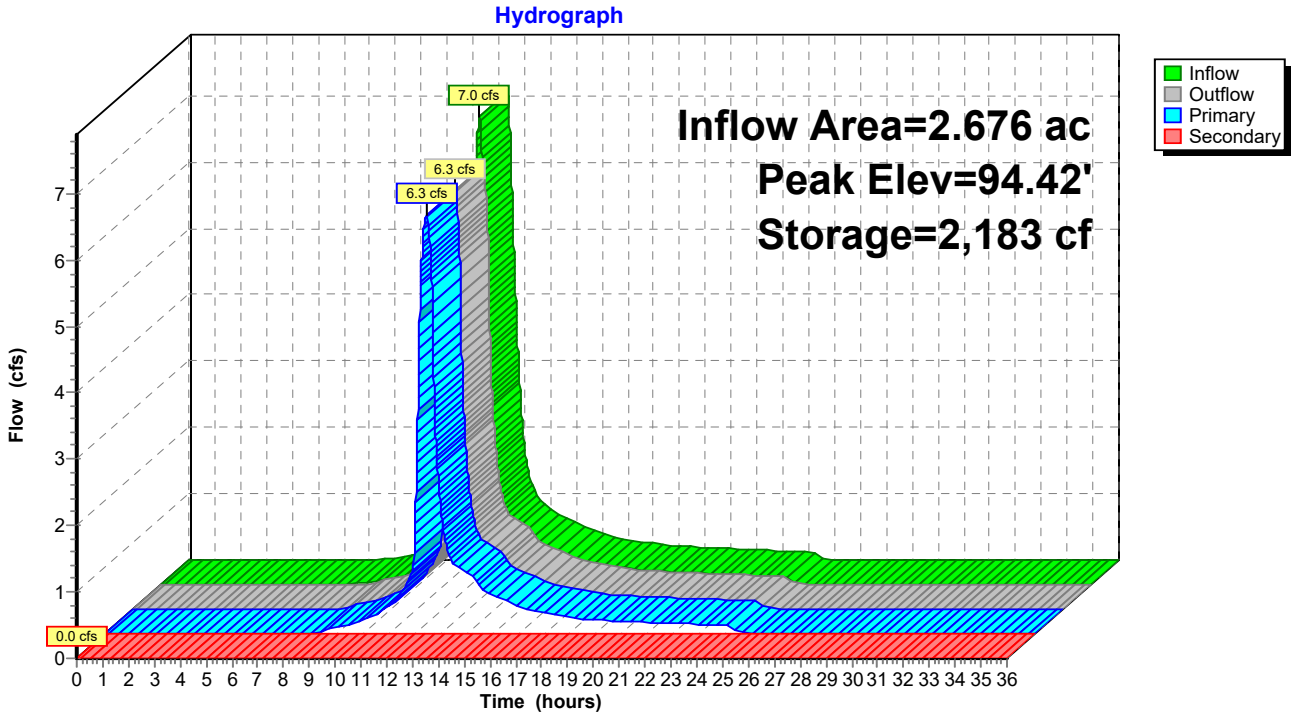
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.70	80	0.0	0	0
92.00	100	100.0	27	27
93.00	214	100.0	157	184
94.00	1,779	100.0	997	1,180
95.00	4,735	100.0	3,257	4,438
96.00	11,075	100.0	7,905	12,343

Device	Routing	Invert	Outlet Devices
#1	Primary	91.72'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.72' / 89.67' S= 0.0512 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	92.25'	**6.0" Vert. Controlling Orifice** C= 0.600
#3	Device 1	93.70'	**15.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	95.05'	**30.0' long x 10.0' breadth Roadway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.3 cfs @ 12.44 hrs HW=94.42' TW=89.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.3 cfs of 6.7 cfs potential flow)
  ├**2=Controlling Orifice** (Orifice Controls 1.3 cfs @ 6.67 fps)
  └**3=Grate** (Orifice Controls 5.0 cfs @ 4.08 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=91.70' TW=89.00' (Dynamic Tailwater)
└**4=Roadway** (Controls 0.0 cfs)

Pond 1.1P:


Hydrograph
Inflow Area=2.676 ac
Peak Elev=94.42'
Storage=2,183 cf
7.0 cfs
6.3 cfs
6.3 cfs
0.0 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

Summary for Pond 1P: Existing Culvert

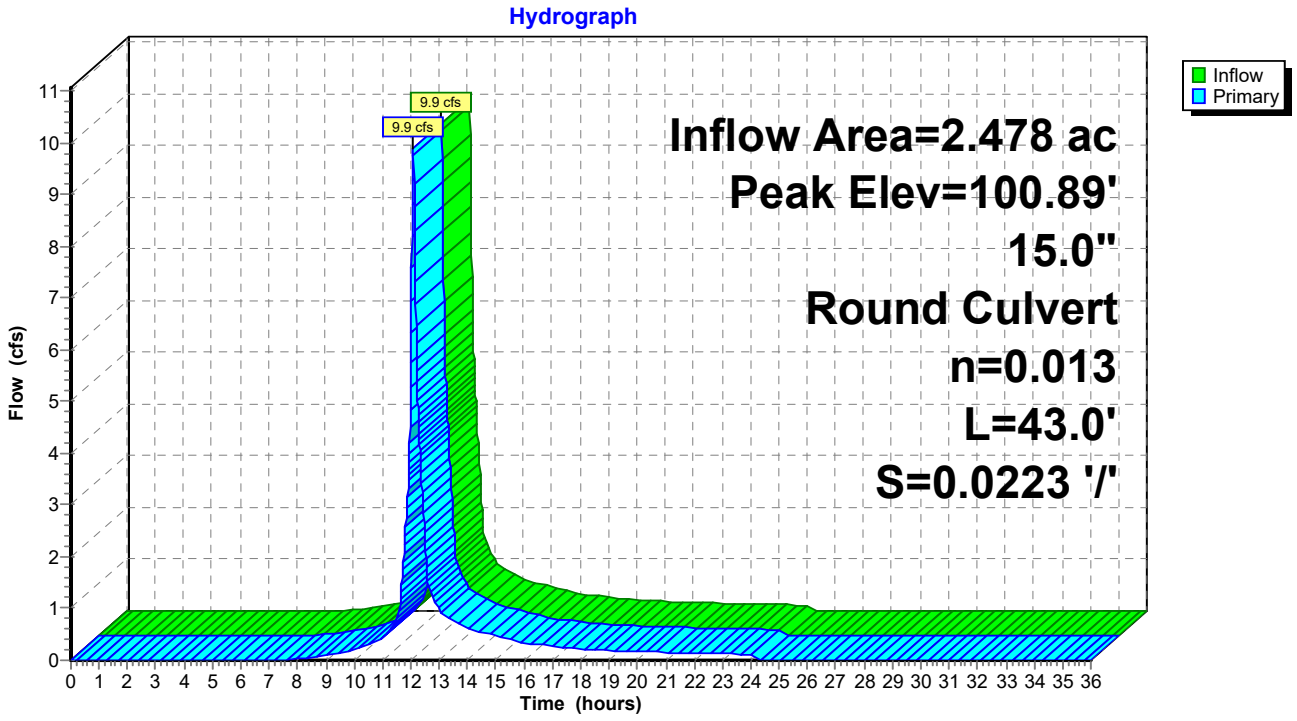
Inflow Area = 2.478 ac, 20.06% Impervious, Inflow Depth = 3.40" for 25-YR event
Inflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af
Outflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min
Primary = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 100.89' @ 12.09 hrs
Flood Elev= 100.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.78'	**15.0" Round Culvert** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.78' / 94.82' S= 0.0223 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=9.9 cfs @ 12.09 hrs HW=100.88' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.9 cfs @ 8.04 fps)

Pond 1P: Existing Culvert



Summary for Pond 4.01P: Existign pond

Inflow Area = 2.127 ac, 30.27% Impervious, Inflow Depth > 3.64" for 25-YR event
Inflow = 4.1 cfs @ 12.26 hrs, Volume= 0.645 af
Outflow = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af, Atten= 29%, Lag= 21.0 min
Primary = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 106.89' @ 12.61 hrs Surf.Area= 3,565 sf Storage= 3,705 cf

Plug-Flow detention time= 26.7 min calculated for 0.641 af (99% of inflow)
Center-of-Mass det. time= 22.0 min (880.0 - 858.1)

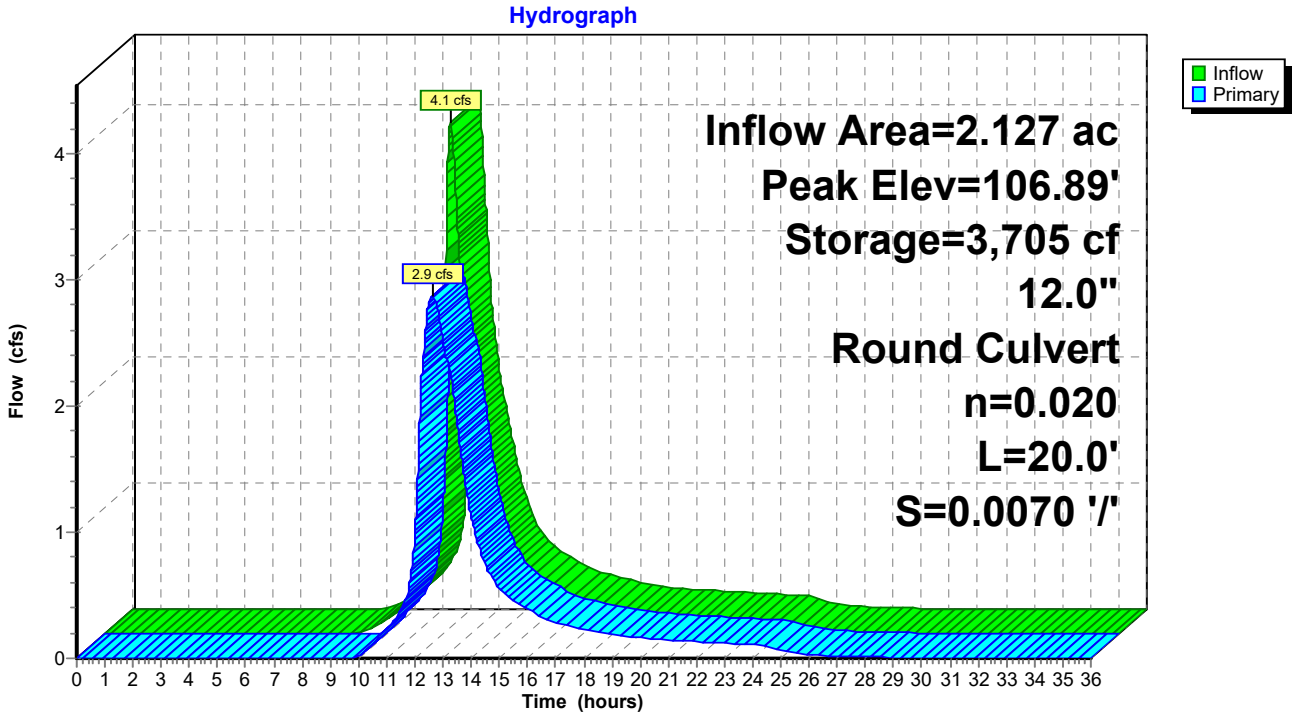
Volume	Invert	Avail.Storage	Storage Description
#1	105.00'	4,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
105.00	100	0	0
106.00	2,200	1,150	1,150
107.00	3,740	2,970	4,120

Device	Routing	Invert	Outlet Devices
#1	Primary	105.32'	**12.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.32' / 105.18' S= 0.0070 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.9 cfs @ 12.61 hrs HW=106.89' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.9 cfs @ 3.66 fps)

Pond 4.01P: Existign pond



Summary for Pond 4.0P: Existing Wetland

Inflow Area = 2.127 ac, 30.27% Impervious, Inflow Depth = 3.66" for 25-YR event
Inflow = 6.4 cfs @ 12.15 hrs, Volume= 0.648 af
Outflow = 4.1 cfs @ 12.26 hrs, Volume= 0.645 af, Atten= 37%, Lag= 6.8 min
Primary = 4.1 cfs @ 12.26 hrs, Volume= 0.645 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 107.08' @ 12.50 hrs Surf.Area= 5,998 sf Storage= 4,959 cf
Flood Elev= 109.00' Surf.Area= 11,962 sf Storage= 18,373 cf

Plug-Flow detention time= 37.0 min calculated for 0.645 af (99% of inflow)
Center-of-Mass det. time= 33.7 min (858.1 - 824.4)

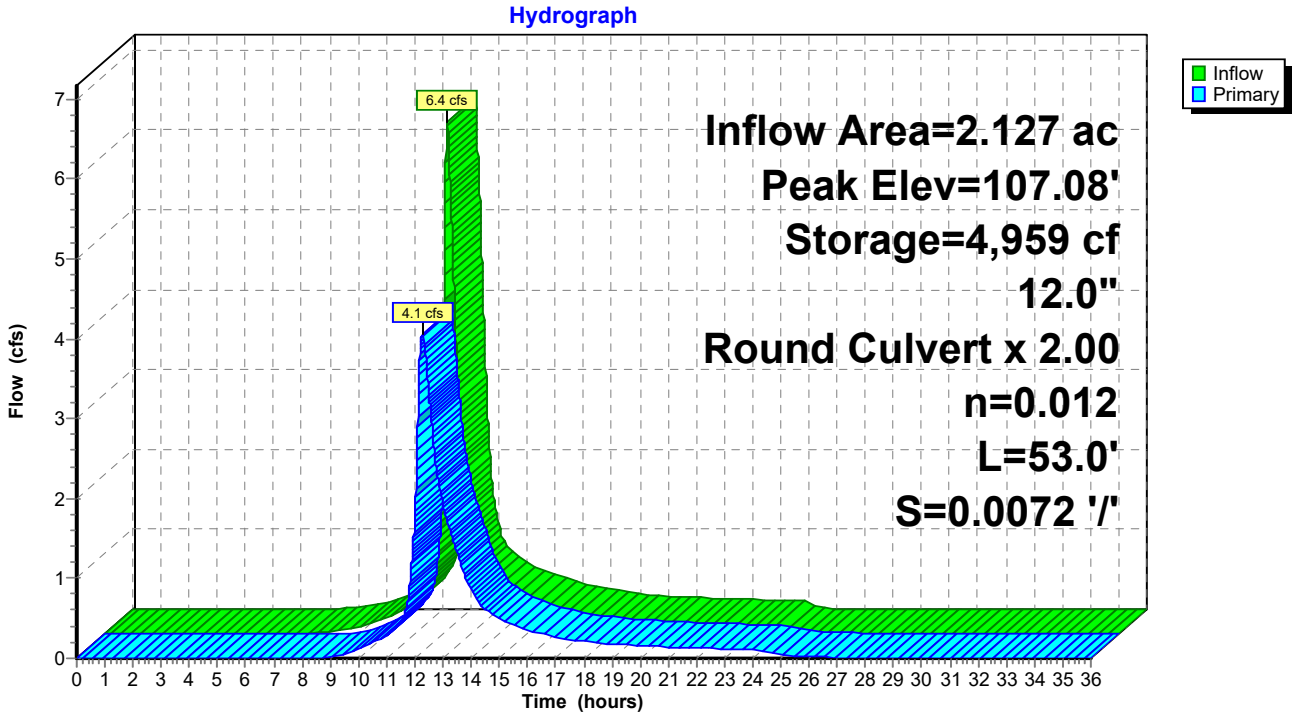
Volume	Invert	Avail.Storage	Storage Description
#1	106.00'	18,373 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
106.00	3,400	0	0
107.00	5,564	4,482	4,482
108.00	10,824	8,194	12,676
108.50	11,962	5,697	18,373

Device	Routing	Invert	Outlet Devices
#1	Primary	106.03'	**12.0" Round Culvert X 2.00** L= 53.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 106.03' / 105.65' S= 0.0072 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=4.1 cfs @ 12.26 hrs HW=106.97' TW=106.55' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.1 cfs @ 3.42 fps)

Pond 4.0P: Existing Wetland



Summary for Pond 4.1P: Existing Culvert

Inflow Area = 0.898 ac, 28.11% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 2.8 cfs @ 12.22 hrs, Volume= 0.270 af
Outflow = 2.7 cfs @ 12.25 hrs, Volume= 0.270 af, Atten= 2%, Lag= 1.7 min
Primary = 2.7 cfs @ 12.25 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 109.24' @ 12.25 hrs Surf.Area= 493 sf Storage= 168 cf
Flood Elev= 111.00' Surf.Area= 4,030 sf Storage= 3,589 cf

Plug-Flow detention time= 0.9 min calculated for 0.269 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (825.9 - 825.0)

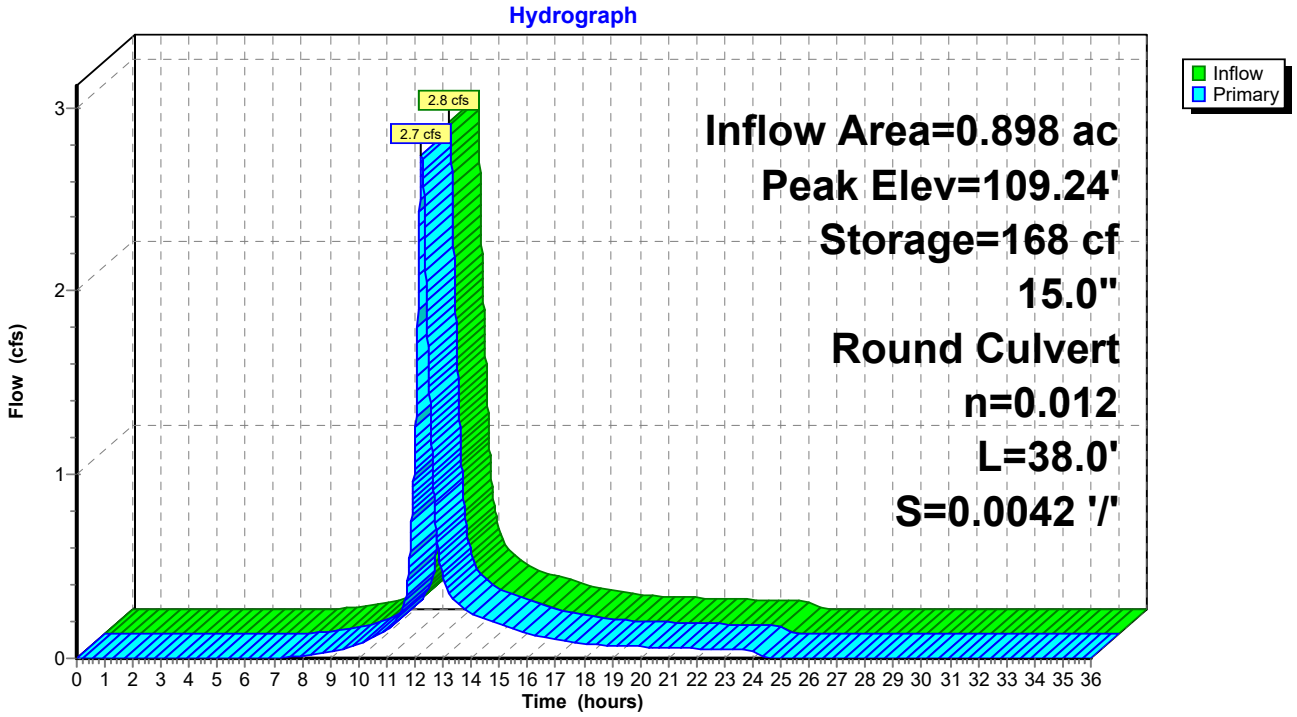
Volume	Invert	Avail.Storage	Storage Description
#1	108.27'	3,589 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
108.27	10	0	0
109.00	220	84	84
110.00	1,380	800	884
111.00	4,030	2,705	3,589

Device	Routing	Invert	Outlet Devices
#1	Primary	108.27'	**15.0" Round Culvert** L= 38.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 108.27' / 108.11' S= 0.0042 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.7 cfs @ 12.25 hrs HW=109.24' TW=108.36' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.7 cfs @ 3.71 fps)

Pond 4.1P: Existing Culvert

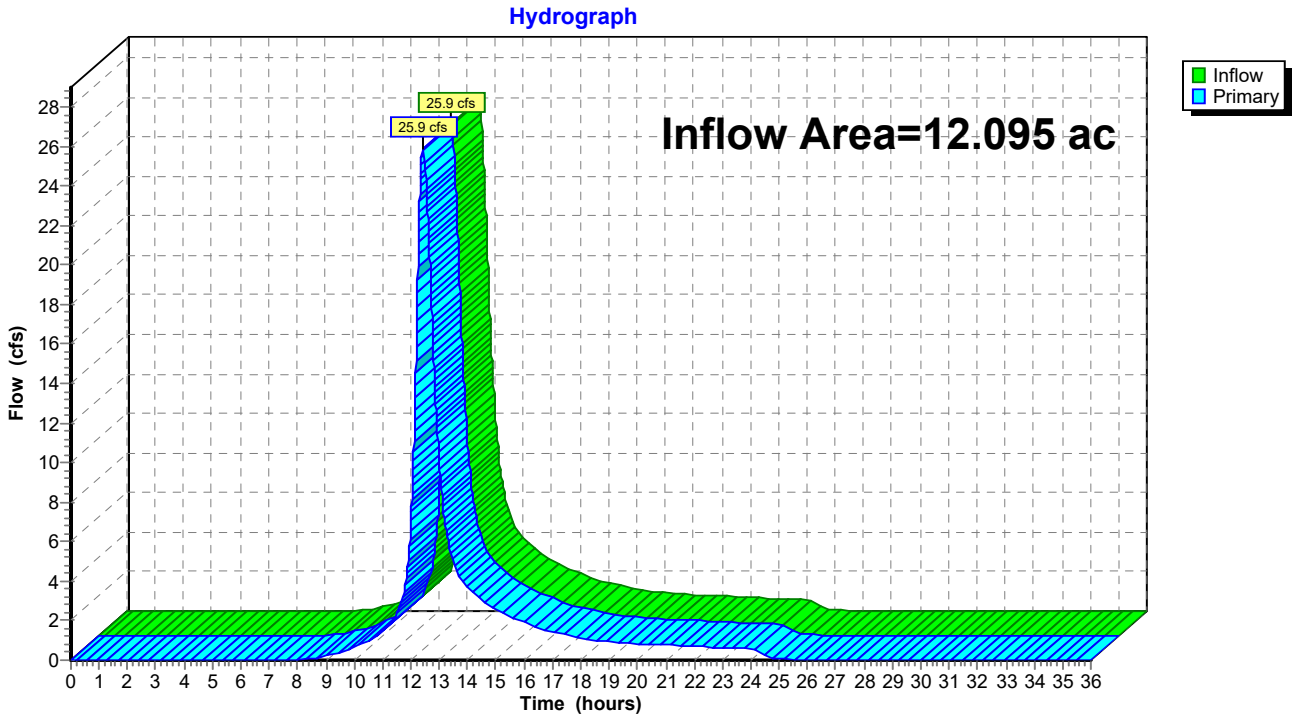


Summary for Link SP-1:

Inflow Area = 12.095 ac, 7.69% Impervious, Inflow Depth = 3.37" for 25-YR event
Inflow = 25.9 cfs @ 12.44 hrs, Volume= 3.396 af
Primary = 25.9 cfs @ 12.44 hrs, Volume= 3.396 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-1:

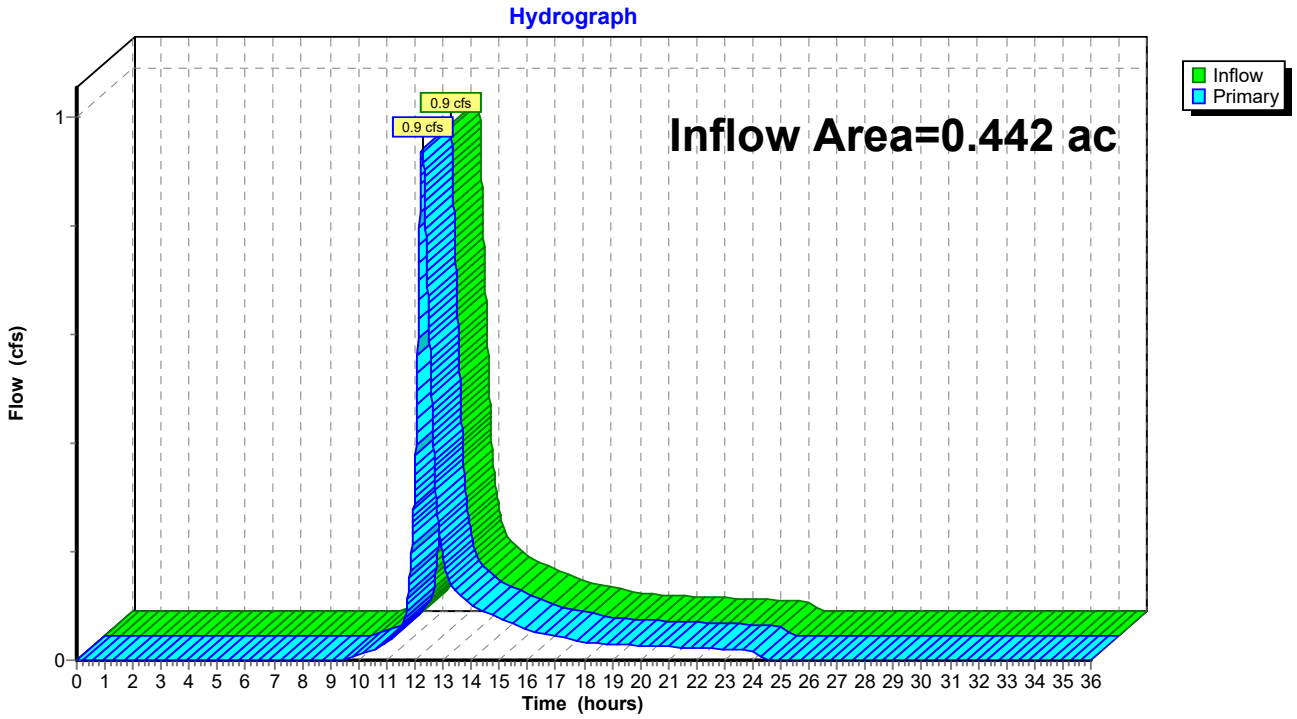


Summary for Link SP-2:

Inflow Area = 0.442 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.9 cfs @ 12.26 hrs, Volume= 0.098 af
Primary = 0.9 cfs @ 12.26 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-2:

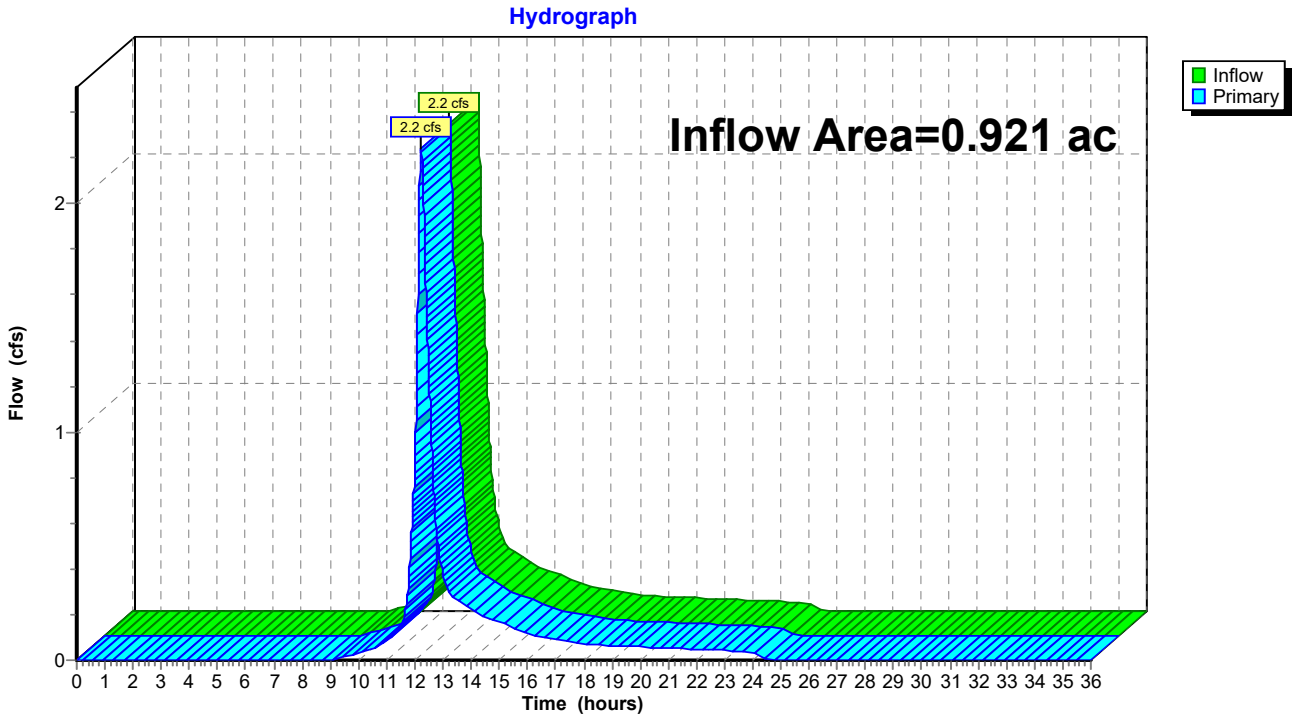


Summary for Link SP-3:

Inflow Area = 0.921 ac, 3.67% Impervious, Inflow Depth = 2.83" for 25-YR event
Inflow = 2.2 cfs @ 12.22 hrs, Volume= 0.217 af
Primary = 2.2 cfs @ 12.22 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-3:

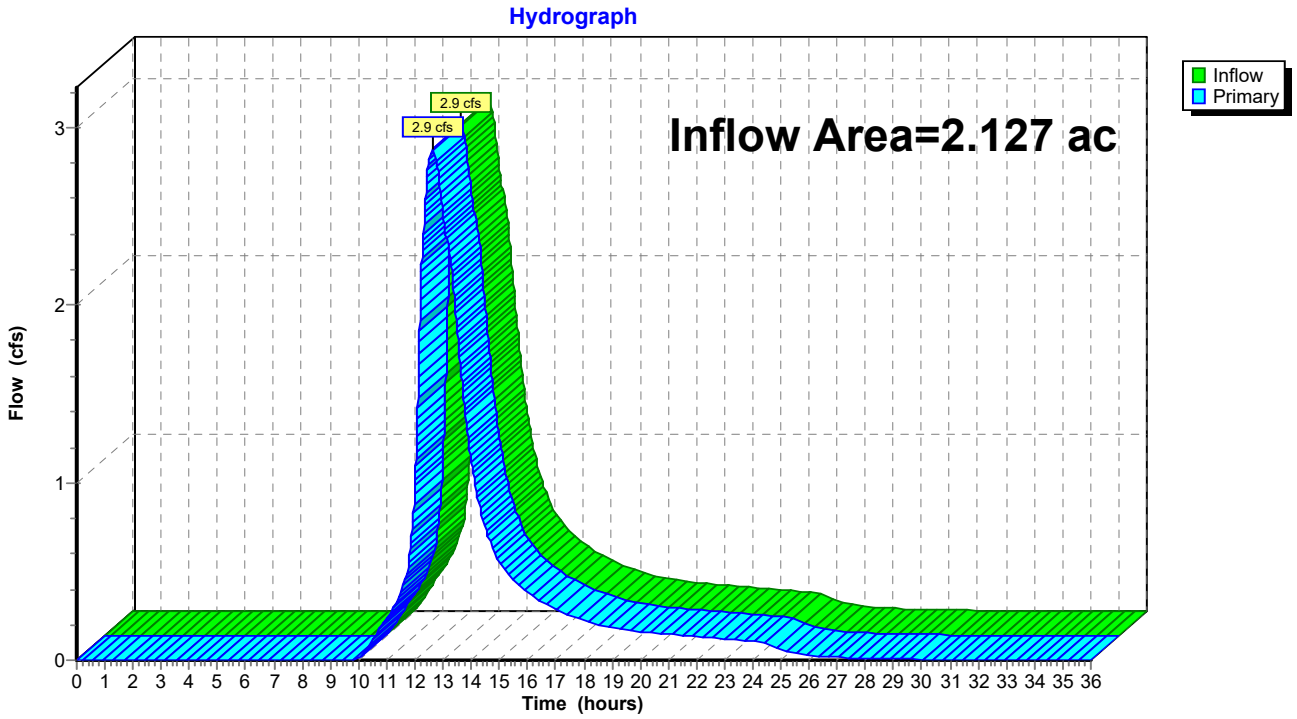


Summary for Link SP-4: SP-4

Inflow Area = 2.127 ac, 30.27% Impervious, Inflow Depth > 3.62" for 25-YR event
Inflow = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af
Primary = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-4: SP-4

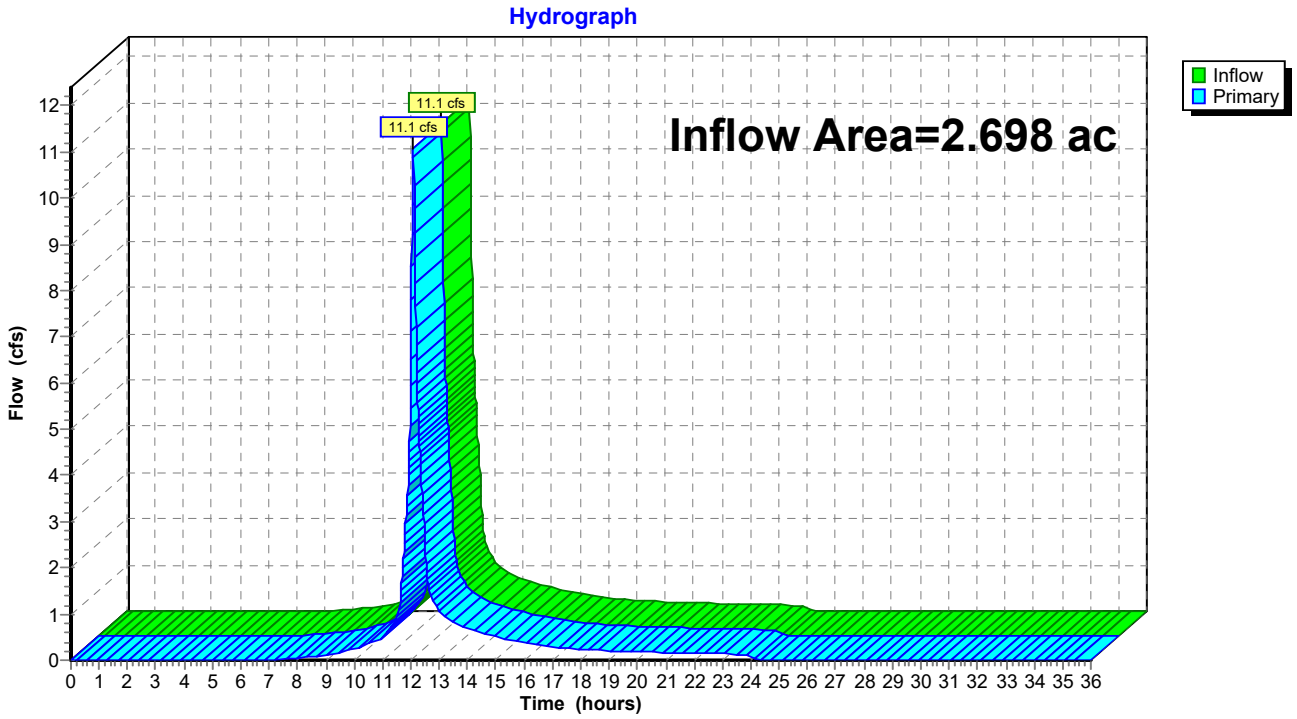


Summary for Link SP-5: SP-5

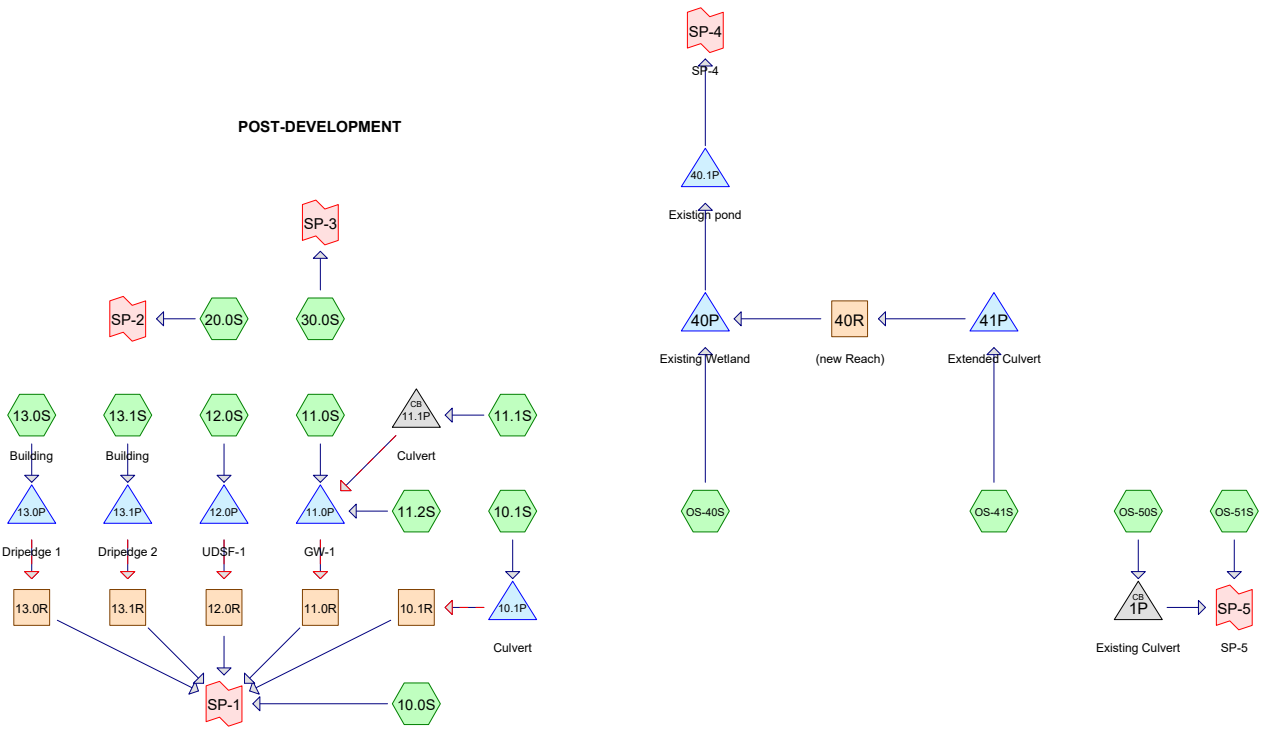
Inflow Area = 2.698 ac, 22.50% Impervious, Inflow Depth = 3.52" for 25-YR event
Inflow = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af
Primary = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-5: SP-5



Appendix 3B
POSTDEVELOPMENT



Routing Diagram for 18347 POST-DEVELOPMENT
Prepared by {enter your company name here}, Printed 7/9/2020
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.272	80	1/2 acre lots, 25% imp, HSG C (OS-50S)
2.866	74	>75% Grass cover, Good, HSG C (10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 30.0S, OS-40S, OS-41S)
3.513	80	>75% Grass cover, Good, HSG D (10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 30.0S)
1.649	98	Paved parking, HSG C (10.1S, 11.0S, 11.2S, 12.0S, OS-40S, OS-41S)
0.791	98	Paved parking, HSG D (10.0S, 10.1S, 11.0S, 12.0S)
0.596	92	Paved roads w/open ditches, 50% imp, HSG C (OS-50S, OS-51S)
1.089	98	Roofs, HSG C (10.0S, 10.1S, 11.0S, 11.2S, 13.0S, 13.1S, OS-40S, OS-41S)
0.809	98	Roofs, HSG D (10.0S, 10.1S, 11.0S, 13.0S, 13.1S)
2.460	70	Woods, Good, HSG C (10.0S, 10.1S, 11.2S, 12.0S, 20.0S, 30.0S, OS-40S, OS-41S, OS-50S)
3.236	77	Woods, Good, HSG D (10.0S, 10.1S, 30.0S)
18.283	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
9.933	HSG C	10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, 13.1S, 20.0S, 30.0S, OS-40S, OS-41S, OS-50S, OS-51S
8.350	HSG D	10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 13.0S, 13.1S, 30.0S
0.000	Other	
18.283		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=1.26"
Flow Length=626' Tc=28.5 min CN=79 Runoff=3.8 cfs 0.477 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.5 cfs 0.290 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=2.26"
Flow Length=254' Tc=11.7 min CN=92 Runoff=4.1 cfs 0.362 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=1.08"
Flow Length=266' Tc=18.0 min CN=76 Runoff=0.5 cfs 0.048 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=1.39"
Flow Length=100' Tc=15.0 min CN=81 Runoff=0.8 cfs 0.072 af

Subcatchment12.0S: Runoff Area=57,628 sf 41.26% Impervious Runoff Depth=1.67"
Flow Length=428' Tc=17.2 min CN=85 Runoff=1.9 cfs 0.184 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.2 cfs 0.094 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.2 cfs 0.093 af

Subcatchment20.0S: Runoff Area=10,684 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.1 cfs 0.016 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=0.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=0.6 cfs 0.065 af

SubcatchmentOS-40S: Runoff Area=53,510 sf 37.68% Impervious Runoff Depth=1.53"
Flow Length=129' Tc=6.2 min CN=83 Runoff=2.2 cfs 0.156 af

SubcatchmentOS-41S: Runoff Area=39,122 sf 33.33% Impervious Runoff Depth=1.39"
Flow Length=193' Tc=15.9 min CN=81 Runoff=1.1 cfs 0.104 af

SubcatchmentOS-50S: Runoff Area=107,926 sf 20.41% Impervious Runoff Depth=1.20"
Flow Length=543' Tc=6.0 min CN=78 Runoff=3.4 cfs 0.248 af

SubcatchmentOS-51S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=2.26"
Flow Length=342' Tc=6.0 min CN=92 Runoff=0.6 cfs 0.041 af

Reach 10.1R: Avg. Flow Depth=0.11' Max Vel=0.45 fps Inflow=2.5 cfs 0.290 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=2.0 cfs 0.290 af

Reach 11.0R: Avg. Flow Depth=0.06' Max Vel=0.19 fps Inflow=0.6 cfs 0.310 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.9 cfs Outflow=0.6 cfs 0.305 af

Reach 12.0R: Avg. Flow Depth=0.03' Max Vel=0.14 fps Inflow=0.3 cfs 0.149 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.1 cfs Outflow=0.2 cfs 0.142 af

Reach 13.0R: Avg. Flow Depth=0.03' Max Vel=0.17 fps Inflow=0.4 cfs 0.094 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.1 cfs Outflow=0.3 cfs 0.094 af

Reach 13.1R: Avg. Flow Depth=0.03' Max Vel=0.18 fps Inflow=0.3 cfs 0.093 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.9 cfs Outflow=0.3 cfs 0.093 af

Reach 40R: (new Reach) Avg. Flow Depth=0.18' Max Vel=0.47 fps Inflow=1.0 cfs 0.102 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=0.9 cfs 0.102 af

Pond 1P: Existing Culvert Peak Elev=96.93' Inflow=3.4 cfs 0.248 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=3.4 cfs 0.248 af

Pond 10.1P: Culvert Peak Elev=91.00' Storage=0 cf Inflow=2.5 cfs 0.290 af
Primary=2.5 cfs 0.290 af Secondary=0.0 cfs 0.000 af Outflow=2.5 cfs 0.290 af

Pond 11.0P: GW-1 Peak Elev=82.65' Storage=11,986 cf Inflow=5.2 cfs 0.483 af
Primary=0.6 cfs 0.310 af Secondary=0.0 cfs 0.000 af Outflow=0.6 cfs 0.310 af

Pond 11.1P: Culvert Peak Elev=84.04' Inflow=0.5 cfs 0.048 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=0.5 cfs 0.048 af

Pond 12.0P: UDSF-1 Peak Elev=89.08' Storage=3,975 cf Inflow=1.9 cfs 0.184 af
Primary=0.3 cfs 0.149 af Secondary=0.0 cfs 0.000 af Outflow=0.3 cfs 0.149 af

Pond 13.0P: Dripedge 1 Peak Elev=100.10' Storage=969 cf Inflow=1.2 cfs 0.094 af
Primary=0.4 cfs 0.094 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.094 af

Pond 13.1P: Dripedge 2 Peak Elev=87.00' Storage=742 cf Inflow=1.2 cfs 0.093 af
Primary=0.3 cfs 0.093 af Secondary=0.0 cfs 0.000 af Outflow=0.3 cfs 0.093 af

Pond 40.1P: Existign pond Peak Elev=106.13' Storage=1,455 cf Inflow=1.6 cfs 0.255 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=1.3 cfs 0.251 af

Pond 40P: Existing Wetland Peak Elev=106.52' Storage=2,063 cf Inflow=2.5 cfs 0.258 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=1.6 cfs 0.255 af

Pond 41P: Extended Culvert Peak Elev=108.80' Storage=395 cf Inflow=1.1 cfs 0.104 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0049 '/' Outflow=1.0 cfs 0.102 af

Link SP-1: Inflow=6.3 cfs 1.401 af
Primary=6.3 cfs 1.401 af

Link SP-2: Inflow=0.1 cfs 0.016 af
Primary=0.1 cfs 0.016 af

Link SP-3: Inflow=0.6 cfs 0.065 af
Primary=0.6 cfs 0.065 af

Link SP-4: SP-4 Inflow=1.3 cfs 0.251 af
Primary=1.3 cfs 0.251 af

Link SP-5: SP-5 Inflow=4.0 cfs 0.289 af
Primary=4.0 cfs 0.289 af

Total Runoff Area = 18.283 ac Runoff Volume = 2.253 af Average Runoff Depth = 1.48"
72.90% Pervious = 13.328 ac 27.10% Impervious = 4.955 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=2.63"
Flow Length=626' Tc=28.5 min CN=79 Runoff=8.1 cfs 0.995 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.2 cfs 0.596 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=3.89"
Flow Length=254' Tc=11.7 min CN=92 Runoff=7.0 cfs 0.625 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=2.37"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.0 cfs 0.106 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=2.81"
Flow Length=100' Tc=15.0 min CN=81 Runoff=1.6 cfs 0.146 af

Subcatchment12.0S: Runoff Area=57,628 sf 41.26% Impervious Runoff Depth=3.18"
Flow Length=428' Tc=17.2 min CN=85 Runoff=3.5 cfs 0.351 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.9 cfs 0.150 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.8 cfs 0.148 af

Subcatchment20.0S: Runoff Area=10,684 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.4 cfs 0.039 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.12"
Flow Length=292' Tc=16.1 min CN=73 Runoff=1.5 cfs 0.150 af

SubcatchmentOS-40S: Runoff Area=53,510 sf 37.68% Impervious Runoff Depth=2.99"
Flow Length=129' Tc=6.2 min CN=83 Runoff=4.3 cfs 0.306 af

SubcatchmentOS-41S: Runoff Area=39,122 sf 33.33% Impervious Runoff Depth=2.81"
Flow Length=193' Tc=15.9 min CN=81 Runoff=2.2 cfs 0.210 af

SubcatchmentOS-50S: Runoff Area=107,926 sf 20.41% Impervious Runoff Depth=2.54"
Flow Length=543' Tc=6.0 min CN=78 Runoff=7.4 cfs 0.525 af

SubcatchmentOS-51S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=3.89"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.0 cfs 0.072 af

Reach 10.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.2 cfs 0.596 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=4.4 cfs 0.596 af

Reach 11.0R: Avg. Flow Depth=0.17' Max Vel=0.37 fps Inflow=4.4 cfs 0.701 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.9 cfs Outflow=3.9 cfs 0.696 af

Reach 12.0R: Avg. Flow Depth=0.08' Max Vel=0.29 fps Inflow=2.7 cfs 0.311 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.1 cfs Outflow=1.4 cfs 0.304 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.5 cfs 0.150 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.1 cfs Outflow=0.4 cfs 0.150 af

Reach 13.1R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.4 cfs 0.148 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.9 cfs Outflow=0.4 cfs 0.148 af

Reach 40R: (new Reach) Avg. Flow Depth=0.28' Max Vel=0.61 fps Inflow=2.1 cfs 0.208 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.0 cfs 0.208 af

Pond 1P: Existing Culvert Peak Elev=98.91' Inflow=7.4 cfs 0.525 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=7.4 cfs 0.525 af

Pond 10.1P: Culvert Peak Elev=91.35' Storage=49 cf Inflow=5.2 cfs 0.596 af
Primary=5.2 cfs 0.596 af Secondary=0.0 cfs 0.000 af Outflow=5.2 cfs 0.596 af

Pond 11.0P: GW-1 Peak Elev=83.12' Storage=16,258 cf Inflow=9.3 cfs 0.877 af
Primary=4.4 cfs 0.701 af Secondary=0.0 cfs 0.000 af Outflow=4.4 cfs 0.701 af

Pond 11.1P: Culvert Peak Elev=84.23' Inflow=1.0 cfs 0.106 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.0 cfs 0.106 af

Pond 12.0P: UDSF-1 Peak Elev=89.35' Storage=4,842 cf Inflow=3.5 cfs 0.351 af
Primary=2.7 cfs 0.311 af Secondary=0.0 cfs 0.000 af Outflow=2.7 cfs 0.311 af

Pond 13.0P: Dripedge 1 Peak Elev=100.76' Storage=1,731 cf Inflow=1.9 cfs 0.150 af
Primary=0.5 cfs 0.150 af Secondary=0.0 cfs 0.000 af Outflow=0.5 cfs 0.150 af

Pond 13.1P: Dripedge 2 Peak Elev=87.85' Storage=1,574 cf Inflow=1.8 cfs 0.148 af
Primary=0.4 cfs 0.148 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.148 af

Pond 40.1P: Existign pond Peak Elev=106.63' Storage=2,856 cf Inflow=3.1 cfs 0.511 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.4 cfs 0.507 af

Pond 40P: Existing Wetland Peak Elev=106.87' Storage=3,791 cf Inflow=5.1 cfs 0.514 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=3.1 cfs 0.511 af

Pond 41P: Extended Culvert Peak Elev=109.07' Storage=583 cf Inflow=2.2 cfs 0.210 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0049 '/' Outflow=2.1 cfs 0.208 af

Link SP-1: Inflow=17.0 cfs 2.889 af
Primary=17.0 cfs 2.889 af

Link SP-2: Inflow=0.4 cfs 0.039 af
Primary=0.4 cfs 0.039 af

Link SP-3: Inflow=1.5 cfs 0.150 af
Primary=1.5 cfs 0.150 af

Link SP-4: SP-4 Inflow=2.4 cfs 0.507 af
Primary=2.4 cfs 0.507 af

Link SP-5: SP-5 Inflow=8.3 cfs 0.597 af
Primary=8.3 cfs 0.597 af

Total Runoff Area = 18.283 ac Runoff Volume = 4.420 af Average Runoff Depth = 2.90"
72.90% Pervious = 13.328 ac 27.10% Impervious = 4.955 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=3.50"
Flow Length=626' Tc=28.5 min CN=79 Runoff=10.8 cfs 1.325 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=6.9 cfs 0.789 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=4.87"
Flow Length=254' Tc=11.7 min CN=92 Runoff=8.6 cfs 0.782 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=3.21"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.4 cfs 0.144 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=3.70"
Flow Length=100' Tc=15.0 min CN=81 Runoff=2.0 cfs 0.192 af

Subcatchment12.0S: Runoff Area=57,628 sf 41.26% Impervious Runoff Depth=4.11"
Flow Length=428' Tc=17.2 min CN=85 Runoff=4.5 cfs 0.454 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.2 cfs 0.183 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.2 cfs 0.181 af

Subcatchment20.0S: Runoff Area=10,684 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.5 cfs 0.054 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=2.1 cfs 0.207 af

SubcatchmentOS-40S: Runoff Area=53,510 sf 37.68% Impervious Runoff Depth=3.91"
Flow Length=129' Tc=6.2 min CN=83 Runoff=5.5 cfs 0.400 af

SubcatchmentOS-41S: Runoff Area=39,122 sf 33.33% Impervious Runoff Depth=3.70"
Flow Length=193' Tc=15.9 min CN=81 Runoff=2.9 cfs 0.277 af

SubcatchmentOS-50S: Runoff Area=107,926 sf 20.41% Impervious Runoff Depth=3.40"
Flow Length=543' Tc=6.0 min CN=78 Runoff=9.9 cfs 0.703 af

SubcatchmentOS-51S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=4.87"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.2 cfs 0.090 af

Reach 10.1R: Avg. Flow Depth=0.21' Max Vel=0.64 fps Inflow=6.9 cfs 0.789 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=5.9 cfs 0.789 af

Reach 11.0R: Avg. Flow Depth=0.21' Max Vel=0.42 fps Inflow=6.0 cfs 0.941 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.9 cfs Outflow=5.6 cfs 0.936 af

Reach 12.0R: Avg. Flow Depth=0.11' Max Vel=0.35 fps Inflow=4.0 cfs 0.413 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.1 cfs Outflow=2.3 cfs 0.406 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.20 fps Inflow=0.9 cfs 0.183 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.1 cfs Outflow=0.5 cfs 0.183 af

Reach 13.1R: Avg. Flow Depth=0.05' Max Vel=0.22 fps Inflow=0.9 cfs 0.181 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.9 cfs Outflow=0.6 cfs 0.181 af

Reach 40R: (new Reach) Avg. Flow Depth=0.33' Max Vel=0.67 fps Inflow=2.7 cfs 0.275 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.6 cfs 0.275 af

Pond 1P: Existing Culvert Peak Elev=100.89' Inflow=9.9 cfs 0.703 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=9.9 cfs 0.703 af

Pond 10.1P: Culvert Peak Elev=91.81' Storage=137 cf Inflow=6.9 cfs 0.789 af
Primary=6.9 cfs 0.789 af Secondary=0.0 cfs 0.000 af Outflow=6.9 cfs 0.789 af

Pond 11.0P: GW-1 Peak Elev=83.42' Storage=19,185 cf Inflow=11.8 cfs 1.118 af
Primary=6.0 cfs 0.941 af Secondary=0.0 cfs 0.000 af Outflow=6.0 cfs 0.941 af

Pond 11.1P: Culvert Peak Elev=84.37' Inflow=1.4 cfs 0.144 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.4 cfs 0.144 af

Pond 12.0P: UDSF-1 Peak Elev=89.46' Storage=5,209 cf Inflow=4.5 cfs 0.454 af
Primary=4.0 cfs 0.413 af Secondary=0.0 cfs 0.000 af Outflow=4.0 cfs 0.413 af

Pond 13.0P: Dripedge 1 Peak Elev=101.01' Storage=2,064 cf Inflow=2.2 cfs 0.183 af
Primary=0.5 cfs 0.178 af Secondary=0.4 cfs 0.005 af Outflow=0.9 cfs 0.183 af

Pond 13.1P: Dripedge 2 Peak Elev=88.02' Storage=1,791 cf Inflow=2.2 cfs 0.181 af
Primary=0.4 cfs 0.172 af Secondary=0.5 cfs 0.008 af Outflow=0.9 cfs 0.181 af

Pond 40.1P: Existign pond Peak Elev=106.90' Storage=3,768 cf Inflow=4.0 cfs 0.671 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.9 cfs 0.667 af

Pond 40P: Existing Wetland Peak Elev=107.10' Storage=5,046 cf Inflow=6.7 cfs 0.674 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=4.0 cfs 0.671 af

Pond 41P: Extended Culvert Peak Elev=109.21' Storage=697 cf Inflow=2.9 cfs 0.277 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0049 '/' Outflow=2.7 cfs 0.275 af

Link SP-1: Inflow=24.5 cfs 3.819 af
Primary=24.5 cfs 3.819 af

Link SP-2: Inflow=0.5 cfs 0.054 af
Primary=0.5 cfs 0.054 af

Link SP-3: Inflow=2.1 cfs 0.207 af
Primary=2.1 cfs 0.207 af

Link SP-4: SP-4 Inflow=2.9 cfs 0.667 af
Primary=2.9 cfs 0.667 af

Link SP-5: SP-5 Inflow=11.1 cfs 0.792 af
Primary=11.1 cfs 0.792 af

Total Runoff Area = 18.283 ac Runoff Volume = 5.779 af Average Runoff Depth = 3.79"
72.90% Pervious = 13.328 ac 27.10% Impervious = 4.955 ac

Summary for Subcatchment 10.0S:

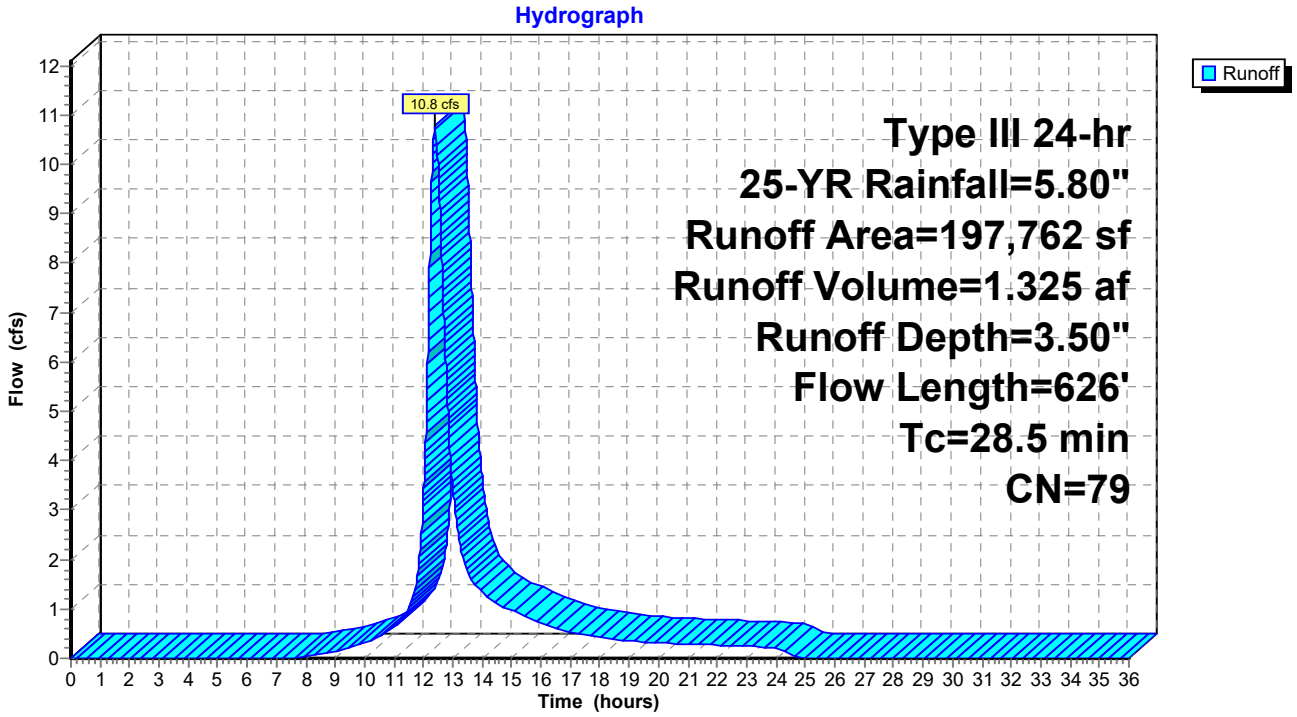
Runoff = 10.8 cfs @ 12.38 hrs, Volume= 1.325 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
1,470	98	Paved parking, HSG D
1,693	74	>75% Grass cover, Good, HSG C
83,115	80	>75% Grass cover, Good, HSG D
273	98	Roofs, HSG C
6,933	98	Roofs, HSG D
411	70	Woods, Good, HSG C
103,867	77	Woods, Good, HSG D
197,762	79	Weighted Average
189,086		95.61% Pervious Area
8,676		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0850	0.14		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	66	0.0300	0.87		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
28.5	626	Total			

Subcatchment 10.0S:



Summary for Subcatchment 10.1S:

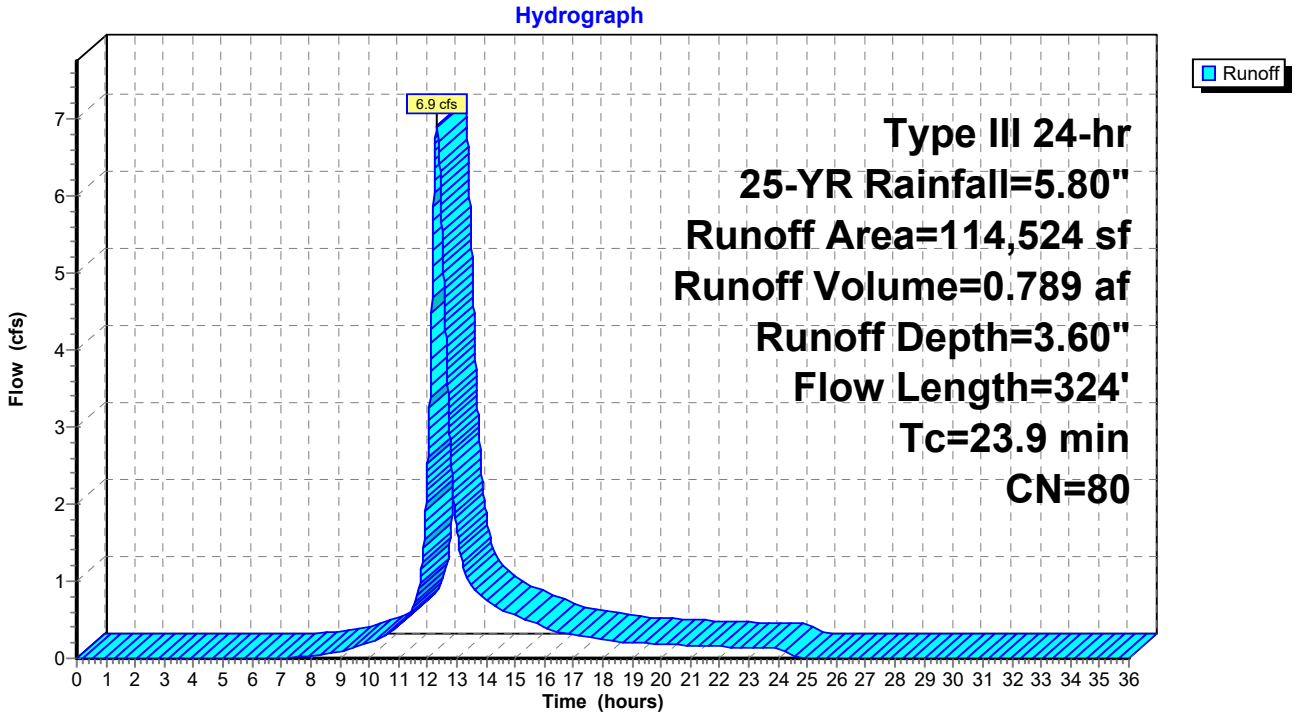
Runoff = 6.9 cfs @ 12.33 hrs, Volume= 0.789 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,274	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,713	74	>75% Grass cover, Good, HSG C
17,290	80	>75% Grass cover, Good, HSG D
11,653	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,039	70	Woods, Good, HSG C
31,568	77	Woods, Good, HSG D
114,524	80	Weighted Average
89,610		78.25% Pervious Area
24,914		21.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Subcatchment 10.1S:



Summary for Subcatchment 11.0S:

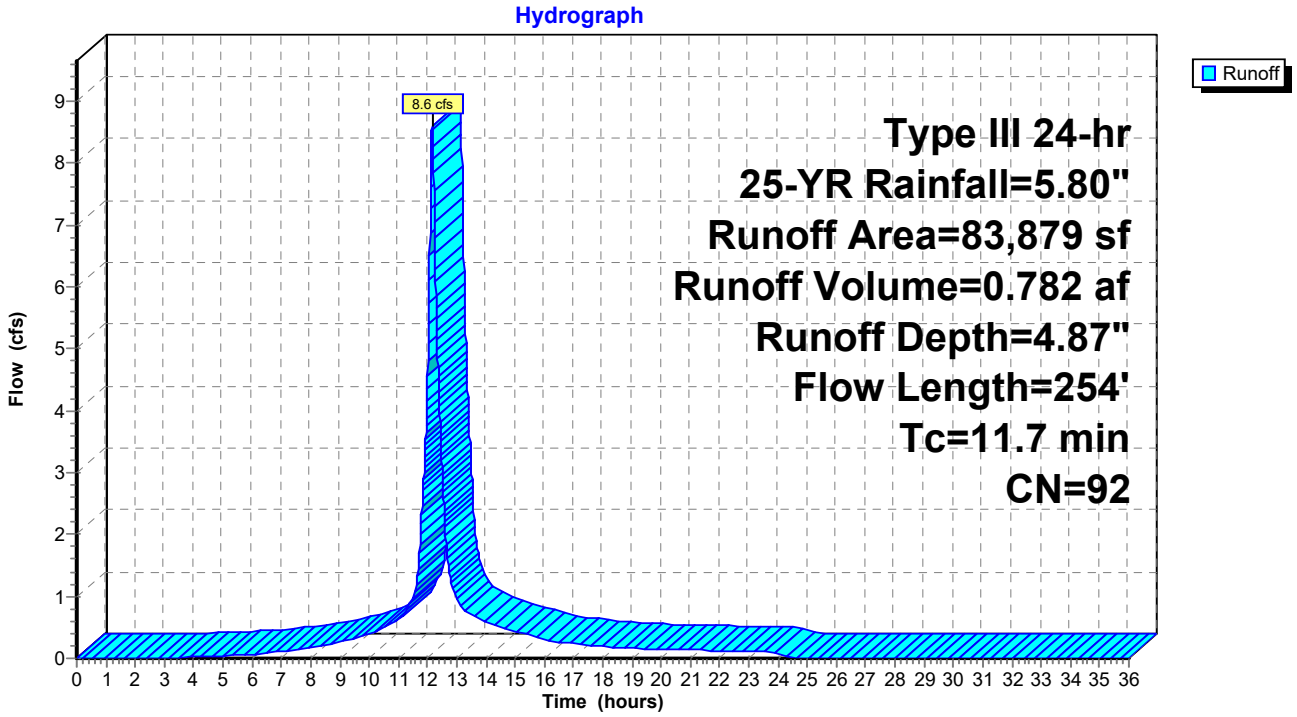
Runoff = 8.6 cfs @ 12.16 hrs, Volume= 0.782 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
30,453	98	Paved parking, HSG C
19,414	98	Paved parking, HSG D
913	74	>75% Grass cover, Good, HSG C
27,299	80	>75% Grass cover, Good, HSG D
4,300	98	Roofs, HSG C
1,500	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
83,879	92	Weighted Average
28,212		33.63% Pervious Area
55,667		66.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	62	0.0150	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	67	0.0200	2.87		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
0.5	125	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
11.7	254	Total			

Subcatchment 11.0S:



Summary for Subcatchment 11.1S:

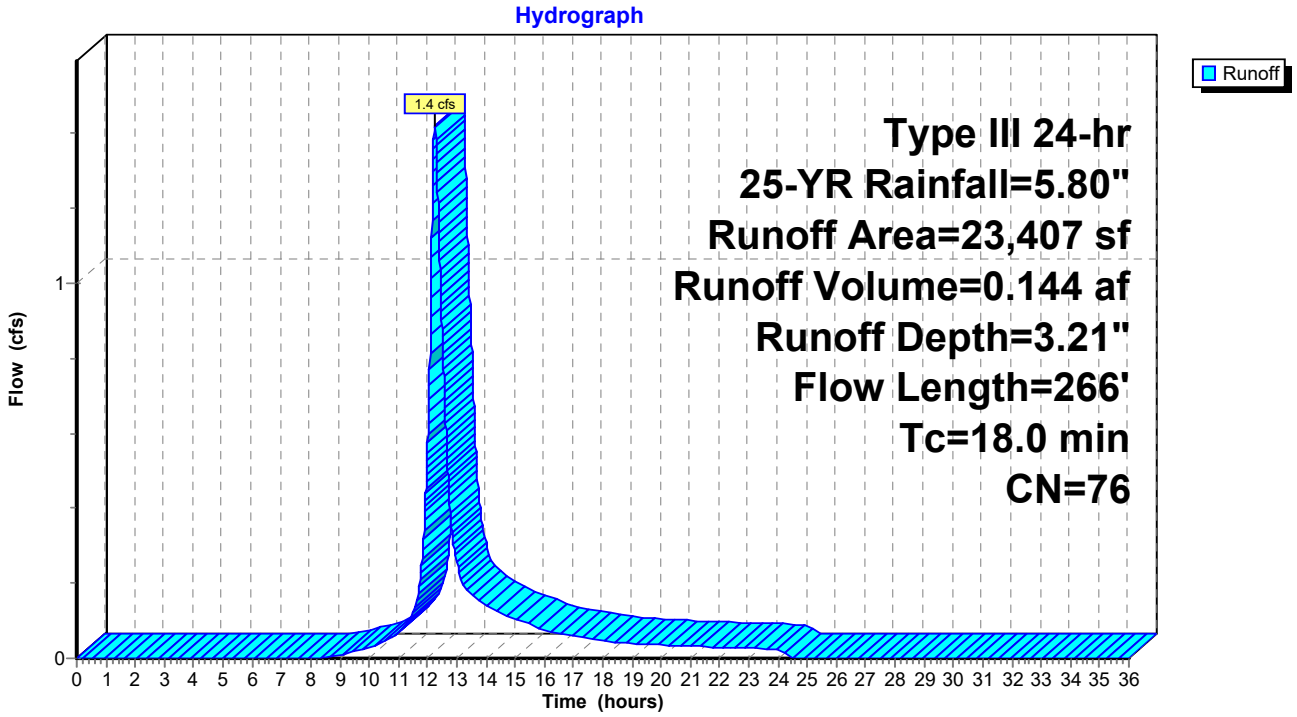
Runoff = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,653	74	>75% Grass cover, Good, HSG C
7,754	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
23,407	76	Weighted Average
23,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0120	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.2	20	0.0120	1.64		**Shallow Concentrated Flow, B** Grassed Waterway Kv= 15.0 fps
0.6	146	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
18.0	266	Total			

Subcatchment 11.1S:



Summary for Subcatchment 11.2S:

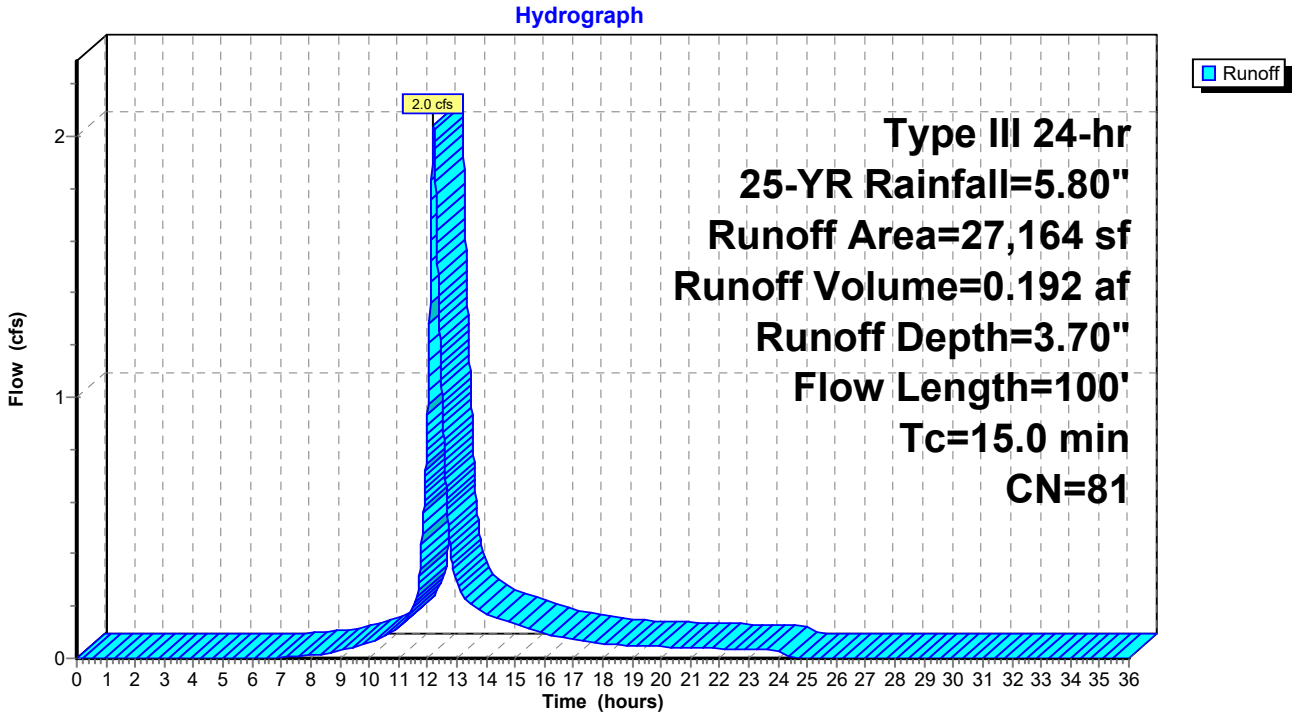
Runoff = 2.0 cfs @ 12.20 hrs, Volume= 0.192 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
3,092	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,185	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
5,497	98	Roofs, HSG C
0	98	Roofs, HSG D
3,390	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
27,164	81	Weighted Average
18,575		68.38% Pervious Area
8,589		31.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	50	0.0100	0.08		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
4.4	50	0.2600	0.19		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
15.0	100	Total			

Subcatchment 11.2S:



Summary for Subcatchment 12.0S:

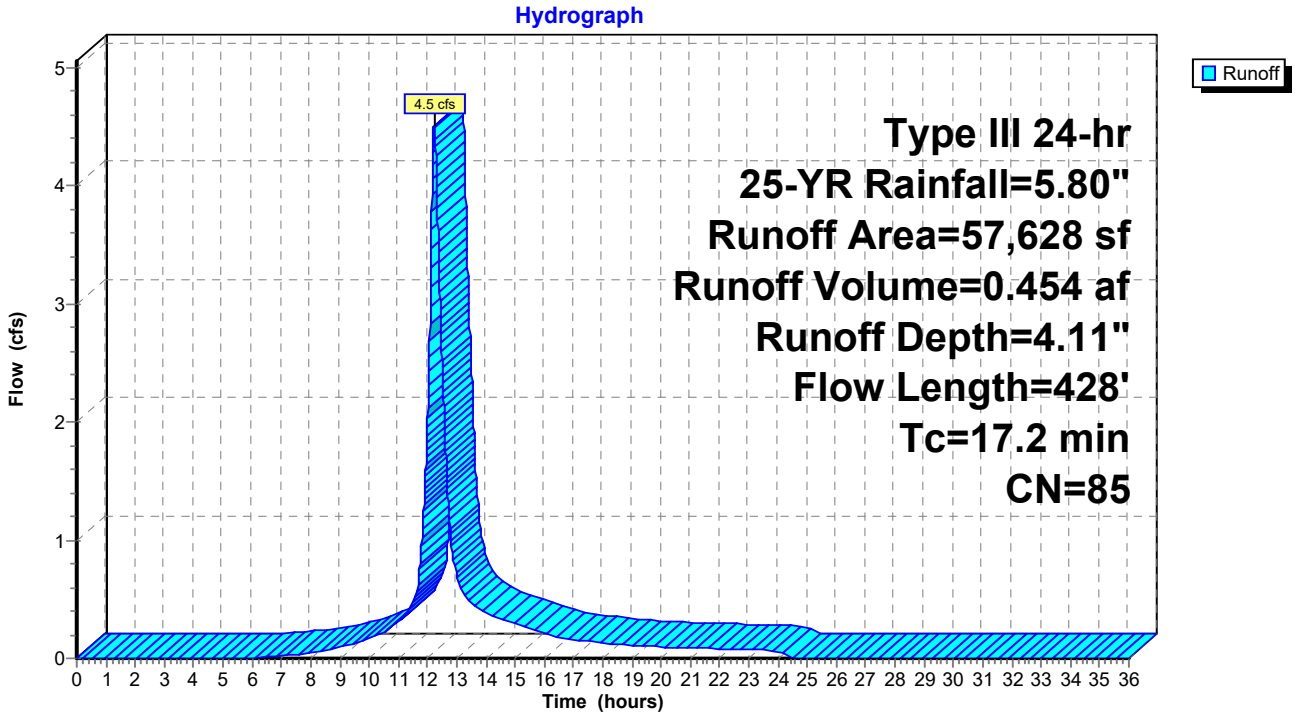
Runoff = 4.5 cfs @ 12.23 hrs, Volume= 0.454 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
10,936	98	Paved parking, HSG C
12,840	98	Paved parking, HSG D
16,741	74	>75% Grass cover, Good, HSG C
13,329	80	>75% Grass cover, Good, HSG D
3,782	70	Woods, Good, HSG C
57,628	85	Weighted Average
33,852		58.74% Pervious Area
23,776		41.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0150	0.11		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	114	0.0500	4.54		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
1.0	214	0.0050	3.47	2.73	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
17.2	428	Total			

Subcatchment 12.0S:



Summary for Subcatchment 13.0S: Building

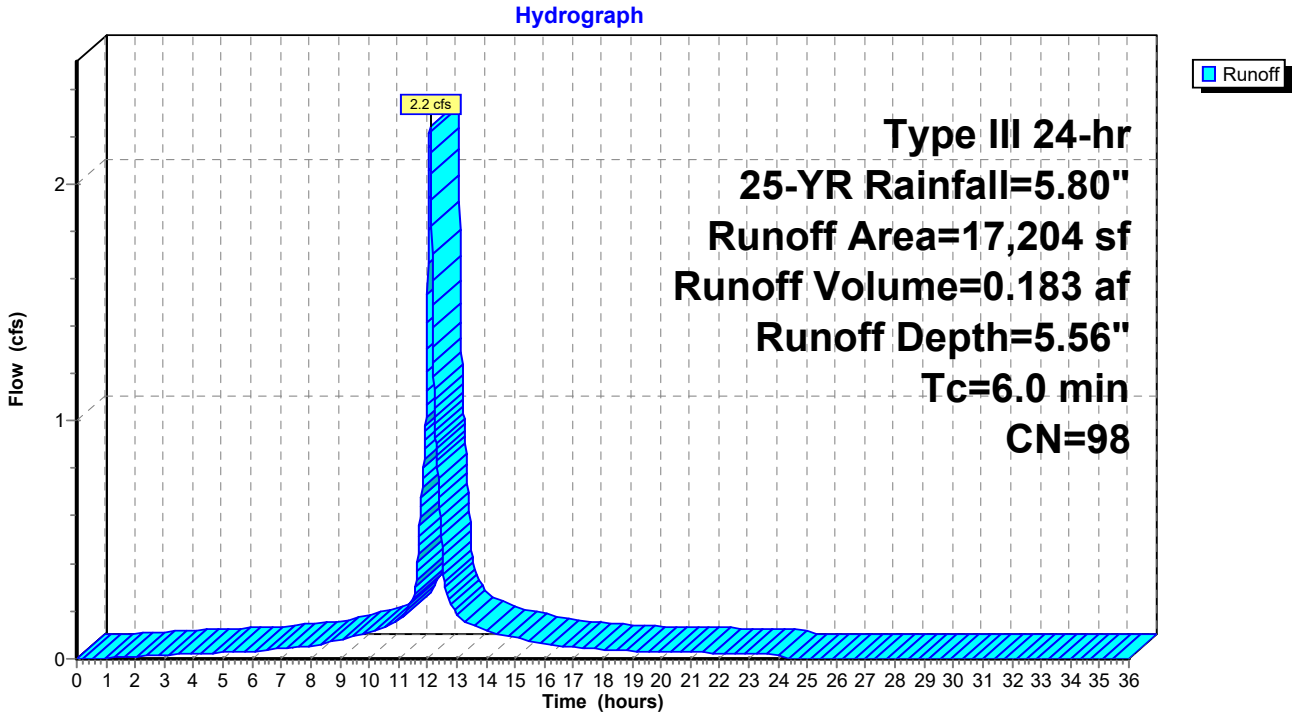
Runoff = 2.2 cfs @ 12.08 hrs, Volume= 0.183 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
9,791	98	Roofs, HSG C
7,413	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
17,204	98	Weighted Average
17,204		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13.0S: Building



Summary for Subcatchment 13.1S: Building

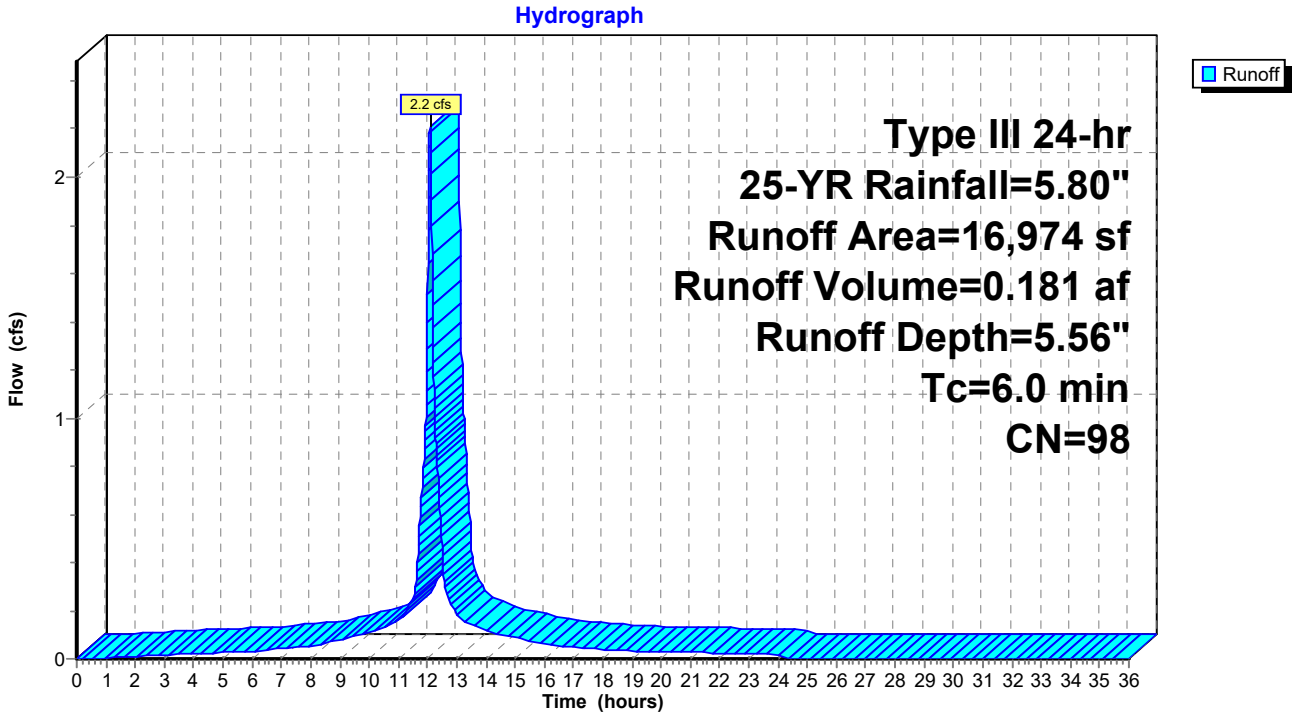
Runoff = 2.2 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
7,807	98	Roofs, HSG C
9,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
16,974	98	Weighted Average
16,974		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13.1S: Building



Summary for Subcatchment 20.0S:

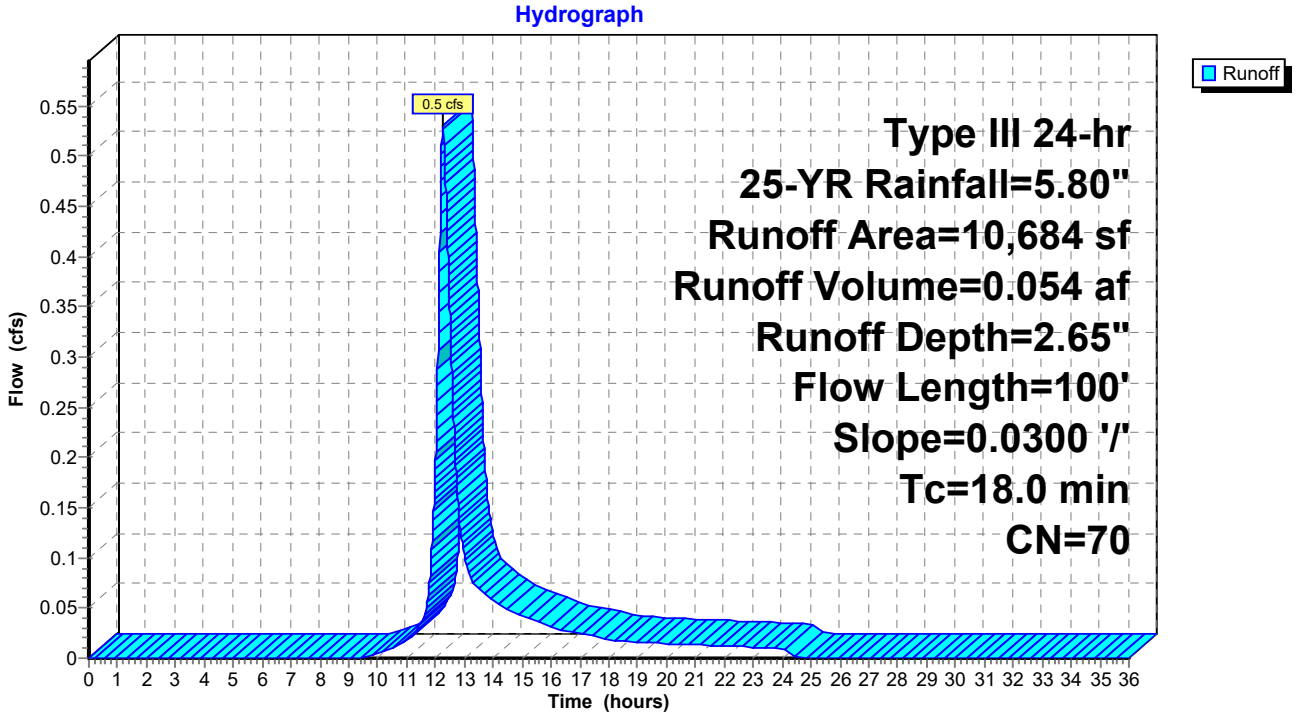
Runoff = 0.5 cfs @ 12.26 hrs, Volume= 0.054 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
10,684	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
10,684	70	Weighted Average
10,684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	100	0.0300	0.09		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"

Subcatchment 20.0S:



Summary for Subcatchment 30.0S:

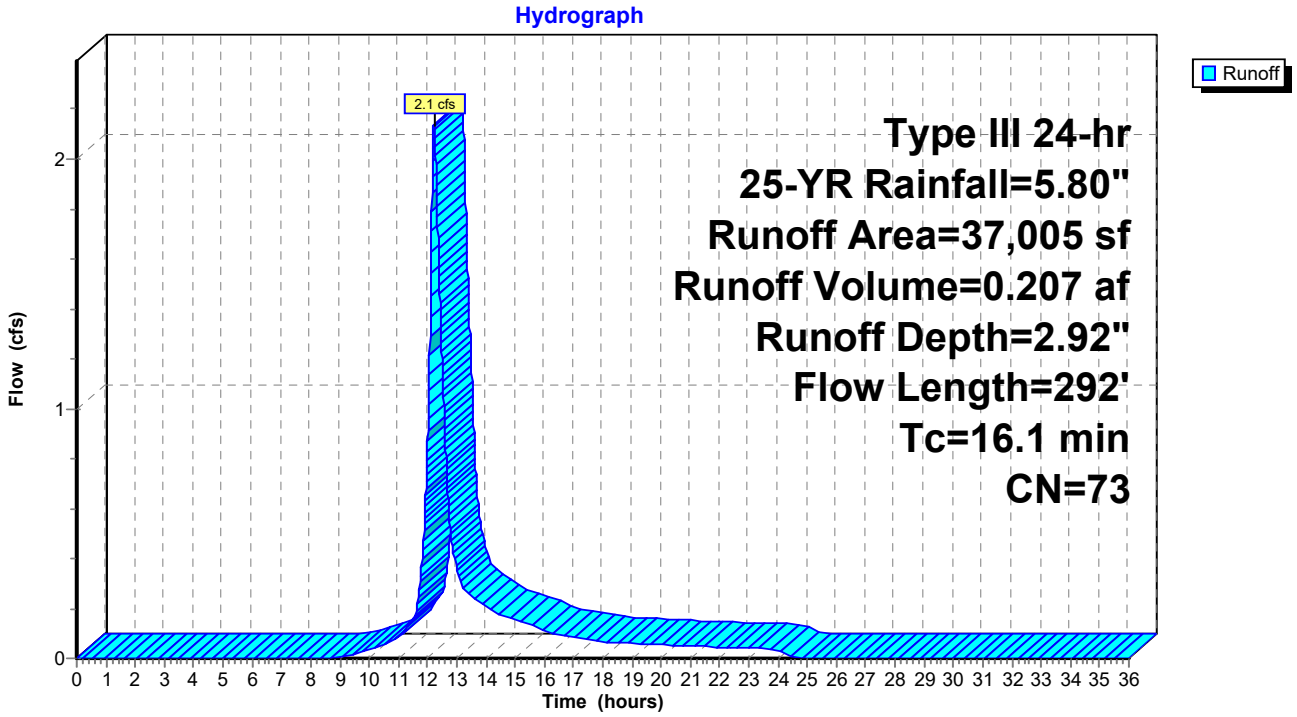
Runoff = 2.1 cfs @ 12.22 hrs, Volume= 0.207 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
8,150	74	>75% Grass cover, Good, HSG C
4,260	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,072	70	Woods, Good, HSG C
5,523	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
37,005	73	Weighted Average
37,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Subcatchment 30.0S:



Summary for Subcatchment OS-40S:

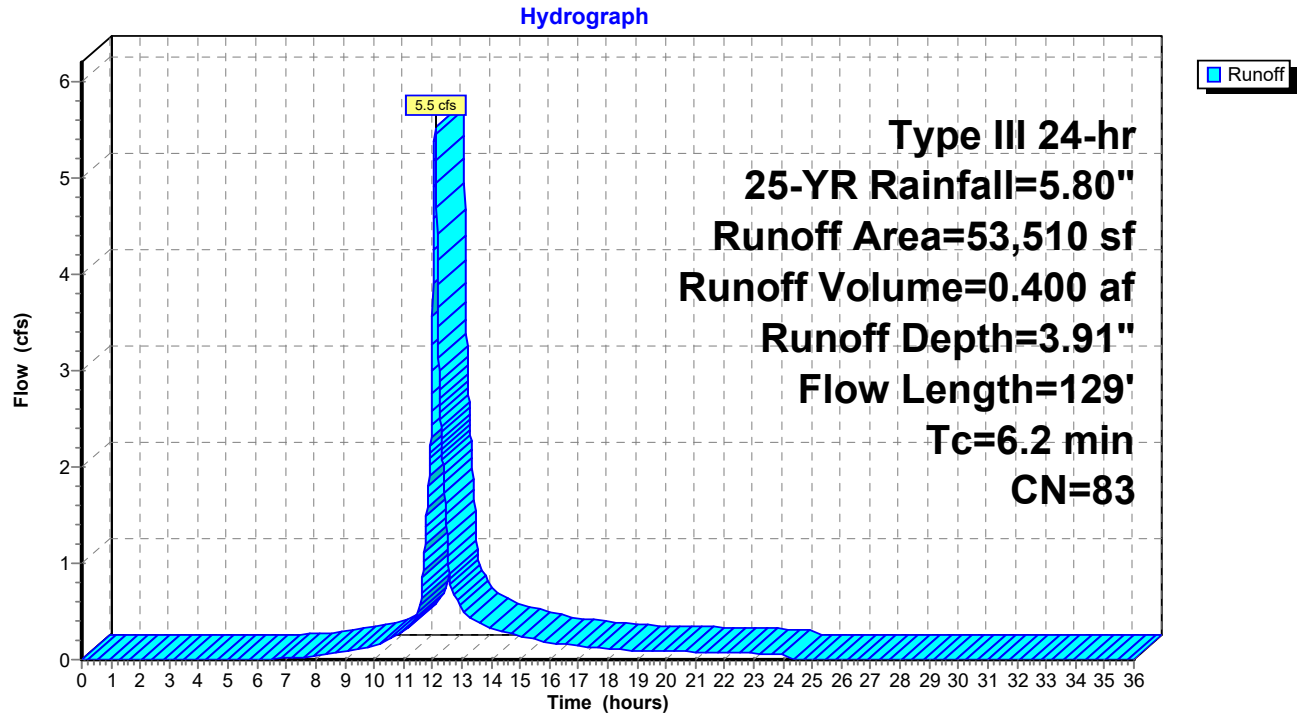
Runoff = 5.5 cfs @ 12.09 hrs, Volume= 0.400 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
16,475	98	Paved parking, HSG C
29,634	74	>75% Grass cover, Good, HSG C
3,686	98	Roofs, HSG C
3,715	70	Woods, Good, HSG C
53,510	83	Weighted Average
33,349		62.32% Pervious Area
20,161		37.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	22	0.0100	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.30"
0.4	65	0.0200	2.87		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.3	42	0.1000	2.21		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
6.2	129	Total			

Subcatchment OS-40S:



Summary for Subcatchment OS-41S:

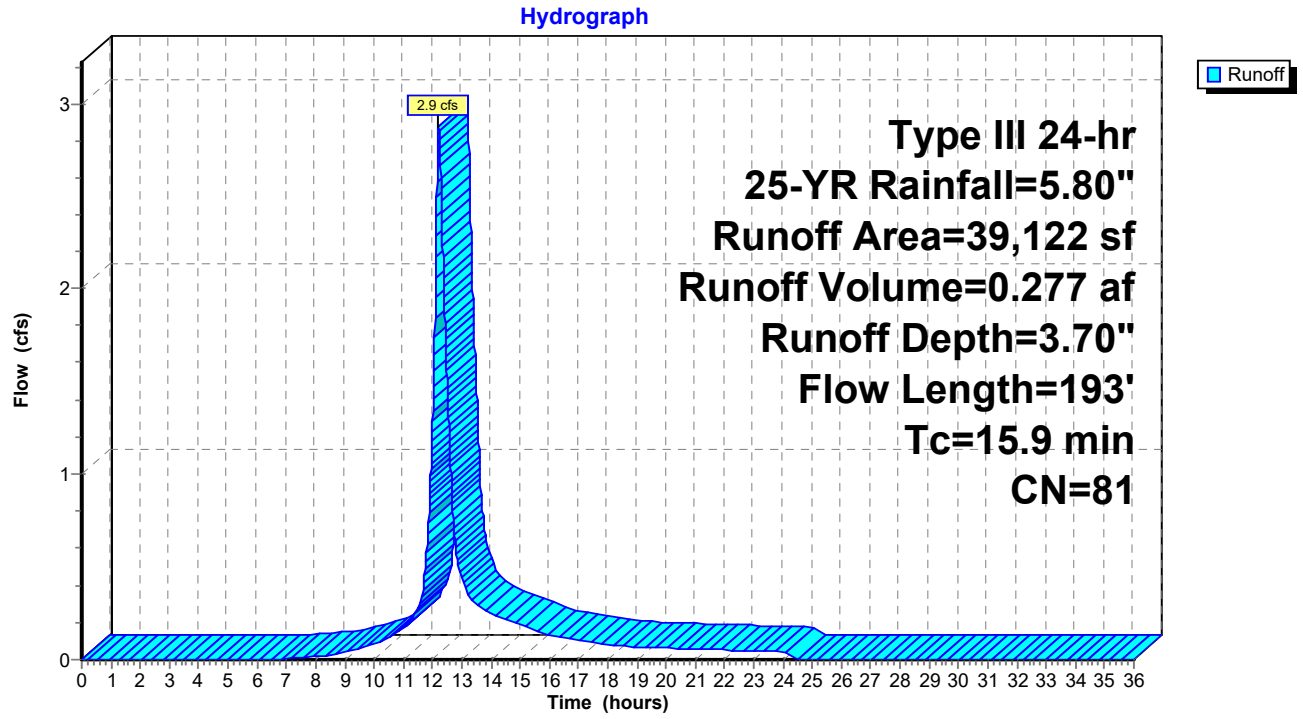
Runoff = 2.9 cfs @ 12.21 hrs, Volume= 0.277 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
8,592	98	Paved parking, HSG C
14,180	74	>75% Grass cover, Good, HSG C
4,449	98	Roofs, HSG C
11,901	70	Woods, Good, HSG C
39,122	81	Weighted Average
26,081		66.67% Pervious Area
13,041		33.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	14	0.2100	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.30"
12.2	86	0.0580	0.12		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.30"
2.0	93	0.0250	0.79		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
15.9	193	Total			

Subcatchment OS-41S:



Summary for Subcatchment OS-50S:

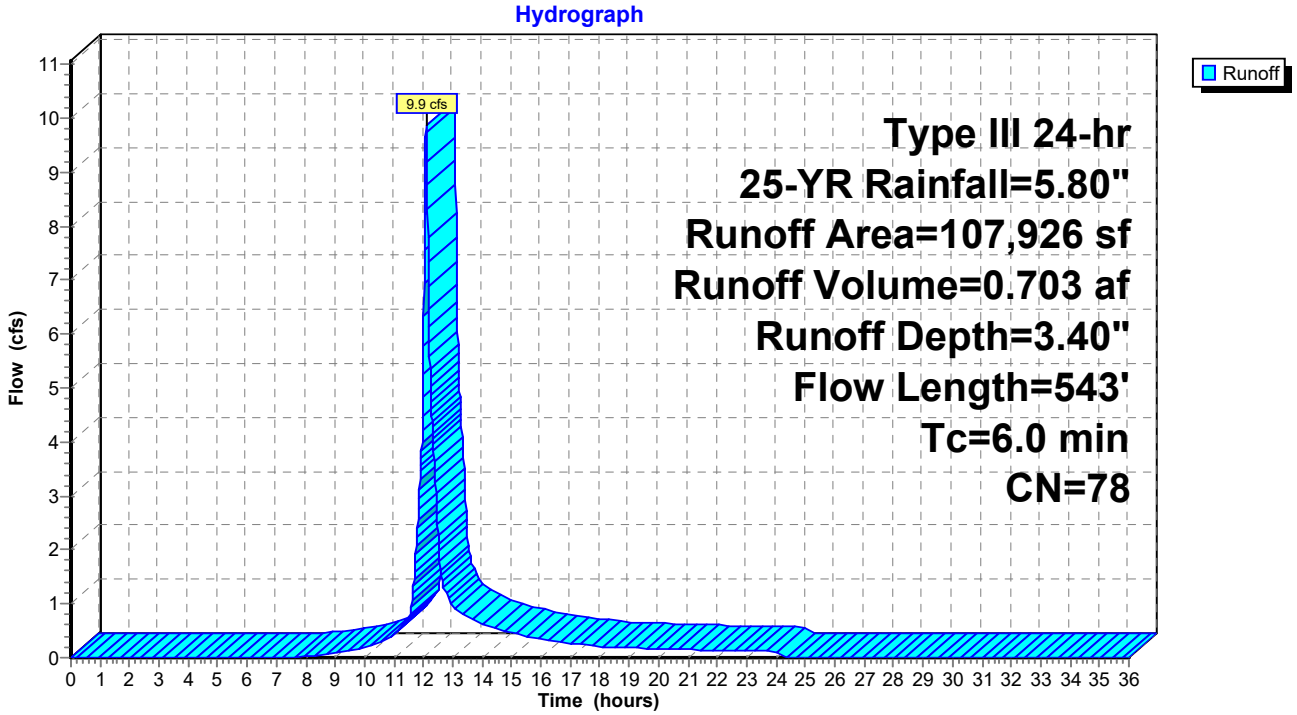
Runoff = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
16,363	92	Paved roads w/open ditches, 50% imp, HSG C
55,403	80	1/2 acre lots, 25% imp, HSG C
36,160	70	Woods, Good, HSG C
107,926	78	Weighted Average
85,894		79.59% Pervious Area
22,032		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	477	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.9	66	0.0300	1.21		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
2.8					**Direct Entry,**
6.0	543	Total			

Subcatchment OS-50S:



Summary for Subcatchment OS-51S:

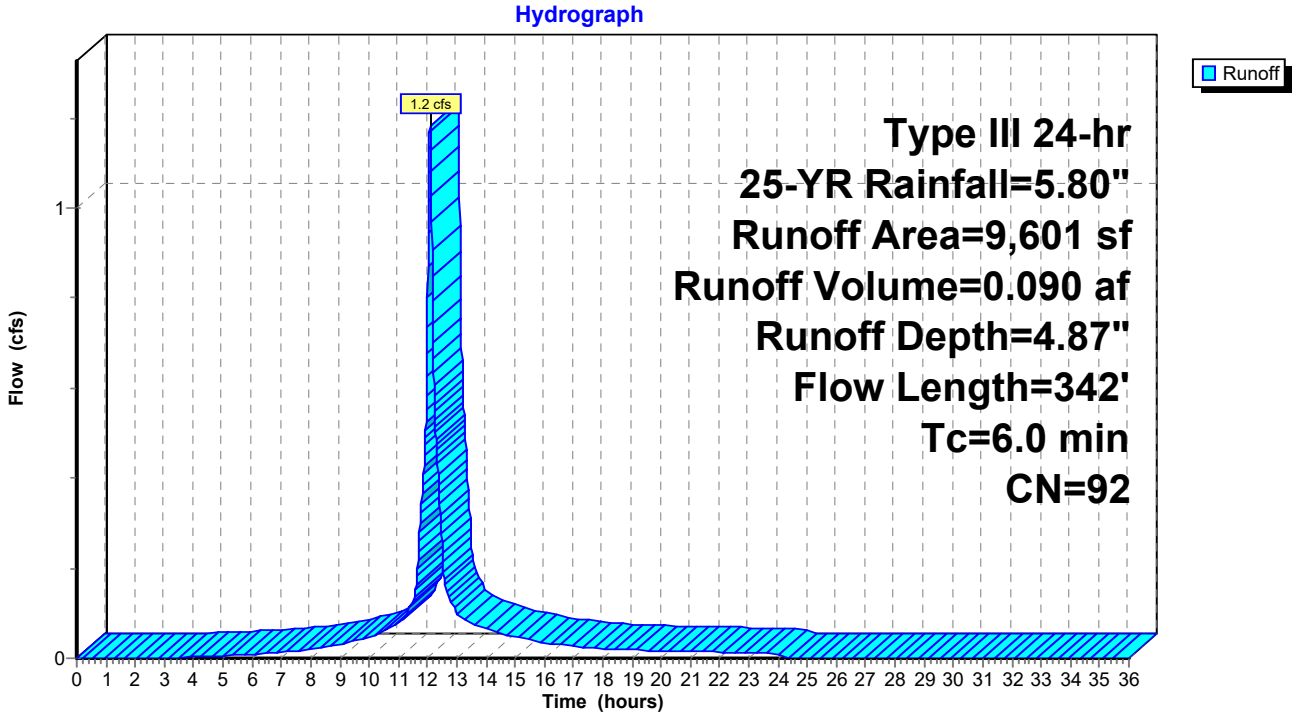
Runoff = 1.2 cfs @ 12.08 hrs, Volume= 0.090 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
9,601	92	Paved roads w/open ditches, 50% imp, HSG C
4,801		50.00% Pervious Area
4,801		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	320	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.1	22	0.1300	2.52		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
4.4					**Direct Entry,**
6.0	342	Total			

Subcatchment OS-51S:



Summary for Reach 10.1R:

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.9 cfs @ 12.35 hrs, Volume= 0.789 af
Outflow = 5.9 cfs @ 12.48 hrs, Volume= 0.789 af, Atten= 14%, Lag= 8.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.64 fps, Min. Travel Time= 12.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 43.6 min

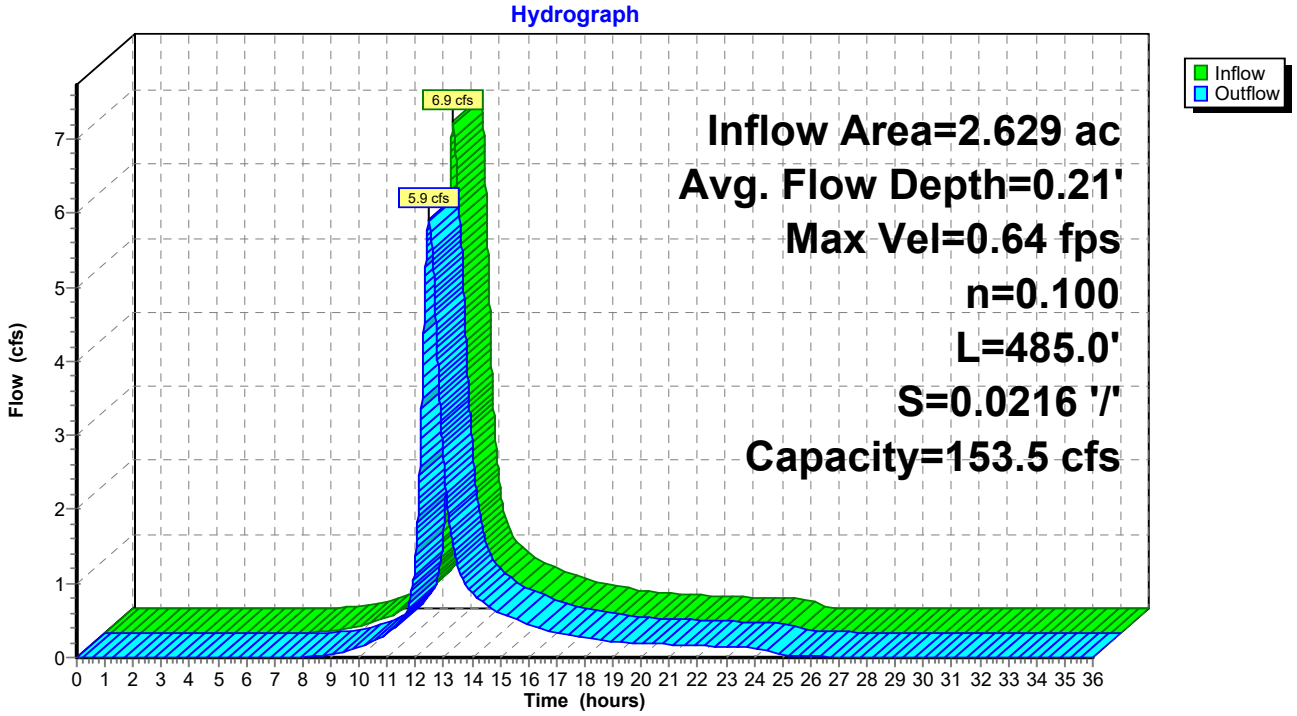
Peak Storage= 4,508 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.5 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'



‡

Reach 10.1R:



Summary for Reach 11.0R:

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth > 3.66" for 25-YR event
Inflow = 6.0 cfs @ 12.44 hrs, Volume= 0.941 af
Outflow = 5.6 cfs @ 12.62 hrs, Volume= 0.936 af, Atten= 7%, Lag= 11.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.42 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 39.7 min

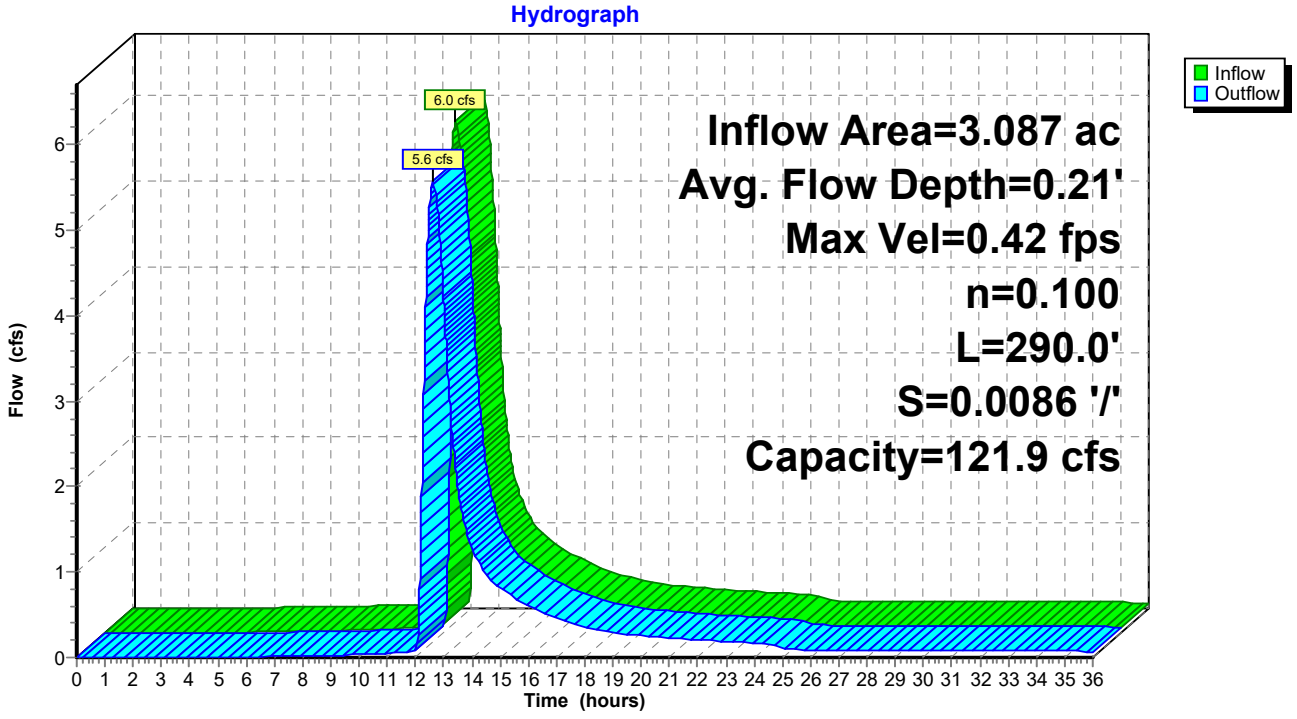
Peak Storage= 3,842 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 121.9 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 290.0' Slope= 0.0086 '/'
Inlet Invert= 81.00', Outlet Invert= 78.50'



‡

Reach 11.0R:



Summary for Reach 12.0R:

Inflow Area = 1.323 ac, 41.26% Impervious, Inflow Depth > 3.75" for 25-YR event
Inflow = 4.0 cfs @ 12.32 hrs, Volume= 0.413 af
Outflow = 2.3 cfs @ 12.61 hrs, Volume= 0.406 af, Atten= 42%, Lag= 17.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.35 fps, Min. Travel Time= 26.0 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 82.6 min

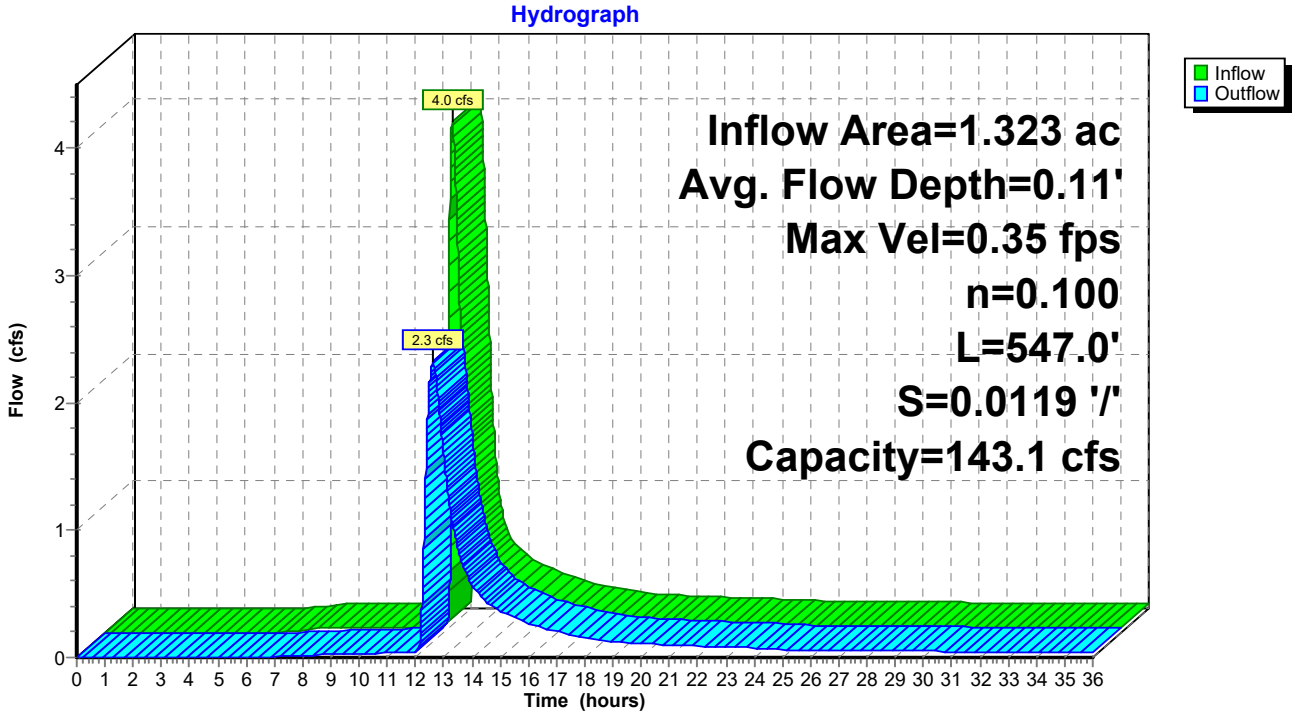
Peak Storage= 3,625 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 143.1 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 547.0' Slope= 0.0119 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'



‡

Reach 12.0R:



Summary for Reach 13.0R:

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.9 cfs @ 12.31 hrs, Volume= 0.183 af
Outflow = 0.5 cfs @ 12.85 hrs, Volume= 0.183 af, Atten= 44%, Lag= 32.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.20 fps, Min. Travel Time= 43.2 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 94.8 min

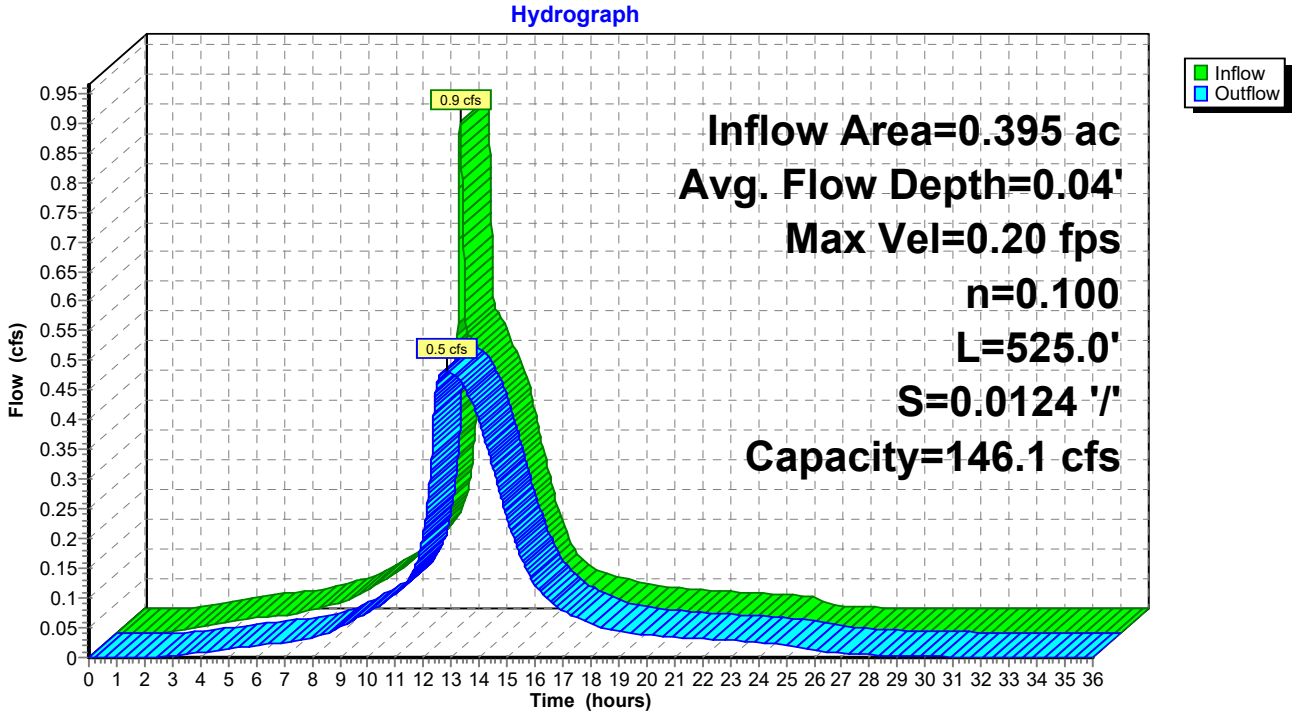
Peak Storage= 1,253 cf @ 12.85 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 146.1 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 525.0' Slope= 0.0124 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'



‡

Reach 13.0R:



Summary for Reach 13.1R:

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.9 cfs @ 12.29 hrs, Volume= 0.181 af
Outflow = 0.6 cfs @ 12.47 hrs, Volume= 0.181 af, Atten= 37%, Lag= 11.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.22 fps, Min. Travel Time= 23.5 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 52.8 min

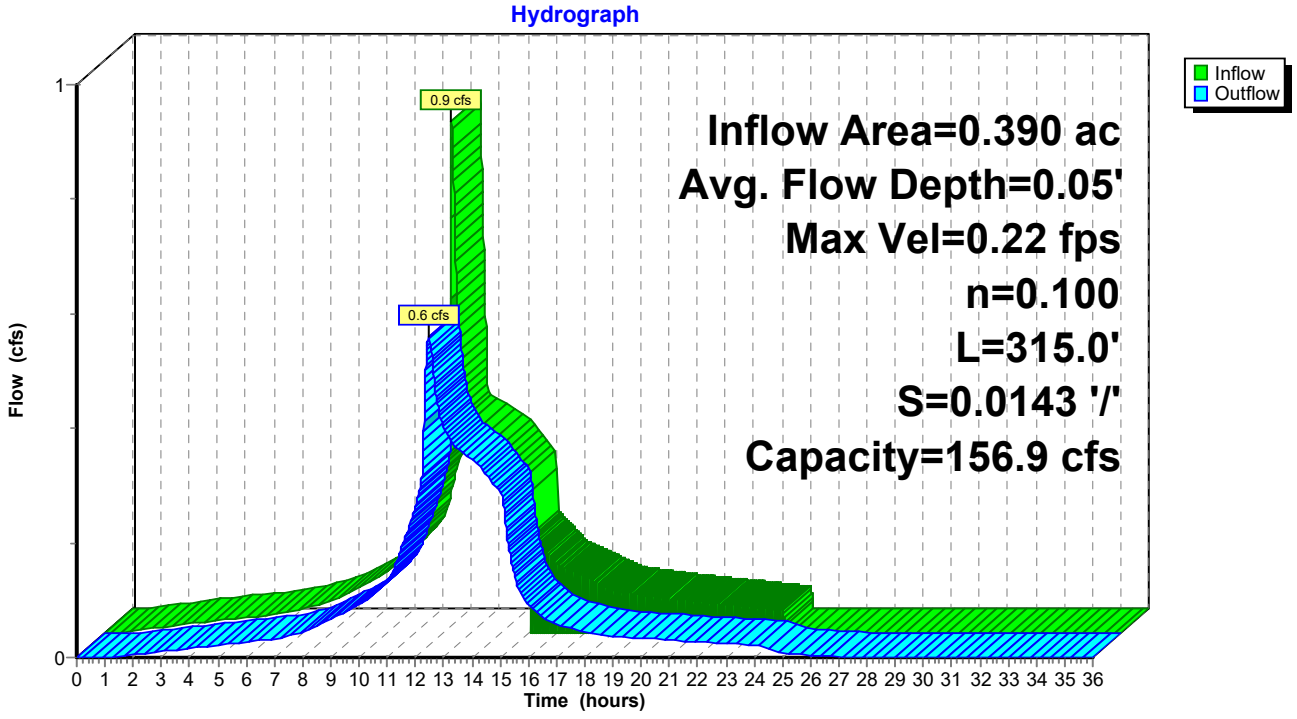
Peak Storage= 791 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 156.9 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 315.0' Slope= 0.0143 '/'
Inlet Invert= 83.00', Outlet Invert= 78.50'



‡

Reach 13.1R:



Summary for Reach 40R: (new Reach)

Inflow Area = 0.898 ac, 33.33% Impervious, Inflow Depth = 3.67" for 25-YR event
Inflow = 2.7 cfs @ 12.26 hrs, Volume= 0.275 af
Outflow = 2.6 cfs @ 12.32 hrs, Volume= 0.275 af, Atten= 4%, Lag= 3.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.67 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 19.9 min

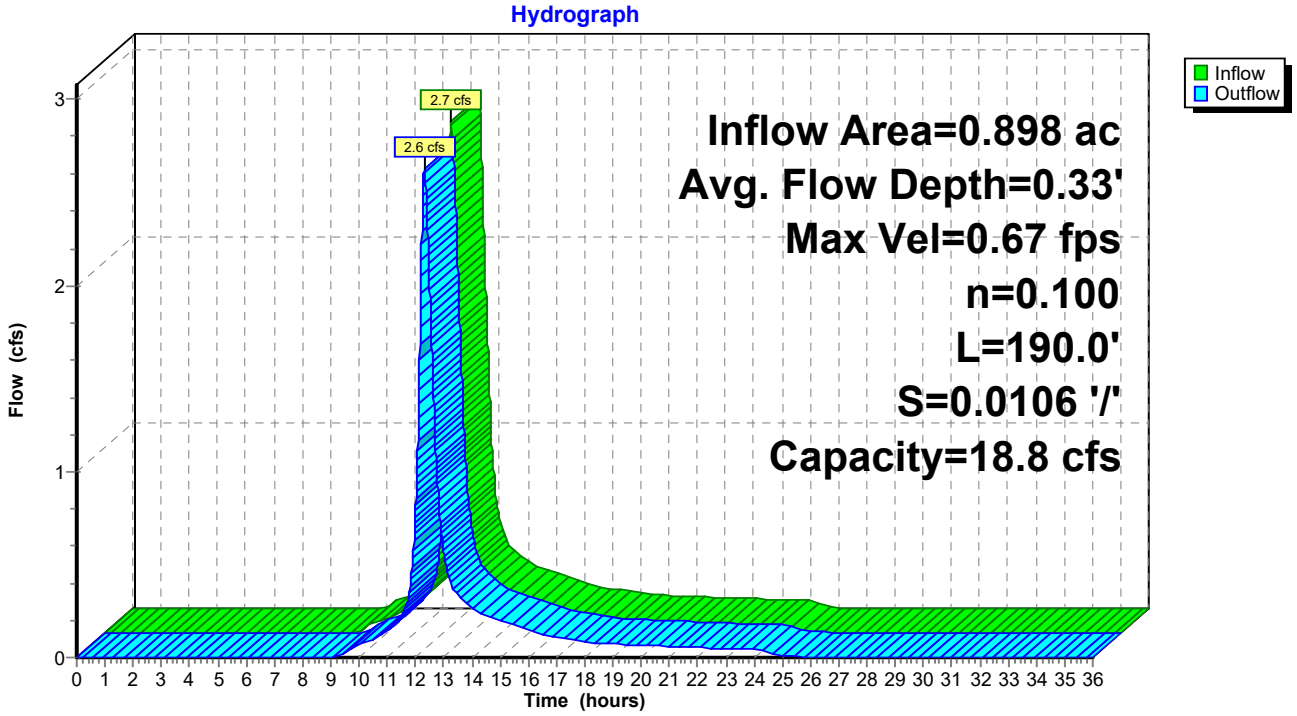
Peak Storage= 743 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 18.8 cfs

10.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 20.00'
Length= 190.0' Slope= 0.0106 '/'
Inlet Invert= 108.04', Outlet Invert= 106.03'



‡

Reach 40R: (new Reach)



Summary for Pond 1P: Existing Culvert

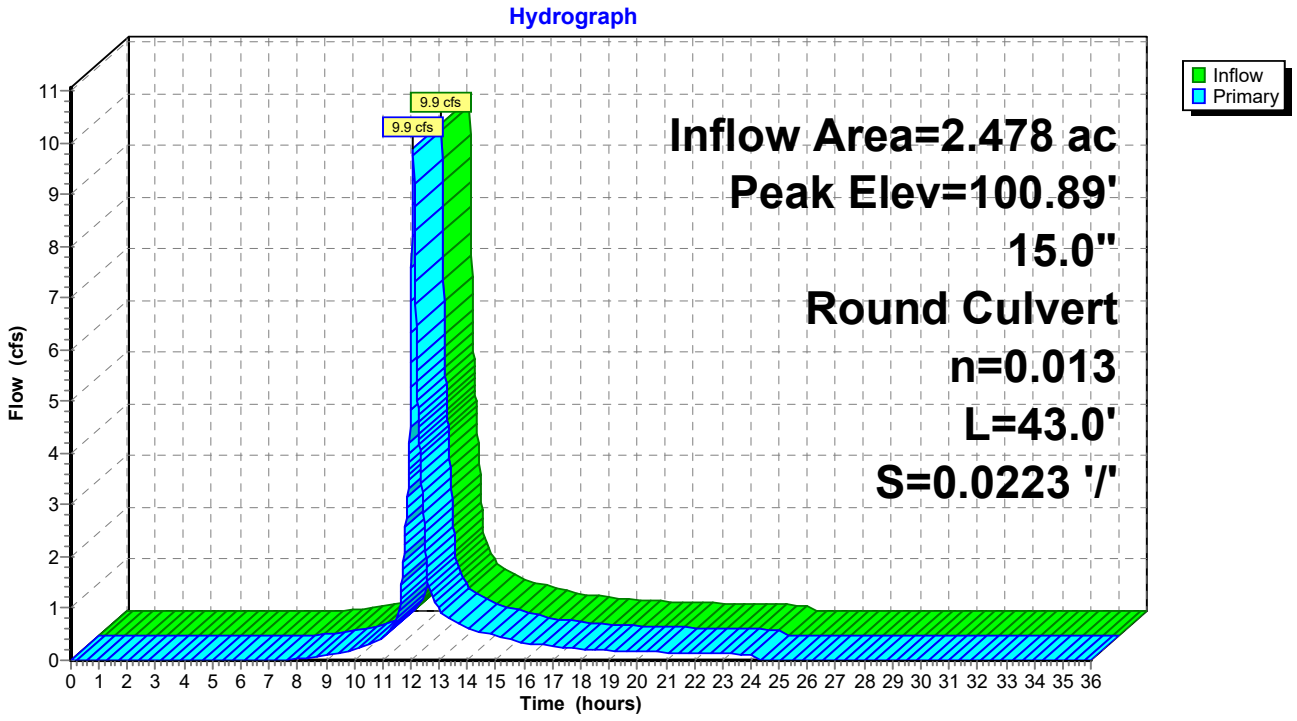
Inflow Area = 2.478 ac, 20.41% Impervious, Inflow Depth = 3.40" for 25-YR event
Inflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af
Outflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min
Primary = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 100.89' @ 12.09 hrs
Flood Elev= 100.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.78'	**15.0" Round Culvert** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.78' / 94.82' S= 0.0223 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=9.9 cfs @ 12.09 hrs HW=100.88' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.9 cfs @ 8.04 fps)

Pond 1P: Existing Culvert



Summary for Pond 10.1P: Culvert

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.9 cfs @ 12.33 hrs, Volume= 0.789 af
Outflow = 6.9 cfs @ 12.35 hrs, Volume= 0.789 af, Atten= 0%, Lag= 1.3 min
Primary = 6.9 cfs @ 12.35 hrs, Volume= 0.789 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.81' @ 12.35 hrs Surf.Area= 224 sf Storage= 137 cf
Flood Elev= 93.00' Surf.Area= 500 sf Storage= 558 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (832.2 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.00'	3,993 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

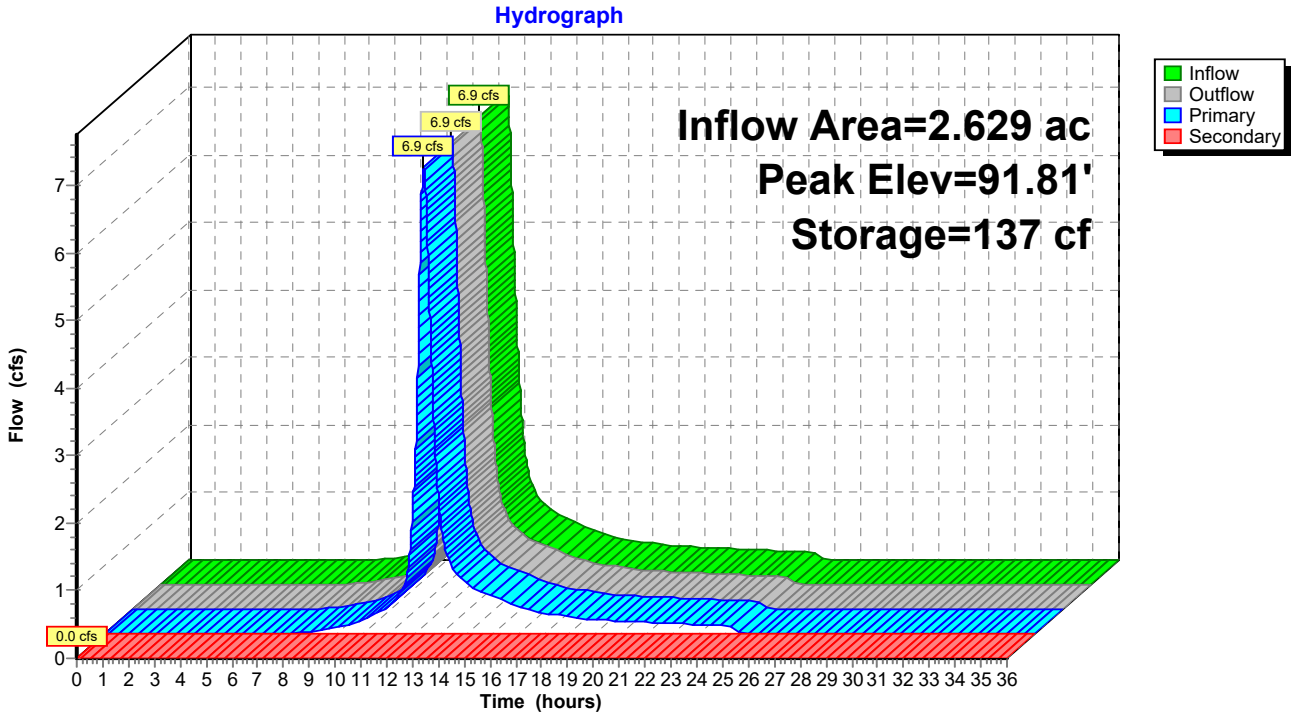
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.00	115	0	0
92.00	250	183	183
93.00	500	375	558
94.00	2,580	1,540	2,098
94.50	5,000	1,895	3,993

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**18.0" Round 18" PIPE** L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 88.00' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	93.00'	**40.0' long x 2.0' breadth Overflow at Driveway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=6.9 cfs @ 12.35 hrs HW=91.81' TW=89.19' (Dynamic Tailwater)
↑—**1=18" PIPE** (Inlet Controls 6.9 cfs @ 3.91 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=91.00' TW=89.00' (Dynamic Tailwater)
↑—**2=Overflow at Driveway** (Controls 0.0 cfs)

Pond 10.1P: Culvert



Summary for Pond 11.0P: GW-1

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth = 4.35" for 25-YR event
Inflow = 11.8 cfs @ 12.17 hrs, Volume= 1.118 af
Outflow = 6.0 cfs @ 12.44 hrs, Volume= 0.941 af, Atten= 49%, Lag= 16.1 min
Primary = 6.0 cfs @ 12.44 hrs, Volume= 0.941 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 83.42' @ 12.44 hrs Surf.Area= 9,949 sf Storage= 19,185 cf
Flood Elev= 84.80' Surf.Area= 10,850 sf Storage= 25,208 cf

Plug-Flow detention time= 210.1 min calculated for 0.941 af (84% of inflow)
Center-of-Mass det. time= 143.5 min (940.3 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	81.00'	25,208 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

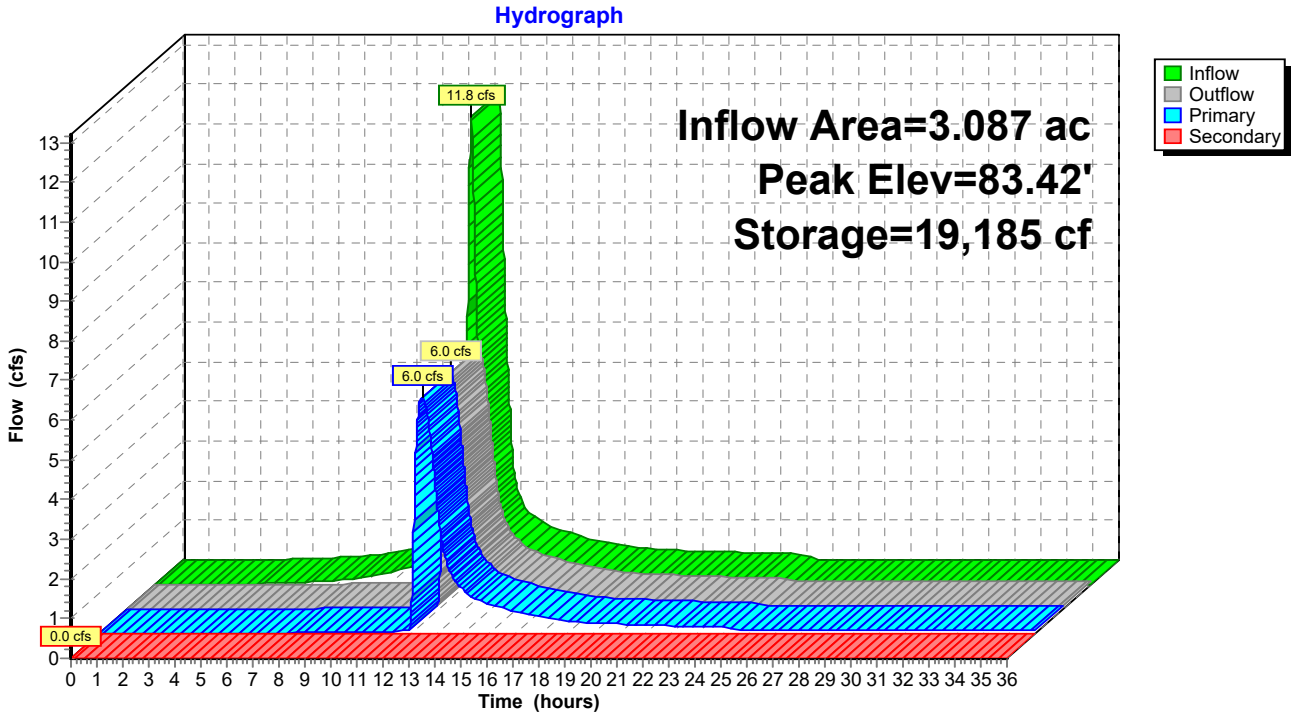
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.00	6,175	0	0
82.00	7,400	6,788	6,788
83.00	9,295	8,348	15,135
84.00	10,850	10,073	25,208

Device	Routing	Invert	Outlet Devices
#1	Primary	80.67'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.67' / 80.50' S= 0.0085 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	80.67'	**1.6" Vert. Orifice** C= 0.600
#3	Device 1	82.50'	**36.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#4	Secondary	83.50'	**25.0' long x 6.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=6.0 cfs @ 12.44 hrs HW=83.42' TW=81.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.0 cfs of 8.6 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.1 cfs @ 7.19 fps)
  └**3=WQV Orifice** (Orifice Controls 5.9 cfs @ 3.92 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=81.00' TW=81.00' (Dynamic Tailwater)
└**4=Emergency Spillway** (Controls 0.0 cfs)

Pond 11.0P: GW-1



Summary for Pond 11.1P: Culvert

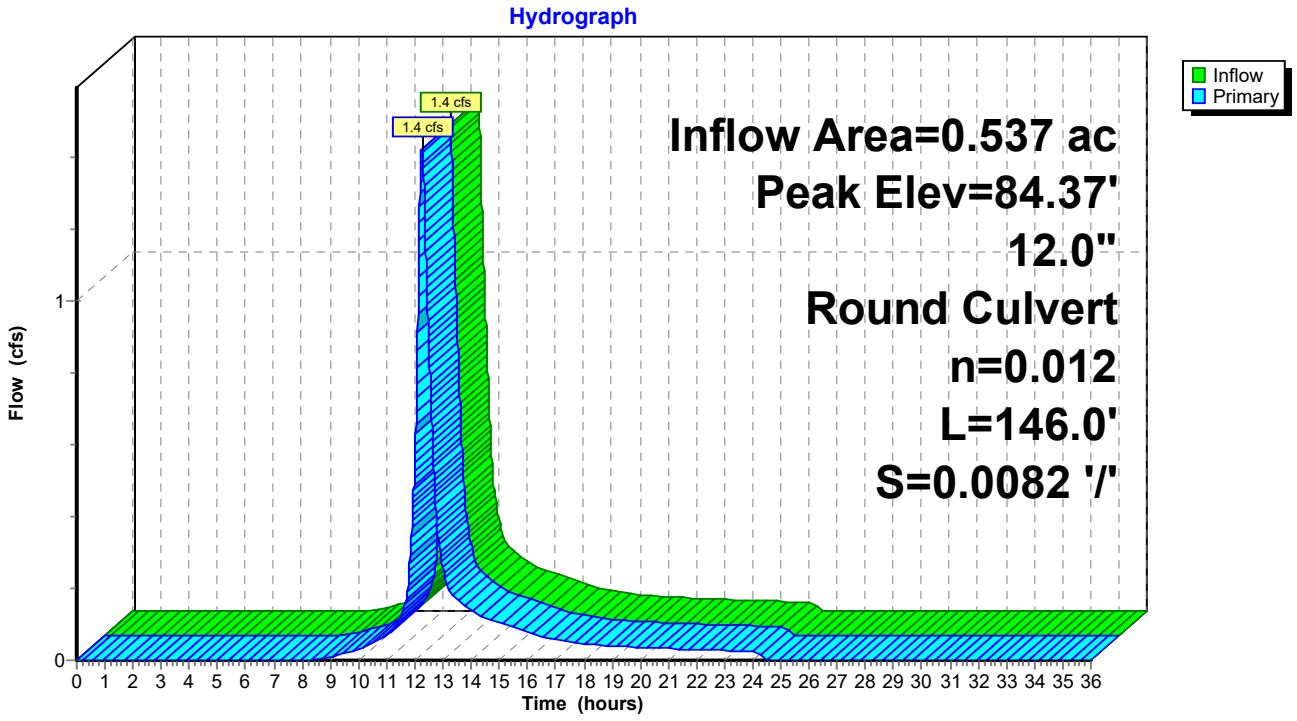
Inflow Area = 0.537 ac, 0.00% Impervious, Inflow Depth = 3.21" for 25-YR event
Inflow = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af
Outflow = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 84.37' @ 12.27 hrs
Flood Elev= 87.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	83.70'	**12.0" Round 12" PIPE** L= 146.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 83.70' / 82.50' S= 0.0082 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.4 cfs @ 12.25 hrs HW=84.37' TW=83.28' (Dynamic Tailwater)
↳**1=12" PIPE** (Outlet Controls 1.4 cfs @ 3.60 fps)

Pond 11.1P: Culvert



Summary for Pond 12.0P: UDSF-1

Inflow Area = 1.323 ac, 41.26% Impervious, Inflow Depth = 4.11" for 25-YR event
Inflow = 4.5 cfs @ 12.23 hrs, Volume= 0.454 af
Outflow = 4.0 cfs @ 12.32 hrs, Volume= 0.413 af, Atten= 11%, Lag= 5.3 min
Primary = 4.0 cfs @ 12.32 hrs, Volume= 0.413 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 89.46' @ 12.32 hrs Surf.Area= 3,379 sf Storage= 5,209 cf
Flood Elev= 90.80' Surf.Area= 4,200 sf Storage= 9,144 cf

Plug-Flow detention time= 190.9 min calculated for 0.413 af (91% of inflow)
Center-of-Mass det. time= 146.4 min (958.7 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	9,144 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

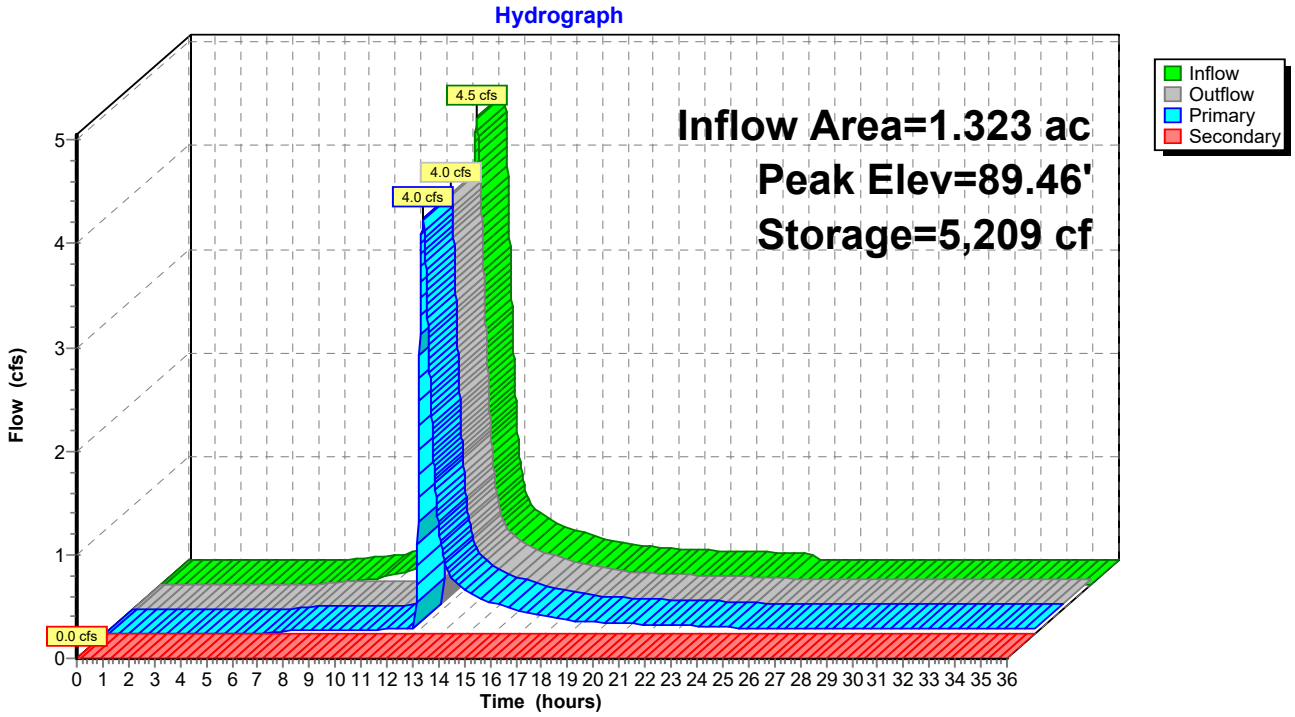
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
87.50	1,955	0	0
88.00	2,304	1,065	1,065
89.00	3,050	2,677	3,742
90.00	3,770	3,410	7,152
90.50	4,200	1,993	9,144

Device	Routing	Invert	Outlet Devices
#1	Primary	85.30'	**12.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 84.30' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	85.30'	**1.0" Vert. Controlling Orifice** C= 0.600
#3	Device 2	85.30'	**4.0" Round UD Header** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 85.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 1	89.00'	**48.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#5	Secondary	89.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.0 cfs @ 12.32 hrs HW=89.46' TW=85.07' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.0 cfs of 5.7 cfs potential flow)
  - **2=Controlling Orifice** (Orifice Controls 0.1 cfs @ 9.77 fps)
    - **3=UD Header** (Passes 0.1 cfs of 0.4 cfs potential flow)
  - **4=WQV Orifice** (Orifice Controls 4.0 cfs @ 2.17 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=87.50' TW=85.00' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 12.0P: UDSF-1



Summary for Pond 13.0P: Dripedge 1

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.2 cfs @ 12.08 hrs, Volume= 0.183 af
Outflow = 0.9 cfs @ 12.31 hrs, Volume= 0.183 af, Atten= 62%, Lag= 13.6 min
Primary = 0.5 cfs @ 12.31 hrs, Volume= 0.178 af
Secondary = 0.4 cfs @ 12.31 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 101.01' @ 12.31 hrs Surf.Area= 3,843 sf Storage= 2,064 cf
Flood Elev= 101.20' Surf.Area= 10,000 sf Storage= 2,660 cf

Plug-Flow detention time= 40.4 min calculated for 0.183 af (100% of inflow)
Center-of-Mass det. time= 40.1 min (785.7 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	2,660 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

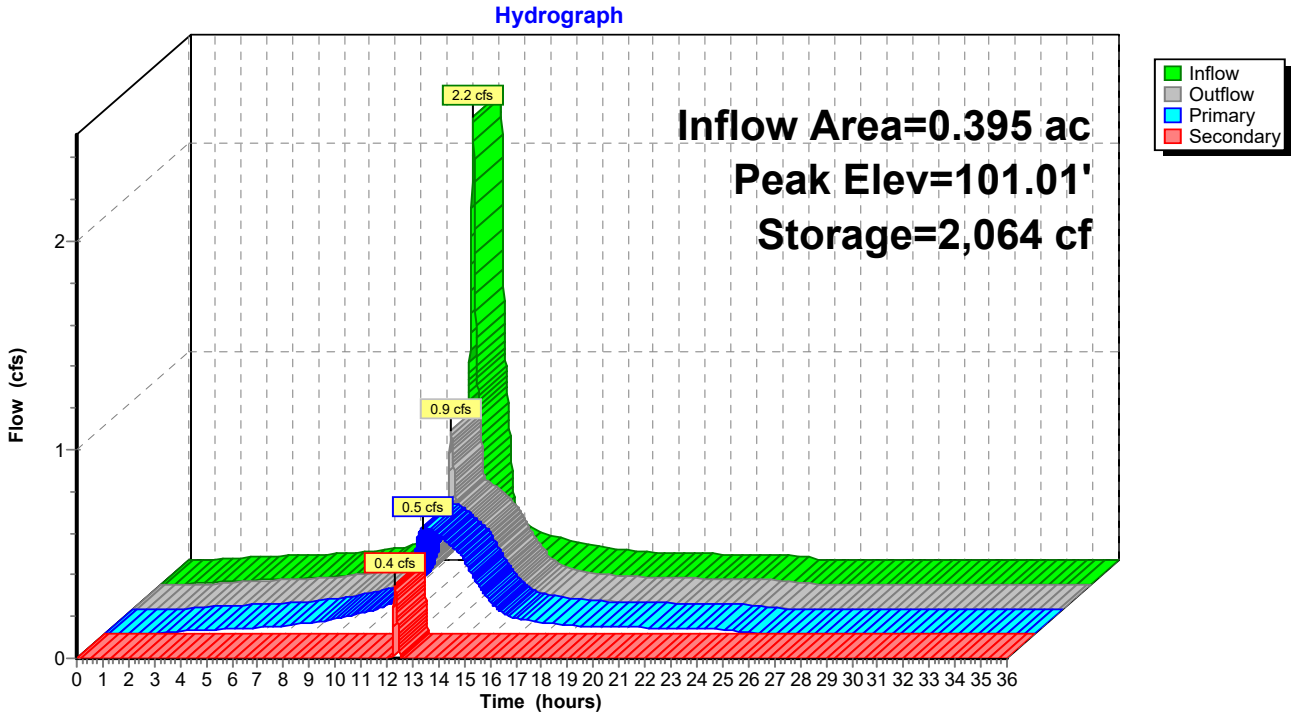
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	2,850	0.0	0	0
98.51	2,850	20.0	6	6
99.00	2,850	20.0	279	285
99.99	2,850	20.0	564	849
100.00	2,850	40.0	11	861
100.99	2,850	40.0	1,129	1,989
101.00	2,850	100.0	29	2,018
101.10	10,000	100.0	642	2,660

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**4.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.50' / 82.30' S= 0.5400 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	101.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.5 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.5 cfs @ 5.82 fps)

Secondary OutFlow Max=0.4 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.32 fps)

Pond 13.0P: Dripedge 1



Summary for Pond 13.1P: Dripedge 2

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.2 cfs @ 12.08 hrs, Volume= 0.181 af
Outflow = 0.9 cfs @ 12.29 hrs, Volume= 0.181 af, Atten= 60%, Lag= 12.5 min
Primary = 0.4 cfs @ 12.27 hrs, Volume= 0.172 af
Secondary = 0.5 cfs @ 12.29 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.02' @ 12.29 hrs Surf.Area= 3,810 sf Storage= 1,791 cf
Flood Elev= 88.20' Surf.Area= 10,000 sf Storage= 2,357 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.9 min (770.6 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	85.50'	2,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

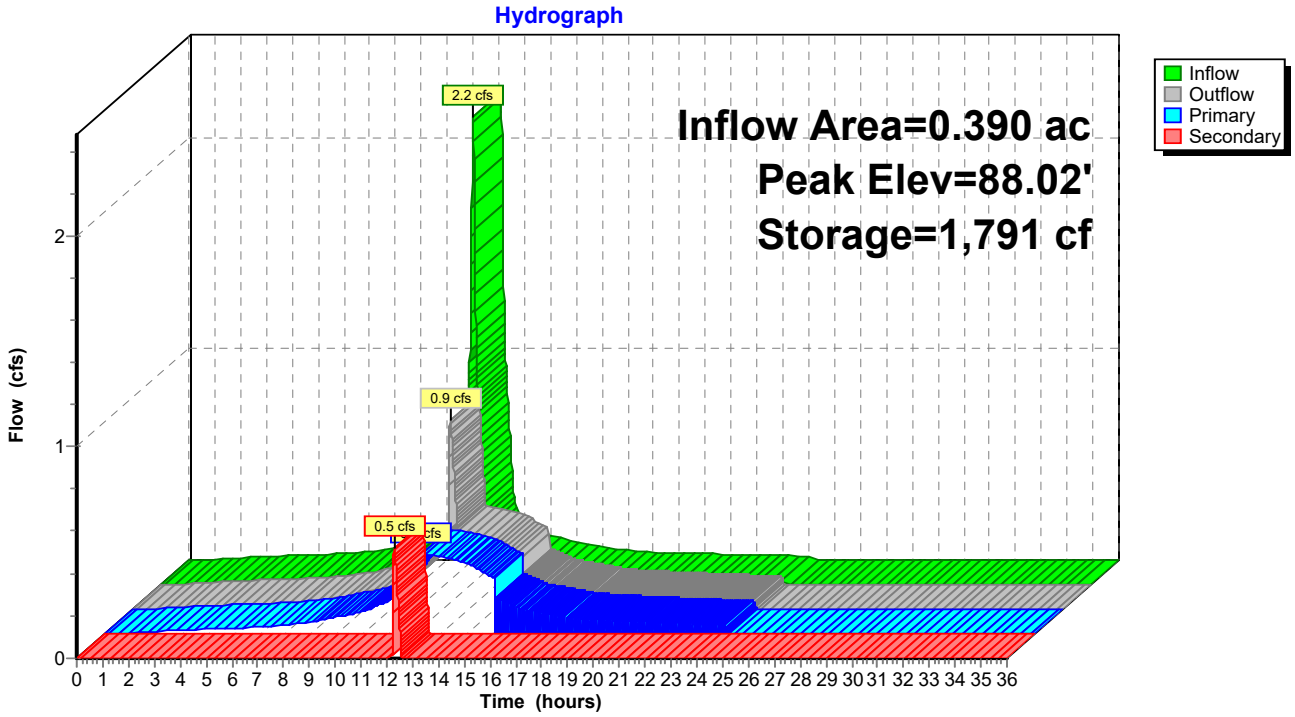
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.50	2,450	0.0	0	0
85.51	2,450	20.0	5	5
86.00	2,450	20.0	240	245
86.99	2,450	20.0	485	730
87.00	2,450	40.0	10	740
87.99	2,450	40.0	970	1,710
88.00	2,450	100.0	25	1,735
88.10	10,000	100.0	622	2,357

Device	Routing	Invert	Outlet Devices
#1	Primary	84.00'	**4.0" Round Culvert** L= 135.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 84.00' / 80.70' S= 0.0244 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	88.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.4 cfs @ 12.27 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.4 cfs @ 4.28 fps)

Secondary OutFlow Max=0.5 cfs @ 12.29 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.5 cfs @ 0.36 fps)

Pond 13.1P: Dripedge 2



Summary for Pond 40.1P: Existign pond

Inflow Area = 2.127 ac, 35.84% Impervious, Inflow Depth > 3.79" for 25-YR event
Inflow = 4.0 cfs @ 12.18 hrs, Volume= 0.671 af
Outflow = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af, Atten= 27%, Lag= 25.0 min
Primary = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 106.90' @ 12.60 hrs Surf.Area= 3,592 sf Storage= 3,768 cf

Plug-Flow detention time= 26.6 min calculated for 0.667 af (99% of inflow)
Center-of-Mass det. time= 21.9 min (877.6 - 855.7)

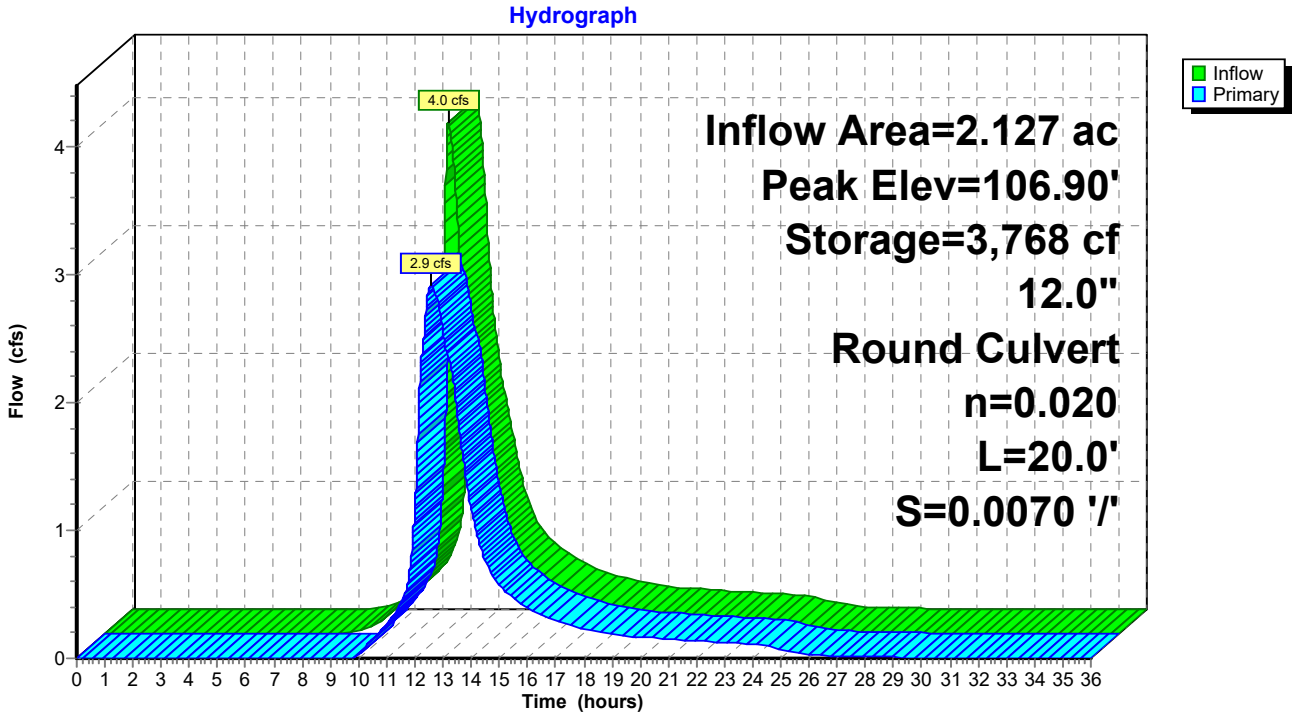
Volume	Invert	Avail.Storage	Storage Description
#1	105.00'	4,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
105.00	100	0	0
106.00	2,200	1,150	1,150
107.00	3,740	2,970	4,120

Device	Routing	Invert	Outlet Devices
#1	Primary	105.32'	**12.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.32' / 105.18' S= 0.0070 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.9 cfs @ 12.60 hrs HW=106.90' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.9 cfs @ 3.71 fps)

Pond 40.1P: Existign pond



Summary for Pond 40P: Existing Wetland

Inflow Area = 2.127 ac, 35.84% Impervious, Inflow Depth = 3.81" for 25-YR event
Inflow = 6.7 cfs @ 12.10 hrs, Volume= 0.674 af
Outflow = 4.0 cfs @ 12.18 hrs, Volume= 0.671 af, Atten= 40%, Lag= 5.2 min
Primary = 4.0 cfs @ 12.18 hrs, Volume= 0.671 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 107.10' @ 12.49 hrs Surf.Area= 6,074 sf Storage= 5,046 cf
Flood Elev= 109.00' Surf.Area= 11,962 sf Storage= 18,373 cf

Plug-Flow detention time= 36.8 min calculated for 0.671 af (99% of inflow)
Center-of-Mass det. time= 33.6 min (855.7 - 822.1)

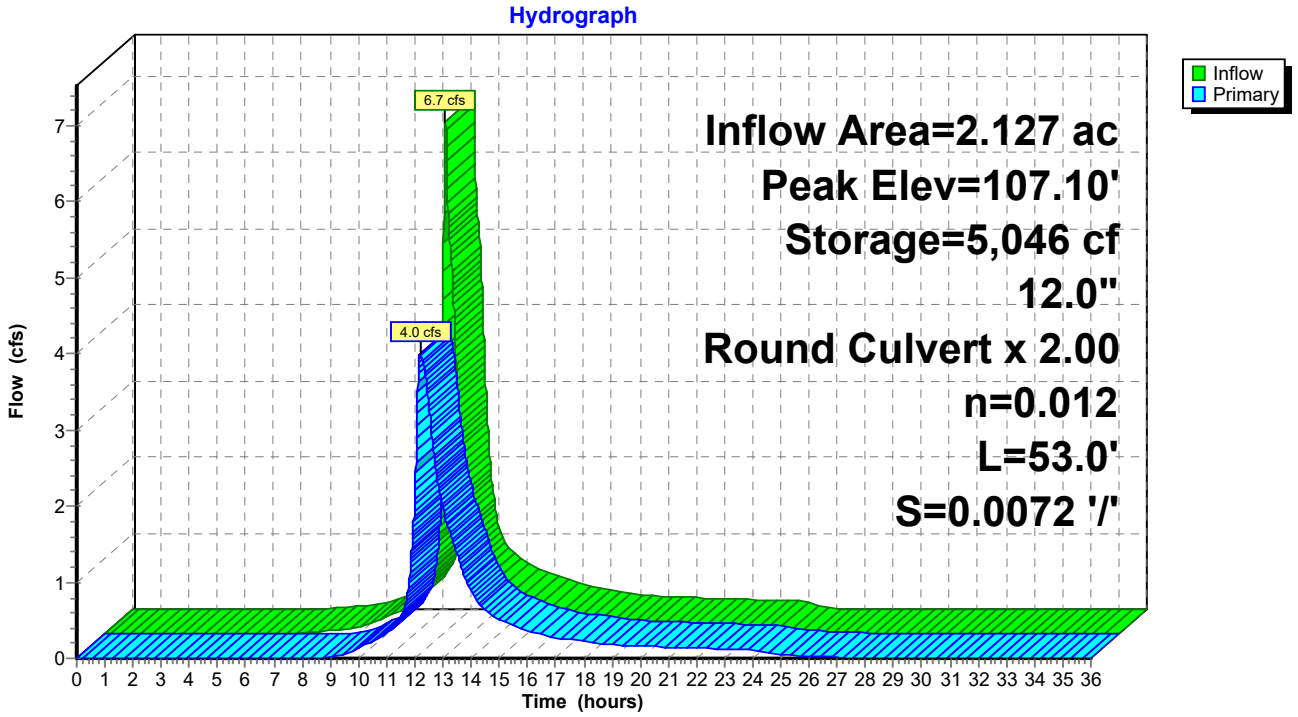
Volume	Invert	Avail.Storage	Storage Description
#1	106.00'	18,373 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
106.00	3,400	0	0
107.00	5,564	4,482	4,482
108.00	10,824	8,194	12,676
108.50	11,962	5,697	18,373

Device	Routing	Invert	Outlet Devices
#1	Primary	106.03'	**12.0" Round Culvert X 2.00** L= 53.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 106.03' / 105.65' S= 0.0072 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=4.0 cfs @ 12.18 hrs HW=106.93' TW=106.48' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.0 cfs @ 3.54 fps)

Pond 40P: Existing Wetland



Summary for Pond 41P: Extended Culvert

Inflow Area = 0.898 ac, 33.33% Impervious, Inflow Depth = 3.70" for 25-YR event
Inflow = 2.9 cfs @ 12.21 hrs, Volume= 0.277 af
Outflow = 2.7 cfs @ 12.26 hrs, Volume= 0.275 af, Atten= 4%, Lag= 3.0 min
Primary = 2.7 cfs @ 12.26 hrs, Volume= 0.275 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 109.21' @ 12.26 hrs Surf.Area= 838 sf Storage= 697 cf
Flood Elev= 111.00' Surf.Area= 3,710 sf Storage= 3,983 cf

Plug-Flow detention time= 16.3 min calculated for 0.275 af (99% of inflow)
Center-of-Mass det. time= 10.8 min (832.9 - 822.1)

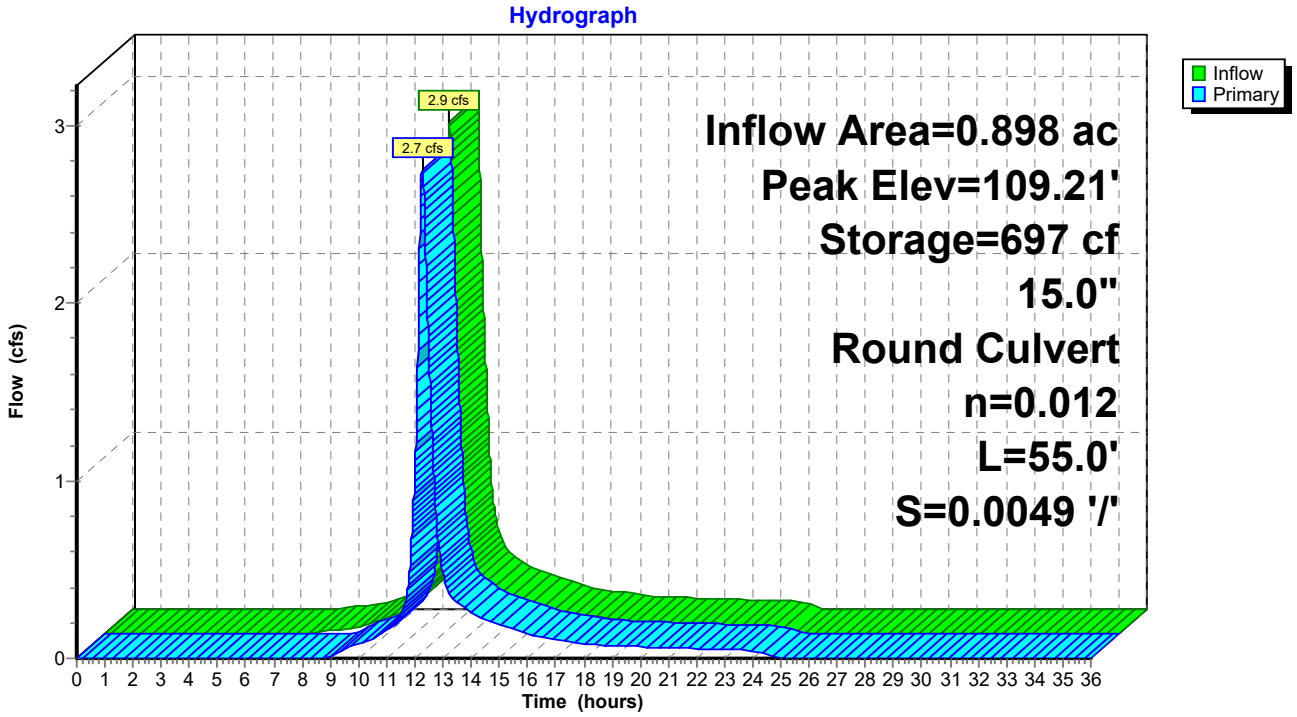
Volume	Invert	Avail.Storage	Storage Description
#1	108.00'	3,983 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
108.00	330	0	0
109.00	733	532	532
110.00	1,230	982	1,513
111.00	3,710	2,470	3,983

Device	Routing	Invert	Outlet Devices
#1	Primary	108.27'	**15.0" Round Culvert** L= 55.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 108.27' / 108.00' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.7 cfs @ 12.26 hrs HW=109.21' TW=108.37' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.7 cfs @ 3.85 fps)

Pond 41P: Extended Culvert

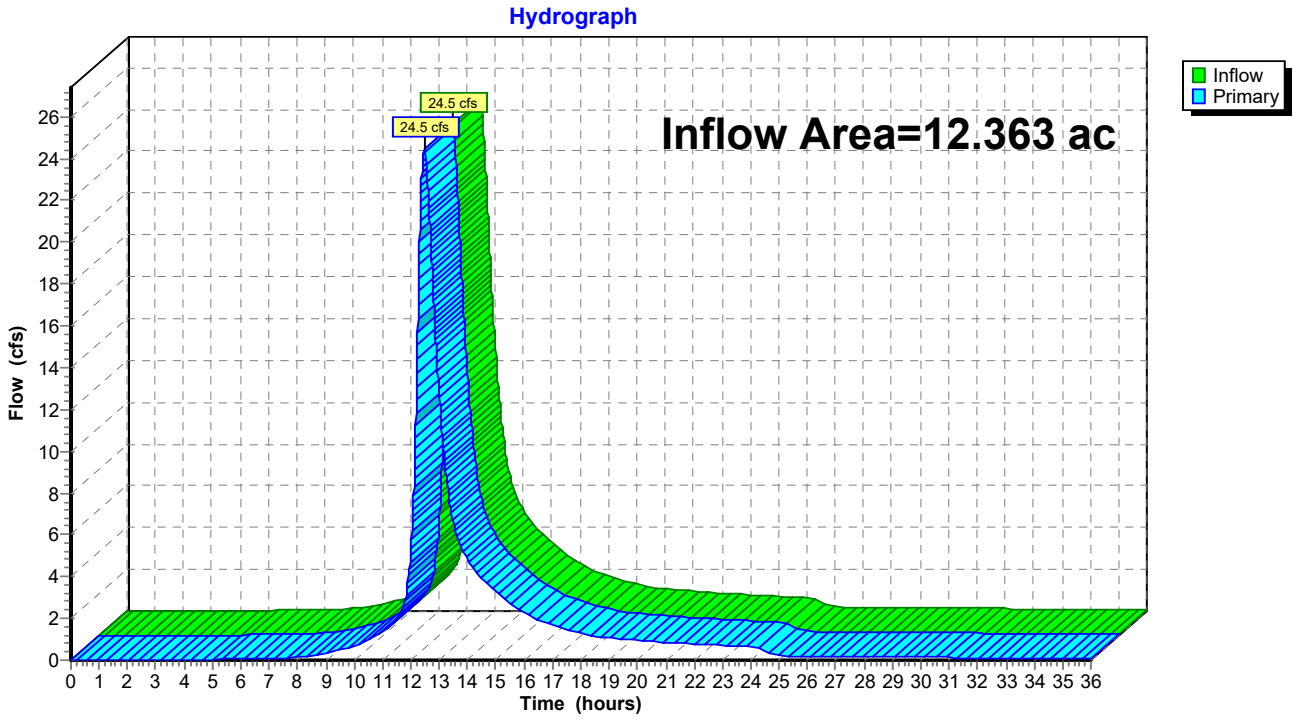


Summary for Link SP-1:

Inflow Area = 12.363 ac, 28.93% Impervious, Inflow Depth > 3.71" for 25-YR event
Inflow = 24.5 cfs @ 12.47 hrs, Volume= 3.819 af
Primary = 24.5 cfs @ 12.47 hrs, Volume= 3.819 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-1:

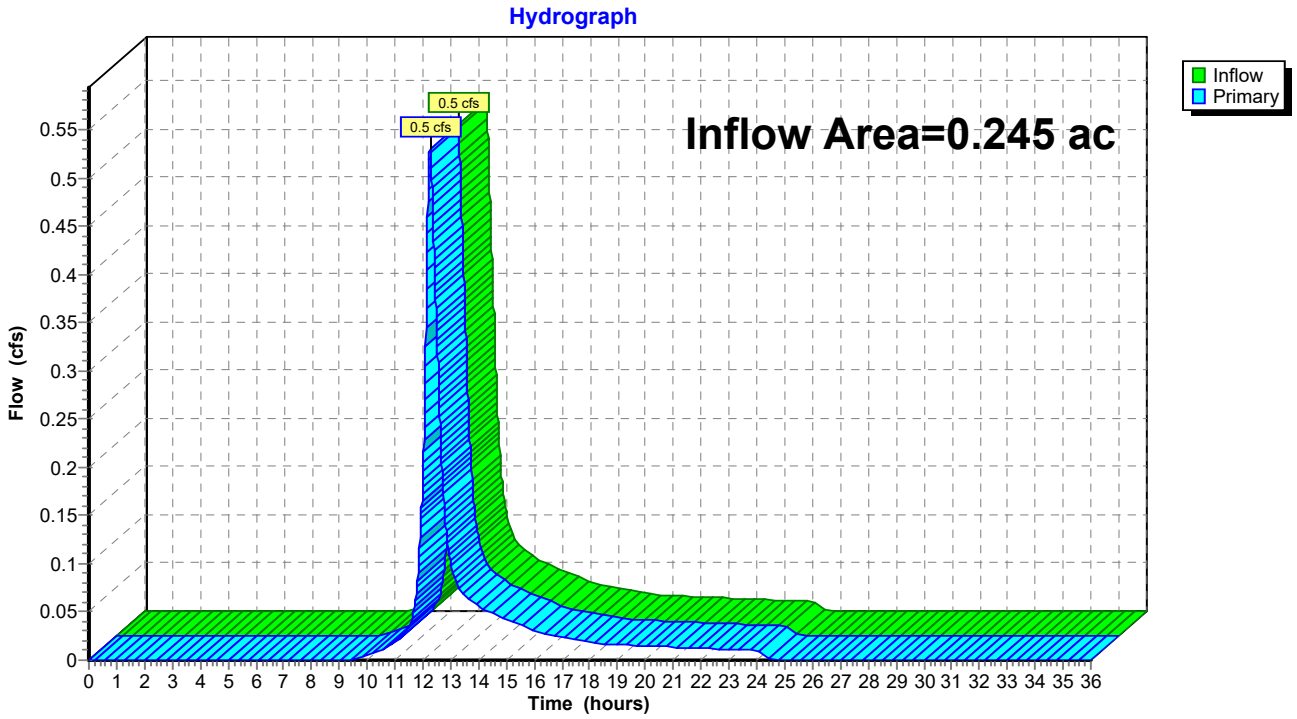


Summary for Link SP-2:

Inflow Area = 0.245 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.5 cfs @ 12.26 hrs, Volume= 0.054 af
Primary = 0.5 cfs @ 12.26 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-2:

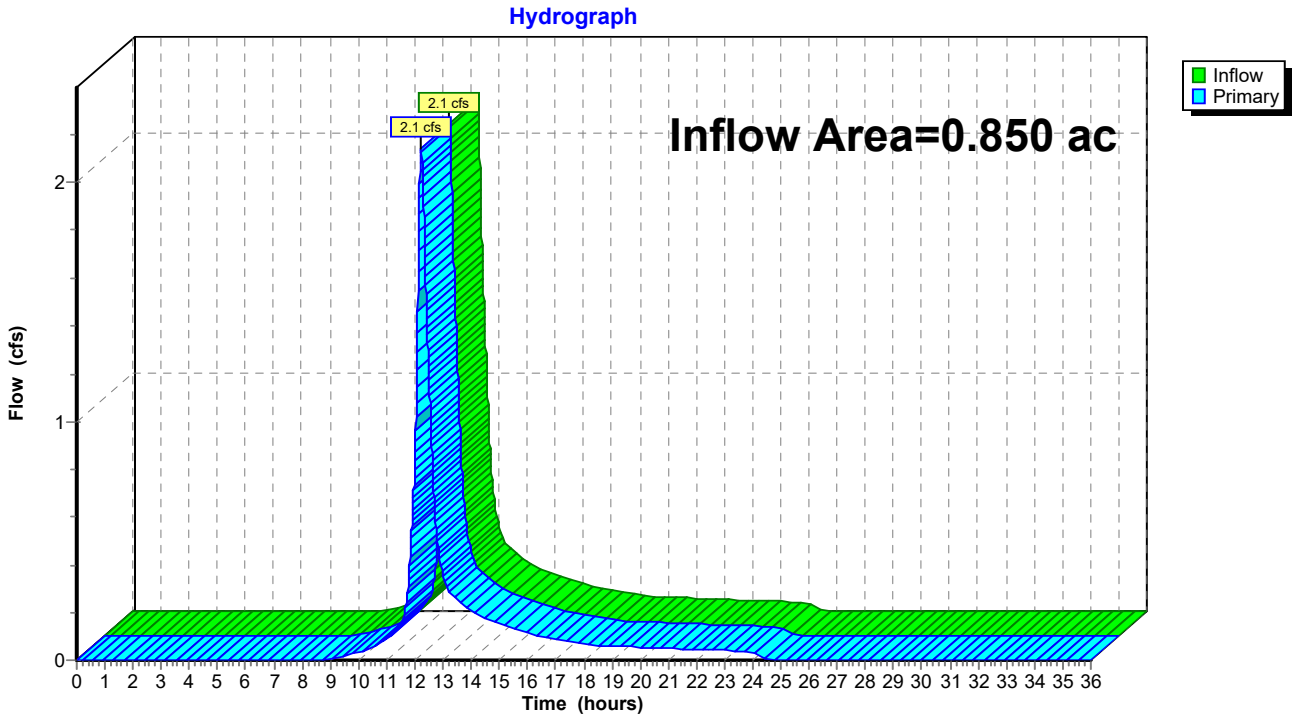


Summary for Link SP-3:

Inflow Area = 0.850 ac, 0.00% Impervious, Inflow Depth = 2.92" for 25-YR event
Inflow = 2.1 cfs @ 12.22 hrs, Volume= 0.207 af
Primary = 2.1 cfs @ 12.22 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-3:

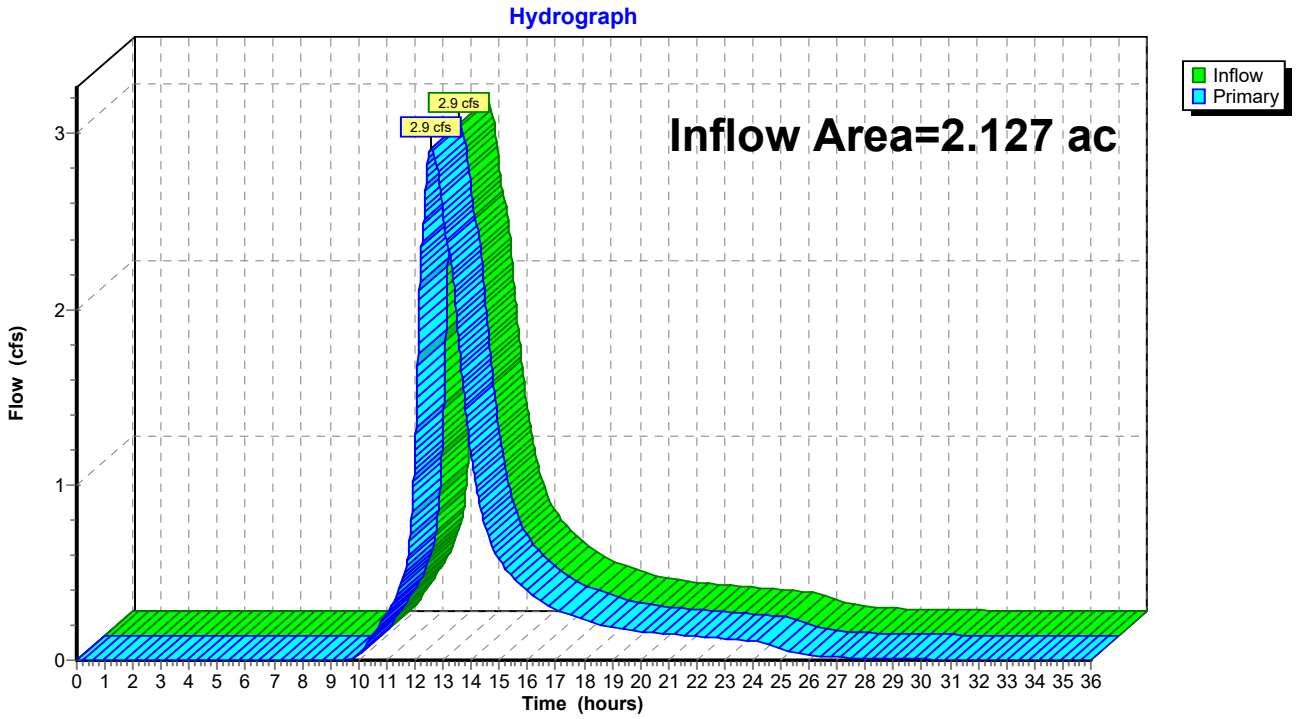


Summary for Link SP-4: SP-4

Inflow Area = 2.127 ac, 35.84% Impervious, Inflow Depth > 3.77" for 25-YR event
Inflow = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af
Primary = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-4: SP-4

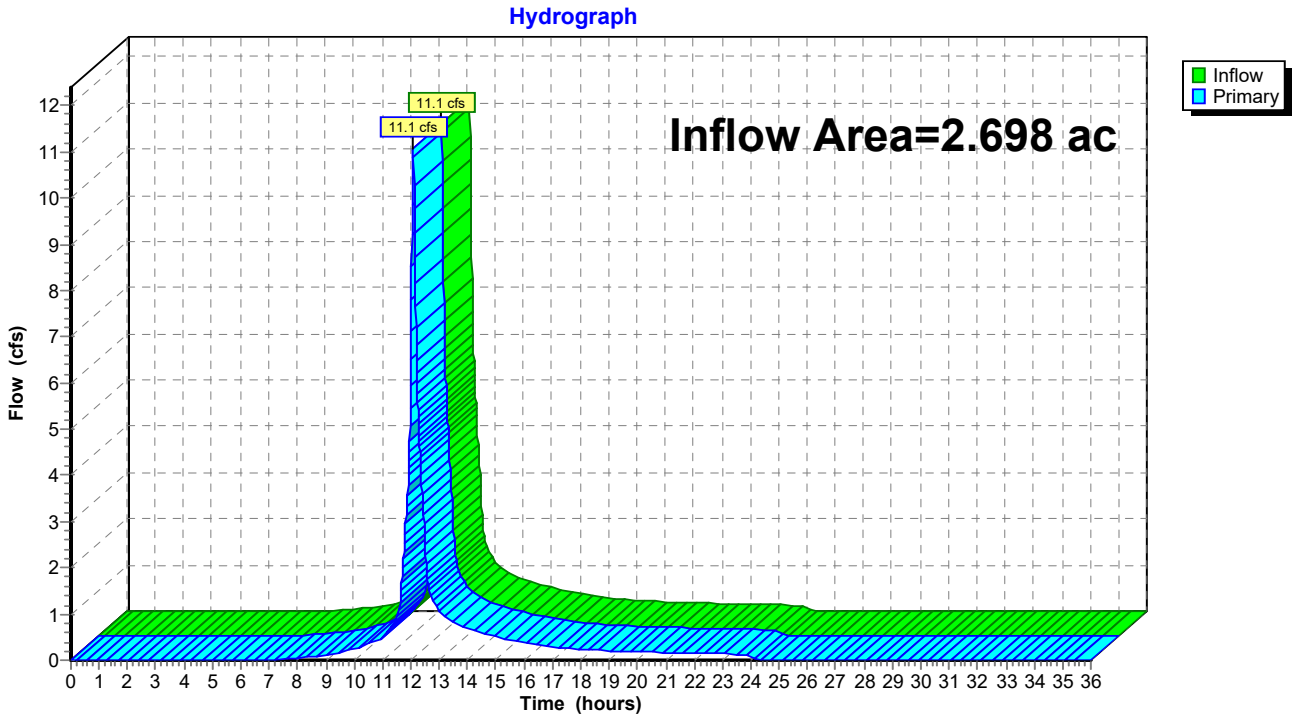


Summary for Link SP-5: SP-5

Inflow Area = 2.698 ac, 22.83% Impervious, Inflow Depth = 3.52" for 25-YR event
Inflow = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af
Primary = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-5: SP-5



Appendix 4

Inspection, Maintenance and Housekeeping Plan

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

FALLBROOK COMMONS
PORTLAND, MAINE

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site by the contractor during construction and by the owner/homeowner association after construction. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section and the erosion and sedimentation control plan for the project. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Correction action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or

washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation. A Spill, Prevention, Control and Countermeasures Plan is created for the project and is to be kept onsite at all times.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from

trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the owner or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

   A. Vegetated Areas:

   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Winter Sanding:

   - Clear accumulations of winter sand along access road at least once a year, preferably in the spring.
   - Accumulations of sand along road shoulders may be removed by grading excess

sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Underdrained Soil Filters:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. Removed sediments should be disposed of in an acceptable manner.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Mowing: If mowing is desired, only handheld string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.

F. Level Spreader:

- The level spreader pool should be inspected after rainfall events for sediment accumulation and debris that may reduce its capacity. Sediment and debris buildup should be removed once the volume of the pool has been reduced by 25%. The level berm must be constructed so that flows slowly seep across the berm as

sheet flow to the receiving downstream drainage way. Repair or reconstruction of the berm is required when flow from the spreader becomes channelized.

G. Gravel Wetland:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good vegetative cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The gravel wetland should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
- Removal any decaying vegetation, litter, and debris that may be found.
- Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.
- Plant biomass shall be harvested annually.

H. Roof Drip Edge:

- During the first year, the drip edge shall be inspected semi-annually and following major storm events.
- Debris, sand and sediment buildup shall be removed as needed. Use vacuum truck as required to remove sand within rock. The drip edge should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours.
- The rock layer shall be replaced with new rock free of sediment/ sand when water ponds on the surface of the bed for more than 72 hours. If water continues to pond, the top several inches of the filter shall be replaced with fresh material. Removed sediments should be disposed of in an acceptable manner.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 2 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. Duration of Maintenance: Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Stormwater Inspection and Maintenance Log Form

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

FALLBROOK COMMONS
PORTLAND, MAINE

This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the proposed Institute for Local Food Systems Innovation. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the municipality. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Level Spreader			
Remove sediment			Monthly
Check for evidence of channelized flow over berm			Monthly
Erosion (side slopes, embankment)			Monthly
Mowed			Semi-Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

Underdrained Soil Filters				
	Remove sediment & debris			Monthly
	Remove weeds			Monthly (during growing season)
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
Gravel Wetland				
	Remove sediment & debris			Monthly
	Check and clean the risers			Monthly
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
	Remove decaying vegetation, litter and debris			As-needed
Roof Drip Edge Filter				
	Remove sediment & debris			Annually
	Remove weeds			Monthly (during growing season)
	Inspection after major storm to verify proper function			Bi-Annually

Appendix 5

Web Soil Survey



Map Scale: 1:2,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	C	4.2	15.4%
BuB	Lamoine silt loam, 3 to 8 percent slopes	C/D	3.0	11.0%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	D	2.2	8.1%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	D	6.0	22.0%
HsB	Lyman-Abram complex, 0 to 8 percent slopes, very rocky	D	2.3	8.6%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	9.6	35.0%
Totals for Area of Interest			**27.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix 6

FEMA Map



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL. 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM 7 — Elevation Reference Mark

•M1.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated or additional flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 (NGVD), and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross-sections and interpolated between cross-sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY:
City of Portland Zoning and Building Inspection Office, 389 Congress Street,Room 315, Portland, Maine 04101 (Maps available for reference only; not for distribution.)

INITIAL IDENTIFICATION:
APRIL 26, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 17, 1986

FLOOD INSURANCE RATE MAP REVISIONS:
December 8, 1998 – to change Base Flood elevations, to add base flood elevations, to change zone designations, to update map format, and to change floodways.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 2 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0002 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

Appendix 7

Form F: Soil Profile/Classification Information

FORM F 18347

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-101** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
SILT LOAM		5Y 4/1 DARK GRAY	
SILTY CLAY LOAM	VERY FIRM	5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 96"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	10"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-102** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM		
SILTY CLAY LOAM	VERY FIRM	5Y 4/2	

LIMIT OF EXCAVATION = 84"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	7"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-103** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 3/2 VERY DARK GRAYISH BROWN	
SILTY CLAY LOAM		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
	VERY FIRM		

LIMIT OF EXCAVATION = 84"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	9"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-104** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
VERY FINE SANDY LOAM		5Y 5/2 OLIVE GRAY	
			COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/1 DARK GRAY	
LOAMY VERY FINE SAND	FRIABLE	2.5Y 5/2 GRAYISH BROWN	

LIMIT OF EXCAVATION = 96"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	16"	

C.S.S. Soil Series / phase name: **NICHOLVILLE** — **MWD** Drainage Class — **B** Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature: Gary M. Fullerton — Date: **11/7/19**

name printed/typed: **Gary M. Fullerton** — Lic.#: **462**

L.S.E. signature: — Date:

name printed/typed: — Lic.#:

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-105** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
			COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM	5Y 5/2 OLIVE GRAY	
LEDGE @ 33"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	3-8	12"	■ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: **ROUNDABOUT VARIANT** | **SWPD** Drainage Class | **D** Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-106** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
SILT LOAM		5Y 5/2 OLIVE GRAY	
	FIRM		COMMON, MEDIUM, DISTINCT
LEDGE @ 23"			

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ■ non-hydric	3-8	16"	■ ground water ■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: **NICHOLVILLE VARIANT** | **MWD** Drainage Class | **B** Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ☐ non-hydric	_____	_____	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
☐ hydric ☐ non-hydric	_____	_____	☐ ground water ☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class | _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile | _____ Drainage Class | _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature:		Date: 11/7/19
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date:
name printed/typed:		Lic.#:

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Memorandum

18347

To: **Daniel Danvers, RLA, Sebago Technics**

From: **Derek Caldwell, P.E., PTOE, Sebago Technics**

Date: **May 6, 2020**

Subject: **Revised Traffic Impact Statement**
Fallbrook Commons Nursing Care Center
Portland, Maine

This memorandum serves to supersede the previously provided Traffic Impact Statement dated November 9, 2019 for the subject project.

We have completed a trip generation and site access assessment for the proposed Fallbrook Commons Licensed Nursing Care Center to be located at 418 Ray Street in Portland. It is our understanding the project is to consist of a 56,000 square foot facility with 90 nursing care beds. The development will be accessed by Merrymeeting Drive, an existing private roadway serving the Fallbrook Woods Assisted Living Facility and the Merrymeeting Condominiums.

Trip Generation

Trip generation for the proposed development is calculated using the 10th Edition of the *Institute of Transportation Engineers Trip Generation Manual*. Land Use Code (LUC) 620 – Nursing Home was used for the calculation based upon the independent variable of 1,000 square feet and beds. The total proposed trip generation for the development is based on an average of the trip generation calculations using each variable. Tables 1 and 2 show the result of the trip generation calculation using the variable of square feet and beds, respectively.

Table 1
Trip Generation
LUC 620 – Nursing Home
56,000 Square Feet

Time Period	Average Rate/ 1,000 SF	Total Trips	Entering %	Exiting %	Entering Trips	Exiting Trips
Weekday	6.64	372	50%	50%	186	186
AM Peak Hour of Adjacent Street	0.55	31	78%	22%	24	7
PM Peak Hour of Adjacent Street	0.59	33	41%	59%	14	19
AM Peak Hour of Generator	0.64	36	63%	37%	23	13
PM Peak Hour of Generator	0.86	48	43%	57%	21	27

Table 2
Trip Generation
LUC 620 – Nursing Home
90 Beds

Time Period	Average Rate/Bed	Total Trips	Entering %	Exiting %	Entering Trips	Exiting Trips
Weekday	3.06	275	50%	50%	138	137
AM Peak Hour of Adjacent Street	0.17	15	72%	28%	11	4
PM Peak Hour of Adjacent Street	0.22	20	33%	67%	7	13
AM Peak Hour of Generator	0.22	20	63%	37%	13	7
PM Peak Hour of Generator	0.37	33	41%	59%	14	19

Table 3 shows the total calculated trip generation for the proposed development, found by averaging the values found in Tables 1 and 2.

Table 3
Total Trip Generation

Time Period	Total Trips	Entering Trips	Exiting Trips
Weekday	324	162	162
AM Peak Hour of Adjacent Street	23	18	5
PM Peak Hour of Adjacent Street	27	11	16
AM Peak Hour of Generator	28	18	10
PM Peak Hour of Generator	41	18	23

In addition, we have evaluated the need for an additional traffic study based upon the Section 1.1 of the *City of Portland Technical Manual.* A traffic study is required if 25 or more passenger car equivalent (PCE) trips are generated in a peak hour and the following applies to the project location:

(1) on an arterial; and/or
(2) within ½ mile of a high crash location; and/or
(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D,

Although the development is projected to generate more than 25 PCE during the PM Peak Hour of the Generator, a traffic study is not required due to the following:

1.) Ray Street is classified as a local roadway.
2.) The project site is not located within a ½ mile of a high crash location. The closest High Crash Location is the segment of Allen Avenue from Washington Avenue to Braeburn Road, a distance of just over ½ mile to the northwest.
3.) The project site is not within ¼ mile of an intersection that has previously been identified as a failing intersection.

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207.200.2100 • Fax: 207.856.2206

Site Access

Access to the site is proposed by way of Merrymeeting Drive, an existing private roadway serving the Merrymeeting Condominiums and the existing Fallbrook Woods Assisted Living Facility. Merrymeeting Drive intersects Ray Street at an existing all-way stop controlled intersection. At this intersection location, Ray Street is classified as an urban local roadway with a posted speed limit of 25 miles per hour. The project proposes to provide improvements to this intersection including new stop signs, stop bars, and a new marked pedestrian crossing across Ray Street. This crossing would connect a proposed sidewalk on Merrymeeting Drive with the existing sidewalk on the eastern side of Ray Street.

It is also proposed to construct an emergency-only access drive connecting the proposed facility directly with Ray Street. This restricted access drive would intersect Ray Street opposite Nevada Avenue. A locked gate, equipped with a Knox Box, will be installed to prevent unauthorized use.

Conclusion

The proposed Fallbrook Commons Nursing Care Center is projected to generate 28 trips during the AM Peak Hour of the Generator and 41 trips during the PM Peak Hour of the Generator. This level of trip generation does not require a MaineDOT Traffic Movement Permit, nor does it warrant further traffic study based upon the criteria set forth in the City of Portland Technical Manual. This low vehicular trip generation is not expected to have an adverse impact on the surrounding area roadways. The main access to the site will be by the existing private Merrymeeting Drive. Proposed improvements at the intersection of Merrymeeting Drive and Ray Street include new stop signs and stop bars, and a new pedestrian crossing.

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207.200.2100 • Fax: 207.856.2206

Att. N

October 16th, 2020
18347

Andrew Tufts, City Planner
389 Congress Street, 4th Floor
Portland, Maine 04101

Fallbrook Commons: PL 925 Level 3 Site Plan
Request for Waiver

Dear Andrew,

The applicant requests a waiver regarding section 14-526. B.1 *"The site plan shall preserve and protect significant natural features by incorporating them into the site design. (Subsection v includes freshwater wetlands."* Per section 14-526.C- the complete preservation of significant natural features on the site would substantially compromise the development of the proposed allowed conditional use.

We request City Staff, and the Planning board to reduce this requirement based on the review and approval from Maine DEP of a Natural Resource Protection Act Approval L-11219-TE-H-N and Army Corps of Engineers Permit # NAE-2020-01331 (included as attachments) as demonstrated compliance with applicable state and federal regulations.

The project has minimized wetland alteration and impacts to natural features to the extent feasible by:

- Utilizing a two-story design to the building
- Grading with 2:1 side-slopes wherever wetland fills are proposed
- Re-vegetating with largely native plants and grasses
- Utilizing a constructed wetland to treat the bulk of the project's stormwater
- Tiered retaining wall systems

We believe that the circumstances stated above illustrate how this project fits the intent of this waiver.

Sincerely,

Dan Danvers, R.L.A.



SEBAGO TECHNICS, INC.

Cc: Daniel Maguire, John Orestis, Doug Gardiner

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

IN THE MATTER OF

FALLBROOK COMMONS	) NATURAL RESOURCES PROTECTION ACT
DEVELOPMENT, LLC	) FRESHWATER WETLANDS ALTERATIONS
Portland, Cumberland County	)
FALLBROOK COMMONS	) WATER QUALITY CERTIFICATION
L-11219-TE-H-N (approval)	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S. §§ 480-A–480-JJ, Section 401 of the Federal Water Pollution Control Act (33 U.S.C. § 1341), and Chapters 310, 315, and 335 of Department rules, the Department of Environmental Protection has considered the application of FALLBROOK COMMONS DEVELOPMENT, LLC with the supportive data, agency review comments, public comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. History of Project: In Department Order #L-11219-87-A-N, dated October 10, 1985, the Department approved the construction of 98 townhomes on an approximately 20-acre parcel of land off Ray Street in the City of Portland. Department Orders #L-11219-87-C-T and #L-11219-87-D-T, dated January 22, 1988 and April 3, 1989, respectively, transferred the original Order to new applicants. In 1989, only 25 of 32 townhomes proposed in phase I of the development had been constructed.

In Department Order #L-11219-87-E-A, dated December 28, 1992, the Department approved the conveyance of approximately 12.64 acres of the original parcel for the construction of a 27,600-square foot single-story assisted-care facility, known as Fall Brook Woods. Subsequent Department Orders include a transfer application that was filed and withdrawn in October 1992 and a condition compliance Order (#L-11219-87-G-C, dated April 7, 1992).

B. Summary: The applicant proposes to purchase approximately 8.24 of undeveloped land from the 12.64 acres authorized for development in Department Order #L-11219-87-E-A to construct a 90-bed nursing care center adjacent to Fall Brook Woods. The project site is located at the end of Merrymeeting Drive in the City of Portland. The proposed development includes a two-story, 58,197-sqaure foot building, two courtyards, and two parking areas. A Site Location of Development Act (Site Law) major amendment permit is required for the proposed project. A Site Law permit application is being reviewed by the City of Portland under its delegated review authority, which was obtained subsequent to the Department's original Site Law approval in 1985.

The applicant is seeking Department approval under the Natural Resources Protection Act (NRPA) for the alteration of 38,461 square feet of freshwater wetlands to construct the proposed project. The proposed project is shown on a set of plans, the first of which is titled "Overall Wetland Impacts of Fallbrook Commons," prepared by Sebago Technics, Inc., and dated November 12, 2019, with a last revision date of May 15, 2020.

The applicant submitted a Notice of Intent (NOI #69983) to comply with the standards and requirements of the Maine Construction General Permit which was accepted by the Department on June 1, 2020.

C. Current Use of the Site: The project site is located on the undeveloped 8.24 acres of the original 20-acre parcel.

D. Public Comment: The Department received comments regarding the proposed project from several interested persons who live in the neighborhood where the project is proposed to be built. Concerns that were raised included several issues related to Site Law review, which were directed to the City of Portland. Several persons expressed general concerns with the project and its potential impacts to natural resources. No draft requests of the Department's decision were requested.

2. EXISTING SCENIC, AESTHETIC, RECREATIONAL OR NAVIGATIONAL USES:

The NRPA, in 38 M.R.S. § 480-D(1), requires the applicant to demonstrate that the proposed project will not unreasonably interfere with existing scenic, aesthetic, recreational and navigational uses.

In accordance with Chapter 315, *Assessing and Mitigating Impacts to Scenic and Aesthetic Uses* (06-096 C.M.R. ch. 315, effective June 29, 2003), the applicant submitted a copy of the Department's Visual Evaluation Field Survey Checklist as Appendix A to the application along with a description of the property and the proposed project. The applicant also submitted several photographs of the proposed project site and surroundings. Department staff visited the project site on March 12, 2020.

The proposed project is located in forested, freshwater wetland, which is not a scenic resource visited by the general public, in part, for the use, observation, enjoyment and appreciation of its natural and cultural visual qualities.

The Department determined that based on the nature of the proposed project and its location, there are no existing recreational or navigational uses of the resource that would be unreasonably impacted.

The Department finds that the proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses of the protected natural resource.

3. SOIL EROSION:

The NRPA, in 38 M.R.S. § 480-D(2), requires the applicant to demonstrate that the proposed project will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

The applicant submitted an acceptable erosion control plan, notes, and details for the project with NOI #69983 referenced in Finding 1. Given that the applicant intends to construct the project according to the plans, the project is not expected be a significant source of sediment into the adjacent wetlands.

The Department finds that the activity will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

4. HABITAT CONSIDERATIONS:

The NRPA, in 38 M.R.S. § 480-D(3), requires the applicant to demonstrate that the proposed project will not unreasonably harm significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

According to the Department's Geographic Information System database there are no mapped Essential or Significant Wildlife Habitats located at the site. The Maine Department of Inland Fisheries and Wildlife (MDIFW) reviewed the proposed project and confirmed that there are no Essential or Significant Wildlife Habitats at the project site.

In its comments, dated November 20, 2019, MDIFW noted that the Maine Endangered Species Act lists several species of bats as endangered or threatened. Because bats are likely to be found on the project site during the breeding season, MDIFW recommended that tree clearing be limited to the period when bats are not present. The applicant agreed to limit tree clearing outside of the months of June and July, the recognized pupping season for tree-roosting bats.

The Department finds that the activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life provided that no tree cutting is conducted during the period of June 1 and July 31.

5. WATER QUALITY CONSIDERATIONS:

As discussed in Finding 3, the applicant proposes to use erosion and sediment control during construction to minimize impacts to water quality from siltation.

The Department does not anticipate that the proposed project will violate any state water quality law, including those governing the classification of the State's waters.

6. WETLANDS AND WATERBODIES PROTECTION RULES:

The applicant proposes to directly alter 38,461square feet of forested, freshwater wetlands to construct the proposed project.

The *Wetlands and Waterbodies Protection Rules*, 06-096 C.M.R. ch. 310 (last amended November 11, 2018), interpret and elaborate on the NRPA criteria for obtaining a permit. The rules guide the Department in its determination of whether a project's impacts would be unreasonable. A proposed project would generally be found to be unreasonable if it would cause a loss in wetland area, functions and values and there is a practicable alternative to the project that would be less damaging to the environment. Each application for a NRPA permit that involves a freshwater wetland alteration must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist.

A. Avoidance. An applicant must submit an analysis of whether there is a practicable alternative to the project that would be less damaging to the environment and this analysis is considered by the Department in its assessment of the reasonableness of any impacts. The applicant submitted an alternatives analysis for the proposed project completed by Sebago Technics and dated November 2019. The purpose of the project is to replace the nearby St. Joseph's Manor elderly care facility.

The no-action alternative was determined to be impracticable because it would not meet the project purpose.

The applicant conducted a survey of available properties that are large enough to accommodate the size of development necessary to make the project viable and in proximity to the existing Fall Brook Woods facility. Redevelopment of the existing St. Joseph's Manor property was dismissed because the current owner does not wish to have a replacement building constructed on that property. The selected parcel was the only property that met the applicant's development criteria.

The project site includes a wetland network that crosses the property. The applicant considered several design layouts. One alternative for development on this parcel included a larger single-story building, but this alternative was determined to be impracticable because the footprint of a larger building would result in greater wetland impact. The selected alternative, a two-story building, will result in the least amount of wetland alteration, while meeting the project purpose. Given the location of the protected natural resources on the site, some impact to the freshwater wetlands cannot be avoided.

B. Minimal Alteration. In support of an application and to address the analysis of the reasonableness of any impacts of a proposed project, an applicant must demonstrate that the amount of freshwater wetland to be altered will be kept to the minimum amount

necessary for meeting the overall purpose of the project. As noted above, wetland impacts were reduced by selecting a two-story building with a smaller building footprint. To further reduce wetland impacts, the applicant proposes to use roof drip edge filters and retaining walls, and side slopes in wetlands will be maintained at 2H:1V. Parking areas and service driveways are also located as close to the building as possible.

C. Compensation. In accordance with Chapter 310, § 5(C)(6)(b), compensation may be required to achieve the goal of no net loss of coastal wetland functions and values. The applicant submitted a functional assessment, dated December 17, 2019, that described the wetlands to be altered by the proposed project. The functional assessment documented that the primary functions and values of these wetlands would include floodflow alteration and sediment/toxicant retention.

The applicant proposes to make a contribution into the In-Lieu Fee program of the Maine Natural Resource Conservation Program in the amount of $165,382.30. Prior to the start of construction, the applicant must submit a payment in the amount of $165,382.30, payable to "Treasurer, State of Maine", and directed to the attention of the In-Lieu Fee Program Administrator at 17 State House Station, Augusta, Maine 04333.

The Department finds that the applicant has avoided and minimized wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project provided that prior to project construction, the applicant submits the In-Lieu Fee payment as described above.

7. OTHER CONSIDERATIONS:

The Department finds, based on the design, proposed construction methods, and location, the proposed project will not inhibit the natural transfer of soil from the terrestrial to the marine environment, will not interfere with the natural flow of any surface or subsurface waters, and will not cause or increase flooding. The proposed project is not located in a coastal sand dune system, is not a crossing of an outstanding river segment, and does not involve dredge spoils disposal or the transport of dredge spoils by water.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. §§ 480-A–480-JJ and Section 401 of the Federal Water Pollution Control Act (33 U.S.C. § 1341):

A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.

B. The proposed activity will not cause unreasonable erosion of soil or sediment.

C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life provided that no tree cutting is conducted during the period of June 1 and July 31 and prior to the start of construction, the applicant makes a contribution to the In-Lieu Fee program as described in Finding 6.

E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.

F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.

G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.

H. The proposed activity is not on or adjacent to a sand dune.

I. The proposed activity is not on an outstanding river segment as noted in 38 M.R.S. § 480-P.

THEREFORE, the Department APPROVES the above noted application of FALLBROOK COMMONS DEVELOPMENT, LLC to construct a 90-bed nursing care center that includes a two-story, 58,197-sqaure foot building with two courtyards and two parking areas as described in Finding 1, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

1. Standard Conditions of Approval, a copy attached.

2. The applicant shall take all necessary measures to ensure that its activities or those of its agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.

3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

4. No tree cutting shall be conducted during the period of June 1 and July 31.

5. Prior to the start of construction, the applicant shall submit a payment in the amount of $165,382.30, payable to “Treasurer, State of Maine”, to the attention of the In-Lieu Fee Program Administrator at 17 State House Station, Augusta, Maine 04333.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED IN AUGUSTA, MAINE, THIS 4TH DAY OF JUNE, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
For: Gerald D. Reid, Commissioner

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES.

RLG/L11219HN/ATS#85782

FILED
June 5, 2020
State of Maine
Board of Environmental Protection

Natural Resources Protection Act (NRPA)
Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCES PROTECTION ACT, 38 M.R.S. §§ 480-A ET SEQ., UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.

B. Compliance With All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.

C. Erosion Control. The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.

D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.

E. Time frame for approvals. If construction or operation of the activity is not begun within four years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.

F. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.

G. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.

H. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.

Revised September 2016

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018 **Contact: (207) 287-2452**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status*. The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested*. The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO ATTENTION OF

MAINE GENERAL PERMIT (GP)
AUTHORIZATION LETTER AND SCREENING SUMMARY

DANIEL MAGUIRE
FALLBROOK COMMONS DEVELOPMENT, LLC
P.O. BOX 110
PORTLAND, MAINE 04112

CORPS PERMIT # NAE-2020-01331
CORPS GP ID# 20-287
STATE ID# NRPA

DESCRIPTION OF WORK:
Place permanent fill in 38,461 s.f. of freshwater wetland off 60 Merrymeeting Drive and Ray Street at Portland, Maine in order to construct associated infrastructure for a 90 bed licensed nursing care center to be known as "Fallbrook Commons". This work is shown on the attached plans entitled "Fallbrook Commons" in ten sheets dated "10/22/2019", "11-12-19", "11-8-19", "05-15-20" and undated respectively.
See GENERAL and SPECIAL CONDITIONS attached.

LAT/LONG COORDINATES: 43.699994° N -70.281236° W **USGS QUAD:** PORTLAND WEST, ME

I. CORPS DETERMINATION:
Based on our review of the information you provided, we have determined that your project will have only minimal individual and cumulative impacts on waters and wetlands of the United States. **Your work is therefore authorized by the U.S. Army Corps of Engineers under the Federal Permit, the Maine General Permit (GP) which can be found at:** https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/ Accordingly, we do not plan to take any further action on this project.

You must perform the activity authorized herein in compliance with all the terms and conditions of the GP [including any attached Additional Conditions and any conditions placed on the State 401 Water Quality Certification including any required mitigation]. Please review the enclosed GP carefully, including the GP conditions beginning on page 5, to familiarize yourself with its contents. You are responsible for complying with all of the GP requirements; therefore you should be certain that whoever does the work fully understands all of the conditions. You may wish to discuss the conditions of this authorization with your contractor to ensure the contractor can accomplish the work in a manner that conforms to all requirements.

If you change the plans or construction methods for work within our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

Condition 37 of the GP (page 16) provides one year for completion of work that has commenced or is under contract to commence prior to the expiration of the GP on October 13, 2020. You will need to apply for reauthorization for any work within Corps jurisdiction that is not completed by October 13, 2021.

This authorization presumes the work shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, please submit a request for an approved jurisdictional determination in writing to the undersigned.

No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained. **This includes but is not limited to a Flood Hazard Development Permit issued by the town if necessary.**

II. STATE ACTIONS: PENDING [ ], ISSUED [X], DENIED [ ] DATE 5JUN2020

APPLICATION TYPE: PBR:___, TIER 1:____, TIER 2 :____, TIER 3: X , LURC: ____ DMR LEASE: ____ NA: ____

III. FEDERAL ACTIONS:

JOINT PROCESSING MEETING: 4JUNE2020 LEVEL OF REVIEW: CATEGORY 1:_____ CATEGORY 2: X

AUTHORITY (Based on a review of plans and/or State/Federal applications): SEC 10_____, 404___X___ 10/404_____, 103_____

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO , USF&WS NO , NMFS NO

If you have any questions on this matter, please contact my staff at 978-318-8676 at our Augusta, Maine Project Office. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0

COLIN M. GREENAN
PROJECT MANAGER
MAINE PROJECT OFFICE

FOR FRANK J. DEL GIUDICE 6/11/20
CHIEF, PERMITS & ENFORCEMENT BRANCH
REGULATORY DIVISION

US Army Corps
of Engineers ®
New England District

PLEASE NOTE THE FOLLOWING GENERAL AND SPECIAL CONDITIONS FOR DEPARTMENT OF THE ARMY GENERAL PERMIT NO. NAE-2020-01331

GENERAL CONDITIONS

16. Soil Erosion, Sediment and Turbidity Controls: a. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, installation of sediment control barriers (i.e. silt fence, vegetated filter strips, geotextile silt fences, erosion control mixes, hay bales or other devices) downhill of all exposed areas, retention of existing vegetated buffers, application of temporary mulching during construction, and permanent seeding and stabilization shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion; of collecting sediment, suspended and floating materials; and of filtering fine sediment. b. Temporary sediment control barriers shall be removed upon completion of work, but not until all disturbed areas are permanently stabilized. The sediment collected by these sediment barriers shall be removed and placed at an upland location and stabilized to prevent its later erosion into a waterway or wetland. c. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

26. Permit on Site: The permittee shall ensure that a copy of this GP and any accompanying authorization letter with attached plans are at the site of the work authorized by this GP whenever work is being performed and that all construction personnel performing work which may affect waters of the U.S. are aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and subcontracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this GP. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means this entire GP and the authorization letter (including its drawings, plans, appendices and other attachments) and also includes permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or subcontract. Although the permittee may assign various aspects of the work to different contractors or subcontractors, all contractors and subcontractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire GP authorization, and no contract or subcontract shall require or allow unauthorized work in areas of Corps jurisdiction.

28. Inspections. The permittee shall allow the Corps to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of this GP and any written verification. To facilitate these inspections, the permittee shall complete and return to the Corps the following forms: a) Work-Start Notification Form and b) Compliance Certification Form, when either is provided with the authorization letter. **These forms are attached after the plans.**

SPECIAL CONDITIONS

1. This permit authorizes impacts to only those areas of wetlands/waterway shown on the attached plans. No other filling, clearing or other disturbance in waters of the United States shall occur without the necessary authorization from the Corps.

2. In the event additional wetland/waterway fill is authorized, the permittee may be required to provide additional appropriate compensatory mitigation to offset cumulative impacts at the site.

3. Compensatory mitigation shall consist of purchasing 0.88 ac. credits from the Maine Natural Resource Conservation Fund. As of the date of this authorization letter, the current cost to purchase these credits is $165,382.30. The permittee must send a cashier's check or bank draft for this amount, as calculated on the enclosed "In-Lieu Fee (ILF) Project Impact Worksheet" to: ME DEP, Attn: ILF Program Administrator, State House Station 17, Augusta, ME 04333. The check must include the Corps file number "NAE-2020-01331" and the statement: "For ILF account only". No impacts authorized by this permit shall begin until the Corps receives a copy of the letter from the Maine Department of Environmental Protection (ME DEP) to the permittee stating that the ME DEP has received the check and accepts responsibility for mitigation. The in-lieu fee amount is valid for one year from the date of this authorization letter and is subject to change.

MAINE IN-LIEU-FEE (ILF)
PROJECT IMPACT WORKSHEET

DEP Invoice # *Filled in by ILF Administrator in Augusta*

Project name: Fallbrook Commons 90 bed licensed nursing care center

Permittee: Daniel Maguire, Fallbrook Commons Development, LLC

DEP/Corps permit #: L-11219-TE-H-N/NAE-2020-01331 *Attach a copy of the permit*

DEP/Corps Project Manager: Robert Green/Colin Greenan

ILF Fee Amount: 38,461 s.f. x ($3.61 + $0.69) = $165,382.30

Check Date: *Filled in by ILF Administrator in Augusta*

Project address: off 60 Merrymeeting Drive/Ray Street at Portland *Attach a locus map*

Biophysical region - Section: Southern Maine

Biophysical region - Subsection: Gulf of Maine Coastal Lowland

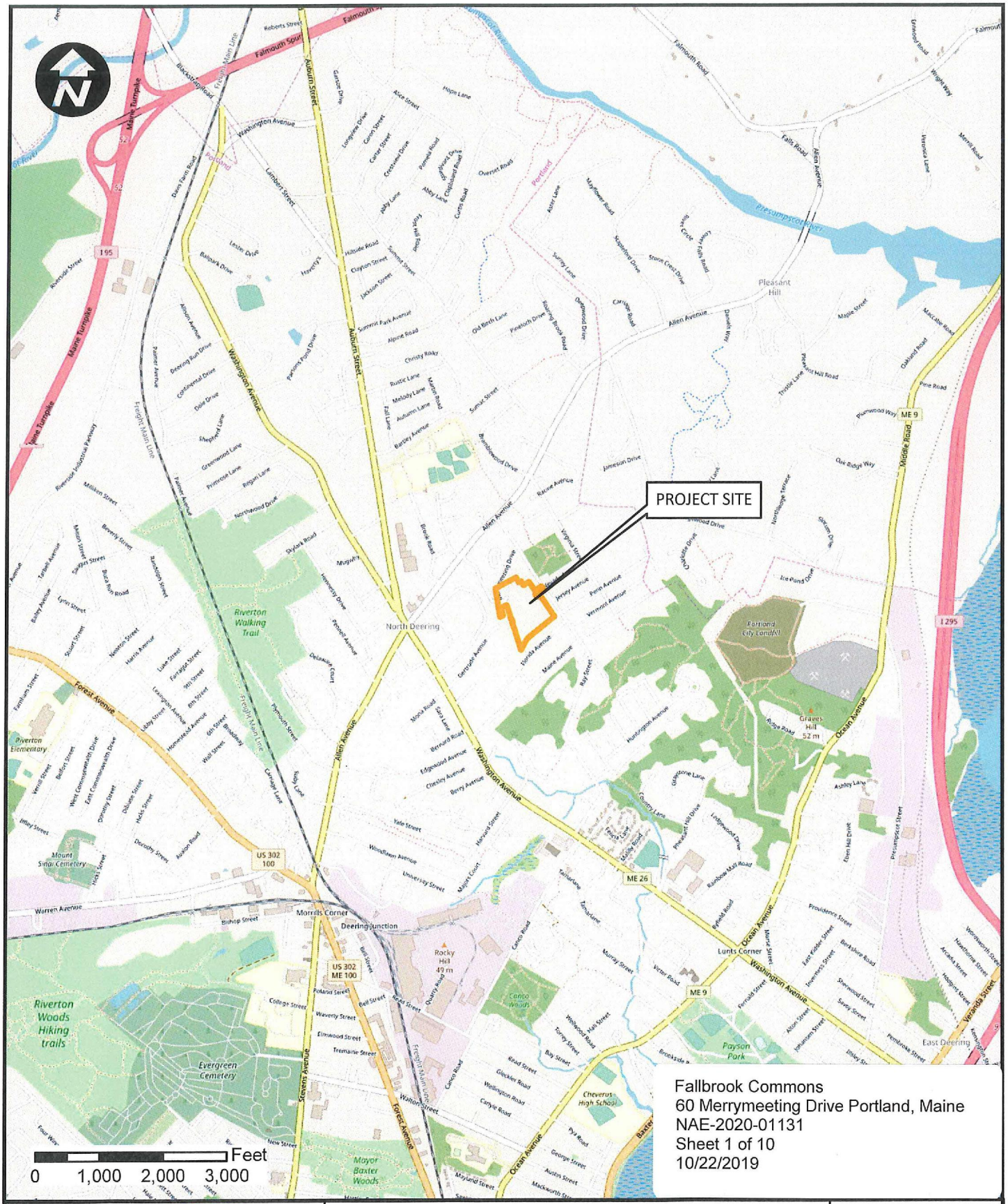
Total impact area subject to compensation: 0.88 ac.

Resource(s) impacted:

Resource Types (list all that apply)	**Functions & Values** (for wetland impacts) (list all that apply, by resource type)	**Types of Impacts** (list all that apply, by resource type)	**SF Impacted** (by resource type)	**Linear FT of Streams Impacted (for Corps use)**
PFO	STR, NR, R, VQ, WH	fill	0.88 ac.	
		Total impacts:	0.88 ac.	

Resource Types: Wetlands by NWI Type (PEM, PFO, PSS, PUB, M1, M2, E1, E2, etc), significant vernal pool depression (SVP), significant vernal pool critical terrestrial habitat (VPCTH), shorebird feeding & staging habitat (shorebird), inland waterfowl & wading bird habitat (IWWH), Tidal waterfowl & wading bird habitat (TWWH), lake or pond (L1, L2), river/stream/brook (RSB)
Wetland Functions & Values: Groundwater recharge/discharge (GWR); floodflow alteration (FF); fish & shellfish habitat (FSH); sediment toxicant retention (STR); nutrient removal (NR); production export (PE); sediment/shoreline stabilization (SS); recreation (R); education/scientific value (ESV); uniqueness/heritage (UH); and visual quality/aesthetics (VQ); wildlife habitat (WH)
Types of Impacts: May include: filling, dredging, vegetation conversion (e.g. forested to shrub/scrub), excavation with associated discharge, etc.

Revised 8/3/16



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE LOCATION MAP
FALLBROOK COMMONS

SCALE: 1:24,000

DATE: 10/22/2019

LOCATION: 60 MERRYMEETING DRIVE PORTLAND, ME

INFORMATION: USGS Quadrangle: Portland West

18347_LocationMap.mxd

43.699941, -70.291236

PROJECT NUMBER: 18347

Construction Management Plan
Fallbrook Health Center
Sandy River Company /Applicant
Landry French
Construction/Contractor

The Construction Management includes the following:
1) a construction management site plan (See attached plan);
2) a construction schedule (time frame); and
3) a written narrative.

Construction Management Principles

A. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits
Prior to scheduling a preconstruction meeting and the issuance of any city required permits, [Applicant and Contractor] shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.
2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

B. Construction Administration and Communication
[Applicant and Contractor] will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Construction Manager will work closely with adjacent abutters, businesses, nearby construction sites, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. The final construction management plan shall provide for the following:

1. Contact Person and contact information for the [applicant and contractor] and who is available 24 hours
2. Construction Signage posted on the site with Contact Information for Contractor
3. Describe any additional communication strategies
4. All construction site signage is temporary and shall be removed at project completion.

C. Construction Schedule

1. The contractor will begin construction in June 2020, with an estimated completion date of October 2021.
2. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
3. Extended Hours or Night Work: Pursuant to Section 17-18, this section not apply to emergency utility work or "Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority."
4. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

D. Security & Public Safety

1. The Construction Management Plan depicts all proposed fencing or other barriers and access gates (with knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*
3. Fire Safety Program. An overall construction of demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security
    - Installation of new fire protection systems as construction progresses
    - Preservation of existing systems during demolition
    - Organization and training of an on-site fire brigade
    - Development of a pre-fire plan with the local fire department
    - Rapid communication
    - Consideration of special hazards resulting from previous occupancies
    - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

E. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction

activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects are required to submit a satisfactory 'maintenance of traffic" (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

   Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic
   - Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
   - In some situations, flaggers may be required.
   - Police details may be required at lighted intersections and may be requested by the City's transportation engineer or his designee.

   All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

F. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).

4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
    1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
    2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or sight lines with the piles of snow.
    3) Clear all walks & ramps with the work zone
    4) Sand or Salt as needed
    5) Clear all basin or drainage to help snow melt
    6) This would include Monday-Friday Sat/Sunday/Holidays

G. Erosion Control and Preservation of Trees

1. The [contractor] shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The [contractor] shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

H. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage area shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. Delivery Truck Holding Areas Off-Site: In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

I. Parking During Construction

1. Construction Parking: Adequate parking for construction workers shall be provided on

site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.

2. Parking: Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.
3. Truck Routes and Volumes: The Construction Management Plan shall address the designated truck routes and expected truck volumes.

J. Dewatering Plans

A basic dewatering plan for any construction work is required. The plan must cover construction sites where groundwater is not expected but the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including filters, erosion and sediment control measures, or other methods of removing sediment from approved discharges.

For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared and approved by the Department of Public Works. Groundwater and/or soil testing may be required to determine course of action if treatment is necessary. Approval for all discharges to City infrastructure is required.

The proposed plan must address the following:

- Project duration, discharge location, storage equipment on-site, dewatering schematic, and emergency contact.
- General requirements include trained staff on-site for all approve discharges and required site log for documentation of all discharges.
- Storage and/or treatment process should include proper settling time and maintain proper use of filtering medium as required.
- Contingency/maintenance plan for all dewatering equipment devices and filtration mediums.

Any water that is removed from an excavation must be pumped from a perforated device buried in crush stone prior discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.



LOCATION MAP N.T.S.

GRAPHIC SCALE
(IN FEET)
1 INCH = 40 FT.

PROGRESS PRINT

NOT FOR CONSTRUCTION

DANIEL M. DANVERS RLA #815 DANIEL L. RILEY PE #8696

REV.:	BY:	DATE:	STATUS:
A	DMD	11-01-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, ADDITIONS OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE PLAN
OF:
FALLBROOK NURSING CARE
MERRYMEETING DRIVE
PORTLAND, MAINE
FOR:
SANDY RIVER COMPANY
217 COMMERCIAL ST., SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	BJB
DATE	11/01/19
SCALE	1" = 40'
PROJECT	18347

SHEET 3 OF 16

June 4, 2020
18347

Andrew Tufts
Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Response to Comments for Fallbrook Commons
Parcel ID: 400 D 023001

Dear Andrew:

A neighborhood meeting for the Fallbrook Commons project was held on February 18th at Fallbrook Woods, approximately 30 of neighbors attended the meeting. We have made a number of revisions to the plans based on comments and concerns raised at the meeting. These concerns were primarily related to the proposed entrance off of Ray Street, the parking areas at the existing facility (Fallbrook Woods), and pedestrian access along Merrymeeting Drive.

The applicant proposes the following changes to the project:

- The proposed access from Ray Street opposite Nevada Avenue has been revised to be an Emergency Only Entrance. This emergency access driveway will be gated with a Knox box for emergency access only to both the proposed and existing facilities.
- The primary entrance to the proposed facility will be from the Merrymeeting Drive, through the existing facility.
- Sidewalks have been added along Merrymeeting Drive for pedestrians and the existing roadway will be repaved to improve its condition
- The parking area at the existing facility (Fallbrook Woods) will be modified and expanded to relocate existing on street parking from Merrymeeting Drive to the facility's parking lot.

We have included revised sections of the original application to reflect the project design, revised plans, and offer the following response to staff comments received in February 2020.

Response to Comments- Planning and Urban Development

Comments from- Mike Tremblay: *"There is a crest vertical curve on Ray Street approximately 200 feet northwest of the site driveway. Vehicles traveling along Ray Street may not be able to see a vehicle entering or exiting the site driveway, depending on the speed of the approaching vehicle and weather conditions. The stopping sight distance for a vehicle traveling 30mph is 200 feet, assuming a flat roadway surface. The marked speed limit on Ray Street is 25mph, but prevailing speeds may be higher. The Applicant should provide sight distance analysis at the site driveway. If sight distance is found to be insufficient, the applicant should provide solutions."*

Response: Sebago Technics traffic engineer has measured sight distance to be 270' from the Ray Street entrance exceeding the requirements for the posted 25 mph speed limit and a 30MPH assumed speed. The applicant has revised the plans to make the entrance off Ray Street opposite Nevada Avenue a gated

emergency fire entrance only. The applicant proposes to use Merrymeeting Drive as the primary entrance to the proposed facility. Additionally, the applicant proposes to improve the pedestrian and vehicular access along Merrymeeting Drive by repaving the road and adding a sidewalk from Ray Street to the new facility as shown on the plans attached to this submission.

Comment from- Mike Tremblay: *"In the bay of parking immediately outside the main entrance to the site, there are accessible parking signs that appear to be installed directly into the ground between parking spaces. This would appear to be challenging to plow/maintain and may result in damage/removal of the signs. A raised area where these signs could be mounted is suggested."*

Response: The applicant is proposing signs on bollards within the parking area to protect them from plowing / mechanical damage. A detail further of the sign on bollard is provided on sheet 16.

Comment from- Mike Tremblay: *"There are 92 parking spaces proposed on-site. There is little information provided about the anticipated parking demand. Given that the site has significant wetlands impacts, right-sizing the parking lots is of paramount importance. The applicant should provide justification for the parking supplied on-site."*

Response: Parking for 92 vehicles is proposed to accommodate the anticipated staffing and visitor requirements of the facility and is based on the applicants experience at similar facilities of this size and use. The facility is expected to employ up to 113 Full time equivalent (FTE) employees as submitted in projections with the Maine Department of Health and Human Services. The staff occurs in shifts. with 55 employees during the day shift, 25 during the evening shift and 10 employees during the night shift. The applicant's experience has been that providing parking for day shift employees with an allowance of approximately one visitor space per 2.5 beds meets the requirements for a typical day use for family visitors, and specialty service vehicle needs at their other facilities.

Comment from- Mike Tremblay: *"Of the 92 proposed parking spaces, 4 are universally accessible. ADA guidelines require 10% of spaces to be accessible for outpatient medical facilities, and 20% of spaces to be accessible for mobility rehabilitation facilities. Understanding that the proposal is for an assisted living/nursing care facility, and thus does not fall under one of the above categories, the number of accessible spaces provided on-site should be considered carefully, as the minimum amount required may not be appropriate."*

Response: This facility is not an outpatient medical facility or a rehabilitation facility, the parking count meets the ADA 208.2.3 Residential Facilities Standards. Residents of this facility will not have cars, leaving all parking spaces to be for guests, employees, and other Non-residents (208.2.3.3). This section refers the requirements back to the standard ADA parking table (Table 208.2) requiring 4 spaces. All ADA spaces at Fallbrook Commons will be Van Accessible.

Comment from- Mike Tremblay: *"None of the accessible spaces are provided in the lower satellite parking area containing the majority of parking spaces. It appears these spaces serve a different level of the building than the main entrance. The applicant should consider the appropriateness of providing a portion of, or additional, accessible spaces in the lower lot. Note that this lot appears to be closest to the courtyard area, which could be the best area for a resident to wait for a relative to pick them up, etc. in this case, the parking area closest to the courtyard would be the lower parking lot. "*

Response: All ADA spaces have been located nearest the primary entrance to the building for employees, guests, and visitors. All public access to the building is controlled through the main entrance. The courtyard entrances are for egress and maintenance/staff access only and are not open to visitors or residents from the outside the front door is the primary entrance for staff and is the only entrance for visitors.

Comment from- Mike Tremblay: *"None of the six parking spaces serving the service entrance, presumably provided for employees, is accessible. "*
Response: The service area is for contractors and facilities maintenance vehicles. Employees and other visitors will use the upper lots.

Comment from- Mike Tremblay: *"Understanding that there is a significant grade challenge, and that this area is currently proposed to be landscaped, the apparent desire line between the courtyard and the lower parking area is a direct line between the courtyard and lower parking area. The Applicant should consider providing a staircase serving this desire line, in addition to the accessible route already proposed. "*

Response: The courtyards are not accessible to the public from the outside. The gates are for egress and maintenance access only. The desire line from the parking areas will be to the front door of the facility.

Comment from- Mike Tremblay: *"The intersection of the site driveway with the internal driveway between sites appears to have two of the three legs under stop control. This is irregular and not recommended. An all-way stop, or partial stop control where only the site driveway has a stop sign, is recommended. "*

Response: The intersection has been revised to an all-way stop.

Comment from- Benjamin Pearson: *"2000-gallon external grease interceptor proposed. A junction manhole is required with channel where grease interceptor outlet connects to sanitary sewer. (See sheet 10 of 19) / Utility Plan 1. Circled in red below. "*

Response: Sewer Man Hole (SMH) 1 has been added to Utility drawing 2.

Comment from- Benjamin Pearson: *"No construction management plan narrative - map provided. A CMP using newest template will be required with building permit submittal. "*

Response: A construction management plan, and map have been provided as section 37 in our application documents. Uploaded 01.08.2020. We have also uploaded this plan to the Construction Management Plan section of E-plan for clarity.

Response to Comments- Lauren Swett from Woodard and Curran

Comment from- Lauren Swett: *"The project is required to conform with Maine DEP Chapter 500 Stormwater Regulations as well as with the City of Portland Section 5 of the Technical Manual. Conformance with the Basic, General and Flooding Standards is required. "*

Response:

- Basic Standards – The Applicant has proposed erosion and sedimentation control measures in conformance with the Basic Standards.
- General Standards – The Applicant has proposed an under drained soil filter, gravel wetland, and roof drip edge filters to treat the proposed project area.
- Flooding Standards – The proposed project will not increase flows in the post-development condition, in conformance with the Flooding Standards.

Comment from- Lauren Swett: *"The Applicant should evaluate the steepness of some of their pipes. In particular pipes SD-21 and RD-4 are steep, due to the proposed change in grade. RD-1 is also relatively steep. Please consider potential velocity issues at the ends of these pipes. "*

Response: Given the relatively small tributary areas and corresponding flow rates we do not have a concern regarding the slopes at these locations. To address the concern, we have adjusted the grades of SD-12 at the upstream and downstream structures. We have revised the alignment of the roof drains and added connection/drop structures at the top of the slope to flatten the grade.

Comment from- Lauren Swett: *"Pipe SD-18 is missing from the Stormdrain Pipe Data tables. "*

Response: Pipe SD-18 has been added to the tables

Comment from- Lauren Swett: *"Wall drains are noted to be connected to CB-8. Please clarify the depth of these connections to verify that the pipe can connect to the structure with all of the other proposed stormdrain connections. "*

Response: Inverts for the wall drain inverts have been added to the labels. The wall drains enter above the site drainage pipes to accommodate the connection.

Comment from- Lauren Swett: *"Ability to serve confirmation will be required from utilities, including the Portland Water District for domestic and fire water services and the Department of Public Works for sewer. "*

Response: We have reached out to Portland Water District and are working with them on the sizing of the domestic, Fire, and Sewer services.

Response to Comments- Robert Bartels- PWD

Comment from- Robert Bartels: *"We are going to want to see the public water main extended through the site from Merrymeeting Drive to the entrance at Ray Street. The hydrant can then be public and the domestic service will not need a meter pit. Please update your design to show a public water main in an easement through the access drive. Please use the attached as reference. Connect the two 8" mains."*

Response: We have complied with this request. Changes will be shown on the next round of drawings.

Response to Comments- Jason Grant- Life Safety CEO

Comment from- Robert Bartels: *"The hydrant should be moved to somewhere in the vicinity of the arrow marked on the attached plan."*

Response: We have relocated the hydrant to the desired location. This change will be reflected on the next round of drawings.

Thank you for your time and consideration during your review. We look forward to the planning board workshop and continued feedback from staff.

Sincerely,

SEBAGO TECHNICS, INC.



Daniel M Danvers, RLA
Maine Licensed Landscape Architect

Cc: Daniel Maguire / John Orestis / Doug Gardner

Evidence of State or federal Approvals

A NRPA Tier 2 application has been submitted to the Maine DEP for their review. A Site Location of Development application will be submitted under separate cover to the City for delegated review.

Andrew Tufts
July 2020
18347

The city of Portland, Department of Planning and Urban Development
4th Floor, City Hall
389 Congress Street
Portland, ME 04101
Fallbrook Commons Development LLC
Narrative of revisions to plans, and response to Planning Board Comments

Dear Andrew:

The applicant has revised the project to address comments raised by the Planning Board and the public at a workshop meeting in June. Please find the attached narrative, plans, and supporting materials prepared by Sebago Technics, and a letter from the applicant further addressing the project's purpose and the Conditional Use criteria of the R-3 Zone.

Fallbrook Commons is designed to function as a campus with the neighboring Fallbrook Woods facility. Dense landscaping, sidewalks, distributed parking with landscaped islands, and campus signage liken the site to a Planned Residential Development which is an approved use in the R-3 zone. The building features a unique two-story design and retaining walls to limit fill slopes to the edges of existing wetlands, creating an altered-but uniform wetland area. The site is proposed to be landscaped with largely native plants and seed mixes, complementing the existing vegetation found on the site, providing a sense of place.

The applicant has revised the parking area to address the Planning Board's comments. The revised plan reduces the site parking from 92 paved spaces to 83 paved parking spaces and 20 overflow and special event parking spaces which will be constructed using reinforced turf to reduce both the visual impression of the site and the impervious area associated with the development. The parking area is has been re-oriented to preserve existing tree cover between the property line and improvements being proposed. Compact car spaces and conduit for EV parking are included in the revised layout.

Evergreen landscaping has been added along the edge of the event parking area and along the property line of the adjacent residences along Florida Avenue to screen vehicles and headlights. Plantings will be tall enough to screen headlights at the time of installation (approximately 3'-4' tall minimum). Trees and landscaping are featured in all parking islands meeting the ordinance requirements to provide shade reducing the heat-island effects.

The facilities dumpster enclosure has been realigned moving it further from Florida Avenue, creating space for additional evergreen screening plantings and reducing wetland impacts.

Fallbrook Commons' exterior walls are proposed to be residential-style materials, highlighting the residential nature of its programming and the purpose of the underlying R-3 zone. Retaining walls are used to minimize wetland impacts, and address the site's topography. Wetland tolerant plantings and native climbing vines proposed along the retaining wall will screen the wall from view. The two walls are stepped to provide a planting area between them. The lower wall will have a lattice installed, for native climbing vines. Additionally, native wetland plant species are proposed at the base of the wall. They will be 3' to 6' tall upon installation and will reach a mature height of 6'-12', screening the majority of the 12' wall. The base of the upper wall is planted with evergreen trees and deciduous shrubs. These trees will be 6'-8' upon installation and will reach a mature height of 12' and will screen the majority of the 6.5' wall.

This project received a Natural Resource Protection Act permit from the Maine Department of Environmental Protection and has received letters of approval by the Army Corps of Engineers for wetland alterations. As a part of their extensive review process, the applicant provided an alternatives analysis demonstrating to the state and federal agencies that the project avoids and minimizes wetland impacts, to the extent practicable. As part of this minimization effort, the review agencies consider both the magnitude and location of the impacts seeking where possible to limit impacts that cannot be avoided to the upland edges of the wetlands to avoid fragmenting retained wetland areas. This has been achieved on the project. Once the agencies have been satisfied that wetland impacts have been avoided and minimized, mitigation is required. MDEP has established its In-Lieu Fee program as the preferred means of mitigating impacts. This program uses fees collected from many projects to fund larger-scale preservation and mitigation projects which have been found to have larger ecological benefits than individual project-by-project on-site migration efforts. This is a mandated program and is a condition of the project permits.

Stormwater generated by the site is being managed in two vegetated systems. The largest, a subsurface gravel wetland, is a vegetated runoff treatment system designed to mimic the function and habitat of the adjacent natural wetlands. Although this is not formally credited against impacts in the permitting process and fee programs. The proposed facility will offset and expand the visual and the physical impacts on the site by re-creating approximately 6,200 sf of constructed wetlands on what are now upland areas represents about 16% of the permitted impacts. A wetland seed mix is proposed for all the stormwater systems and the surrounding earthwork; revegetating these areas with species adapted to the natural setting.

Included with the revised plan set, are renderings showing perspective views of the facility, the walls, the tree canopy being protected, and the proposed landscaping on the site.

We thank you for the opportunity for a second workshop.

Sincerely,

Dan Danvers, RLA



SEBAGO TECHNICS, INC.

Cc: Daniel Maguire; John Orestis; Doug Gardner

Sandy River
COMPANY

Att. S

June 29, 2020

Andrew Tufts
City of Portland Planning Board

Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

Re: Fallbrook Commons replacement project for St Joseph Manor

We look forward to a second Workshop meeting with the Planning Board just as soon as possible. We have made changes to the parking areas in both layout and a reduction in spaces, along with additional buffers, to address concerns expressed in the first Workshop meeting. We have also made changes to the retaining wall which was also expressed as a concern. And we are providing further information regarding wetlands and our approved permits from the Maine Department of Environmental Protection.

We would also like to use this letter to address questions about Conditional Use and the discussion raised at the end of the first Workshop about where nursing homes belong in the city.

As mentioned in our meeting, Sandy River Company has been involved in the development of over a dozen nursing home projects in the past 30+ years. What we have learned is that residents and families do not want to live in commercial or industrial areas, nor out in the country. A nursing home is the resident's home. They would prefer to be in a residential area with surroundings that feel as much as home as possible.

The proposed site is in the R-3 zone and within the North Deering Neighborhood. A nursing home (called a Long-term and Extended care facility in the City's Land Use Code) is a Conditional Use under the Institutional section. The Institutional section also includes Hospitals, Places of Assembly and Schools which are also Conditional Uses within the R-3 Zone.

There are several nursing homes and assisted living facilities in Portland to include Fallbrook Woods, St Joseph, The Cedars, Portland Center for Assisted Living, Seaside Nursing, and the City's own Barron Center. These are all located within Residential Zones. Fallbrook Woods and St Joseph are in the same R-3 zone and area within the North Deering Neighborhood and abut residential streets. St Joseph is just one street over from Florida Avenue and abuts Maine Avenue and Ray Street.

The Land Use Code further indicates as a condition of Conditional Use that "the Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing of the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts that would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard

217 Commercial St., Suite 201 PO Box 110 • Portland, Maine 04112 • TEL: 207.558.6060
www.SandyRiverCompany.com

is satisfied if it finds that: The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone".

Again, St Joseph and Fallbrook Woods Assisted Living are within this same area within the North Deering Neighborhood and same R-3 Zone. There are also schools and churches within this same North Deering Neighborhood and R-3 Zone. St Joseph, which is being replaced, operates 24 hours a day and has over 120 parking spaces. We are, in fact, replacing and downsizing St Joseph with a new state-of-the-art nursing care center in the same neighborhood that will have less beds and less parking spaces and with less traffic. And again, there are other long-term care facilities within R-3 and other Residential Zones as mentioned above with similar parking spaces, hours of operation and traffic being generated.

It is also important to note that the traffic being generated by the new project does not empty onto Florida Avenue. The proposed nursing home will be part of the existing Fallbrook Woods campus and use the campus drive, Merrymeeting Drive. Merrymeeting Drive is a private drive that will be upgraded as part of this project.

In summary, the City intended through its Land Use Code that nursing homes belonged in residential zones and neighborhoods and the nursing homes in Portland are all located within a Residential Zone. We believe Fallbrook Commons meets the standards for a Conditional Use Permit within the R-3 Zone. We will certainly do everything possible to screen and provide buffers to lesson the impact of this project on the neighborhood. And as mentioned, we are also proposing a decrease in parking spaces.

We would like to close this letter by reiterating the importance of this new facility as a replacement of St Joseph.

The existing 45-year old nursing care facility has outlived its useful life as a nursing home. Additionally, as we have all learned from COVID-19, existing older nursing homes are extremely vulnerable places in managing such infectious disease outbreaks. We need to replace St Joseph Manor for the following reasons:

- The resident rooms are small, shared rooms, and four persons to a bathroom that do not meet ADA standards, nor appropriately allow for managing any possible virus outbreaks. The new building will be largely private rooms with private baths and offer a much safer environment to manage infectious disease control.

- Built in 1974, the facility is an old-style long double loaded corridor facility with dead end corridors. The layout of the building does not allow for efficient programming and caregiving. The proposed new facility will consist of three "neighborhoods" within the building offering the opportunity to create both a traditional long-term care neighborhood and short stay rehabilitation neighborhoods, as well as decentralize dining and living areas. This layout also offers the opportunity to significantly improve the management of any outbreaks of infectious disease.

- The physical plant is in poor condition with failing or outdated mechanical systems, heating inefficiencies and a roof that needs replacing; there is an entire wing that is not operational.

Clearly, replacing St Joseph Manor with a new state-of-the-art nursing center will have a dramatic positive impact on the quality of life of residents and improve the emotional health of residents and their families. As part of the collaboration for this project, it became important that the replacement facility and services continue to be offered within the City of Portland. The proposed new replacement facility is within the same neighborhood, allowing for a nearby transition for residents and family and staff. The development of a new nursing home that will be home to 90 residents requires at least 5-7 acres of land which is almost impossible to find with the City. The available land at Fallbrook Woods offers the opportunity to create a senior care campus whereby staff and resources can be shared as well as families can easily visit family members that might be in both centers.

Building and opening the replacement facility for St Joseph Manor is critical to the health and safety of residents and staff. And we believe the City's Land Use Codes intends for nursing homes to be in residential areas. Fallbrook Commons will replace St Joseph in the same residential neighborhood and Residential Zone (R-3).

We appreciate the City of Portland's support for this important project.

Sincerely,

Daniel J Maguire
Managing Partner
Sandy River Company

Google Groups

Fallbrook woods expansion

Alison Mason <lilady371@yahoo.com> Jun 3, 2020 4:04 PM

Posted in group: **Planning Board**





To whom it concerns, Iam a neighbor to Fallbrook woods living on Ray Street across from the proposed new entrance. Iwould like to say that for a facility that prides themselves and at one time promoted themsel1.es as an animal sanctuary, the expansion would not be a good idea. Here in North Deering we enjoy living side by side our animal neighbors the deer, racoon, skunk, porcupine, hawks, and occasional coyote. The deer herd here is a good sized group who live side by side with us mostly unnoticeable.
Fallbrook woods on the other hand is very noticeable with their large engine going off a few times a day distrubing our peace and tranquility. I am thinking with this expansion the around the clock intermitten banging would only be amplified. (I am thinking this is a generator of some type that I mention here and it goes off a few times a day. It is located at the far right front of the building, close to where the proposed building is to go) The trail along side the facility has been used by many as a walking or biking path but lately as a dumping site for garbage by people walking through and left there to rot. They claim the water area at their entrance is theirs, you can clearly see how well they have managed that. Polluted and again not cared for.
I don't feel the need to say anything more as to having a business "nestled in the woods" of our household neighborhood. Perhaps a relocation for them all together would answer their need to expand. I hope they are not permitted to expand their business at the expense of the rest of the people who live here 24 hours a day 7 days a week and call this home. Our animal neighbors will be grateful as well. I am attaching a picture of the HUGE buck we have living here. He was located in the woods on Ray Street heading "home" for the night, his home is in the location of this new facility.
Thank you so very much for taking the time to read this and even more for considering the impact this expansion has on everyone around it.
Sincerely,
Alison Mason

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Fallbrook Commons, Merrymeeting Drive

Andrew Tufts <atufts@portlandmaine.gov> Mon, Jul 6, 2020 at 1:19 PM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: **Ann Acheson** <tinkeya@yahoo.com>
Date: Fri, Jul 3, 2020 at 4:53 PM
Subject: Fallbrook Commons, Merrymeeting Drive
To: atufts@portlandmaine.gov <atufts@portlandmaine.gov>

Dear Andrew,

I understand there may still be time to submit written comments regarding the new Fallbrook Commons nursing home planned to be located off Merrymeeting Drive, since an additional workshop is being planned. I am the secretary of the Fallbrook Condo Association, but am writing in my capacity as a unit owner. My comments are on the attached document.

Thanks very much.

Ann Acheson

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov
(207) 874-8724

Response to Planning Board from A. Acheson.docx
17K

Fallbrook Woods

Beth <mom21kid@aol.com> Jul 1, 2020 4:54 PM
Posted in group: **Planning Board**

Hi

I am a resident of Florida Avenue. I have lived there for 24 years. I strenuously object to the building of the nursing home / long term care facility at Fallbrook, for many reasons.including the impact on the wildlife, the paths to walk on through the woods, the atmosphere of our neighborhood, the destruction of wetlands. If the DEP isn't going to do their job to protect us, please do yours to help us and the wildlife.

This conditional use permit should not be granted - it will significantly and negatively impact the peace and quiet of our current residential neighborhood. They are trying to pull one over on us - from doing the "public meeting" in the middle of a snowstorm when the rest of the City was shut down hoping we wouldn't all attend to who knows what else they have done. This neighborhood is zoned R3 for a reason - please keep it that way!

Thank you for your consideration.

Beth Webster
47 Florida Avenue

Fallbrook Nursing Home Expansion Opposition

Brendan Regan <brendan.regan01@gmail.com> Jul 3, 2020 10:09 AM
Posted in group: **Planning Board**

Dear Portland Maine Planning Board,

My name is Brendan Regan. I've been a Portland Resident for 6 years and have owned and lived at 114 Florida Ave for the last 4 years. I'm writing this email to go on record as being OPPOSED to the Conditional Use Permit under consideration for the expansion of Fallbrook Nursing Home. The reasons for my opposition are many: Destruction of wetland and wooded habitat for local wildlife, concern about drainage at my flat, low-lying-elevation property, concern about increased traffic and public safety, concern about depreciation of property value, concern about the proposed access point being a "blind" location creating another public safety issue and being squeezed between current residential properties, and concern about increased light and noise pollution.

Overall, I'm really upset that this project is even under consideration. My neighbors and I live in an R3 zone. I chose to live here because it's a quiet, RESIDENTIAL neighborhood. I have no desire to live in a commercial area. It's my understanding that the current Fallbrook establishment was granted a conditional use permit for it's construction originally. It's current facility I must admit is "out of sight, out of mind". The current expansion project would be quite the opposite. Not only destroying wetland and wildlife habitat, but placing a parking lot requiring a retaining wall upwards of 15+ feet tall from what I've heard. That's about as tall as my home!

Should this project be approved, the facility will loom over the local neighborhood. It will be a commercial citadel on a newly formed hill! With the absolute minimum offset from property lines I might add.

On the topic of the massive parking lot, I have serious concern about drainage affecting my property. My property shares the lowest point of the area with my adjacent neighbors. The plan to direct all the run-off from the proposed IMPERVIOUS ACRES of drainage plane towards the drain at the intersection of Ray St and Penn Ave via a retention pond seems drastically insufficient and is very concerning to me. Being at such a flat, low elevation and having very dense, clay soil, my property already suffers from poor drainage. Any threat to increased drainage or flood potential could lead to property damage and/or inhospitable use of my property for many months out of the year during our wet seasons.

I can tell you from personal experience that the drain at Ray St and Penn Ave is already borderline insufficient. It's overgrown with vegetation and it gets easily blocked or restricted with branches, leafs, and other debris. Placing additional strain on it's capacity by creating acres and acres of impervious surface will most definitely cause complications. What is my recourse should Fallbrook lead to flooding of my property? This burden should not be placed on me or my neighbors after the fact.

The other complaint I'd like to focus more closely on is the depreciation of local property values. It's been estimated that property values could reduce by 5-10% based on this project. That equates to tens of thousands of dollars for EACH property in the vicinity. That's a substantial burden to be placed on local property owners, the majority of whom are owner-occupied and are your constituents!

I could continue with each topic of concern, but I'd like to summarize my view of this project and the conditional use exemption. This proposal is placing a serious unjust, undue burden on the tax-paying citizens of this neighborhood. It's in violation of R3 zoning. Fallbrook has already received an original exemption, they should NOT be granted another one. I am STRONGLY OPPOSED to this project for all my stated reasons. I find it incredibly hard to believe that St Joseph's is not capable of renovation. I find it incredibly hard to believe that Fallbrook's parent company cannot find another suitable location for a facility of this sort that is zoned properly. Alternative options are out there, they are just not being considered because it's easier to bully around local residents and flaunt the power of the dollar to supersede existing law. It's a matter of commercial gain at the expense of the local citizenry and wildlife. This is an R3 residential area and it should stay that way, no acceptions. I AM OPPOSED TO THIS PROJECT AND ALL IT'S AFFILIATED APPLICATIONS AND EXEMPTIONS! I request that you deny Fallbrook's request for any exemptions from current zoning or any other laws that are necessary to move forward with this expansion.

Sincerely,

Brendan Regan, owner-occupant
114 Florida Ave
Portland, Maine 04103

No to Fallbrook Nursing Home proposal

Christopher Havey <christopherhavey@gmail.com> Jul 16, 2020 7:55 PM
Posted in group: **Planning Board**

To Whom It May Concern,

Our family bought a house abutting the land proposed land to be built on not too long ago. The forest behind the house is what really sealed the deal and made us ok with paying what we did.

The wildlife, birds, flora, wetlands, and brooks will be highly impacted. We have to protect these valuable resources which cannot speak for themselves.

We love the quiet and close community here. People and children and dogwalkers are always out walking and biking on these streets and the increase in traffic will also irrevocably affect the character and safety of this R3 zoned neighborhood. I'm also concerned about possible flooding, and the increased light and noise pollution that comes with this type of facility on a 24 hour basis.

This project doesn't seem to meet the criteria for being an exception to the R3 zoning. Why can't they utilize the already developed property where St. Josephs sits currently. I could go on and on but I know my neighbors have already laid out my concerns so well, and I absolutely echo all their thoughtful responses.

Please protect our community and our natural resources.

Sincerely,
Christopher Havey

No to New Fallbrook Nursing Home Site.

Dana Hilt <rigoletto2@verizon.net> Jul 17, 2020 10:43 AM
Posted in group: **Planning Board**

We are new neighbors abutting the 60 Merrymeeting proposed nursing home site, and we're thrilled to purchase a home with a bit of natural woods and such a quiet back yard. We were drawn to this when purchasing, and have so enjoyed the abundance of wildlife that lives there and the quiet. The neighborhood seemed one where children could play and people were known to each other. A major project such as this one ,even if the Portland area needs more nursing homes , would change the whole character of a whole series of wooded backyards on many blocks which we believed would remain the same when we purchased the property. I am sure the original planners did not envision this as a viable plan. There are many other medical parks and sites that would be more appropriate. I am concerned that the huge increase in traffic and small streets will host so much new traffic, to make it less safe for drivers and children. There is also a school nearby; and during construction there is worry about the few who may be less concerned about the safety of children and homes than those in this tight neighborhood. Has there been proposals to adequately address these concerns? Where will the children play?
Sincerely,
Terry Hilt

Comment submission for Nov 10 Planning Board Meeting

Ddenb@maine.rr.com <Ddenb@maine.rr.com> Nov 5, 2020 3:08 PM
Posted in group: **Planning Board**

I am submitting this comment for the planning board to review prior to the November 10th meeting. Thank you very much.
Please put in the public record
Deb Denbow
69 Florida Ave, Portland, Maine

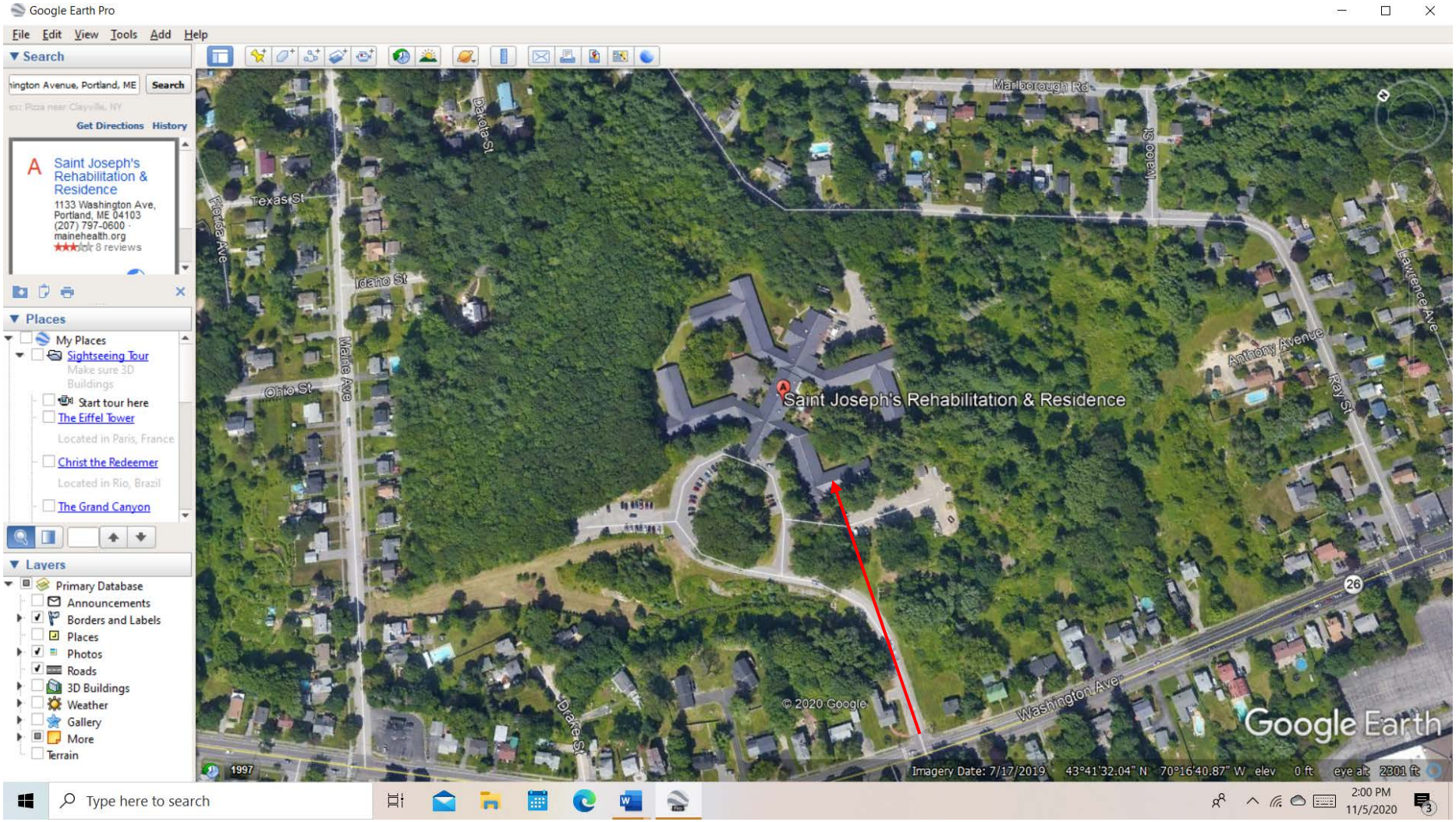
To the Portland Planning Board:

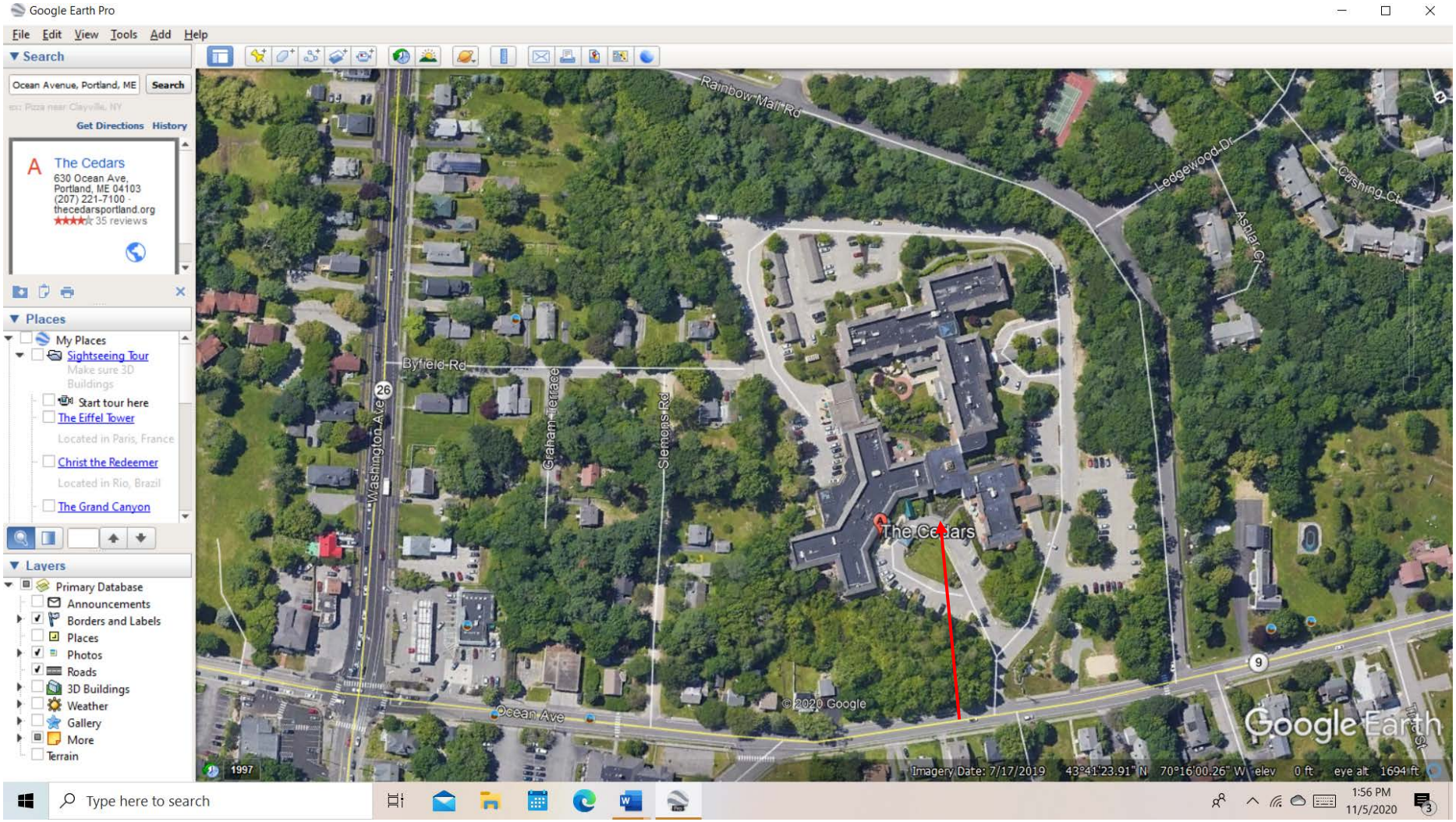
Since the last workshop on the Fallbrook development, a third family on Florida Ave has sold their home and moved and a fourth home has gone up for sale. That makes four families in the area on Florida Ave that will be most affected by this development that have made the difficult decision to sell their home and move from a neighborhood they love. That is four less families still voicing concern over this proposed development because they have made the ultimate objection. They left.

When that many families think the only option left to them is to move, it is very clear that there is still something drastically wrong with this development as it is currently planned.

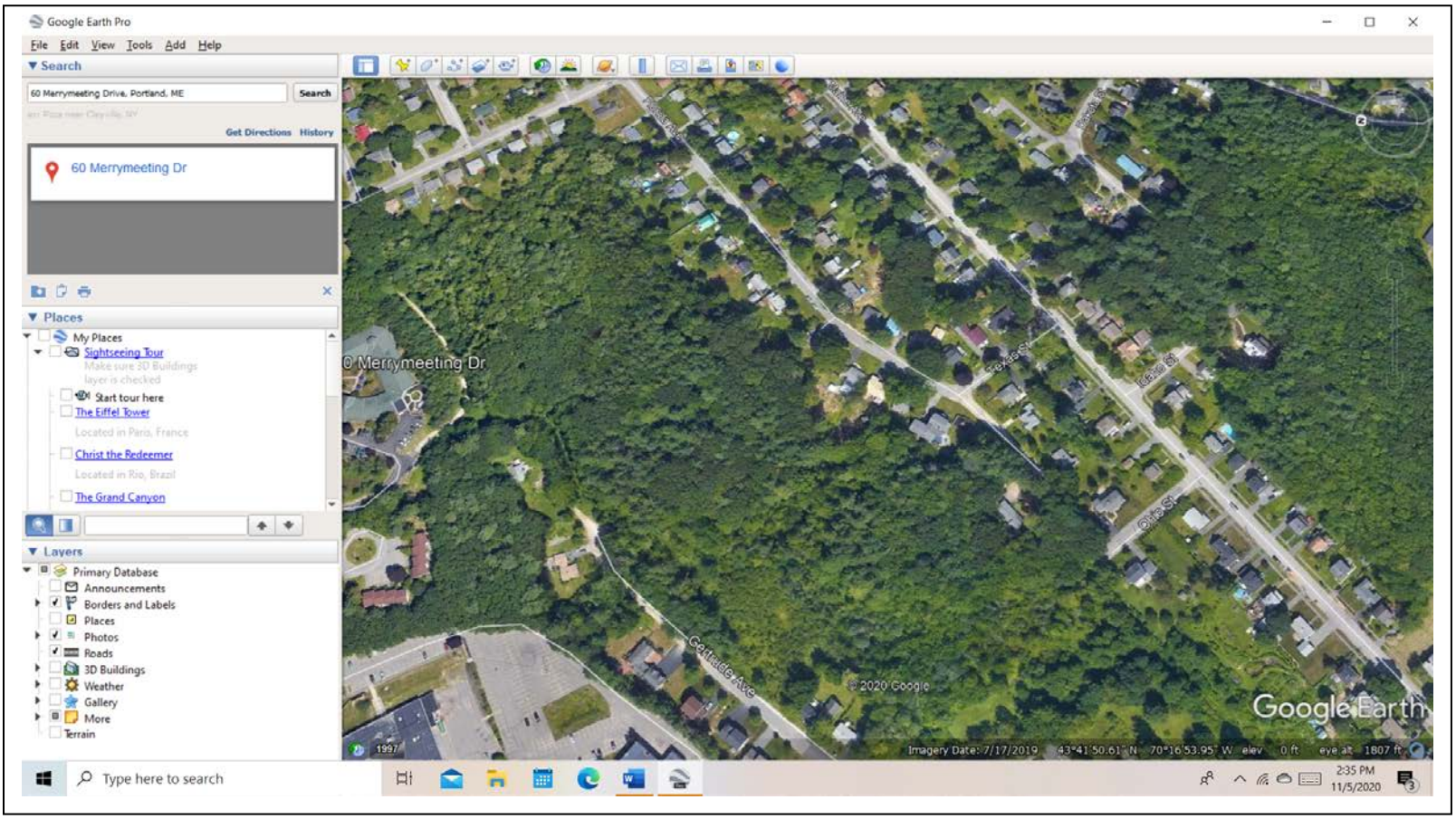
The issue is not having a nursing home in the neighborhood. The problem is the property is not large enough for this project as it is planned to still allow an appropriate and reasonable setback from abutting neighbors' homes.

Two other senior housing/nursing homes in Portland were allowed a conditional use permit to build in Zone 3; St Josephs and The Cedars. St Josephs is on busy Washington Ave. It has extensive woodlands surrounding it on all sides to shield it from the surrounding neighborhood. The Cedars is on busy Ocean Ave. It too has extensive woodlands shielding it from its neighbors.


Google Earth Pro
File Edit View Tools Add Help
Search
Saint Joseph's Rehabilitation & Residence
1133 Washington Ave, Portland, ME 04103
(207) 797-0600 · mainehealth.org
8 reviews
Places
My Places
Sightseeing Tour
Start tour here
The Eiffel Tower
Christ the Redeemer
The Grand Canyon
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Weather
Gallery
More
Terrain
Saint Joseph's Rehabilitation & Residence
Maine Ave
Ohio St
Idaho St
Texas St
Florida Ave
Dakota St
Marlborough Rd
St Cloud
Lawrence Ave
Anthony Avenue
Ray St
Washington Ave
Drake St
26
© 2020 Google
Google Earth
Imagery Date: 7/17/2019 43°41'32.04" N 70°16'40.87" W elev 0 ft eye alt 2301 ft
Type here to search
2:00 PM
11/5/2020


Google Earth Pro
File Edit View Tools Add Help
Search
Ocean Avenue, Portland, ME
Search
Get Directions History
The Cedars
630 Ocean Ave,
Portland, ME 04103
(207) 221-7100 -
thecedarsportland.org
35 reviews
Places
My Places
Sightseeing Tour
Make sure 3D Buildings
Start tour here
The Eiffel Tower
Located in Paris, France
Christ the Redeemer
Located in Rio, Brazil
The Grand Canyon
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Weather
Gallery
More
Terrain
Rainbow Mall Rd
Ledgewood Dr
Cushing Ct
Asilar Ct
Byfield Rd
Washington Ave
Graham Terrace
Siemons Rd
Ocean Ave
The Cedars
© 2020 Google
Google Earth
Imagery Date: 7/17/2019 43°41'23.91" N 70°16'00.26" W elev 0 ft eye alt 1694 ft
Type here to search
1:56 PM
11/5/2020

In comparison, this proposed development is bordered by Florida Ave which dead ends in a dirt road, by Gertrude Ave which dead ends in a dirt road and by Merrymeeting Dr which was described by someone on the staff/planning board as ‘’basically a long driveway’’. The only “normal” road is Ray St which is a residential road going through a residential neighborhood. Ray St is also marked on both ends with NO TRUCKS ALLOWED signs.



If a development is asking for an “exemption” to build in a Zone 3 area shouldn’t they be held to a higher standard? Shouldn’t they be held to the same standards as St Josephs and The Cedars when they were given a Zone 3 conditional use permit?

As I said before, having a nursing home in the neighborhood is not the problem. The problem is the facility is so large as it is planned, it is unable to accommodate appropriate and reasonable setbacks.

Also, one major problem that was brought up at the first workshop that the developer has not addressed yet is the nighttime staff parking lot noise of shift change at 11:00 PM and 3:00 AM EVERY night! Because Florida Ave is so quiet, noise travels VERY far. At 11:00 PM and 3:00 AM every night there will be the sounds of cars coming and going, car engines starting, car doors slamming shut and people talking. In the winter the noise will be compounded during storms with snowplows, people shoveling out their cars and scrapping ice off their windshields. Like I said, every little sound travels extensively on Florida Ave. The neighbors closest to the staff parking lot will have their sleep repeatedly disrupted throughout the night every night. It is a well-documented fact that lack of quality sleep on a regular basis plays a huge detrimental role on a person’s health.

Daniel keeps stressing that this is a residential development, but it is also just as much a 24/7 365 day a year business. If they want an exemption to build here, all the neighbors are asking

for is an appropriate and reasonable 200 foot setback of the existing woods so that the neighbors are not affected by the business end of this development with all its busyness, activity, noise and traffic. This is not an unreasonable request. We have been told by someone who has extensive experience with Portland city government and development in this city that asking in this case for a 200 foot to 300 foot setback from the existing neighborhood homes is not an unreasonable request. Daniel and the other companies involved with this project are very experienced. I'm sure it would be possible to change the existing plans to accommodate this appropriate and reasonable setback request if they were asked to by the planning board.

I would also like to piggy back on something Maggie mentioned at the last meeting. Daniel kept emphasizing "state of the art" when talking about the interior of the proposed facility. Maggie said she would like to see "state of the art" applied to the outside of the facility too. With a bigger setback more existing trees would be saved. These wooded areas would be perfect for walking trails. The trails would be used by short-term patients and long-term residents. It would be a peaceful place for visiting families to take their loved ones especially if seating areas were interspersed along the trails. The larger wooded areas would also benefit the existing wildlife. The healing effects of interacting with nature are well documented, another positive for the patients and residents. The trails would also be used by employees on their breaks. Again, being out in nature

would be a welcome break from a rewarding but often stressful career.

It is my hope that the planning board will see that increasing the setback from the existing homes, especially on Florida Ave is a win-win for everyone one involved; neighbors, residents/ patients and their families, employees and the development itself. Thank you for your time and consideration.

Sincerely

Deb Denbow

69 Florida Ave

City of Portland Planning Board
389 Congress St.
Portland ME 04101
October 16, 2020

Dear Planning Board Members,

Thank you for your service to the citizens of Portland in these challenging times. You have an important job.

I read recently about the proposal to rezone 13 acres on Merrymeeting Drive from Residential in order to facilitate construction of a 90 bed, 58,000 square foot nursing home. I lived directly adjacent to the Cedars Nursing Home for several years and want to share with you some of my experiences to help inform your decision.

My former husband and I bought our first home in 1986, a cape at the end of Byfield Road, a dead-end street, with a remarkably large back yard bounded on three sides by wooded areas. It was lovely.

A few years later, we learned of the proposal to develop the Cedars nursing home on a large parcel next to us. Though we and our neighbors objected, the planning board approved the plan, with some stipulations. Those included that the gate between the development and Byfield Road, which served as a fire exit, would be locked except in the case of emergency, and a buffer of trees planted between the campus and abutting properties, including ours.

Once approved, the site was soon cleared, but then construction stalled for more than a year, leaving a raw, denuded plot of land. The construction period was pretty awful, what with the noise and trash. The trees were planted, but were undersized, and not watered. Several died and were not replaced. Almost immediately, the fire gate was opened to allow deliveries.

When the project was approved, my friends joked “Well, at least it will be quiet!” It was anything but quiet. Over the years we lived next door, we were frequently woken as early as 4:00 a.m. by delivery trucks and at least once by snow removal via bucket loader at 1:00 a.m. From time to time, an emergency door would be used, triggering an alarm to blare through the neighborhood. Of course, the arrival of ambulances was a constant.

Other noise came from the shift changes at 7:00 a.m., 3:00 p.m., and 11:00 p.m. A reality is that many nursing home staff are low wage workers whose cars are loud. One worker was consistently picked up by a partner who idled his car directly next to our front yard, smoking.

The Cedars campus was officially smoke free. The result was that one fellow smoked a cigarette and finished his coffee at the foot of our driveway every morning just before 7:00. He wasn't malicious, but it was creepy. Worse were the folks who grouped to smoke beneath a tree on our property, laughing loudly and leaving their cigarette butts behind.

My own mother is now 85, and I am sympathetic to the argument that elders want to live in a community. However, in my time as a neighbor to the Cedars, I rarely saw residents outside. When I visited my former neighbor there after a fall, I felt altogether unaware of the outside world. Further, the rendering of the Fallbrook Commons looks severe and institutional, rather than like a residence. Thus, I am not persuaded that the project needs to be built in the proposed location. The examples of other nursing homes in residential neighborhoods are those on busy major arteries rather than in quieter neighborhoods.

We ultimately sold our property to the Cedars, which allowed them to expand and us to move, though I felt guilty about the impact on the rest of our small neighborhood.

You have the unenviable job of balancing competing interests. I strongly encourage you to look closely at the option of a renovation of the existing St. Joseph's Rehabilitation Residence on Washington Avenue. In this era of climate change, renovating existing buildings rather than clearing trees for new construction should be a priority.

Sincerely,

Eliza Townsend
157 Wolcott St.

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: comments project - 60 Merrymeeting Dr

1 message

Andrew Tufts <atufts@portlandmaine.gov> Tue, Jun 2, 2020 at 8:51 AM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: **Ian Pollis Houseal** <ihouseal@yahoo.com>
Date: Fri, Feb 7, 2020 at 2:40 PM
Subject: comments project - 60 Merrymeeting Dr
To: Andrews Tufts <atufts@portlandmaine.gov>

Mr. Tufts,

As an abutter to the proposed project at 60 Merrymeeting Dr. Plan Number PL-000925-2019, I would like to make the following comments on the project at this time:

1. The project is entirely too large for the neighborhood.

2. The project well exceeds the intended density of the zone. The existing nursing home facility has already clustered development to that portion of the site and this project will more than double the density.

3. The WETLAND impact is extensive and will be severely damaging on both the Florida Avenue side of the project and the fire road side of the project.

4. The project will disturb and eliminate natural spring streams

5. The project makes no consideration to the natural topography of the site. The project proposes rip-rap and erosion control blankets around the perimeter of the site which is unnecessary.

6. The project will flood basements on houses along Florida Ave because of its runoff.

7. It looks like the project will blast or have to pound the ridge outcrop at the center of the site.

8. Stormwater impacts will be excessive, flooding abutting properties and overwhelming the stormwater system to the south of Ray St. The proposed plan gives not consideration of the existing stormwater system which runs along the back of the properties along Florida Ave and the fire road.

9. There are important species in this forest including foxes, hawks, kestrels, owl, and a white deer in this forest.

10. A gravel wetland? Why not something more considerate of the site.

11. Should this project proceed, the project should obligated to connect to Gertrude Avenue and improve Gertrude Avenue, not make no reference or consideration of connecting to this street out of convenience. Gertrude Avenue connects to Washington Avenue.

Thank you,

Ian Houseal
86 Florida Avenue

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov

(207) 874-8724

testimony - Ian Houseal - 86 Florida Ave - abutter to application in the vicinity of 60 merrymeeting dr

Ian Pollis Houseal <ihouseal@yahoo.com> Jun 5, 2020 12:01 PM

Posted in group: **Planning Board**

Dear Planning Board,

Please see the attached testimony for inclusion in the record for the remote planning board workshop scheduled for Tuesday June 9 at 4:30 from Ian Houseal, 86 Florida Ave abutter to the proposed project in the vicinity 60 Merrymeeting Dr.

thank you,

Ian Houseal
86 Florida Ave

Ian Houseal
86 Florida Ave
Abutter

Testimony of Ian Houseal for public comments for Planning Board Workshop, Tuesday June 9, 2020
In consideration of a plan by Fallbrook Properties, LLC on a proposal for a 90-bed, 58,197 square foot nursing care facility

Dear Members of the Planning Board, please accept my comments as a citizen, property owner, and abutter to the proposed project.

1. Apparently this proposed project will be replacing the Saint Joseph's Rehabilitation and Residence facility, nearby, due to a claim that the facility has reached the end of its useful life. That 19.54 acre site, currently less than 50% developed, is affiliated with this project due to the transfer and crediting of authorized beds. In keeping with City Zoning Code, § 14-88, Conditional Use, (c) Institutional, 2. Long-term and expended care facilities, a. "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential area," the applicant must demonstrate the proposed use cannot be reasonability accommodated at the Saint Joseph's property. It is reasonable that the application demonstrate the requirement of this standard due to the corporate relationships between the developer, and the operators of these facilities. Frankly, this evaluation is practical and important to the planning function of the City in appropriately locating congregate care facilities.

2. According to the City Assessing records as of April 1, 2020, Fallbrook Properties LLC is the owner of record of this 12.62 acre parcel including the Fallbrook Woods Assisted Living Facility. As proposed by the applicant, the project will split and sell 8.28 acres to a new owner, Fallbrook Care Development LLC. Pursuant to City Zoning Code, § 14-88, Conditional Use, (c) Institutional, 2. Long-term and expended care facilities, a. "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential area," it appears as if the applicant intends to split the lot, thereby bypassing the condition and standard required by City Code § 14-88 (c) 2. a. This is not right. The applicant must demonstrate that the proposed use cannot be reasonably accommodated on the existing site through more efficient utilization of land or buildings, unless of course the evaluation demonstrates that the site could be more efficiently utilized. Financial convenience is not sufficient for a project of this scale and magnitude.

3. Although most certainly a standard of site plan review, it is unacceptable that the proposed project does not proposed to connect to Washington Avenue via existing public right-of-ways. Gertrude Street and the so called Topsham Street public right-of-ways are streets on the official map of the City, and connectivity is a stated goal of the City's planning documents. Furthermore, this connection is stated in prior site plan approvals for development. The applicant must demonstrate that this connection is not practical, unless of course it is practical

as an evaluation would determine. Financial convenience to ignore this standard is not sufficient for a project of this scale and magnitude.

4. With regard to "significant physical encroachment into established residential area" as cited in City Code § 14-88 (c) 2. a. above, and pursuant to City Code § 14-474 (c) Conditions for conditional uses: 1. Authorized uses. A conditional use permit may be issued for any use denominated as a conditional use in the regulations applicable to the zone in which it is proposed to be located. 2. Standards. …upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district, please ensure that the application adheres to the standards and conditions listed below in its submission:

    a. With regard to Zoning Code § 14-88 (c) 2. a. above, had the proposal made consideration of these standards and conditions, a different proposal would have emerged in keeping with the standards and conditions requiring consideration of existing and surrounding uses on the site more specifically, the Saint Joseph's property and the property under deliberation, itself.

    b. With regard to City Code § 14-474 (c) 2. above, it does not appear that this application is for an expansion or amendment for capacity for concurrent operations at the property under deliberation. This application clearly appears to be for a second conditional use, separate and distinct from the Fallbrook Woods facility. This is especially disappointing in that the applicant has not considered the Fallbrook Woods facility site even though there is a corporate and currently an ownership affiliation, given that Fallbrook Properties LLC, the owner of the Fallbrook Woods facility owns the property. This is furthermore disappointing due to the failure to consider the Saint Joseph's Rehabilitation and Residence facility and the deferred maintenance that has occurred there and at the Fallbrook Woods facility and surrounding properties. The application must adhere to the standards and conditions in its application.

    c. As proposed, the application proposes a second conditional use in addition to the existing conditional use existing at the Fallbrook Woods facility, at similar size and intensity already existing on the same property or more simply stated, next door. An additional conditional use of similar size and intensity will, without a doubt, due to the fact that the existing facility is already a conditional use and therefore already exceeds the size and intensity of use allowed in the district; the new conditional use will by fact have a substantial negative impact. Such additional conditional uses would most certainly have a substantially greater negative impact than would normally occur from surrounding uses or other allowable uses in the same zoning district, specifically R-3 and the allowable uses in that district since the purpose of the conditional use permit is to mitigate the negative impact of conditional uses. For example, obviously, it would be inappropriate to permit two utility substations conditional use permits (Zoning Code § 14-88 (d) 2.) or a line of day cares in a residential neighborhood within proximity of each other. It would stand to reason that multiple daycares, multiple substations, multiple congregate care facilities would be better located in other locations when treated as conditional uses, not in proximity to each other. Or stated as fundamental to planning, agglomerated through zoning for allowable use for reasons of business benefit including

such as activities/uses as retail, lawyers, and doctors offices. At a minimum, the Planning Board is obligated to require that the second conditional use consider the first conditional use, if it was to be permitted it at all in consideration of the question as to whether the application is complete. This is why the standards and conditions of the Zoning Code pertaining to conditional use exist and more particularly City Code § 14-88 (c) 2. a. and § 14-474 (c) 2. This has obviously been ignored in the application. The application must adhere to the standards and conditions in its application, as described above and consider the existing conditional use and the Saint Joseph's property.

d. Concerning site design issues as presented in the plan:

   i. Retaining Walls. As calculated from the proposed plan, retaining walls would be installed on this outcropping site to support a single floor plate. These retaining walls are calculated at 6-12 feet in height as drawn. The visual impact from the backyards of Florida Avenue homes is excessive and could be mitigated with a different configuration in consideration of the neighborhood and surrounding permitted uses and conditional uses.

   ii. Dumpster: The dumpster locations are inappropriate. The locations will be disruptive due to noise, smell, rodents, and headlights. As currently proposed, dumpster locations would be better located near the access road so as to minimize paving, site disturbance, and facilitate access and security.

   iii. Pedestrian Access: Where are the sidewalks to access Washington Avenue and Ray Street or Merry Meeting Drive? How will employees safely access this facility or for those using the facility to take a walk for exercise? This is an institutional use, is it not?

   iv. Greenspace. There are well used pedestrian and bicycle trails throughout the property that the public, outside of the immediate neighborhood uses regularly for recreation and travel to and from work, school, or shopping. What accommodations will be made to the public to encourage the occupants of this congregate care facility to be part of the community and vice versa?

   v. Parking lot: The parking area will be disruptive to the neighbors on Florida Avenue due to noise at all hours, headlights, and during shift changes. This parking lot should be relocated to the access road side of the site so as to minimize disruption.

   vi. Lighting: Lighting will be disruptive to the neighbors on Florida Ave. As proposed, the site lighting on the site will be substantially greater than roadway lighting on Florida Avenue. Of course City lighting standards require downcast lighting, but this proposed facility is on a hill and light trespass is unavoidable as the structure is currently configured. The applicant should consider other locations for the structure and paved areas and parking lots.

vii. Maintenance. It is doubtful the facility will be adequately maintained or that the management of the facility will be responsive to complaints once built. As understood, this facility will be replacing a congregate care facility on Washington Ave which has degraded due to deferred maintenance. Potholes are extensive in the parking lot and although I have heard how poor the conditions are in the facility. In light of COVID, cleanliness, corporate models for lack of attention to maintenance, what assurances will be provided that this institutional facility will not be driven to the end of its useful life when the term for maximizing profit has expired?

viii. Public dump. I am appalled that Fallbrook Properties LLC has allowed a public dump to continue for more than five years along the fire access road. Piles of trash, televisions, bed frames continually pile up and remain. I have very little confidence that this facility being proposed will be treated with respect by whoever operates in the future and I expect it to degrade quickly, especially as proposed. What quality assurances will be made to ensure the property is not neglected as it currently is?

ix. Construction staging. The staging area as shown as the parking lot will be disruptive to the neighborhood. Access from one end of the site to the other without paving will cause excessive amount of dust and noise throughout construction. Staging construction material would be more appropriate next to the access road. I am disappointed that this application even suggests this as a location for staging construction. What reaction was the developer expecting from the neighborhood?

x. Blasting. There is a substantial amount of ledge that will need to be driven or blasted as currently designed. This will disruptive for a long period of time during construction. This will cause an excessive amount of dust and noise and will continue for a long period of time.

xi. Arrangement of structures. The arrangement of the structures designed is like fitting a round peg in a square hole on this site. The proposed building and site layout is excessively over-designed (i.e. retaining walls, blasting, dumpsters, staff parking lot, lighting, gravel wetlands, etc.), placed for convenience and not considerating of its context in the neighborhood. The proposed structures make no consideration of the existing congregate care facility on the same site or abutting the proposed facility. The application makes no consideration of access to public ways including Gertrude Street. The proposal exacerbates the potential for pedestrian and vehicle conflicts at the proposed access road especially since access to Merry Meeting Lane is being discouraged.

xii. Sewage disposal. Although the project will potentially meet State Chapter 500 Standards for stormwater runoff, excessive gravel wetland area is proposed. This engineered system is more appropriate for industrial or commercial facilities on a site where site disturbance could be minimized to a greater extend without engineering controls, but due to the wetlands present on the

site, and the topography of the site, consideration has not been made for convenience. An engineered gravel wetland is inappropriate for a residential neighborhood. The gravel wetlands will need maintenance which is unlikely to be carried out and must remain free and clear of vegetation. Better site context consideration would lead to a better design and functionality.

xiii. Volume and type of traffic. Traffic generated, hours of operation, expanse of pavement, and the number of parking spaces are substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone. Although the Fallbrook Woods facility, as proposed, would be a surrounding use, by conditional use permit, the property has already exceeded a reasonable calculation of normal.

It is heartening that through the pursuit of profit, Fallbrook Properties LLC has been motivated to finally take responsibility for considering the maintenance of their property; however, it is disappointing that now that Fallbrook Properties LLC is considering the maintenance of their property, they have discovered that the way this corporation chooses to meet that end is through the sale and maximization of profit at the expense of the community.

comments from Workshop on Fallbrook Woods September 15

Ian Pollis Houseal <ihouseal@yahoo.com> Sep 15, 2020 6:43 PM
Posted in group: **Planning Board**

Dear Planning Board Members,

The material presented this evening with proposed changes was not in the agenda package. It was not available to the public prior to the meeting. And I was unable to adequately comment or review prior to the meeting to make succinct comments on the changes the applicant has proposed. Mr. Austin Smith, had comments with regard to my finding that I find that the changes are unnoticeable and expressed disappointed that those changes were not recognized. Well, frankly, I couldn't because the material was unavailable.

The changes have been minor: a massive retaining wall is still a massive retaining wall. And a large parking lot is still a large parking lot. The site conditions are still the same in the intensity and scale of the proposed use.

Fundamentally, the conditional use is not meeting the standards, and the conditional uses are being disregarded. This proposal fails to rise to the level of a conditional use permit at presented. Conditional use is not an allowed use; please find your legal footing here. You are all debating conditional use, but that is a legal definition well established in the State.

I find it unacceptable that St. Joseph's is being abandoned; this topic is within the Planning Board's purview. Gertrude Rd, is also being disregarded and discounted. Furthermore, it is unacceptable that the existing facility on the site is being disregarded.

The neighborhoods comments continue to be disregarded or discounted.

This is very disappointing. This is an opportunity missed. This building is a square peg in a round hole. The project is inconsiderate to neighborhood.

Thank you,

Ian Houseal
86 Florida Avenue
207-272-8610

Public comments for Planning Board Public Hearing, Tuesday November 10, 2020 in consideration of a conditional use permit for Fallbrook Properties, LLC on a proposal for a 90-bed, 58,197 square foot nursing care facility in the R-3 Zone responding to the conditional use permit standards established and described in City Code § 14-88 and § 14-474.

Ian Houseal, 86 Florida Ave
Abutter
Prepared 11-05-20

This conditional use permit should not be authorized because:

- *The proposal has not adequately responded to the physical qualities of the site nor does the proposed conditional use complements the scale, character, and style of the surrounding neighborhood.*
  - *The proposed building **LOOMS ABOVE THE NEIGHBORHOOD**.*
  - *The proposed building is **MASSIVE** and **MONOLITHIC** and out of scale with the neighborhood.*
  - *The building sits on top a pedestal of a rock outcropping perched much higher than surrounding buildings more visible and more impacting than surrounding uses or other allowable uses because of how the building and parking lot is arranged on the site. **(ARRANGEMENT OF STRUCTURE, EXPANSE OF PAVEMENT)**.*
  - *The proposed conditional use, in the current form and scale proposed **OBVIOUSLY** causes significant negative physical encroachment into the established residential area surrounding the site pursuant to §88*

- *The proposed conditional use, at the size and intensity contemplated **OBVIOUSLY** causes a substantially greater negative impact than would normally occur from surrounding uses or other allowable uses in the same zone pursuant to §474. The design and operation of the proposed conditional use including but not limited to landscaping, screening, loading, deliveries, hours of operation, expanse of pavement, deliveries, trash generation, arrangement of structures, and materials storage will have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.*

The list of concerns raised by myself as an abutter to the project, a residential property that will experience a substantial negative impact from the proposed project and significant negative physical encroachment pursuant to the standards for a conditional use permit pursuant to City Code § 14-88 and § 14-474 remain

unheard, considered, or addressed in the application for the conditional use permit through multiple Planning Board Workshops. See testimony of Ian Houseal for Planning Board workshop, Tuesday June 9, 2020.

It is furthermore likely that the public and neighbors will see new information presented by the developer at the public hearing and be forced to compromise on the significant negative physical encroachment proposed by the project to encroach on residential area nor complement the scale, character, and style of the surrounding neighborhood.

According to City Code § 14-86, "The purpose of the R-3 residential zone is: To provide for medium-density residential development characterized by single-family homes on individual lots and also to provide for planned residential unit developments on substantially sized parcels. Such development shall respond to the physical qualities of a site and complement the scale, character and style of the surrounding neighborhood."

The proposed use is not listed within the purpose of the zone. The listed permitted uses are the surrounding uses and allowed uses. Other institutional conditional uses such as hospitals, places of assembly, and school facilities must not be considered the metric for comparison, but those permitted uses listed for the zone and contemplated in the Zoning Ordinance.

The proposed conditional use does not align with the purpose of the R-3 residential zone. It is not medium-density residential development characterized by single-family homes on individual lots (i.e. surrounding and allowable uses) or planned residential unit development (i.e. allowable use.)
The proposed use does not respond to the physical qualities of the site nor complement the scale, character and style of the surrounding community.

According to City Code § 14-474, the Board may impose reasonable conditions upon the premises **benefited by a conditional use as may be necessary to**

prevent or minimize adverse effects therefrom other properties in the neighborhood.

"Benefited by" implies a special case or a unique case not a preemptory approval by-right. Furthermore, impact is defined as "prevent" or "minimize." Neither of these thresholds have been met. "Halfway" and a "little bit" or not at all is not a threshold.

As such, to prevent or minimize adverse effect on those properties on Florida Avenue:

1. The primary structure must not be located on the top of the outcropping because of the elevation of the proposed structure, given its scale, in proximity to and in comparison to surrounding properties is incompatible or uncomplimentary to the scale, character, and style of the surrounding neighborhood and in comparison to other surrounding uses and allowable uses. The building will loom over the neighborhood.

2. The parking lot must not be located at the most furthest distance from the property entrance possible because of the impact the parking lot will have in "expanse of pavement" and "light" impact and scale of the parking lot compared to surrounding uses.

According to City Code § 14-88 – "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas."
The project proposes an expansion of existing institutional uses onto land other than the lot on which the principal use is located, therefore it shall be demonstrated that the proposed institutional use cannot be accommodated on the existing site through more efficient utilization of land or buildings.

1. The proposal must consider renovation, replacement, or addition to the existing Fall Brook Woods facility through more efficient utilization of land or buildings. It is reasonable pursuant to the requirements of a conditional use in the R-3 Zone.
2. The proposal must consider renovation, replacement, or addition to the existing St. Joseph's facility more efficient utilization of land or buildings. It is reasonable pursuant to the requirements of a conditional use in the R-3 Zone.

The proposal will reduce institutional beds allowed and available in the zone only padding the pocket books of the executives of these corporations. **This proposal would close St. Josephs** reducing nursing homes beds. The Planning Board needs to consider location and beds in the zone and the city overall.

The applicant never made any substantial revisions to their proposal during the workshop process. For example, the developer presented a tiered retaining wall as a revision made to the proposal; however, the original proposal included the retaining wall presented with a tier. **The retaining wall has become no less obtrusive to neighboring properties.** Obviously, vegetation would grow. This isn't a compromising exercise; almost nothing has been asked of the applicant thus far to **PREVENT OR MINIMIZE** the impact to other properties in the neighborhood.

There is an existing Planned Residential Unit Development (PRUD) incorporating the existing conditional use on the site. The Planning Board has asked the applicant to consider the existing PRUD and a PRUD. Information has not been forthcoming.

There is an approved site plan for the property. The existing site plan for the property has been disregarded.

The existing site plan for the property considers access to the property from Washington Ave via Gertrude Street/Topsham Street. This has been disregarded by the applicant. **As stated by the developer, "Consideration of the site plan and existing public way for accessing would upset more people."** That is not a reasonable rationale for **DISREGARDING THE PHYSICAL QUALITIES OF THE SITE**.

This conditional use permit should not be authorized because the applicant has failed to show that the proposed use, at the size and intensity contemplated at the proposed location, will not have a substantially greater negative impact than would normally occur from surrounding uses or other allowable uses in the same zoning district. The applicant might come back with a proposal of smaller scale and intensity with a minimal impact on the existing neighborhood. Notwithstanding all the overwhelming reasons listed above that the proposal does not warrant the approval of a conditional use permit, the Planning Board feels compelled to authorize the conditional use permit upon the premises benefited by the conditional use permit, reasonable conditions must be imposed. **It is requested that such reasonable conditions of a conditional use permit be substantially the same as the requirements of §14-280. Institutional Development Plan so as to prevent or minimize the impact to the neighborhood.**

And finally, the applicant has presented misleading information to hide the impact of the project to the neighborhood. The applicant has sought to manipulate the public's and neighborhood's support or opposition to the project and participation and response to the project outside of public forums. The developer has offered to quiet abutters by offering to pave a private way; not a public way. Corporate interests represented in the application are seeking to profit at the neighborhoods expense, detriment, and damage.

Ian Houseal
86 Florida Ave
Abutter

Testimony of Ian Houseal for public comments for Planning Board Workshop, Tuesday June 9, 2020
In consideration of a plan by Fallbrook Properties, LLC on a proposal for a 90-bed, 58,197 square foot nursing care facility

Dear Members of the Planning Board, please accept my comments as a citizen, property owner, and abutter to the proposed project.

1. Apparently this proposed project will be replacing the Saint Joseph's Rehabilitation and Residence facility, nearby, due to a claim that the facility has reached the end of its useful life. That 19.54 acre site, currently less than 50% developed, is affiliated with this project due to the transfer and crediting of authorized beds. In keeping with City Zoning Code, § 14-88, Conditional Use, (c) Institutional, 2. Long-term and expended care facilities, a. "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential area," the applicant must demonstrate the proposed use cannot be reasonability accommodated at the Saint Joseph's property. It is reasonable that the application demonstrate the requirement of this standard due to the corporate relationships between the developer, and the operators of these facilities. Frankly, this evaluation is practical and important to the planning function of the City in appropriately locating congregate care facilities.

2. According to the City Assessing records as of April 1, 2020, Fallbrook Properties LLC is the owner of record of this 12.62 acre parcel including the Fallbrook Woods Assisted Living Facility. As proposed by the applicant, the project will split and sell 8.28 acres to a new owner, Fallbrook Care Development LLC. Pursuant to City Zoning Code, § 14-88, Conditional Use, (c) Institutional, 2. Long-term and expended care facilities, a. "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential area," it appears as if the applicant intends to split the lot, thereby bypassing the condition and standard required by City Code § 14-88 (c) 2. a. This is not right. The applicant must demonstrate that the proposed use cannot be reasonably accommodated on the existing site through more efficient utilization of land or buildings, unless of course the evaluation demonstrates that the site could be more efficiently utilized. Financial convenience is not sufficient for a project of this scale and magnitude.

3. Although most certainly a standard of site plan review, it is unacceptable that the proposed project does not proposed to connect to Washington Avenue via existing public right-of-ways. Gertrude Street and the so called Topsham Street public right-of-ways are streets on the official map of the City, and connectivity is a stated goal of the City's planning documents. Furthermore, this connection is stated in prior site plan approvals for development. The applicant must demonstrate that this connection is not practical, unless of course it is practical

as an evaluation would determine. Financial convenience to ignore this standard is not sufficient for a project of this scale and magnitude.

4. With regard to "significant physical encroachment into established residential area" as cited in City Code § 14-88 (c) 2. a. above, and pursuant to City Code § 14-474 (c) Conditions for conditional uses: 1. Authorized uses. A conditional use permit may be issued for any use denominated as a conditional use in the regulations applicable to the zone in which it is proposed to be located. 2. Standards. …upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district, please ensure that the application adheres to the standards and conditions listed below in its submission:

    a. With regard to Zoning Code § 14-88 (c) 2. a. above, had the proposal made consideration of these standards and conditions, a different proposal would have emerged in keeping with the standards and conditions requiring consideration of existing and surrounding uses on the site more specifically, the Saint Joseph's property and the property under deliberation, itself.

    b. With regard to City Code § 14-474 (c) 2. above, it does not appear that this application is for an expansion or amendment for capacity for concurrent operations at the property under deliberation. This application clearly appears to be for a second conditional use, separate and distinct from the Fallbrook Woods facility. This is especially disappointing in that the applicant has not considered the Fallbrook Woods facility site even though there is a corporate and currently an ownership affiliation, given that Fallbrook Properties LLC, the owner of the Fallbrook Woods facility owns the property. This is furthermore disappointing due to the failure to consider the Saint Joseph's Rehabilitation and Residence facility and the deferred maintenance that has occurred there and at the Fallbrook Woods facility and surrounding properties. The application must adhere to the standards and conditions in its application.

    c. As proposed, the application proposes a second conditional use in addition to the existing conditional use existing at the Fallbrook Woods facility, at similar size and intensity already existing on the same property or more simply stated, next door. An additional conditional use of similar size and intensity will, without a doubt, due to the fact that the existing facility is already a conditional use and therefore already exceeds the size and intensity of use allowed in the district; the new conditional use will by fact have a substantial negative impact. Such additional conditional uses would most certainly have a substantially greater negative impact than would normally occur from surrounding uses or other allowable uses in the same zoning district, specifically R-3 and the allowable uses in that district since the purpose of the conditional use permit is to mitigate the negative impact of conditional uses. For example, obviously, it would be inappropriate to permit two utility substations conditional use permits (Zoning Code § 14-88 (d) 2.) or a line of day cares in a residential neighborhood within proximity of each other. It would stand to reason that multiple daycares, multiple substations, multiple congregate care facilities would be better located in other locations when treated as conditional uses, not in proximity to each other. Or stated as fundamental to planning, agglomerated through zoning for allowable use for reasons of business benefit including

such as activities/uses as retail, lawyers, and doctors offices. At a minimum, the Planning Board is obligated to require that the second conditional use consider the first conditional use, if it was to be permitted it at all in consideration of the question as to whether the application is complete. This is why the standards and conditions of the Zoning Code pertaining to conditional use exist and more particularly City Code § 14-88 (c) 2. a. and § 14-474 (c) 2. This has obviously been ignored in the application. The application must adhere to the standards and conditions in its application, as described above and consider the existing conditional use and the Saint Joseph's property.

d. Concerning site design issues as presented in the plan:

   i. Retaining Walls. As calculated from the proposed plan, retaining walls would be installed on this outcropping site to support a single floor plate. These retaining walls are calculated at 6-12 feet in height as drawn. The visual impact from the backyards of Florida Avenue homes is excessive and could be mitigated with a different configuration in consideration of the neighborhood and surrounding permitted uses and conditional uses.

   ii. Dumpster: The dumpster locations are inappropriate. The locations will be disruptive due to noise, smell, rodents, and headlights. As currently proposed, dumpster locations would be better located near the access road so as to minimize paving, site disturbance, and facilitate access and security.

   iii. Pedestrian Access: Where are the sidewalks to access Washington Avenue and Ray Street or Merry Meeting Drive? How will employees safely access this facility or for those using the facility to take a walk for exercise? This is an institutional use, is it not?

   iv. Greenspace. There are well used pedestrian and bicycle trails throughout the property that the public, outside of the immediate neighborhood uses regularly for recreation and travel to and from work, school, or shopping. What accommodations will be made to the public to encourage the occupants of this congregate care facility to be part of the community and vice versa?

   v. Parking lot: The parking area will be disruptive to the neighbors on Florida Avenue due to noise at all hours, headlights, and during shift changes. This parking lot should be relocated to the access road side of the site so as to minimize disruption.

   vi. Lighting: Lighting will be disruptive to the neighbors on Florida Ave. As proposed, the site lighting on the site will be substantially greater than roadway lighting on Florida Avenue. Of course City lighting standards require downcast lighting, but this proposed facility is on a hill and light trespass is unavoidable as the structure is currently configured. The applicant should consider other locations for the structure and paved areas and parking lots.

vii. Maintenance. It is doubtful the facility will be adequately maintained or that the management of the facility will be responsive to complaints once built. As understood, this facility will be replacing a congregate care facility on Washington Ave which has degraded due to deferred maintenance. Potholes are extensive in the parking lot and although I have heard how poor the conditions are in the facility. In light of COVID, cleanliness, corporate models for lack of attention to maintenance, what assurances will be provided that this institutional facility will not be driven to the end of its useful life when the term for maximizing profit has expired?

viii. Public dump. I am appalled that Fallbrook Properties LLC has allowed a public dump to continue for more than five years along the fire access road. Piles of trash, televisions, bed frames continually pile up and remain. I have very little confidence that this facility being proposed will be treated with respect by whoever operates in the future and I expect it to degrade quickly, especially as proposed. What quality assurances will be made to ensure the property is not neglected as it currently is?

ix. Construction staging. The staging area as shown as the parking lot will be disruptive to the neighborhood. Access from one end of the site to the other without paving will cause excessive amount of dust and noise throughout construction. Staging construction material would be more appropriate next to the access road. I am disappointed that this application even suggests this as a location for staging construction. What reaction was the developer expecting from the neighborhood?

x. Blasting. There is a substantial amount of ledge that will need to be driven or blasted as currently designed. This will disruptive for a long period of time during construction. This will cause an excessive amount of dust and noise and will continue for a long period of time.

xi. Arrangement of structures. The arrangement of the structures designed is like fitting a round peg in a square hole on this site. The proposed building and site layout is excessively over-designed (i.e. retaining walls, blasting, dumpsters, staff parking lot, lighting, gravel wetlands, etc.), placed for convenience and not considerating of its context in the neighborhood. The proposed structures make no consideration of the existing congregate care facility on the same site or abutting the proposed facility. The application makes no consideration of access to public ways including Gertrude Street. The proposal exacerbates the potential for pedestrian and vehicle conflicts at the proposed access road especially since access to Merry Meeting Lane is being discouraged.

xii. Sewage disposal. Although the project will potentially meet State Chapter 500 Standards for stormwater runoff, excessive gravel wetland area is proposed. This engineered system is more appropriate for industrial or commercial facilities on a site where site disturbance could be minimized to a greater extend without engineering controls, but due to the wetlands present on the

site, and the topography of the site, consideration has not been made for convenience. An engineered gravel wetland is inappropriate for a residential neighborhood. The gravel wetlands will need maintenance which is unlikely to be carried out and must remain free and clear of vegetation. Better site context consideration would lead to a better design and functionality.

xiii. Volume and type of traffic. Traffic generated, hours of operation, expanse of pavement, and the number of parking spaces are substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone. Although the Fallbrook Woods facility, as proposed, would be a surrounding use, by conditional use permit, the property has already exceeded a reasonable calculation of normal.

It is heartening that through the pursuit of profit, Fallbrook Properties LLC has been motivated to finally take responsibility for considering the maintenance of their property; however, it is disappointing that now that Fallbrook Properties LLC is considering the maintenance of their property, they have discovered that the way this corporation chooses to meet that end is through the sale and maximization of profit at the expense of the community.

DIVISION 4. R-3 RESIDENTIAL ZONE*

---

*Editor's note--Ord. No. 534-84, adopted May 7, 1984, repealed Div. 4, §§ 14-87--14-90, and enacted a new Div. 4, §§ 14-86--14-91. Formerly, Div. 4 was derived from Code 1968, § 602.4.A--D, and the following ordinances: Ord. No. 49-74, 372-75, 406-75, 34-76, 145-79, 145-81, 303-81, 90-83, and 499-74.

Sec. 14-86. Purpose.

The purpose of the R-3 residential zone is:

To provide for medium-density residential development characterized by single-family homes on individual lots and also to provide for planned residential unit developments on substantially sized parcels. Such development shall respond to the physical qualities of a site and complement the scale, character and style of the surrounding neighborhood.

(Ord. No. 534-84, 5-7-84; Ord. No. 81-88, § 1, 7-19-88)

***Editor's note--**Ord. No. 81-88, § 1, adopted July 19, 1988, amended § 14-86 to read as herein set out. See also the editor's note to Art. III of this chapter for additional provisions relative to Ord. No. 81-88.

Sec. 14-87. Permitted uses.

The following uses are permitted in the R-3 residential zone:

(a) Residential:

1. Single-family detached dwellings.

2. Planned residential unit development (PRUD) consisting of horizontally attached dwelling units or a series of such dwelling units. No dimensional requirements contained in section 14-90 shall apply with respect to such development, except for those requirements specifically denoted for PRUD. There shall be no open outside stairways or fire escapes above the ground floor. All land shall be owned and used in common and shall be governed and maintained as set forth in section 14-498(i)(3) of article IV (subdivisions) of

5. Municipal uses, excluding those specifically set forth in section 14-88 of this division.

6. Wind energy systems, as defined and allowed in Article X, Alternative Energy.

(Ord. No. 534-84, 5-7-84; Ord. No. 262-84, § 1, 12-17-84; Ord. No. 36-85, § 1, 7-15-85; Ord. No. 81-88, §§ 2, 3, 7-19-88; Ord. No. 86A-89, § 3, 8-21-89; Ord. No. 33-91, § 4, 1-23-91; Ord. No. 165-97, § 1, 12-1-97; Ord. No. 33-11/12, 1-18-12)

---

*Editor's note--Ord. No. 81-88, §§ 2 and 3, adopted July 19, 1988, amended subsections 14-87(a)2 and (b)5 to read as herein set out. See also the editor's note to Art. III of this chapter for additional provisions relative to Ord. No. 81-88.

Sec. 14-88. Conditional uses.

The following uses shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses) and any special provisions, standards or requirements specified below:

(a) Residential:

1. Sheltered care group homes, as defined in section 14-47 of this article, for up to twelve (12) individuals, plus staff, and serving a primary population which is not handicapped persons, parolees, persons involved in correctional prerelease programs, or current illegal drug users, provided that:

a. A sheltered care group home shall not be located within five hundred (500) feet of another, as measured alone street lines to the respective property lines;

b. There shall be no open outside stairways or fire escapes above the ground floor;

c. The facility shall make provision for adequate on-site staffing in accordance with applicable state licensing requirements. If a facility is not licensed by the state,

there shall be a minimum of one (1) staff person for every ten (10) residents or fraction thereof.

The board of appeals may impose conditions upon a conditional use permit concerning the creation or operation of a sheltered care group home including but not limited to the following: site and building maintenance; lighting, fencing, and other appropriate security measures; screening and buffering of parking areas; compatibility of any additions or alterations with the existing residential structure; compatibility of new structures with the architectural character of the surrounding area; and limitation on the duration of a sheltered care group home permit.

2. Alteration or construction of a detached single-family dwelling to accommodate one (1) additional dwelling unit for the benefit of homeowners or tenants, provided that:

   a. The accessory unit shall be no more than thirty (30) percent of the gross floor area of principal building and shall have a minimum floor area four hundred (400) square feet; gross floor area shall exclude any floor area that has less than two-thirds of its floor-to-ceiling height above the average adjoining ground level; gross floor area may include attic space if such space shall be included as habitable space within either dwelling unit;

   b. There shall be no open outside stairways or fire escapes above the ground floor;

   c. Any building additions or exterior alterations such as facade materials, building form, or roof pitch shall be designed to be compatible with the architectural style and to maintain the single-family appearance of the dwelling;

   d. A minimum lot size of six thousand five hundred (6,500) square feet of land area

shall be required;

g. No dwelling unit shall be reduced in size to less than one thousand (1,000) square feet of floor area, exclusive of common areas and storage in basement or attic;

h. Parking shall be provided as required by division 20 of this article;

i. The project shall be subject to article V (site plan) of this chapter for site plan review and approval and the following additional standards:

i. Any additions or exterior alterations such as facade materials, building form and roof pitch shall be designed to be compatible with the architectural style of the building;

ii. The scale and surface area of parking, driveways and paved areas shall be arranged and landscaped to properly screen vehicles from adjacent properties and streets.

j. Either the accessory unit or principal unit shall be occupied by the lot owner, except for bona fide temporary absences.

3. Alteration of a structure existing and not in residential use as of January 1, 1984, to three (3) or more dwelling units, provided that:

a. No open outside stairways or fire escapes above the ground floor shall be constructed or have been constructed in the immediately preceding five (5) years;

b. A lower level dwelling unit shall have a minimum of one-half of its floor-to-ceiling height above the average adjoining ground level;

c. Three thousand (3,000) square feet of land

area per dwelling unit shall be required;

d. On-site parking shall be required as specified in division 20 (off-street parking) of this article, for the combined uses of the site;

e. The project shall be subject to article V (site plan) of this chapter for site plan review and approval and the following additional standards:

i. Any addition or exterior alterations such as façade materials, building form, and roof pitch shall be designed to be compatible with the architectural style of the structure and, subject to the dimensional requirements of this zone, shall be limited to a gross floor area equal to or less than 25% of the total existing floor area as of [insert date of adoption].

ii. The scale and surface area of parking, driveways, and paved areas shall be arranged and landscaped to be compatible in size and scale with neighboring properties in the area and to properly screen vehicles from adjacent properties and streets.

(b) Commercial:

1. Reserved.

(c) Institutional: Any of the following conditional uses provided that, notwithstanding section 14-474(a) (conditional uses) of this article or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority:

1. Elementary, middle, and secondary school;

2. a. Long-term and extended care facilities;

b. Intermediate care facility for thirteen (13) or more persons;

3. Places of assembly;

4. Hospital.

Such uses shall be subject to the following conditions and standards in addition to the provisions of section 14-474:

City Code § 14-88. Conditional uses. (c) a.

a. In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas; and

b. The proposed use will not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or thereafter; and

c. In the case of a use or use expansion which constitutes a combination of the above-listed uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative; and

d. Article V (site plan) sections 14-522 and 14-523 notwithstanding, in the case of places of assembly the proposed use shall be subject to the requirements of article V (site plan) of this chapter; and

e. In the case of community halls:

i. The structure was in existence as of January 4, 2010.

ii. The structure was built for institutional or other non-residential uses;

the basis of the decision have not materially changed, and the two-year period is not exceeded thereby.

(f) *Recording of variances.* No variance shall be valid unless, within thirty (30) days of final approval of the variance, a certificate describing the variance has been recorded by the applicant for the variance in the registry of deeds as required by 30 M.R.S.A. Section 4963.

(Code 1968, § 602.24.C; Ord. No. 437-74, 7-1-74; Ord. No. 467-83, § 1, 4-20-83; Ord. No. 563-84, 5-7-84; Ord. No. 357-84, § 1, 12-17-84; Ord. No. 354-85, § 6, 1-7-85; Ord. No. 40-85, § 1, 7-15-85; Ord. No. 67-87, § 5, 11-2-87; Ord. No. 93-88, 7-19-88; Ord. No. 167-89, 12-11-89; Ord. No. 324-92, 4-22-92; Ord. No. 164-97, § 13, 1-6-97; Ord. No. 208-98, §§ 1, 2, 2-2-98; Ord. No. 253-05/06, 7-17-06; Ord. No. 296-08/09, 6-15-09; Ord. No. 60-12/13, 11-19-12)

***Editor's note—**Ord. No. 93-88, adopted July 19, 1988, amended § 14-473 by adding subsection (f) to read as herein set out. See also the editor's note to Art. III of this chapter for additional provisions relative to Ord. No. 93-88.

Sec. 14-474. Conditional uses.

(a) *Authority.* The board of appeals may, subject to the procedures, standards and limitations set out in this section, approve the issuance of a conditional use permit authorizing development of conditional uses listed in this article.

(b) *Procedure:*

1. *Application.* Applications for conditional use permits shall be submitted to the building authority. A nonrefundable application fee, as established from time to time by the city council to cover administrative costs and costs of a hearing, shall accompany each application. The application shall be in such form and shall contain such information and documentation as shall be prescribed from time to time by the building authority but shall in all instances contain at least the following information and documentation:

    a. The applicant's name and address and his or her interest in the subject property;

    b. The owner's name and address if different than the applicant;

    c. The address, or chart, block and lot number as shown in the records of the office of the assessor

of the subject property;

d. The zoning classification and present use of the subject property;

e. The particular provision of this article authorizing the proposed conditional use;

f. A general description of the proposed conditional use;

g. Where site plan approval is required by article V of this chapter, a preliminary or final site plan as defined by article V of this chapter.

2. *Public hearing.* A public hearing shall be set, advertised and conducted by the board of appeals in accordance with article VI of this chapter.

3. *Action by the board of appeals.* Within thirty (30) days following the close of the public hearing, the board of appeals shall render its decision, in a manner and form specified by article VI of this chapter, granting the application for a conditional use permit, granting it subject to conditions as specified in subsection (d), or denying it. The failure of the board to act within thirty (30) days shall be deemed an approval of the conditional use permit, unless such time period is mutually extended in writing by the applicant and the board. Within five (5) days of such decision or the expiration of such period, the secretary shall mail notice of such decision or failure to act to the applicant and, if a permit is authorized, shall issue such permit, listing therein any and all conditions imposed by the board of appeals.

(c) *Conditions for conditional uses:*

1. *Authorized uses.* A conditional use permit may be issued for any use denominated as a conditional use in the regulations applicable to the zone in which it is proposed to be located.

2. *Standards.* The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than

would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:

a. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and

b. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and

c. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

3. *Use Specific Standards*. The following additional standards of review apply to the specific uses.

a. Emergency shelters are subject to the following conditions, in addition to the provisions of section 14-474 (c) 2. Notwithstanding section 14-474(a) or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority for any shelter also subject to Level III site plan review:

i. The facility shall provide adequate space for conducting security searches and other assessments;

ii. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas;

iii. A Management Plan adequately outlining the following areas shall be provided:

Management responsibilities; Process for resolving neighborhood concerns; Staffing; Access restrictions; On-site surveillance; Safety measures; Controls for resident behavior and noise levels; and Monitoring Reports.

iv. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit;

v. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, housing assistance, or other programs;

vi. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site; and

vii. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

(d) *Conditions on conditional use permits.* The board of appeals may impose such reasonable conditions upon the premises benefited by a conditional use as may be necessary to prevent or minimize adverse effects therefrom upon other property in the neighborhood. Such conditions shall be expressly set forth in the resolution authorizing the conditional use permit and in the permit. Violation of such conditions shall be a violation of this article.

(e) *Effect of issuance of a conditional use permit.* The issuance of a conditional use permit shall not authorize the establishment or extension of any use nor the development, construction, reconstruction, alteration or moving of any building or structure, but shall merely authorize the preparation, filing and processing of applications for any permits or approvals which may be required by the codes and ordinances of the city, including but not limited to a building permit, a certificate of occupancy,

subdivision approval and site plan approval.

(f) *Limitations on conditional use permits.* No conditional use permit shall be valid for a period longer than six (6) months from the date of issue, or such other time as may be fixed at the time granted not to exceed two (2) years, unless the conditional use has been commenced or is issued and construction is actually begun within that period and is thereafter diligently pursued to completion; provided, however, that one (1) or more extensions of said time may be granted if the facts constituting the basis of the decision have not materially changed, and the two-year period is not exceeded thereby. A conditional use permit shall be deemed to authorize only the particular use for which it was issued and such permit shall automatically expire and cease to be of any force or effect if such use shall for any reason be discontinued for a period of twelve (12) consecutive months or more.

(g) *Appeals from board decisions.* Appeals from any decision of the board of appeals or, where applicable, the Planning Board respecting a conditional use permit shall be to superior court.
(Code 1968, § 602.24.D; Ord. No. 437-74, 7-1-74; Ord. No. 407-83, 2-2-83; Ord. No. 467-83, § 2, 4-20-83; Ord. No. 237-83, 10-17-83; Ord. No. 222-13/14, 5-5-2014; Ord. No. 252-16/17, 6-5-2017)

Sec. 14-475. Reserved.

***Editor's note—**Section 7 of Ord. No. 354-85, adopted Jan. 7, 1985, repealed § 14-475, relative to nonconforming uses, which derived from Code 1968, § 602.24.E, and Ord. No. 437-74, adopted July 1, 1974.

Sec. 14-476. Successive applications.

Whenever any application, appeal or other request filed pursuant to this article has been finally denied on its merits, a second application, appeal or other request seeking essentially the same relief, whether or not in the same form or on the same theory, shall not be brought within one (1) year of such denial unless, in the opinion of the officer or board before which it is brought, substantial new evidence is available or a mistake of law or fact significantly affected the prior denial.
(Code 1968, § 602.24.F; Ord. No. 437-74, 7-1-74)

Sec. 14-477. Violations.

In addition to any other remedies available, the board of appeals after notice and hearing may revoke any variance or other relief granted under this article when the provisions of this

Institutional Overlay Zone and the accompanying Regulatory Framework as an amendment to the city's code of ordinances.

(e) *Future Institutional Development*.

1. All new development by the Eligible Institution within the boundary of the IOZ shall be compliant with the IOZ and accompanying Regulatory Framework, consistent with the IDP, consistent with the Comprehensive Plan, and meet applicable site plan standards, unless such standards are superseded by the Regulatory Framework.

2. Any use/development proposed by the Eligible Institution outside the IOZ boundary that complies with the zoning for permitted uses in that location shall be reviewed under the standards of that zone. Any use/development proposed by an Eligible Institution outside of the IOZ boundary that is proposed in a residential zone and is functionally related to the operations within the IOZ shall be addressed by the IDP and require an amendment to the IDP.

(Ord. No. 221-16/17, 5-1-2017)

14-280. Institutional Development Plan *(IDP)*

(a) *Purpose.* Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the Planning Board in accordance with this ordinance. The purpose of the IDP is to establish baseline data about institutional land uses, facilities, and services and measure, analyze, and address the anticipated or potential impacts of planned institutional growth and change. The IDP shall serve as a background document that supports the proposed Regulatory Framework and frames subsequent site plan review(s).

(b) *Planning Horizon.* An IDP shall provide the city and abutting neighborhoods with a clear outline of the anticipated or potential growth and change of the Eligible Institution for the short- to medium-term (e.g. 1-5 and 5-10 years respectively), as well as a conceptual growth plan for the long-term (e.g. 10 years

or more); however, the specific planning horizons for each institution will be determined as part of the IDP approval process.

(c) *Content.* The IDP submission shall address the following elements unless specifically modified by the Planning Authority or Planning Board, with the scope and level of detail to be clarified at the required Scoping Meeting.

1. Context Information, including:

   a. The institution's adopted mission, vision, or purpose statement;

   b. A summary of relevant baseline data on the institution, including:

      i. A neighborhood context plan;

      ii. An inventory of current programs and services;

      iii. A current census of the number of people using the institution (e.g., employees, enrollment, patients), with an indication of maximums and minimums over time;

      iv. An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking); and

      v. An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities; and

   c. A summary of the baseline characteristics of the existing campus and context of the institution, based on identified study areas, including:

i. A summary of existing resources, such as historic, open space, and natural resources;

ii. A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization;

iii. A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues; and

iv. Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth; and

d. A summary of public involvement in the development of the IDP, including major areas of public concern.

2. Assessment of Future Institutional Growth and Change, including:

a. A description of institutional needs and areas of future institutional growth and change, with;

i. A projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time);

ii. Institutional objectives for property both within and outside the IOZ boundary (e.g. acquisition and/or disposition), including an indication of any functional land use connection for sites outside the IOZ boundary to the main campus; and

iii. A Development Plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary

of the IOZ and any phasing of the development; and

b. Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the Regulatory Framework, including:

i. Transportation and access, with;

a. An analysis of the projected changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan;

b. An analysis of the projected changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety; and

c. A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required; and

ii. Environment, with;

a. An analysis of potential cumulative impacts on natural resources and open spaces;

b. An analysis of projected energy consumption, hazardous materials

generation, noise generation, and similar issues as relevant; and

c. An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation; and

iii. Infrastructure, with;

a. An analysis of projected public utility demand and the capacity of associated infrastructure;

b. An analysis of projected public safety needs and projected impacts to the capacity of these services; and

c. An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth; and

iv. Design, with;

a. An analysis of projected impacts to neighboring properties and public spaces, including potential shadow, wind, and lighting impacts, impacts of height and massing, and impacts to historic resources;

b. An analysis of transition areas between the institution and adjoining neighborhoods, including identification of key character defining components of the surrounding context;

c. An analysis of existing Crime Prevention Through Environmental Design issues and identification of how these principles would be addressed as part of the

proposed campus development; and

d. A conceptual built environment/public realm plan, representing the synthesis of the analysis and including a set of guidelines for urban design, landscape, open space, and streetscape treatments, with particular attention to the treatment of edges (both within and abutting the IOZ boundary) to achieve compatible transitions; and

v. Neighborhood Engagement, with;

a. A plan for ongoing community engagement that represents best practices, promotes collaborative problem solving around community concerns, fosters transparency, and identifies mechanisms for neighborhood feedback and institutional accountability;

b. A property management framework that identifies the institution’s process for handling operational property issues with neighbors;

c. Strategies for assuring communication pertaining to property acquisition and disposition in surrounding neighborhoods; and

d. A set of construction management principles to apply to all institutional construction, that represent best practice, aim to minimize short- and long-term construction impacts on surrounding residents and businesses, and ensure a clear communication strategy is in place in advance of construction.

(d) *Standards of Review*. The IDP shall:

1. Address all content requirements, unless explicitly modified by the Planning Authority or Planning Board;

2. Reflect the issues/topics identified in the required public process;

3. Demonstrate consistency with the city’s Comprehensive Plan and the purpose of this ordinance;

4. Demonstrate how the property ownership, proposed growth, and requested Regulatory Framework relate to the institution’s mission;

5. Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands;

6. Outline an approach to open space, natural, and historic resources that supports preservation and enhancement.

7. Demonstrate that potential cumulative environmental impacts have been anticipated and can be minimized or satisfactorily mitigated;

8. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated;

9. Reflect a comprehensive design approach that ensures appropriate transitions with the existing or future scale and character of the neighboring urban fabric;

10. Promote compatibility with existing or future uses in adjacent neighborhoods, maintain housing, and support local amenities;

11. Anticipate future off-site improvements that would support the integration of the institution into the community and city-wide infrastructure;

12. Conform with Portland's Historic Preservation Ordinance standards for designated landmarks or for properties within designated historic districts or designated historic landscapes, if applicable. When proposed adjacent to or within one hundred (100) feet of designated landmarks, historic districts, or historic landscapes, the IDP shall be generally compatible with the major character-defining elements of the landmark or portion of the district in the immediate vicinity; and

13. Incorporate strategies to support clear communication and ongoing public engagement between institutions and nearby neighbors.

(e) *Approval.* Upon finding that an Eligible Institution's IDP meets the standards of review, the Planning Board shall approve, approve with conditions, or deny an IDP.

(f) *Monitoring.* The IDP shall establish a schedule for reporting on IDP implementation at regular intervals of not more than ten years from the date of approval of the initial or amended IDP, and identify thresholds for IDP amendments;

(g) *Amendments.* An approved IDP shall guide campus development unless and until amended. If at any time the Eligible Institutions request minor amendments to an approved IDP, the Planning Authority may approve such minor amendments, provided that they do not constitute a substantial alteration of the IDP and do not affect any condition or requirement of the Planning Board. The applicant shall apply with a written statement of the proposed amendment and proposed amended IDP to the Planning Authority, whose decision as to whether the amendment is minor shall be final. Major amendments shall be reviewed by the Planning Board. When the IDP is amended, the baseline data in the IDP shall be updated as appropriate.
(Ord. No. 221-16/17, 5-1-2017)

14-281. Regulatory Framework

(a) *Purpose*. The Regulatory Framework translates the IDP into a set of clear and specific zoning requirements for the IOZ that constitute the text and map amendments to the City's Land Use Code and Zoning Map. The zoning requirements are anticipated

to include parameters that guide the growth and change of the institution as well as broad strategies to address potential impacts, with plans and details to be developed under site plan review.

(b) *Applicability.* The Regulatory Framework shall apply only to properties that are within the IOZ boundary and to which the Eligible Institution holds right, title, or interest. For these properties, the Institutional Overlay Zone shall supersede the underlying zoning, and all new institutional development shall be conducted in compliance with the Regulatory Framework and the approved Institutional Development Plan. Properties located within the Institutional Overlay Zone not subject to right, title, or interest of the Eligible Institution shall continue to be governed by the regulations of the underlying zoning designation.

(c) *Uses.* Institutional uses, including hospitals and higher education facilities, shall be permitted, as shall uses that are functionally integrated with, ancillary to, and/or substantively related to supporting the primary institutional use, consistent with the applicable approved IDP.

(d) *Content*. The Regulatory Framework shall reflect the information and analysis of the IDP. The content shall be tailored to address the particular issues associated with the institution and its neighborhoods. The Regulatory Framework should be succinct and use tables and graphics as possible to address the following, if applicable:

1. *Zoning boundary of the IOZ*: The area to which the regulations apply, as shown on the zoning map, subject to other provisions of this ordinance (i.e. the map amendment to the City’s Zoning Map);

2. *Phasing and schedules:* Requirements that relate to particular proposed phases; a chart showing the schedule or thresholds for submitting an amended IDP (or elements of an IDP, such as a Transportation Demand Management (TDM) Plan);

3. *Uses:* Clarification, as necessary, on permitted uses;

4. *Dimensional Requirements*: Graphics, sketches, or standards, including details for transition zones within the IOZ boundary;

5. *Transportation*: Elements such as Transportation Demand Management Plan (TDM) trip reduction targets or contribution to area-wide TDM measures; broad parameters for ensuring pedestrian, vehicular, bicycle and transit access and safety; parking ratios and management strategies; thresholds for access improvements;

6. *Environment:* The approach to the inclusion of open space and preservation of environmentally-sensitive areas;

7. *Mitigation measures*: The broad approach to identified mitigation measures, which would be addressed in greater detail in the site plan review process; thresholds for addressing deficiencies; goals for preservation/protection;

8. *Design*: Graphics and standards to clarify building placement and envelope (height and massing); guidelines for integration of site features; required treatments for transition zones and treatment for all edges (both within and abutting the IOZ boundary); guidelines for establishing campus identity;

9. *Neighborhood Integration:* Thresholds and strategies for neighborhood engagement; mitigation of impacts on neighboring properties, including construction impacts; buffering requirements; objectives for pedestrian linkages and safety; other requirements that address community concerns; and

10. *Monitoring:* A schedule for regular monitoring reports on IDP implementation in accordance with the IDP.

(e) *Standards of Review:* The Regulatory Framework shall:

1. Be consistent with the Comprehensive Plan and the Institutional Development Plan;

2. Provide a clear zoning framework, using graphics and tables as appropriate, to apply to future site plan reviews;

3. Provide specific regulatory statements as appropriate that respond to concerns raised during the required public involvement; and

4. Outline measurable goals and thresholds for improvements or other actions identified in the IDP to be advanced in subsequent site plan applications.

(f) *Approval/Adoption.* The Planning Board shall review the proposed Regulatory Framework against the standards of review and make a recommendation on the institution's IOZ designation and Regulatory Framework to the City Council for adoption as part of this zoning ordinance.

(g) *Amendments.* A Regulatory Framework and IOZ boundary as adopted by the City Council shall remain in force unless and until amended. Amendments to a Regulatory Framework and/or IOZ boundary may be brought forth by the city or Eligible Institution. Proposed amendments to the IOZ boundary or Regulatory Framework shall be reviewed by the Planning Board and adopted by the City Council subject to the provisions of this ordinance.

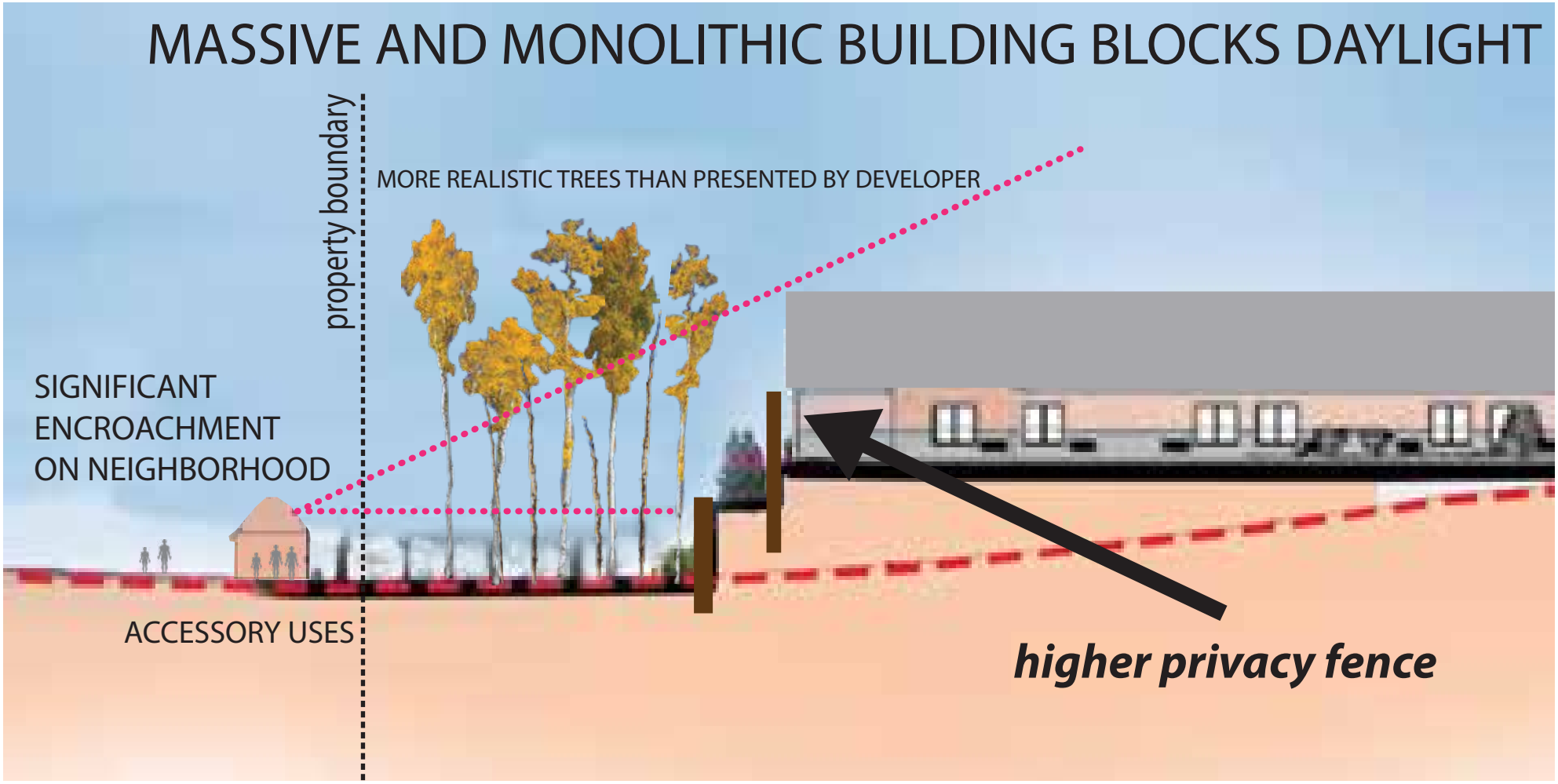
(Ord. No. 221-16/17, 5-1-2017)

14-282. Maine Medical Center Institutional Overlay Zone Regulatory Framework.

(a) Applicability. All development proposed by Maine Medical Center (MMC) within the boundary of the Institutional Overlay Zone (IOZ) shall be consistent with the approved Institutional Development Plan (IDP), consistent with the Comprehensive Plan, and meet applicable standards of the land use code, unless such standards are superseded by the following Regulatory Framework. This Regulatory Framework shall govern future development by MMC within the IOZ unless amended by the Portland City Council upon formal application of MMC.

1. The MMC Institutional Overlay Zone shall have the boundaries depicted in the map, below, and shall

FUTURE BACKYARDS ALONG FLORIDA AVENUE



LOOMS OVER NEIGHBORHOOD
Excessively high retaining wall and fenced institutional use

applicant's workshop presentation

Ian Pollis Houseal <ihouseal@yahoo.com> Nov 5, 2020 3:47 PM
Posted in group: **Planning Board**

Please see the attached correction to the applicant's site section provided during the last workshop meeting. As I said during the meeting, the section is disingenuous. It is misleading, intentionally so.

Proximity to surrounding structures and property has been corrected scaled in the attached, actual to my property. The developer presented a "typical," but it is nothing of the sort; only if you skew that section line.

Additionally, the existing vegetative buffer as exists has been modified to better reflect actual conditions. Those trees that the developer stamped in don't exist. The ones I drew do.

This proposal and resultant conditional use, given site limitations will be an imposing structure on the landscape. It will cause irreparable harm to the neighborhood character and style. The building is massive compared to the residential neighborhood.

The retaining wall proposed is massive in inappropriate in a residential neighborhood. The Planning Board must prevent or minimize such impact, not compromise with the developer for a lesser impact (if such lesser impact was ever presented compared to the original submission; it was not.)

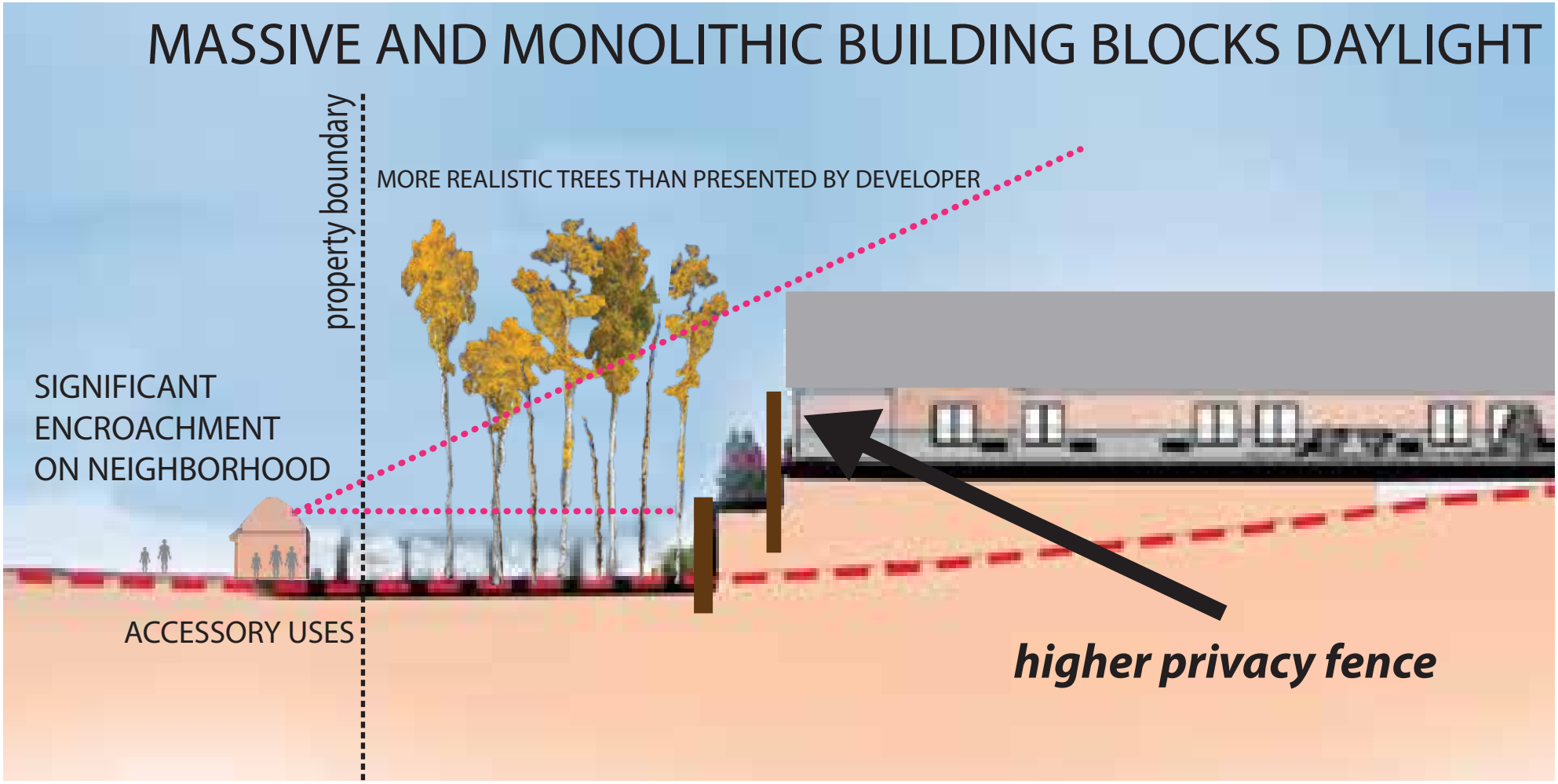
The height of the retaining wall has yet to be disclosed to the community.

The applicant should come back later with a proposal of less intensity and scale, more in character with the residential neighborhood with minimum or no encroachment into the surrounding properties.

The proposed conditional use as presented is incompatible with the allowable uses and surrounding existing uses.

The proposal fails to demonstrate that it will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

FUTURE BACKYARDS ALONG FLORIDA AVENUE



LOOMS OVER NEIGHBORHOOD
Excessively high retaining wall and fenced institutional use

retaining wall example

Ian Pollis Houseal <ihouseal@yahoo.com> Nov 5, 2020 4:11 PM
Posted in group: **Planning Board**

I wanted to make sure the Planning Board and the public had a reflective illustration of the retaining wall proposed by the applicant. As a matter of fact, this retaining wall in the picture may be of a similar height to the proposal and a similar material.

More accurate trees were also included in the illustration. The computer models and dense trees presented by the developer are inaccurate and misleading. The perspectives were skewed and also hid, problematic areas for their application (i.e. those areas impacted by the development.)

Obviously, there won't be a dump truck parked on top of a wetland or the existing trees, but you never know. I don't see that that the forested wetland will survive the construction.

Granted, the applicant has proposed two tiers of retaining walls in their original application, suggesting in their supposed revision for aesthetic and vegetative or buffering. The impact and resulting substantial negative effect will be about the same as a single retaining wall tier.

This picture was taken in Sanford Maine. The facility there will likely be the model for this proposal except that the topography is reversed in that the building and parking lot is in Sanford is in a valley, not on an outcropping of rock requiring a substantial retaining wall and structure that will loom over the neighborhood and create a literal "spite" wall to its neighbors.

Furthermore, the Sanford property has public road access and the proposal and resulting project included the acceptance of a street and the discontinuance of a street. It is unreasonable that the developer would not connect the street.

The current proposal with the presented "arrangement of structures" and "expanse of pavement" (e.g. the proposed uses scale and intensity as presented on the site) will have a substantially greater effect/impact on surrounding properties that those associated with surround and allowable uses like residential and PRUDs.

Thank you,

Ian Houseal
86 Florida Ave
207-272-8610

SANDY RIVER COMPANY'S PROPOSED RETAINING WALL FOR FALLBROOK WOODS ALONG FLORIDA AVENUE (ILLUSTRATIVE PURPOSES ONLY, NO TRUCK IN ACTUALITY) ACTUAL SANDY RIVER COMPANY RETAINING WALL



Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: 60 Merrymeeting Drive - Fallbrook

Andrew Tufts <atufts@portlandmaine.gov> Thu, Nov 5, 2020 at 8:55 AM
To: Jennifer Munson <jmy@portlandmaine.gov>

New comments

---------- Forwarded message ---------
From: **Jeffrey Crawford** <crawfordj555@gmail.com>
Date: Thu, Nov 5, 2020 at 8:23 AM
Subject: Fwd: 60 Merrymeeting Drive - Fallbrook
To: <atufts@portlandmaine.gov>
Cc: Justin Costa <jcosta@portlandmaine.gov>

Hello,

Can you please confirm receipt of this email? I don't see it included in the Fallbrook documents.

Regards,
Jeff Crawford

---------- Forwarded message ---------
From: **Jeffrey Crawford** <crawfordj555@gmail.com>
Date: Fri, Feb 28, 2020 at 1:37 PM
Subject: 60 Merrymeeting Drive - Fallbrook
To: <jcosta@portlandmaine.gov>

Hello Justin,

I am writing to you about my opposition against proposed site plan PL-000925-2019 - Main Parcel 400 D023001 - 60 Merrymeeting Drive.

I am a direct abutter to the proposed project and have been unable to receive the secure mail detailing this project as it is addressed to the previous owners. Thankfully my neighbors on Florida Avenue have been keeping me in the loop.

Not only does this proposal obstruct a wetland, but also its wildlife and its ecological value. Becoming a first time homeowner in 2019, this is also quite the surprise. One of the selling points was the land and privacy, but with the proposed construction, that goes away. Furthermore, the proposed plans show a drainage ditch directly behind my property. Currently being a wetland, and only a few runoffs for drainage in the new plan, foresight only shows flooding as well as excess fleas and bugs directly pushed towards mine and my neighbors properties.

I understand the sole purpose of the project is to replace the current rehab center down the street at Saint Joseph's Rehabilitation & Residence - but why don't they rebuild the current site? Or build on the many wooded acres directly abutting the current location of Saint Joseph's Rehabilitation & Residence? Rather than intruding on this beautiful and nice neighborhood.

As part of the North Deering community, I ask that you remain mindful of our neighborhood's best interests and forgo the construction at this proposed location.

Sincerely,

Jeff Crawford
72 Florida Ave, Portland, ME 04103

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov

(207) 874-8724

Fwd: Fallbrook Campus

Jeffrey Crawford <crawfordj555@gmail.com> Nov 5, 2020 9:19 PM
Posted in group: **Planning Board**

---------- Forwarded message ---------
From: **Jeffrey Crawford** <crawfordj555@gmail.com>
Date: Thu, Nov 5, 2020 at 11:51 AM
Subject: Fallbrook Campus
To: <atufts@portlandmaine.gov>, Justin Costa <jcosta@portlandmaine.gov>

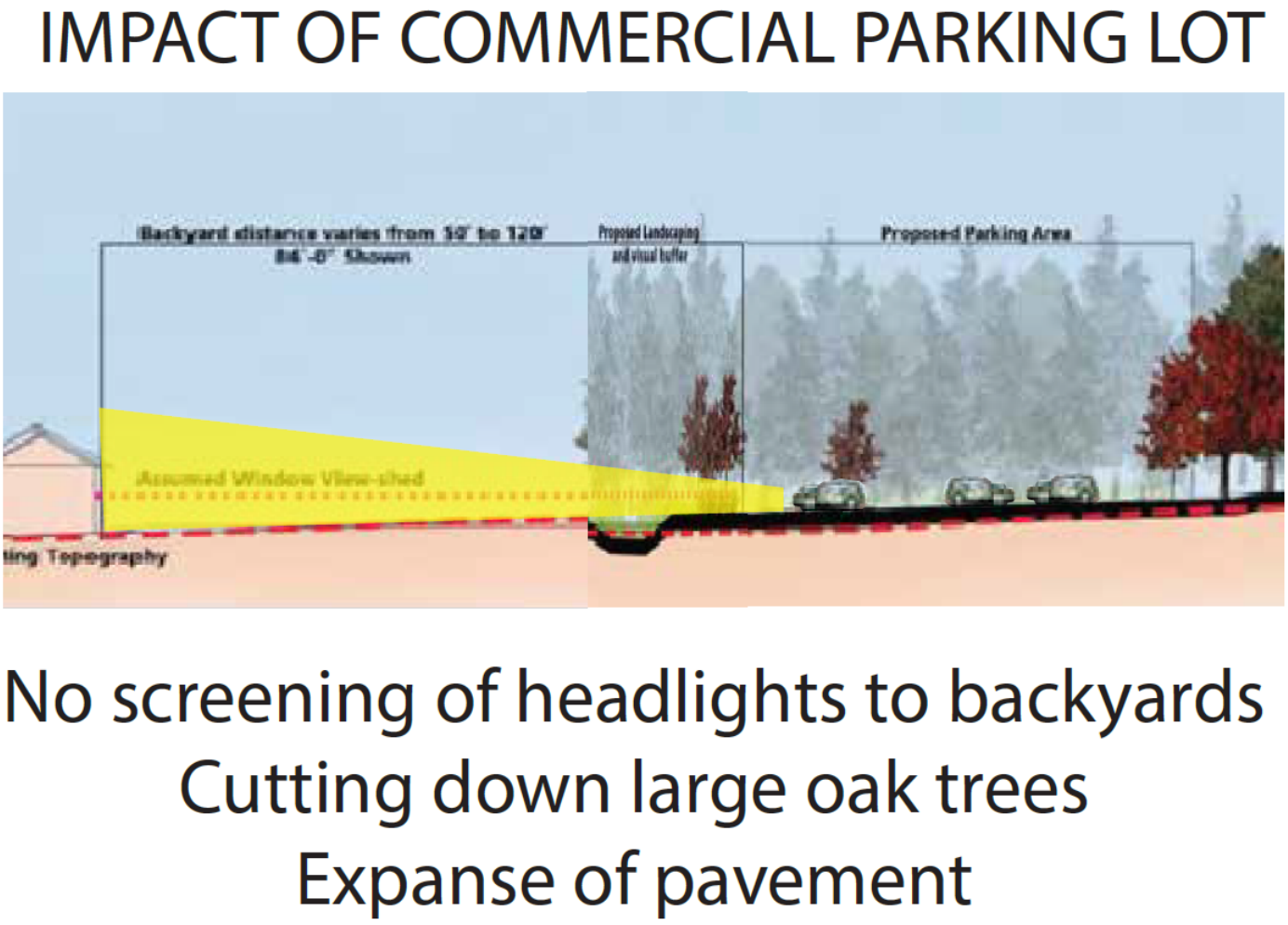
Hello Planning Board,

I am writing today in opposition against the proposed relocation of St. Joe's Rehab and Residences to the Fallbrook campus. The level of impact/encroachment of this building's size and intensity will have a significant negative impact not just to the abutters, but the surrounding neighborhood. Attached is a view of what one would see in relation to the parking lot. I am already able to see the houses on Topsham Street and some of the Residences, through the woods, during the day. At night one can see the house's outdoor lights. Thankfully they are houses, so the intrusion is next to nothing. The attached image is an example of what would be the light impact from a variety of people coming and going at all hours from the parking lot, including healthcare workers, interns, family members, commercial snow trucks, food delivery service companies, and more. During the day, it will feel like we are looking into Pape Subaru's car lot. I can only imagine what the view of the massive building and it's very own, 200' long x 150' deep retaining wall, is going to look like next to the parking lot (the retaining wall is 2X - 4X longer than abutting backyards!). There also wasn't an exact buffer distance provided from said parking lot, to the abutting properties, including mine. Furthermore, I am unsure of how close they can try to plant a tree or two between the property lines, the 75' long drainage ditch to be installed, and the commercial parking lot. Please refer to the attached image visualizing the light intensity and disturbance. Hopefully the noise and light pollution from all the activity doesn't stir up all the dogs in the neighborhood, and in the immediate vicinity of the parking lot.

The conditional use permit should not be granted for this project. Please don't let the developers take advantage - this neighborhood is zoned R3 for a reason and the project would completely change the dynamics of the neighborhood. The deer family that have been visiting my broccoli plants for breakfast every morning this past month, will also be forced out of their beautiful neighborhood.

Thank you for your time and consideration.

Jeff Crawford
72 Florida Avenue



Fwd: A SINCERE APOLOGY - Fall Brook Woods

Jeffrey Crawford <crawfordj555@gmail.com> Nov 5, 2020 9:23 PM
Posted in group: **Planning Board**

Hello,

Please confirm receipt of this email, and it's inclusion to the fallbrook meeting on 11/10/20.

Thank you,
Jeff Crawford
72 Florida Ave.

---------- Forwarded message ---------
From: **Jeffrey Crawford** <crawfordj555@gmail.com>
Date: Thu, Nov 5, 2020 at 8:25 AM
Subject: Fwd: A SINCERE APOLOGY - Fall Brook Woods
To: <atufts@portlandmaine.gov>
Cc: Justin Costa <jcosta@portlandmaine.gov>

Hello,

Can you please confirm receipt of this email? I don't see it included in the Fallbrook documents.

Regards,
Jeff Crawford

---------- Forwarded message ---------
From: **Jeffrey Crawford** <crawfordj555@gmail.com>
Date: Thu, Sep 17, 2020 at 6:37 PM
Subject: Re: A SINCERE APOLOGY - Fall Brook Woods
To: Justin Costa <jcosta@portlandmaine.gov>
Cc: Ian Pollis Houseal <ihouseal@yahoo.com>, Michael Denbow <mdenbow@maine.rr.com>

Councilor Costa,

I am thankful to have run into Ian yesterday morning, and I am also embarrassed to have missed the online messages from other neighbors informing me about the Planning Board meeting this past Tuesday 9/15 in regards to the Fallbrook Project. With summer winding down, school picking up, more folks going back to work, you begin to understand how much I would have appreciated the postcards neighbors received alerting them about this meeting, as I stand in opposition of this project and would have liked to have been heard during the meeting. I am one of the neighbors who bought an abutting property to the project that was placed on the market because of this proposal; unfortunately I did not find out about the proposal until after my purchase, surprise, surprise. It has almost been a year since we moved in, yet we continue to be left in the dark about updates relating to this project.

After watching the 2.5 hour recording of Tuesday's meeting, it is obvious this project needs to slow down and be looked at further. Renderings were provided that don't portray the whole story; comparisons were made of what was allowed at other R3 nursing homes, yet are in completely different types of neighborhoods than this project. Not all R3 zones are created equal. On top of it, I cannot believe employees of St. Joe's and Maine Med were allowed to speak in favor of this project. As Ian said, it is not a popularity vote. They do not live in this neighborhood, they would be working in our neighborhood where we sleep. Yes, we all agree nursing homes are needed, but the discussion is not about that, it is about the intended/proposed location. The current location seems to make the most sense, a location that can be assumed to have gone through the conditional use process 40 years ago to eliminate a greenspace, to allow 100+ more beds into Portland. But now, the existing St. Joe’s can just decide it no longer wants that space for nursing beds, doesn’t have to say what the future brings of the existing location, has actually proposed less beds then what is currently existing, and are trying to create the elimination of yet again, another a greenspace with an abundance of species while at the same time, heavily intruding on a beautiful, quite but active neighborhood.

The plans we received before the meeting (and the rest of the plans during the meeting) show very minimal in changes, and still have yet to prove it meets the conditional uses. There have been almost no addendum changes with the applicant’s most recent submission. It is as though, since our last meeting, they've spent most of their time taking screenshots of the

renderings from their previously drawn CAD/REVIT files, and pasting them onto a DWG sheet. Don't get me wrong, they are nice renderings, but that is all they are, and they could have been presented much sooner. You can’t blame Sebago Technics though, I don’t believe they get paid for their work until a project gets the go ahead.

Without rehashing everything that has been brought up, it is obvious this project does not meet the conditional use standards for this location. The ebb and flow of Tuesday's meeting was much, much different than last time. Prepared for by some, but not all. On top of it all, a project this size and requiring conditional use permits, should not be discussed virtually with the public, including the likes of St. Joe's employees, who I'm not sure would have made their comments if it wasn't for this virtual meeting. Would they have actually driven to and attended this meeting if it was in person? Do they actually live in Portland? The few callers that were in support of the project never had to state their address, whereas those against the project couldn't begin speaking without saying where they live. And honestly, it felt even more unfair, as every single person that called in against the project was immediately informed when they had 30 seconds left to talk, whereas some St. Joe's employees were not interrupted and allowed to go over the 3 minute mark before they were notified. Consistency was lacking. During the course of the comments, not once did I hear any of the people in favor of the project say they were in favor of the proposed location, just they were in favor of a brand new, state of the art building that benefits those inside it/building it. The purpose of the meeting felt diluted at this time, and was out of context.

In the end, this was not ready to come back to the Planning Board. I strongly hope that you will look into this matter further and encourage everyone involved to take a step back, so we can try to avoid the same perpetual outcome, and avoid the mistake happening a second time. The lucructive nursing home industry should not be able to take advantage of us, or Portland, like this. I strongly believe they should have to compare what renovating the existing St. Joseph's facility would cost in comparison to this proposal. This proposed project will completely change the dynamics of this beautiful neighborhood.

Regards,
Jeff Crawford
72 Florida Ave.

No to 60 Merrymeeting Development

Jenirose Friedkin <jenirosa@gmail.com> Jul 16, 2020 7:24 PM
Posted in group: **Planning Board**

Dear Planning Board,

Our family recently purchased a house on Florida Ave. abutting the proposed site for the FallBrook Nursing home. Our choice of this house and decision to pay as much as we did was very much because of the greenway behind our backyard. I can not imagine that this development will not affect property values as it was absolutely why we paid as much as we did.

We have so enjoyed the quiet of this neighborhood and the relatively low light pollution. And also the abundance of birdsong. In the short time we have been here, we have seen deer, hawks, groundhogs, squirrels, chipmunks, bats, and an ever expanding assortment of birds, so many birds! The neighborhood children play in the woods, and we use it for walks. There are wetlands there ,which are a dwindling resource, and I hate to think of all the flora and fauna that will be displaced or lost due to the development. We need to preserve the green spaces we still have in our cities to be stewards for the future.

There is relatively little traffic and no sidewalks here. People are always walking their dogs, jogging , riding bikes with their kids, playing games, and suchlike on these narrow and friendly streets. The increase of traffic will be seriously significant as people rush to and from work at all hours of the day and night. Emergency vehicles and supply trucks and service vehicles as well as the noise and traffic anticipated for the construction phase will cause much disruption and are a safety concern. There also is no public transportation that regularly runs to here, and so employees and visitors will need to have cars which seems irresponsible in this time of environmental and economic distress for essential workers.

We also have a very high water table here and folks have experienced flooding in the past, the amount of run off from the newly paved area would certainly increase and the plans do not account for this level of change to water patterns. I also am concerned about how this run off will affect the creek it runs into and it's ecology.

The developer has also not been responsible in informing the community about this proposal and the change in venues to online for planning board meetings can make it difficult for many neighbors to stay informed and attend meetings. Not everyone is internet savvy or has access to the technology necessary to engage responsibly. For instance, one cannot view the published plans from an iPhone or iPad and myself and may older adults only use this sort of technology if they use it at all due to the relative ease of these devices. I only heard about the proposal through a flyer a neighbor distributed.

This area is Zoned R3 and it truly has the character of a quiet residential neighborhood. It would have to be approved as a conditional use permit and I do not believe it should be an exception. The previous St. Joseph's site is already developed and should be home to new and updated facility. I hate to have a NIMBY attitude as I have worked in social work with seniors and understand the need this is addressing, but after careful consideration I have come to believe that this is not an appropriate site for the project.

Thank you for your consideration,
Jenirose Friedkin.

Fall Brook Woods & North Deering

Jennell Carter <jennell.carter@gmail.com> Jul 1, 2020 8:07 PM
Posted in group: **Planning Board**

Dear Portland Planning Board Members,

Thank you for listening to the potential benefits and negative impact that the expansion of Fall Brook Woods may bring to the city of Portland and specifically to the neighborhood in North Deering.

I have been a homeowner in this neighborhood for 12 years. I moved to this neighborhood because it was walkable, there is minimal traffic outside of neighbors moving to and fro. My partner and I were drawn to neighbors outside walking, old, young families, kids on bikes riding in the streets. It was reminiscent of the neighbors we each grew up in.

We have gone through the updates to the re-routing of the actual brook of Fall Brook and St. Joseph's Manner. We have benefited from the enhanced traffic pattern by removing the entrance on Maine Avenue and seeing the reduction of traffic help keep our neighborhood a safe walkable neighborhood. We do experience 53 ft tractor trailers traveling down our road on occasion when they miss the entrance and you feel the vibration in your home.

Additionally, we saw wildlife return as they use the once paved entrance off of Maine Ave as a corridor that connects them from the actual Fall Brook into Copley Woods and then in the wooded areas surrounding the Quarry Run as well as the powerline off of Ledgewood where wildlife have some sort of habitat in greater Portland.

Our homes were predominantly built in the 1920s and 1930s. Many are from Sears Kit homes - they have great bones, lots of character and represent the working families that reside within. We purchased these homes to live in a family centric neighborhood, with trails, sidewalks, limited commercial traffic and the beauty of the natural environment including trees well over 100 yrs old.

It is easy to overlook these assets that we drive by each day but the reality is, trees these old, wildlife corridors, neighborhoods that promote community and engagement amongst neighbors are rare - in fact these are buzz terms that are used to assist in getting permits to meet certain criteria for permitting; however, they actually exist - not in theory but in everyday life in our neighborhood.

I have a Master's Degree in Community Planning and Development and all too familiar with NIMBY - but I think that sometimes we overlook the character and the existence of the community that is so very hard to recreate through the planning and permitting process.

It is my belief that as members of our community we need to provide housing and medical facilities for all of our community members. But I also think that we need to provide equal consideration for the wildlife, the natural environment and the people and the community that exists and weigh the impact (either good or negative).

We need to protect our very limited green space that exists in Portland. The land that Fall Brook Woods would like to develop is adjacent to some of the larger contiguous parcels of land that connect - creating a safe and necessary environment for wildlife, wetland and water run off.

Yes, I have concerns about traffic patterns, home values, man made features such as large parking lots, tall street lights in the parking lots, loss of trees but the reality is - what will be affected are people, the community the exists, their foot traffic patterns that drive daily social engagement and for those that we all need to speak up for - the wildlife, trees, and natural vegetation.

Thank you for listening. I encourage you to come visit our neighborhood, park your cars and take a walk. You just might be surprised to witness the community that exists in our neighborhood.

Sincerely,
Jennell

Jennell Carter
146 Maine Avenue
Portland, ME 04103
207-252-5910

Proposed Fallbrook Commons

Lee Ann Whitney <leeanninmaine@gmail.com> Jul 8, 2020 6:00 PM
Posted in group: **Planning Board**

To All Members:

I am writing to you at this time to express my strong opposition to the proposed twelve acre Fallbrook Commons development on Merrymeeting Drive. I live in the Fallbrook Woods Condominiums that are located at 1 Merrymeeting Drive. There are twenty eight units here in this quiet, residential area. At the present time we share the road with the Fallbrook Woods Assisted Living (Memory Care) facility that is just down the road from my Unit #1. The traffic is usually minimal with the exception of the very large delivery trucks and fire and rescue vehicles that frequent the road. Sadly, this quiet road would become the one and only route into both Fallbrook Woods and Fallbrook Commons if this project is approved. Originally, the route to the Commons had been from Ray Street but that was changed, apparently due to vehicle safety concerns. The problem that the developers faced was easily solved by simply changing the entrance to Merrymeeting Drive!

Since being informed of these plans, I have decided to scope out the area surrounding my neighborhood that would also be impacted. I have walked on Ray Street, Florida Avenue and Gertrude Avenue. I have spoken to the owners of the condominiums at The Residences off of Allen Avenue. Surprisingly, many of the people I have spoken to are unaware of what may be coming into their neighborhoods. The families whose backyards will abut the proposed "Commons" would sacrifice their woodlands and wetlands in exchange for a six to twelve foot retaining wall, parking for 92 cars with 24 hour lighting. The lighting would impact the nocturnal environment of not only the residents on Florida but also the wildlife that might still find a habitat there after all the construction. I particularly urge you to take into consideration the issue of the wetlands. They exist everywhere in this area, and also on Merrymeeting Drive. Could this be the reason that the name Fallbrook has been assigned to these two facilities?

I must emphasize to you that these areas in North Deering are clearly residential neighborhoods! Merrymeeting would be transformed from a simple, residential road into a busy thoroughfare. Please try to imagine the volume of traffic that will pass by my condominium as well as by my neighbors" who live as I do, directly on Merrymeeting Drive: All deliveries of everything you can imagine, huge Sysco trucks, rescue and fire vehicles, all staff (nurses, doctors, CNA's, physical therapists, podiatrists, kitchen cooks and aids etc.), visitors and volunteers. As with any medical facility, there would be work-shift changes and other activities 24/7. The developers have planned eight to ten special events annually generating even more traffic. It is easy to predict that the folks on Ray Street and Allen Avenue will also be impacted by the increased traffic. During the construction phase, that is projected to last at least eighteen months, all areas will suffer, but particularly Merrymeeting Drive, the only way in and the only way out!

I have been told by the HOA board that this 12 acre plot was part of a long term plan to slowly add more condominium units. I consider there to be a massive difference between the building of more units and the construction of a two-story commercial property in the middle of a residential,wetland area. Has the term "grandfathered" somehow been attached to this proposal because of plans for more housing units made way back in 1989? If so, I feel that the history of this "Fallbrook" area should be carefully scrutinized and then perhaps there may be a legitimate decision made that the proposed Fallbrook Commons does not belong in this neighborhood. Period. Grandfathered or not.

And, what about our property values? I doubt that any prospective buyers would think twice about my condominium were they to sit in my back garden during all day delivery days, or the folks on Florida whose back areas are bordered by a huge retaining wall separating them from dumpsters, street lights and parking lots

I sincerely hope that your consciences will prevail as you further assess the reasons why this project should or should not be approved. I feel that it is likely that Fallbrook Commons for a development site. But, please, not in backyards or anywhere in a residential area such as ours.

Sincerely,

Lee Ann Whitney

Fallbrook Commons Proposal

Lee Ann Whitney <leeanninmaine@gmail.com> Aug 20, 2020 2:17 PM
Posted in group: **Planning Board**

Dear Members,

This is a follow-up to a letter that I wrote to you regarding the proposed Fallbrook Commons project that would be built in my neighborhood. I would like to emphasize my use of the word "proposed" since the prospect of this plan ever coming to fruition greatly depresses me. This feeling is shared by many of my neighbors on Florida Avenue, Ray Street, Gertrude Avenue, among others, and includes Merrymeeting Drive where I own a condominium. All of us will be negatively affected if this plan is approved for this residential part of the city.

I suspect that many of you may not be familiar with our neighborhoods here in North Deering. Although we have the very busy Washington Avenue in our midst, it is impressive how this area nestled in between Allen Avenue Extension, Ray Street and Washington Avenue remains almost rural in nature. Many homeowners have extensive gardens in their yards. Dog walkers and children enhance the neighborly atmosphere. There is a wetland along Merrymeeting Drive where families of ducks raise their families every year. Surely this would be impacted by increased traffic and the construction of a proposed sidewalk. If this plan is accepted, Merrymeeting will become the *sole* entrance to both the small, existing Fallbrook Woods and the massive Fallbrook Commons, turning it into a 24/7 throughway, only a few yards from my back deck. The developers' grand dream of a "campus" will turn my quiet home and those of my neighbors into a grand nightmare. It is such a pleasure for me to watch people from around the area walk their dogs, to see children riding their bikes and parents pushing strollers along Merrymeeting Drive! It is unbearable to think of this vanishing. A proposed sidewalk would not solve the problem. The atmosphere would be changed forever by the increased volume of construction vehicles, staff and visitor cars, delivery trucks and rescue vehicles rushing by at all hours to get to the "complex" .

This is a residential area, not a commercial area! The homeowners on Ray Street and Florida Avenue would no longer have views of their private, wooded backyards. In exchange, there will be 24 hour lighting in the 90 plus parking lot, dumpsters and retaining walls and staff headlights shining into their windows all hours of the night. Please try to imagine how it will be for them. Traffic will increase on the full length of Ray Street as vehicles approach the *main entrance* on Merrymeeting Drive from both directions. There are no sidewalks on Ray Street, creating a pedestrian hazzard. Note: There is a lot of foot traffic on Ray Street.

The way I see it, this whole project would be a disaster to this neighborhood should it be approved. I encourage all of you to take a drive out here so you can better envision how we would be impacted by this proposed project in our residential area. In closing, a huge, noisy Sysco delivery truck just passed my condo on it's way to little Fallbrook Woods. I can manage that but I can easily imagine the future here with a massive Fallbrook Commons installed back there in those pristine woods. Maybe it would be time to think about moving since I foresee the value of my home will decrease considerably. Please don't let this proposed development happen!

Sincerely,

Lee Ann Whitney
1 Merrymeeting Drive.
Portland, ME 04103
207-699-8900

Proposed Fallbrook Commons

Lee Ann Whitney <leeanninmaine@gmail.com> Sep 18, 2020 5:56 PM
Posted in group: **Planning Board**

To All Board Members:

I have written previously but after listening to the workshop on Tuesday, September 15 I feel the need to reiterate the reasons why I am opposed to any approval that you may be considering regarding the proposed expansion of Fallbrook Woods Memory Care by the construction of Fallbrook Commons, a 58,000+ square foot, 90 bed nursing care facility. As a resident of Fallbrook Condominiums on Merrymeeting Drive, as an abutter to the project and as a taxpayer to the City of Portland I present the following reasons why this proposal should be denied:

* Unresolved issues with the DEP and the City in regard to displacement of wetlands. Would the City have to pay a fee for allowing this? Apparently, the natural wetlands that exist in the area would be replaced by gravel which would presumably attract the same flora and fauna that lived there when in it"s natural state. (?!) Biologically, I doubt it.

* The only public access to the facility would be via Merrymeeting Drive. Originally, the main entrance was to be from Ray Street but that was nixed due to "road safety issues". Easement rights to the small, 56 resident Fallbrook Woods are in existence but subjecting the road and nearby residents to the additional 24/7 traffic generated by the Commons proposal would be an over-burdening of the easement rights to Merrymeeting Drive. A Legal analysis conducted by an attorney for the Fallbrook Condominium Association determined that " if the new proposed use is so much more severe than before, one can say that the easement has been expanded or, in this case, over-burdened. But, his recommendation was not to pursue that issue due to its legal cost. I absolutely think that it should be pursued by the Planning Board before you make your final decision!

* The impact on displaced wildlife.

* The safety issues regarding pedestrian traffic on Allen Avenue Extention (Falmouth Rd.) and Ray Street. There is only a very short section of sidewalk on Ray Street, but a lot of foot traffic so people with dogs and children walk on the sides of the road most of the way to and from both ends of Ray Street. Are they to share the road with huge construction vehicles and delivery trucks, etc. with no alternative but to jump into the woods to avoid them?

* The unfortunate residents of Florida Avenue, Ray Street, Gertrude and Loring Avenues, The Residences Condominiums... all of whom will lose privacy, quiet and peaceful quality of life since the actual building will literally be in their backyards.. Personally, since my condominium on Merrymeeting Drive is directly on the only route in and out of the "Complex" means I will face devaluation of my property. The view from my garden would be either of trucks or a fence, instead of the woods that I now enjoy .

* And, finally I would like to pose this question: Why is this location, in a residential area, zoned R-3 and considered by you to be a "conditional use" area, seemingly the only location for this nursing facility in all of Portland?! Isn't there another place for its installation in a location that would be less disruptive to an entire neighborhood? Regarding the employees from St. Joseph"s who spoke on Tuesday, do any of them live in the vacinity of this proposed facility? When they spoke it was all about the NEED. Of course there is need but at what cost to a neighborhood? My impression by their comments was that those who oppose may be selfish and heartless and don't care about the elderly. Tose speakers had to have known that the issue with those of us who oppose is LOCATION and not that we would be instrumental in any plan that would deprive the elderly of the care that they deserve.

I strongly encourage all of you to tour the area where I live. Perhaps then you will see that approving this project here is a bad idea for the taxpayers like me who treasure our environment and who will be so impacted by traffic, noise and disruption if the Fallbrook Commons project is approved. I will look forward to a knock on my door very soon from one or all of you. I would love to meet you personally.

Sincerely, Lee Ann Whitney
1 Merrymeeting Drive #1

*

Fallbrook Commons Proposal

Lee Ann Whitney <leeanninmaine@gmail.com> Nov 4, 2020 5:39 PM
Posted in group: **Planning Board**

Hello Planning Board Members:

My walk today started from my home at 1 Merrymeeting Drive. From there I turned right onto Ray Street. Since there are no sidewalks from that point on I had to walk on the narrow street. When I came to the crest of the hill two vehicles approached me, one on each side of the road. One was a huge Sysco truck and the other an SUV. This was a very uncomfortable situation for a pedestrian and there are many of us who walk in our neighborhood on Ray Street. I want to bring this to your attention since the Fallbrook Commons proposal includes Merrymeeting Drive as its main entrance which means that ANY vehicle entering that road must access it from either direction on Ray Street! I feel that this poses a dangerous situation for all people trying to walk safely on Ray Street particularly in the area of the hill where the road is especially narrow.

I have written to you several times expressing my opposition to approving the construction of " Fallbrook Commons" in this residentail area since it simply is not designed to manage the amount of traffic that will be generated by this 90 bed facility. With EVERY vehicle of EVERY size using Ray Street and Merrymeeting Drive there will be a massive influx of traffic 24/7 on both Ray Street, Merrymeeting Drive and Allen Avenue. I know that the developer has offered to create a section of sidewalk on Merrymeeting but what about Ray Street? There is only a very small segment now on the end closest to Allen Avenue near where there is a bus stop. School children use this route to get home from school. I feel that this dangerous situation should concern you greatly.. After all, how would you feel if a pedestrian were to be struck by a truck that they were unable to dodge due to no sidewalks? I think this is a city council issue as well as a planning board issue.

Many of us here in the vicinity of this proposed project have decided that this is "a done deal" and that the board has already decided to allow this to go through. I say this because at a previous workshop staff from St. Joseph's Manor were allowed to monopolize a good slot of time promoting the need for a nursing home project such as this. No one that I know disputes that. What we want to emphasize is the bad choice of LOCATION! At that meeting I was offended by the suggestion that those of us who live in the area surrounding the proposed sight didn't care about old people! A person in the planning board office asked the same question of a person who called to voice their opposition to "Fallbrook Commons"! On the contrary, I am a 74 year old woman whose parents both lived into their 90"s. I know first hand about nursing homes and the need for them. What you need to focus on here is the suitability of the site for this huge facility and the safety issues that are created if you decide to grant approval to the developers.

I was unable speak at the last workshop and I don't expect to be able to do so on November 10. I expect that a lot of time will be filled up by opinions given by the employees of Fallbrook Woods and again by employees of St. Joseph's Manor. Do any of these people live near the proposed site? Do any of these people even live in Portland? It is reprehensible to try to shame those of us who don't want to see the character of our neighborhood forever changed by claiming that we don't care about old people and their welfare. Surely there are other sites in Portland that could provide their goal of having a "country-like setting" in the last years of their lives. I sincerely hope that you will do the most compassionate thing for this quiet Portland neighborhood by not approving this project.

Sincerely, Lee Ann Whitney

Fallbrook property development at Merrymeeting Dr.

LK Weiss <lk@portlanddesignco.com> Apr 8, 2020 9:14 AM
Posted in group: **Planning Board**

To whom it may concern,

Seven months ago, my wife and I purchased our first home together here on Ray St in Portland. Despite the prices being 1/3 higher than surrounding towns, we dug deep and chose this neighborhood because it's a quiet suburb with little traffic, lots of kids, wildlife, wooded trails, friendly neighbors with dogs, and a really sweet neighborhood feel. Within our first month of living here, we saw a doe, a pack of coyotes, and several fox. Just 10 minutes from downtown! It's the "last frontier" of Portland.

And we're passionate about keeping it that way.

We recently received a notice informing us of the proposed Fallbrook Development. A 90-bed nursing care facility on 13 acres of land which is currently home to multiple species of wildlife. In addition to what's listed above, turkeys, owls, hawks and eagles, woodpeckers, tree frogs and more call this area home.

Not only will it interfere with wildlife, it will have a major impact on traffic, the safety of children and pets in our neighborhood, and it could drastically impact the value of our homes and properties. The runoff from the proposed large parking area would have ramifications on area streams and ponds with winter salts and chemicals.

This isn't the right neighborhood for this kind of development, and would only benefit the developers—not the constituents who are investing in this neighborhood and city. It's not about keeping things the way they are forever. We know this city is growing and changing (I was born and raised here, and have seen it change so much in 40 years). While the downtown/peninsula areas continue to develop and expand with drab brick box hotels and corporate offices, the suburbs are the last bit of what drew people here in the first place. There are enough cities overtaken by stripmalls and retirement condos. Keep our neighborhoods in tact, and the wildlife in our city.

We are very much against this development moving forward.
Thank you for considering,
LK and Laura Weiss
305 Ray St. Portland

PORT LAND
DESIGN Co

LK Weiss
Founder & Creative Director

142 High St. Suite 415, Portland, Maine 04101
PortlandDesignCo.com

Fallbrook Woods Expansion

Louise Stone <stoneruks@maine.rr.com> Jul 7, 2020 3:38 PM
Posted in group: **Planning Board**

Hello, I am a resident of Virginia St. and very concerned about this quietly evolving detrimental project. I am opposed to the 60 Merrymeeting/Fallbrook Expansion project and think the R3 zoning should be upheld. This project does not support the clearly residential nature of this neighborhood. Every square inch of wetlands and woodlands in our city should be left alone. There are other places to build within the city that would do less damage. Paying a fine does not appear to be a deterrent which should also be reviewed.

Louise Stone
131 Virginia St.
Ptld. 04103

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Opposition to the construction planned by fallbrook properties

Andrew Tufts <atufts@portlandmaine.gov> Wed, Feb 26, 2020 at 3:00 PM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: **Luis Garcia MD** <luis.garciamd2@gmail.com>
Date: Mon, Feb 24, 2020 at 5:20 PM
Subject: Opposition to the construction planned by fallbrook properties
To: <atufts@portlandmaine.gov>
Cc: MONY WIFE <monygarcia2@yahoo.com>

Hello Mr. Tufts, my wife and I want to reach out to express our complete opposition to the construction fallbrook properties is planning (plan number PL-000925-2019). The deleterious effect on flora, fauna, our environment and possibly on all our property values are simply unacceptable. The great majority of our neighbors hold the same sentiment and will oppose this project by any legal means available to us.
My wife and I would like to know where the city stands on this issue, we would also like to be informed of any meeting and/or hearing which is planned or already scheduled on this matter. I thank you for any assistance you can provide to my wife and I, as well as to our neighbors.

LUIS GARCIA, M.D.
MONICA GARCIA
80 FLORIDA AVE, PORTLAND

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov
(207) 874-8724

Against development of fallbrook woods behind our house

Luis Garcia MD <luis.garciamd2@gmail.com> Jul 1, 2020 4:36 PM
Posted in group: **Planning Board**

"I share a property line with FallBrook woods. Our property will be severely impacted by this proposed project.

- There are minimal setbacks on our property lines

- Some of the planned use is for parking. Headlights will be shining directly into my property during any hours of even semi-darkness. With three shift changes, visitors, vendors, etc. this will be a MAJOR source of disruption and change to how things are currently and will last far beyond the even more intrusive 14-month construction timeline
- The builder and owner both plan on placing the GARBAGE DUMPSTERS behind our property. That is utterly unacceptable!! This development will bring an increase in the population of insects and rodents which create a health hazard to all of us.
- Over 90% of the trees separating my property from theirs are being removed. There are plans for them to be replaced by "plantings" - some of these are as minor as foot-tall lilies or other perennial plants or bushes. Plants do not provide the shade, sound absorption, erosion control or privacy of mature trees

- No consideration has been taken for snow measures (removal or snowbanks). Plows will regularly force snow (and salt/chemical runoff) into my property during the winter when these parking spaces are cleared

- Have the standards been met for solar warming and shade of these parking lots? And are these RESIDENTIAL standards or commercial ones? It seems as though this corporation is trying to double dip - claiming they are making a residence when it comes to pleasing the Board, but then building a large retail/commercial structure with an even larger parking lot, in the middle of a classically residential, quiet neighborhood.

The above are just a few of the most major impacts I'll experience to my property. In addition, the destruction of acres of wetland are distressing to say the least. Just because they have received preliminary NERPA/DEP approval does NOT mean that they have fulfilled YOUR (Board of Planning, Portland Maine) site plan standards. HOLD THEM TO THOSE.

Adherence to city ordinances and the opinions, desires and overall quality of life of residents of Portland are YOUR RESPONSIBILITY - don't forget why you took the job of protecting your neighbors! The powerful letters of recommendation from Maine Med and others should have no more influence over your decision making than the voices of the many many residents whose lives will be negatively impacted by the proposed project.

Is Fallbrook prepared to mitigate the impact of 20 foot retaining walls, permanent removal of wildlife and flora, massive increases in traffic, blasting damage, water intrusion and things like 16,000 gallons of increased sewer usage to the abutters of this property? Will compensation be made for any damages and if so, will Fallbrook point the finger at the City for their involvement?

This conditional use permit should NOT be granted - it will significantly and negatively impact the peace and quiet of our current residential neighborhood. I do not believe they are doing all they can to preserve the overwhelmingly beautiful, irreplaceable nature features of this very large, green space. This neighborhood is zoned R3 for a reason - the Board should defend that!

This property, while considered a "residence" is in fact a long-term care facility with "24/7 access, a hair salon, gift shop and full restaurant and kitchen" - how is that aligned with the current neighborhood and more importantly, how does this integrate into our current COMMUNITY? It does not. Please protect us.

LUIS GARCIA, M.D.

Fallbrook project in North Deering

Lynn Lagerstrom <stonesfan26@gmail.com> Mar 11, 2020 9:53 AM
Posted in group: **Planning Board**

March 9, 2020

Dear Sir/Madam:

I would like to add my voice to the concern regarding the Fall Brook Nursing Home. While I understand the need for such a facility I don't believe this is the best location for it.

Portland has grown by leaps and bounds and in the process so many woodlands and waterways have been taken over and eliminated. This neighborhood is so fortunate in having rare wetlands and deep woods for all sorts of wild animals not to mention all the many variations of wild birds. There are turtles and frogs in these woods and wetlands that are fast becoming dangerously close to endangered in Maine. There are also many walking trails that connect throughout Portland and Falmouth.

Also, as many of us who live here are aware, there is an underground stream right through the whole area and there is a lot of flooding because of it. My own cellar once had over two feet of water during a rain storm some years ago and that is when I first heard of the stream. Some people, in the houses on the end of Florida Avenue, can even hear the stream running when the water is high. Some areas of the street have even sunk in a little here and there which shows that the ground may not be quite secure for heavy building and construction to say nothing of the blasting. It is one thing to build a small family home in this area but a huge multi-level building will be quite another matter altogether.

I ask you all to please reconsider destroying all this wild beauty for a plan that might not even work out in the long run. These woods and wetlands are important to the ecology and I don't believe it is the proper place for a nursing home and huge extended parking lots. It will also increase the traffic and that will further devastate the whole area.

Thank you very much for your consideration of this matter.

Sincerely,

Lynn Lagerstrom

57 Florida Avenue

Portland, ME 04103

June 23, 2020

Ladies and Gentlemen of the Planning Board Re:Fallbrook Project

I would again like to express my concern regarding the Fall Brook Nursing Home.

Our neighborhood has wonderful nature trails and wetlands that many in Portland enjoy and I'm sure you know that areas like these are fast disappearing in the Greater Portland area. They are home to a multitude of wildlife and birds and water creatures and we should all be banding together to protect them and not tear this land asunder for still more building when we already have an existing structure that could be utilized. I continue to hope that something can be done to build on to the already existing nursing home site off Ray Street and Washington Avenue - the two access roads that currently serve this site and would greatly minimize construction and impact on this quiet neighborhood.

Also, much of this neighborhood is built on ledge and there is an underground stream right through the whole area and at times this causes flooding. Some areas of the street have even sunk in a little here and there which shows that the ground may not be quite secure for heavy building and construction to say nothing of the blasting. My neighbors and I are very concerned about the blasting, noise, excess traffic flow and the mud, dirt and dust caused by heavy construction. Some of us are retired and on the older side and the idea of this whole thing is very stressful to us.

These woods and wetlands are very important to the ecology and I feel that we should be trying to keep and protect them instead of going forward with this very destructive and invasive project. Please remember all our fears and concerns when you meet to consider this project.

Thank you very much for your consideration of this matter.

Sincerely,

Lynn Lagerstrom

Lynn Lagerstrom

57 Florida Avenue

Portland, ME 04103

Fallbook Commons expansion

martha maury welty <mwelty65@gmail.com> Jul 4, 2020 10:09 AM
Posted in group: **Planning Board**

Having recently moved to a condo at Fallbrook, we're distressed to learn of the proposed 90 bed nursing home to be built in our neighborhood.

We moved here for the woods and wetlands and all the wildlife they provide.

We thought we would continue to enjoy the area unchanged, since it was zoned residential. I'm not sure I understand zoning, if a corporation can be allowed to come into residential neighborhood when it's clearly against the rules.

Our other concern is enlarging an existing nursing home, at a time when we know these places are incubators for disease. Smaller establishments seem much more practical.

Thank you for your time and consideration.

Sincerely,
Martha and Charles Welty
4 Merrymeeting Dr
Portland, Me 04103

Opposition to 60 Merrymeeting project - I am largest private landowner/abutter

B Melcher <tech@zembugroup.com> Jul 1, 2020 3:17 PM
Posted in group: **Planning Board**

Hello Planning Board!
My name is Bill Melcher and I share over 510 feet of property line with FallBrook Woods (see attached images). I am the single largest private neighbor and my residential, single-family home will be severely impacted by this proposed project.

- There are minimal (in some cases, only 8 feet!) setbacks along my property lines
- Some of the planned use is for parking. Headlights will be shining directly into my property during any hours of even semi-darkness. With three shift changes, visitors, vendors, etc. this will be a MAJOR source of disruption and change to how things are currently and will last far beyond the even more intrusive 14-month construction timeline
- Over 90% of the trees separating the properties are being removed. There are plans for them to be replaced by "plantings" - some of these are as minor as foot-tall lilies or other perennial plants or bushes. "Plantings" do not provide the shade, sound absorption, erosion control or privacy of mature trees
- No consideration has been taken for snow measures (removal or snowbanks). Plows will regularly force snow (and salt/chemical runoff) into my property during the winter when these parking spaces are cleared
- Have the standards been met for solar warming and shade of these parking lots? And are these RESIDENTIAL standards or commercial ones? It seems as though this corporation is trying to double dip - claiming they are making a residence when it comes to pleasing the Board, but then building a large retail/commercial structure with an even larger parking lot, in the middle of a classically residential, quiet neighborhood.

The above are just a few of the most major impacts I'll experience to my property. In addition, the destruction of acres of wetland are distressing to say the least. Just because they have received preliminary NERPA/DEP approval does NOT mean that they have fulfilled YOUR (Board of Planning, Portland Maine) site plan standards. HOLD THEM TO THOSE.

Adherence to city ordinances and the opinions, desires and overall quality of life of residents of Portland are YOUR RESPONSIBILITY - don't forget why you took the job of protecting your neighbors! The powerful letters of recommendation from Maine Med and others should have no more influence over your decision making than the voices of the many many residents whose lives will be negatively impacted by the proposed project.

Is Fallbrook prepared to mitigate the impact of 20 foot retaining walls, permanent removal of wildlife and flora, massive increases in traffic, blasting damage, water intrusion and things like 16,000 gallons of increased sewer usage to the abutters of this property? Will compensation be made for any damages and if so, will Fallbrook point the finger at the City for their involvement?

This conditional use permit should NOT be granted - it will significantly and negatively impact the peace and quiet of our current residential neighborhood. I do not believe they are doing all they can to preserve the overwhelmingly beautiful, irreplaceable nature features of this very large, green space. This neighborhood is zoned R3 for a reason - the Board should defend that!

This property, while considered a "residence" is in fact a long-term care facility with "24/7 access, a hair salon, gift shop and full restaurant and kitchen" - how is that aligned with the current residential neighborhood and more importantly, how does this integrate into our current COMMUNITY? It does not. Please protect us.

Respectfully,
Bill Melcher

MERRYMEETING DR

514,054 Sq. Ft

403 F001

12,500 Sq. Ft
403 F003

2,500 Sq. Ft
403 F007

403 F017

GERTRUDE AVE

17,150 Sq. Ft
402 J001

5,815 Sq. Ft
402 I007

402 I006

402 I005
4,259 Sq. Ft

402 I004
4,088 Sq. Ft

4,500 Sq. Ft
402 H006

402 H007

5,000 Sq. Ft
402 H005

5,436 Sq. Ft
402 H004

5,502 Sq. Ft
402 H003

402 H002

3,774 Sq. Ft
402 E013

4,001 Sq. Ft
402 E022

402 E021

4,826 Sq. Ft

4,876 Sq. Ft

4,891 Sq. Ft

4,941 Sq. Ft

5,027 Sq. Ft

5,077 Sq. Ft

5,127 Sq. Ft

5,178 Sq. Ft

5,230 Sq. Ft

5,328 Sq. Ft

5,279 Sq. Ft

403 A007

403 A006

403 A005

403 A004

403 A003

403 A002

403 A001


Merrymeeting Dr
Merrymeeting Dr
Fallbrook Woods
Ray St
128 Gertrude Avenue
11 min drive - home
Randy's Bullma

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Fallbrook Project North Deering

Andrew Tufts <atufts@portlandmaine.gov> Wed, Feb 26, 2020 at 3:00 PM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: <MDENBOW@maine.rr.com>
Date: Mon, Feb 24, 2020 at 12:12 PM
Subject: Fallbrook Project North Deering
To: atufts@Portlandmaine.gov <atufts@portlandmaine.gov>

Thank you Mr. Tufts for speaking with me today- you were very informative and helpful.

As you may remember our conversation today surrounded the proposed project off of Ray Street by Fallbrook Properties, LLC and their 90 Bed Skilled Nursing Facility that is proposed to be built. Some of us in the neighborhood received notice of a meeting with the engineers and facility on week prior to the meeting date, some did not receive any notice. At this meeting the engineers explained their plan of building, starting in June, the intent to cut all of the tress located on the property down, their intent to build and place parking lots and building up to the 25 foot set back, entrance to the facility to be placed on a very hazardous location at the base of a hill on Ray Street, and their lack of concern for the integrity of the neighborhood. As you may suspect the neighbors and people at the meeting were not pleased with the proposal.

Due to the environmental impact of the project, concern for loss of property values due to the type and size of the project (Minimal of 5-10 percent loss), traffic safety, and overall apparent disregard for the abutting neighbors may of us are extremely upset with this proposal. If possible I would like to be advised of any upcoming meetings with the city planning committee well in advance so the neighborhood may participate and view their concerns and opinions. I would also like to have the contact person that I may sent a FOIA (Freedom of Information Act) request to if needed.

I really do appreciate you help in this.

Thank you again.

Mike Denbow

69 Florida Ave, Portland, Maine 04103

mdenbow@maine.rr.com

207-899-0053

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov
(207) 874-8724

Mike and Deb Denbow
69 Florida Ave, Portland, Maine
207-899-0053 (mdenbow@maine.rr.com)
Portland, Maine 04103
03/15/2020

Portland Maine Planning Board
City of Portland
389 Congress Street, 4th Floor
Portland, Maine 04101

Dear Portland Maine Planning Board:

My wife and I own property at 69 Florida Ave in Portland. We purchased our home over 20 years ago for the location and neighborhood quality the location brings to this portion of Portland. The wooded land, lack of traffic noise buffered by the trees, wildlife that have been evident throughout our years here, give this area a country atmosphere. This neighborhood is a vast mix of young and older adults, young families with small children, single adults, and retirees. The sense of community has always been in place and most have felt it to be a great place to live, until lately.

The recent notification and meeting with the proposed builders of Fallbrook LLC about a large-scale skilled nursing facility that will be built in a wooded section abutting our neighborhood has changed the dynamics of the once calm neighborhood. At a meeting with Fallbrook LLS., it was stated by the designers and owners the project will be built with the cooperation from Maine Medical Center. The reasoning for this is Maine Medical Center does not wish to be in the nursing home business any longer and is looking for placement of the people who currently reside at St Joseph's Manor. Fallbrook LLC with the cooperation of Maine Medical Center has decided to build a facility to accommodate this by building a facility that will completely remove the wooded section in the neighborhood, covering wet lands, and placing parking lots up to the allowed distances from property lines. It was indicated in this meeting there would be no compromise. Representatives stated building would start as early as June of this year, they changed this quickly to October of this year when questioned further at the meeting.

Unfortunately, families in the neighborhood are quickly selling their homes to avoid the anticipated approval by city planning board for this immense construction project. They along with the rest of us here feel this will not only change the neighborhood, but will have significant impact on land, housing values, drainage, wildlife, wetlands, noise, traffic, safety, and loss of community. Because Maine Medical Center, who owns St Joseph's Manor, does not wish to be in the nursing home business and wishes to convert their existing nursing home into something else, our neighborhood may have to pay the price.

Throughout this letter I would like to address several, but not all issues that will follow this project.

Stress-

Several families have considered and two families have already moved from our street due to the location and magnitude of this project. Their homes would have directly abutted the parking lot of the new Fallbrook project. One of the families was at the meeting at Fallbrook where the design members and Fallbrook members had no problems or issues stating the project will not change, all the trees will be cut down on the land, the parking lot and building area will be brought to within 25 feet of property lines. Blasting will occur for several months during excavation, construction noise, traffic will increase causing more stress and agitation. It was clearly stated by the representatives of Fallbrook LLC. our neighborhood will have no problems with this in 2-3 years and would accept it. This has been causing significant stress in the area.

Safety

Several areas of concern will be noted here, but the list is substantially larger. General Construction, traffic both immediate and future, fire and rescue, will be addressed. Topics such as hazardous materials, hazardous waste, sewage will be discussed at a later times.

General construction combined with added traffic will increase potential for accidents. Some adults walk the paths out back with their dogs and children. There are children who now play in the wooded area behind the homes. Flammables, construction equipment, explosives, are just a few concerns.

Construction traffic will increase on Ray St with the entry to the Fallbrook LLC designers and staff state will be off of that street below a blind hill. Traffic coming in from Allen Ave will have a very high potential for accidents to occur at the entrance to the facility due to that very blind hill. Traffic on Maine Ave and side streets will increase due to traffic flow traveling northbound on Washington Ave, they will do what most travelers do, cut through to avoid Allen Ave. Unless the city of Portland authorizes the reduction of the hill prior to the new Fallbrook entry I feel there will be significant liability if the city approves this entry. I know I will be the first to testify that the city has been warned about this. Fallbrook Condominiums has already stated they do not want any of the construction or future employees or visitor traffic to travel on Merrymeeting Drive.

After the construction is completed work day traffic in and out of the facility using the proposed roadway will cause the same safety issue as construction equipment. This was brought to the engineers and staff at the Fallbrook meeting in February. Their reply was there was not going to be that much employee or visitor traffic in or out. After prompting for estimates for employees daily it was between 50-70 during the day, this does not

count the night and middle shift staff, or visitors to the facility. When this was broached the only response given was “They can take public transportation”. I would like to point

out the increased traffic concern is not only by employees and guests, but also by delivery trucks and such that deliver at different times of day and night.

Fire and Rescue will have a traffic flow and safety concern. In the event of a large-scale fire or alarm numerous pieces of fire apparatus will be called to the facility to handle an emergency. The only entrance being that off of Ray St and below a blind hill. The road leading to the facility will not be adequate to handle these apparatuses. It would be prudent to have the facility look at a different entry off of Washington Ave where entrance and egress is easier and safer for everyone involved.

Increase in drainage issues and Mosquito’s

Currently the undeveloped land absorbs most of the water. Houses along the border of the proposed building area do have some flooding but is fairly well controlled by the make up the property. The proposed building site will remove most of the trees and land mass and replace it with a building or tarred section of driveway that will hold at least 90 or more vehicles. This will increase the potential for large amounts of run off that would normally be absorbed by the forested area. Engineers and staff form the Fallbrook LLC project stated that run off ponds would be used to control this. They could not effectively answer where that water would be directed afterward. They were also asked how the potential of increased mosquito habitat would be handled. The answer was that was not their concern.

Wildlife and Wetlands

This area has a population of deer and fawns, fox, coyotes, racoons and their kits, hawks, owls, turkeys, ducks and ducklings, bats (that eat the mosquitos), tree frogs, migratory birds, and the list goes on. Removing this environment will significantly impact the ecological balance of the wildlife that calls this home. There is nearly 1 acre of wetlands on the property that the designers have stated they will build over, there are vernal pools, along with streams both above and below ground. Removal of this land will not only impact the environmental balance but will also cause more noise pollution currently abated by the trees and current land configuration

Housing Values

Speaking to real estate agents, building this facility in the manner that is proposed will affect house and property resale later with a 5-10 percent reduction in value.

There are significant more issues that can be addressed by this letter, ie zoning and such but I will stop at this time. I will ask the planning board to review this letter along with

letters and emails from the rest of the neighborhood and ask yourselves, would you want this in your back yard? Most of us do not.

My wife and I hope the Portland Planning Board will closely review the project and make a wise and prudent decision on its outcome. Review of the plans for the project and also looking at the existing St Josephs Manor as an alternative building site would make more financial, ecological,

and safety sense. The land there is cleared, there is a safe access to Washington Ave, and a building exists at that location already.

Thank you for your attention in this matter. We request that this e-mail be placed into the public record for the review for this site.

Mike and Deb Denbow
69 Florida Ave, Portland, Maine
207-899-0053 (mdenbow@maine.rr.com)

Fallbrook Project North Deering

MDENBOW@maine.rr.com <MDENBOW@maine.rr.com> Apr 26, 2020 10:14 AM
Posted in group: **Planning Board**

Hello Andrew,

I hope you have been well, safe, and not out and about in public. I have been watching the Planning board agenda for the Fallbrook Project to be announced. There have been no notifications at all about the date and time of the meeting. I have been noticing orange tape on some of the trees bordering the properties that will be directly effected by this project, the ones with parking lots going right up to their property lines. MANY in our neighborhood WANT to make sure that our voices and concerns are not only listened to but acted upon. We do not want to miss a meeting at all, we do not want the meeting to suddenly appear on the agenda the day before it happens, and we want to be prepared for it.

I have several questions in regard to this-

1) How much notice will be given for the meetings for Falbrook planning board/public involvement and monitoring
2) How will the public be notified of these meetings and insure that we as a neighborhood have plenty of notice to prepare for them
3) Can Fallbrook or its designers or contractors begin to build or prepare for the project before any approval is given by the planning board and if so, how much can they do.
4) Neighborhood recourse if the Fallbrook project starts w/o consent of the planning board
5) Zoning questions- who do we speak to to insure the project falls under the proper zoning- looking at the zoning area, I do not believe it does.
6) Where the meetings may occur on Zoom, what is the max participants the meetings may have. I want to make sure that all who have a say in the matter, who want to speak or attend, may do so.
7) Where can I find information on who actually is currently sitting on the planning board and who will be making decisions about this project.

I appreciate the assistance you gave to me when this first started. I know you are probably buried in upcoming events. Stay safe, stay well.

Mike Denbow
69 Florida Ave, Portland Maine
mdenbow@maine.rr.com
207-899-0053

From: Michael Denbow
69 Florida Ave Portland, Maine

Regarding: Planning Board Hearing 11/10/2020 Fallbrook LLC

The proposed 90 bed Fallbrook Facility by Sandy River and North Country Associates has been a hotly contested issue in the North Deering neighborhood of Florida Ave, Ray St, Gertrude Ave and Merrymeeting Dr.

The initial meeting with the neighborhood by Sandy River in the middle of a blizzard in Feburary was very tense. Neighbors adjacent to the proposed facility expressed their dissatisfication regarding the building's placement in regard to the property lines of their existing homes and the removal of scenic beauty from this site. The general consensus and reply from Sandy River at that time was they planned to cut everthing down to the 25 foot boundaries of each property and the neighborhood "would not even notice the changes from the development after a couple of years". There was no concern at that meeting from the developers, Fallbrook or any other representatives about being good neighbors or working with the neighborhood.

This problem has been brought before the City of Portland's planning board to determinine the merits of the Fallbrook LLC project under an R-3 Zone conditional use. During the workshop meetings small changes have been made on the part of Fallbrook LLC. , removal of 10 parking spaces from a parking lot that will back up to several properties, planting some trees, making a green lawn area for overflow of parking during special events, trying to reduce some of the light from the lighting in the parking lot and in some areas reducing some of the footprint of the building and going up one floor. However many issues still remain. Issues such as huge retaining walls that back up to abutting neighbors limiting existing sunlight and privacy, concern for noise and light pollution caused by staff arriving and leaving at all hours of the night, not to mention the noise from delivery trucks, sanitation trucks, snowplows and other commercial equipment during all hours of day and night especially during the winter months. There is also concern about car headlights from parking lots and facility roads shining into abutting neighbor residences every night. The minor changes made do not address the three issues at hand; the R3 Zone, whether conditional use should be granted for these minimal changes and the adverse impact on the neighborhood.

From statements made by the developers and Fallbrook LLC the intent of this development is to replace the St Josephs facility on Washington Ave currently owned by Maine Medical Center. Fallbrook LLC will pay MMC to take some of the patients from that facility when it closes. Fallbrook LLC and the developers have stated they will not only have long term patients located at this new facility, but will also have a rehabilition unit for temporary patients. Dan Mcquire from Sandy River has compared this new facility to several others located in Portland. Below you will see the list provided by Mr. Mcquire. To be able to compare these facilities apples to apples it will be important to break down what each facility actually is, can do and how it is licensed by the State of Maine. Under the State of Maine licensing is required for assisted living facilities, medical facilities and independent living facilities that have salons and such.

I have broken down what each property is. The first group will be Independent and Assisted Living Facilities. They are not required to be licensed as a medical facility due to the type of assistance they provide to their residents. There are no rehabilitation services and no skilled nursing services provided for acute ilness, injury or surgery etc. Outside nursing agencies or rehabilitation units provide this care.

The second group contains patients who require medical care, long term or acute and will be licensed as a Medical Facility due to the type of medical care provided to the persons at the faciltiy. They also can provide rehabilitaiton services and extensive medical care given under the direction of a physician.

Portland Zoning Land Use Code

Senior Care Facilities

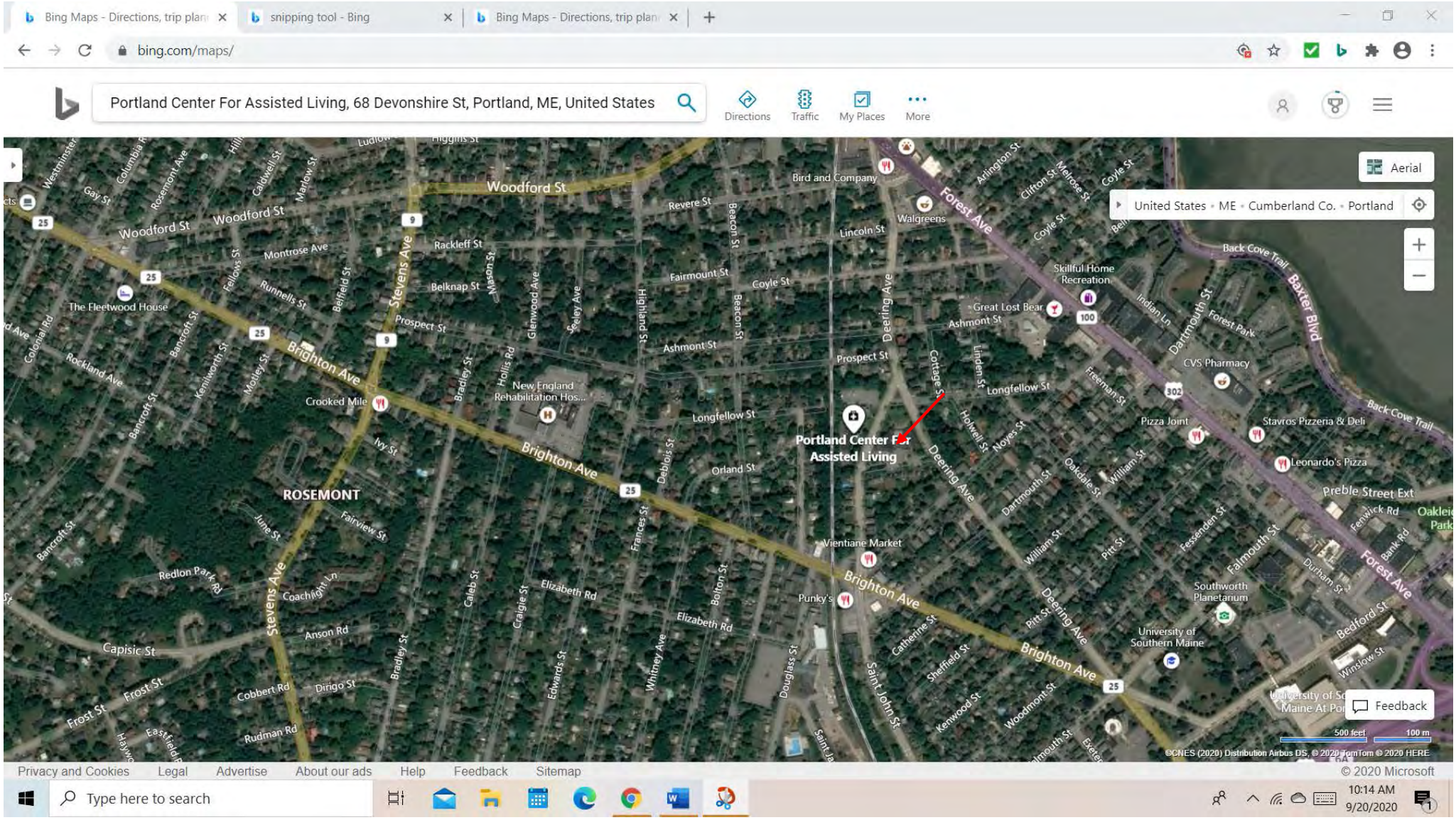
Name of Property	Nursing Beds	Assisted Living Beds/IL Units	Total Senior Cre Beds/Units	Zone	Notes
The Cedars	102	30 AL	132	Residential Zone 3	The Cedars is adding 20 AL units in late 2020
Seaside	137	0	137	Residential Zone 5	
The Barron Center	219	0	219	Residential Zone 5	Originally Licensed for 235 Beds
Portland Center for AL	0	170 AL	170	Residential Zone 5	Originally Licensed as a Nursing Home
Canco Woods/Birchwoods AL	0	80 AL/120 IL	200	Contract Zone	Within R-3 Neighborhood
Ashton Gardens	0	150 IL	150	Residential Zone 5	
Fallbrook Woods	0	56 AL	56	Residential Zone 3	
Park Danforth	0	39 AL/180 IL	219	Residential Zone 6a	
75 State Street	0	67 AL/85 IL	152	Residential Zone 5	
St Joseph	121	0	121	Residential Zone 3	Originally Licensed for 200 Beds
Proposed Fallbrook Commons	90	0	90	Residential Zone 3	

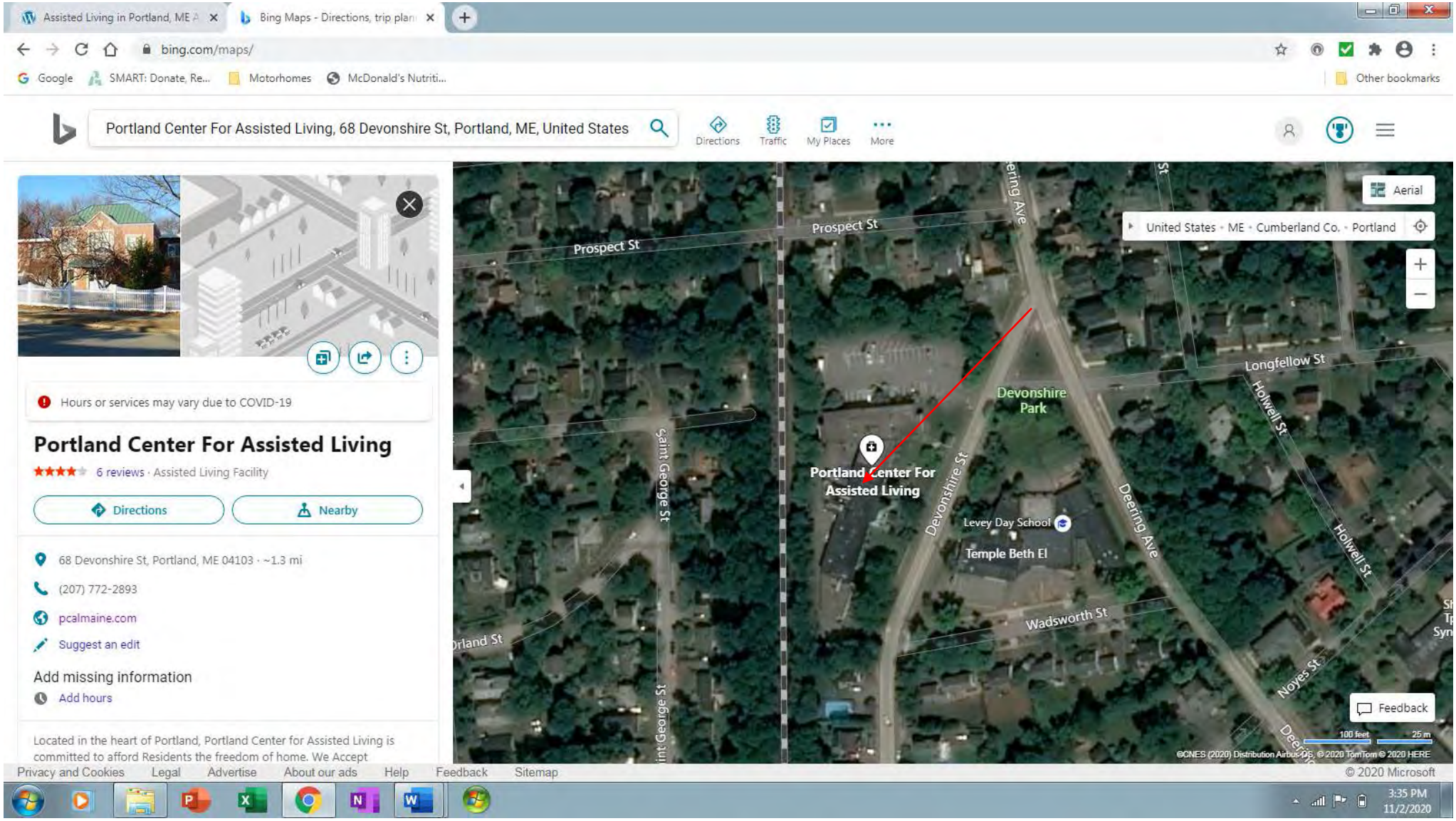
Group One

Assisted Living (Licensed as Assisted Living Facility) and Independent Living Facilitiies

Portland Center for Assited Living 68 Devonshire Street Zoned R-5

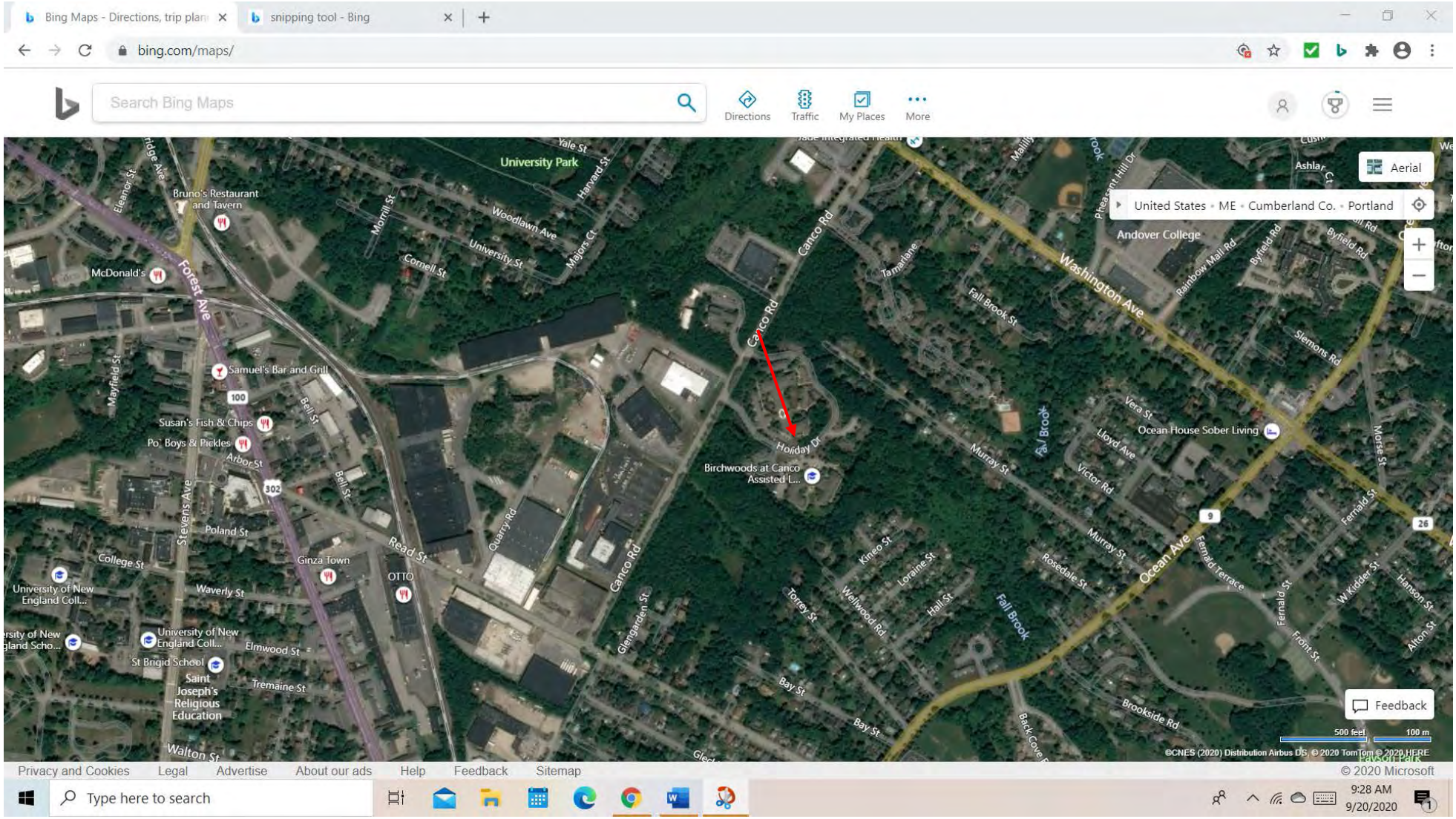
This facility is licensed by the State of Maine as a PNMI (Private Non-Medical Institution), an assisted living facility. The facility is in a densely populated area surrounded by houses and businesses. It is located on a busy city street that connects Deering Ave and Brighton Ave. PCAL was a nursing home at one time and now is assisted living only. There are large mature trees located on most sides of the faciltiy separating the facilty from the abutting neighbors.

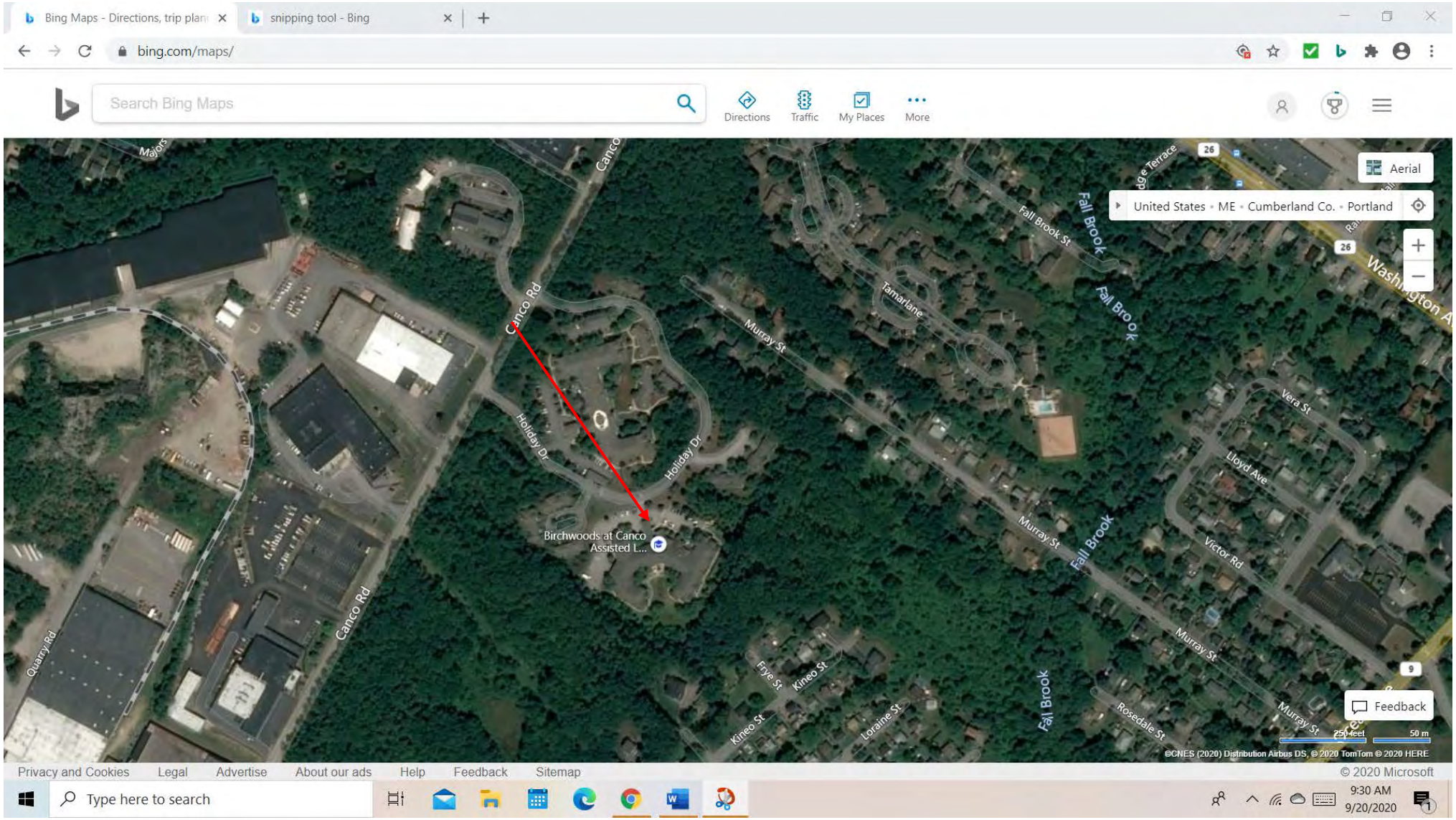



Assisted Living in Portland, ME
Bing Maps - Directions, trip plan
bing.com/maps/
Google
SMART: Donate, Re...
Motorhomes
McDonald's Nutriti...
Other bookmarks
Portland Center For Assisted Living, 68 Devonshire St, Portland, ME, United States
Directions
Traffic
My Places
More
Hours or services may vary due to COVID-19
Portland Center For Assisted Living
6 reviews · Assisted Living Facility
Directions
Nearby
68 Devonshire St, Portland, ME 04103 · ~1.3 mi
(207) 772-2893
pcalmaine.com
Suggest an edit
Add missing information
Add hours
Located in the heart of Portland, Portland Center for Assisted Living is committed to afford Residents the freedom of home. We Accept
Prospect St
Saint George St
Aerial
United States · ME · Cumberland Co. · Portland
Longfellow St
Devonshire Park
Holwell St
Portland Center For Assisted Living
Devonshire St
Levey Day School
Temple Beth El
Deering Ave
Wadsworth St
Noyes St
Feedback
100 feet
25 m
©CNES (2020) Distribution Airbus DS, © 2020 TomTom © 2020 HERE
Privacy and Cookies
Legal
Advertise
About our ads
Help
Feedback
Sitemap
© 2020 Microsoft
3:35 PM
11/2/2020

Canco Wood/Birchwoods 257 Canco Road Zoned C4-ROS

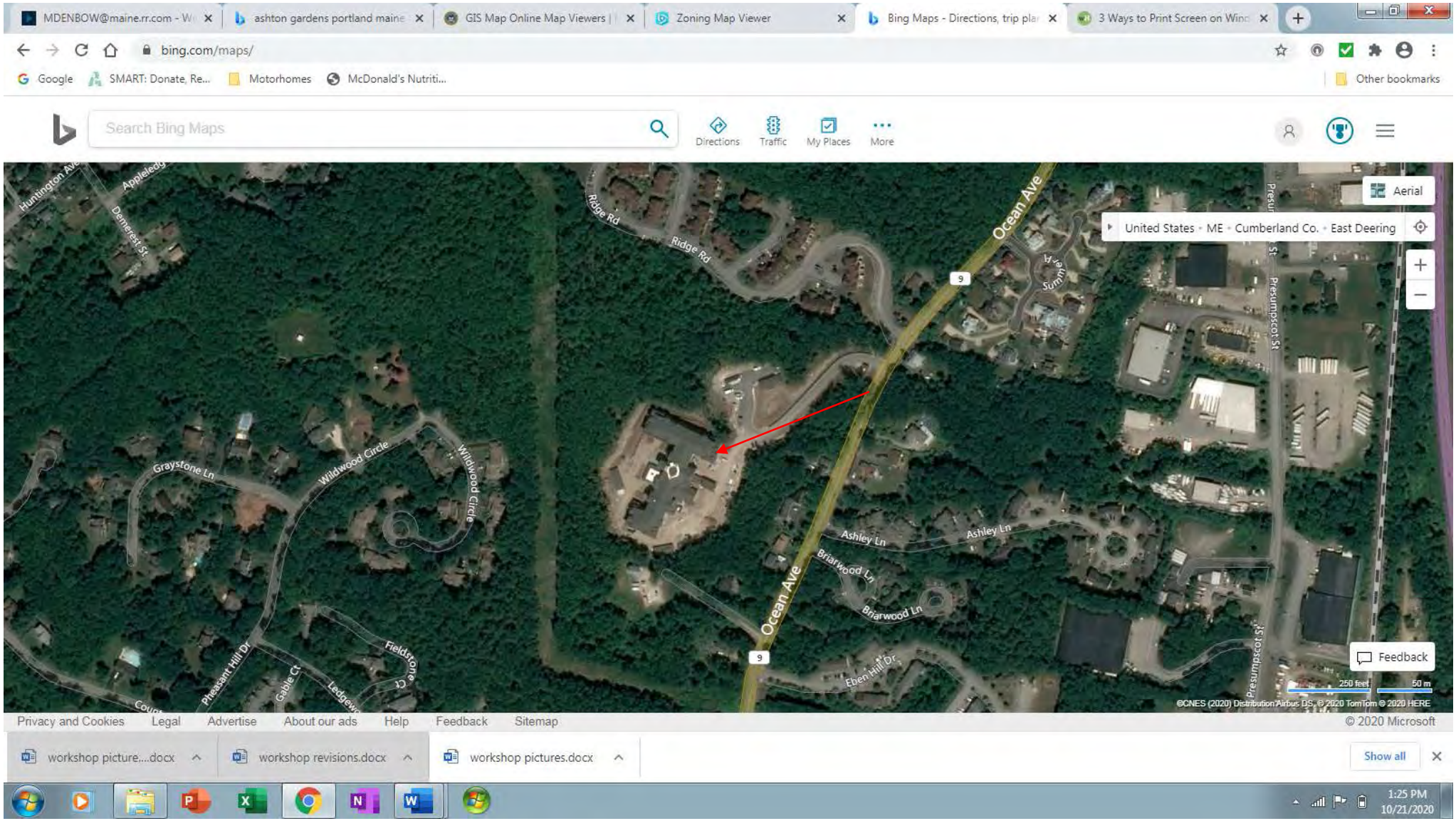
This facility has 80 Assisted and 120 Independent living units. The facility is licensed as an Assisted Living Facility. It is located on Canco Road which is a major street for the city of Portland connecting Washington Ave and Read Road. It is a comercially used street with commercial traffic for large commercial businesses, warehouses, churches, and medical office buildings located on this street. The entrance of the facility is also located on this street. Birchwoods was built in 1999. In 2005 a second building was constructed behind the first building. Birchwoods is surrounded by a large forested area, some of which is a city park with walking trails. The homes abutting Birchwoods are separated from the facility by an extensive forested area with very thick, mature trees. The shortest distance between Birchwood and an individual home is 130 feet. This is at one home only. Most of the other homes have a 200 foot plus range of woods separating them from Birchwoods.

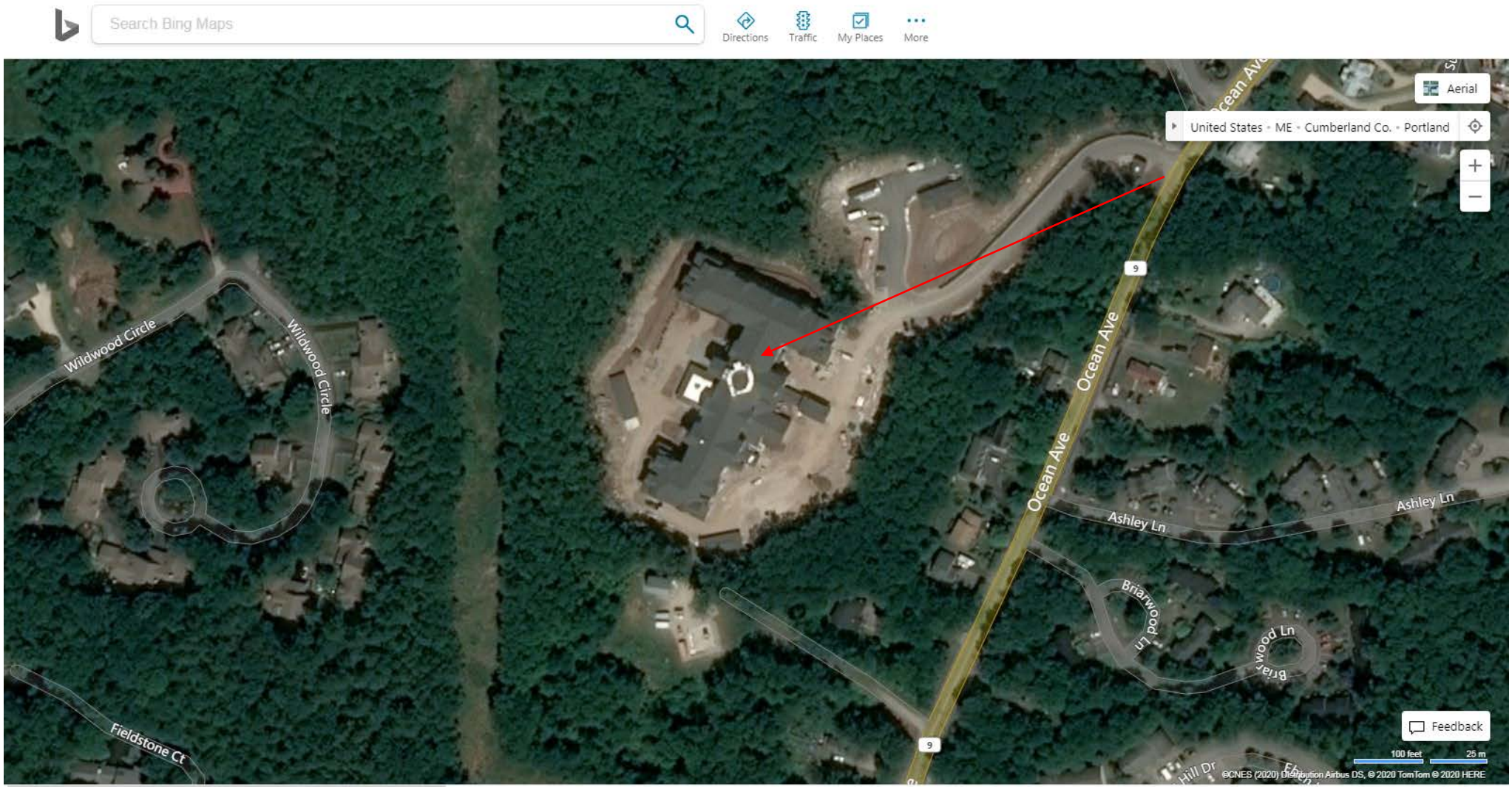



Bing Maps - Directions, trip plan
snipping tool - Bing
bing.com/maps/
Search Bing Maps
Directions
Traffic
My Places
More
Aerial
United States • ME • Cumberland Co. • Portland
Canco Rd
Holiday Dr
Tamarlane
Murray St
Fall Brook
Fall Brook St
Vera St
Lloyd Ave
Victor Rd
Rosedale St
Frye St
Kineo St
Loraine St
Quarry Rd
Birchwoods at Canco Assisted L...
Feedback
©CNES (2020) Distribution Airbus DS, © 2020 TomTom © 2020 HERE
Privacy and Cookies
Legal
Advertise
About our ads
Help
Feedback
Sitemap
© 2020 Microsoft
Type here to search
9:30 AM
9/20/2020

Ashton Gardens Ashton Gardens 802-838 Ocean Ave Zoned R5

Ashton Gardens is an independent living facility owned by Ashton Gardens Retirement Residence PROPCO LLC. The facility is an independent living facility and does not have any licensing with the State of Maine. Year built is listed as 2017. There are no assisted living units and all units are listed as independent. There is a mature tree section of 120 feet between the closest privately owned property and the facility. The rest of the facility property is surrounded by vast amounts of mature trees. The main entry into the property is from Ocean Ave, a major roadway that connects Portland and Falmouth.

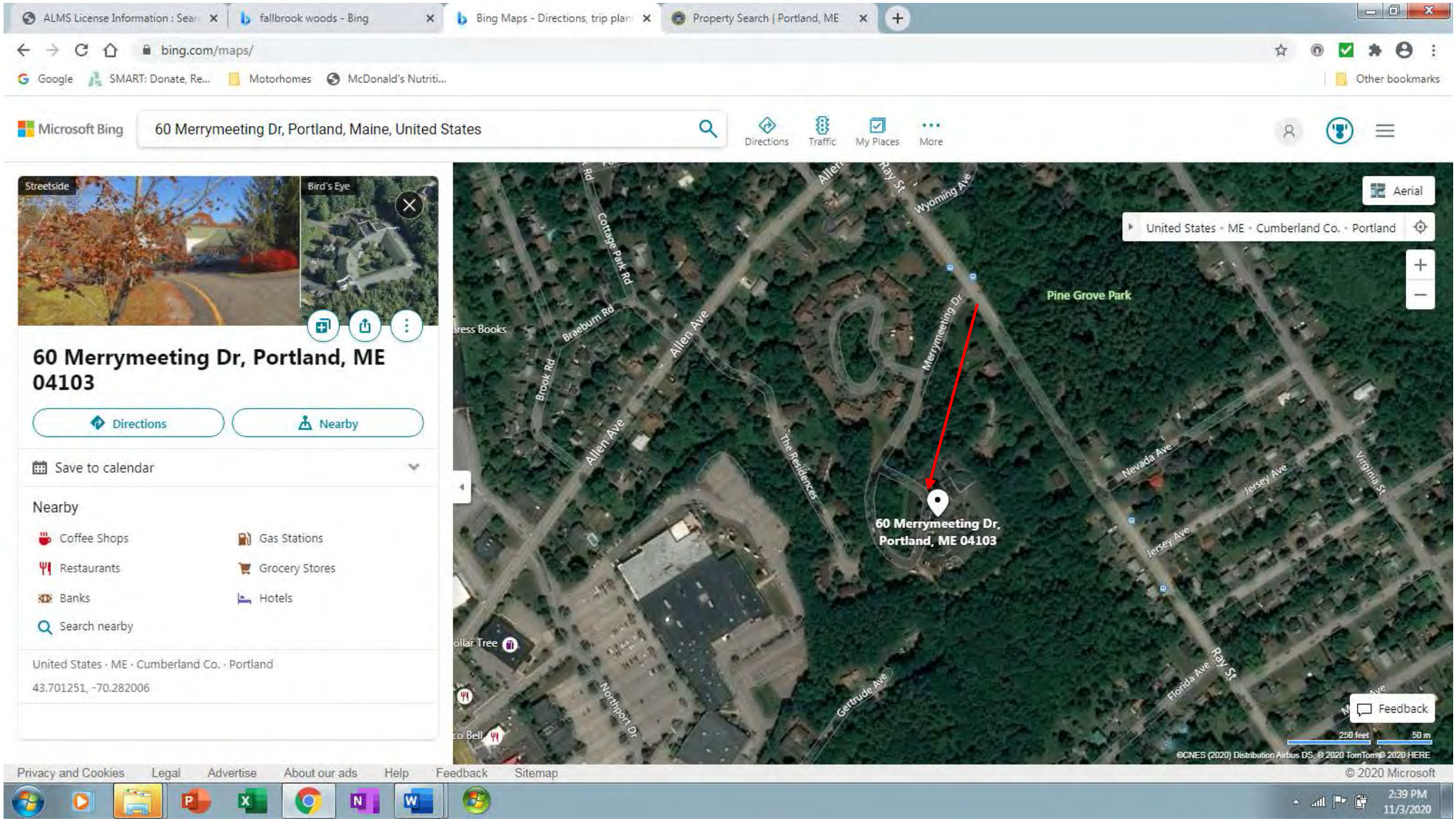


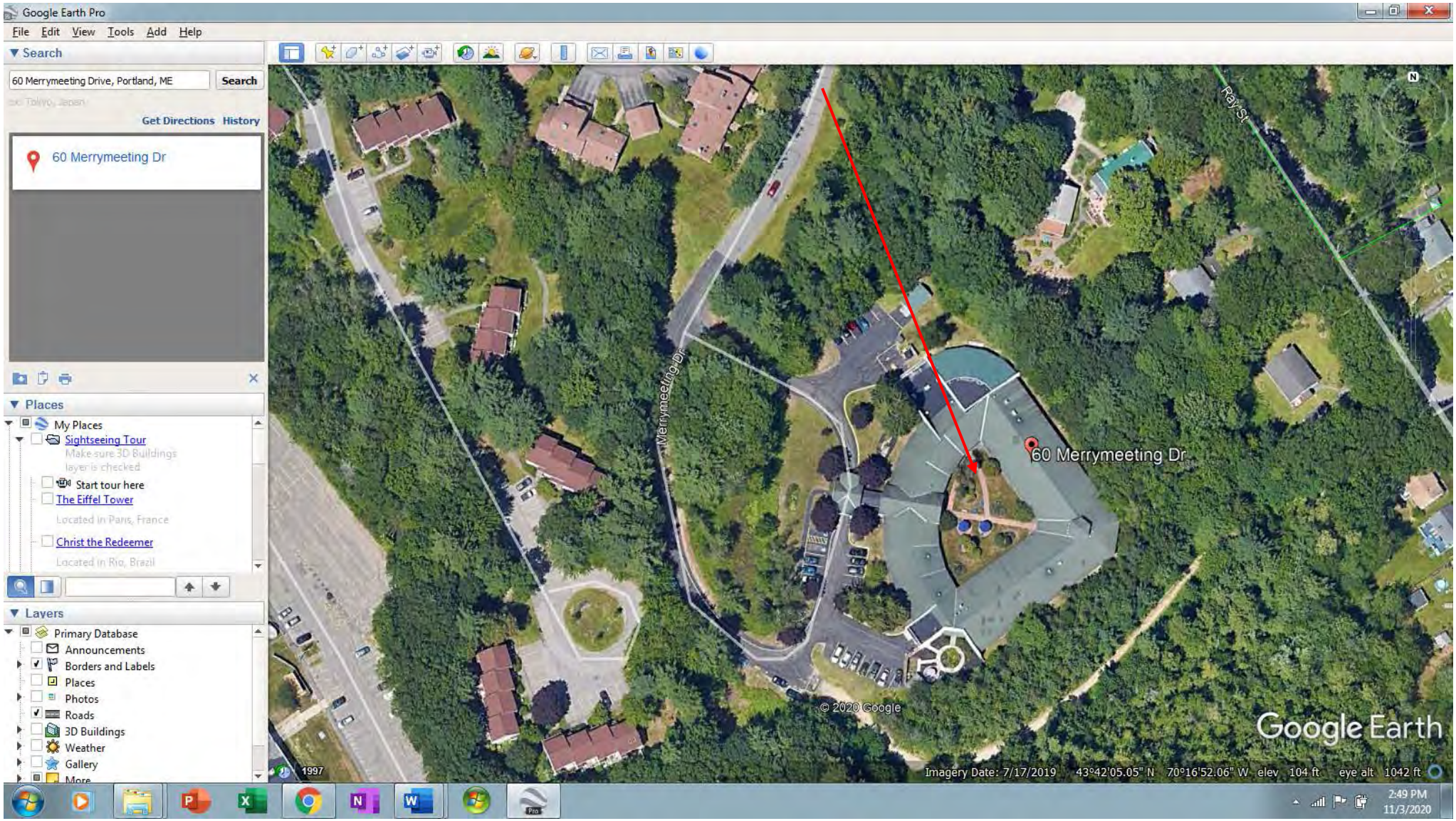


workshop picture....docx workshop revisions.docx workshop pictures.docx Show all

Fallbrook Woods 60 Merrymeeting Drive Zoned R-3

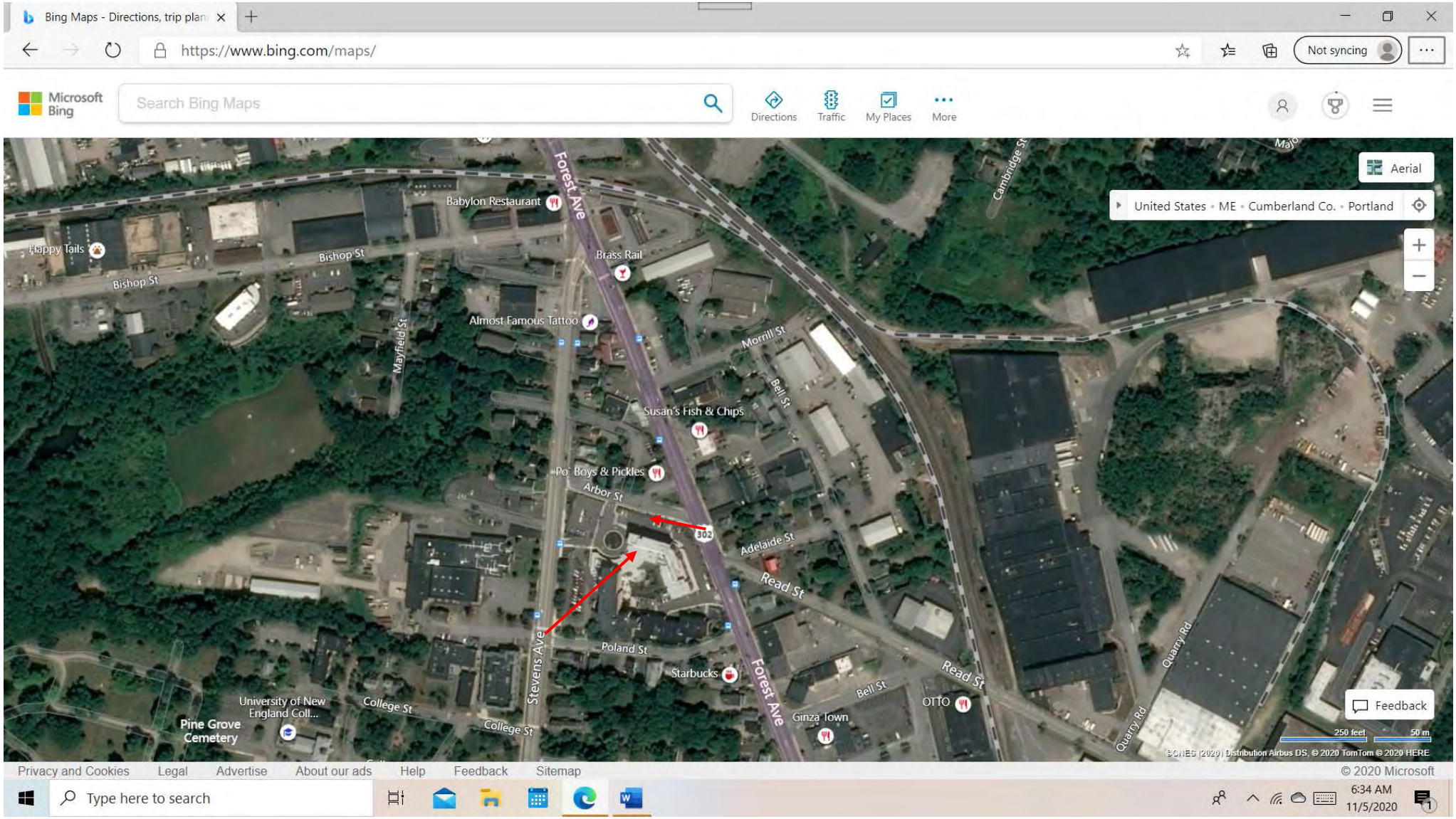
This facility is licensed as a PNMI (Private Non-Medical Institution), an assisted living facility. The facility is at the end of Merrymeeting Drive which is a private roadway that exits onto Ray Street. Ray Street is a public residental roadway which is posted “No Trucks” at both ends. Fallbrook was constructed in 1993. The closest distance to the back of one privately owned property, measured from the back of a storage building on Fallbrook, is 70 feet of thick mature forest. The rest of the homes surrounding Fallbrook are separated by well over that distance of mature forested area. All other areas surrounding Fallbrook are either thickly wooded or on the Allen Ave side of the building.

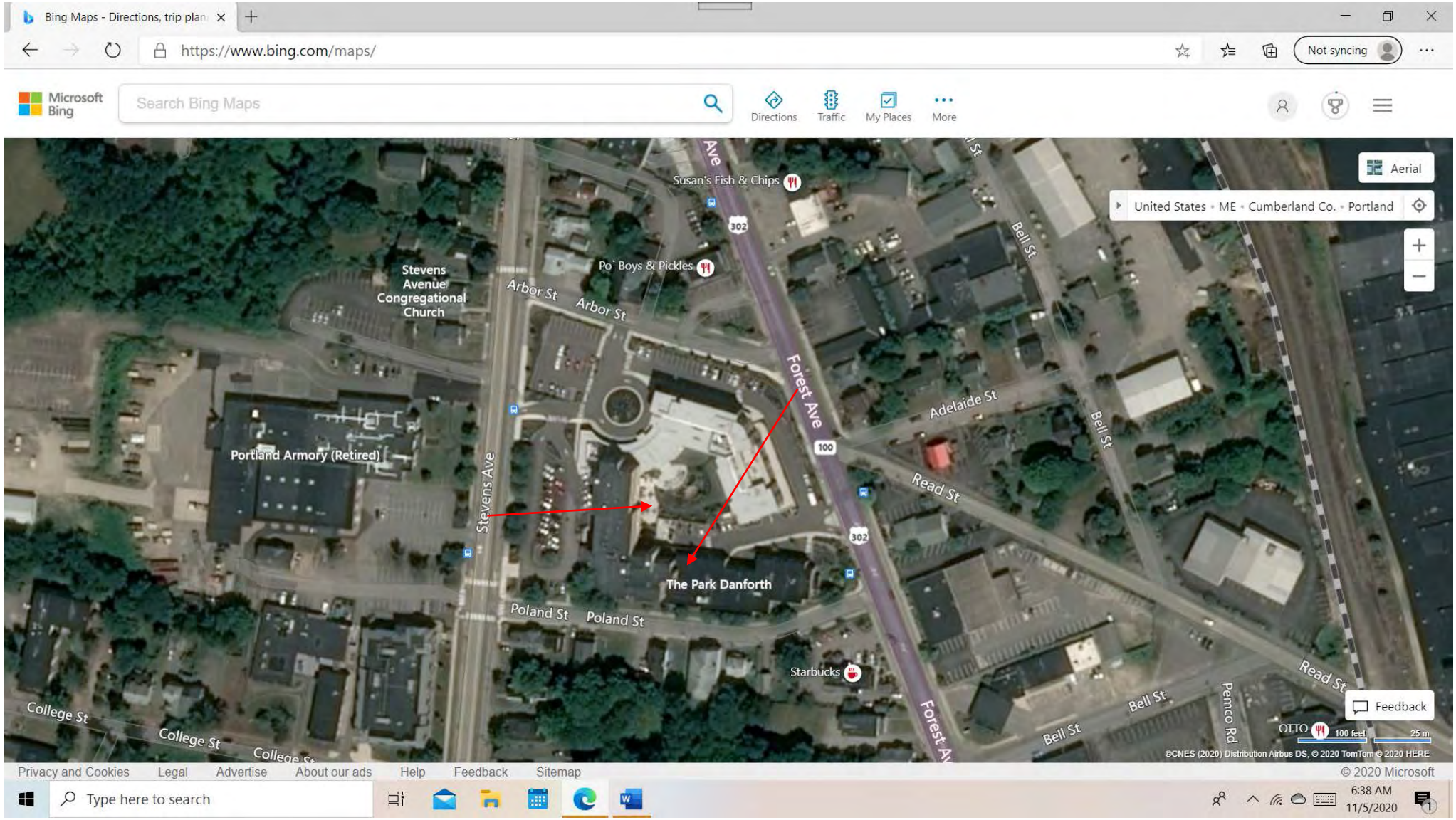



Google Earth Pro
File Edit View Tools Add Help
Search
60 Merrymeeting Drive, Portland, ME
Search
Get Directions History
60 Merrymeeting Dr
Places
My Places
Sightseeing Tour
Make sure 3D Buildings layer is checked
Start tour here
The Eiffel Tower
Located in Paris, France
Christ the Redeemer
Located in Rio, Brazil
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Weather
Gallery
More
Merrymeeting Dr
Ray St
60 Merrymeeting Dr
© 2020 Google
Google Earth
1997
Imagery Date: 7/17/2019 43°42'05.05" N 70°16'52.06" W elev 104 ft eye alt 1042 ft
2:49 PM
11/3/2020

Park Danforth Independent Living, Clarks Terrace Assisted Living 777 Stevens Ave Zone 6a

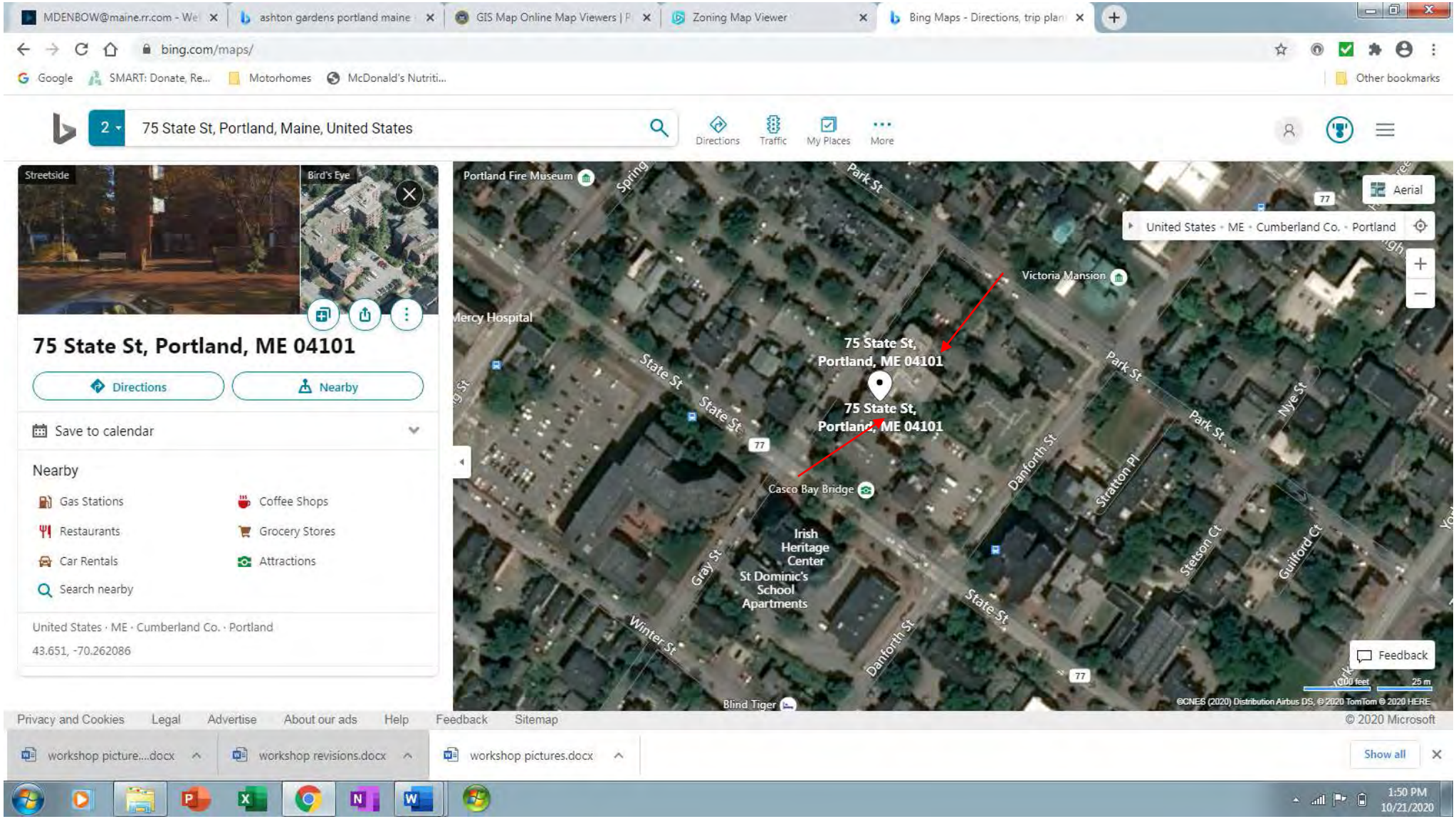
Park Danforth is an independent living facility licensed with the State of Maine. Clarks Terrace is the assisted living section and is licensed as a PNMI (Private Non-Medical Institution). The facility is located across the street from the Univeristy of New England and is bordered by two major roadways, Stevens Ave and Forest Ave. A mix of businesses, schools and residences are in this area.

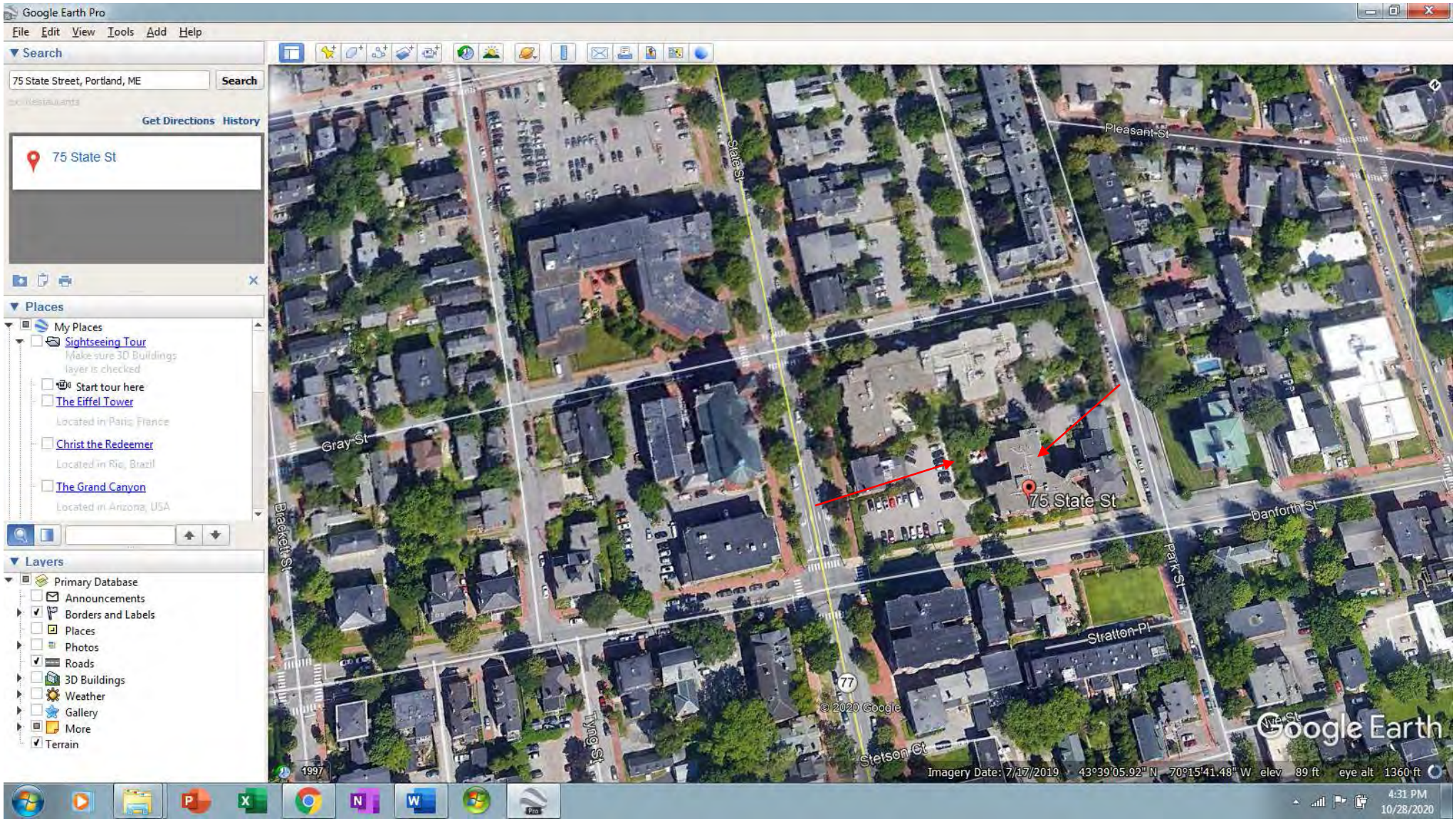



Bing Maps - Directions, trip plan
https://www.bing.com/maps/
Not syncing
Microsoft Bing
Search Bing Maps
Directions
Traffic
My Places
More
Aerial
United States • ME • Cumberland Co. • Portland
Susan's Fish & Chips
Po' Boys & Pickles
Stevens Avenue Congregational Church
Arbor St
Portland Armory (Retired)
Stevens Ave
Forest Ave
Adelaide St
Bell St
Read St
The Park Danforth
Poland St
Starbucks
College St
Pemco Rd
OTTO
100 feet
25 m
©CNES (2020) Distribution Airbus DS, © 2020 TomTom © 2020 HERE
Feedback
Privacy and Cookies
Legal
Advertise
About our ads
Help
Feedback
Sitemap
© 2020 Microsoft
Type here to search
6:38 AM
11/5/2020

75 State Street 75 State Street Zoned R6

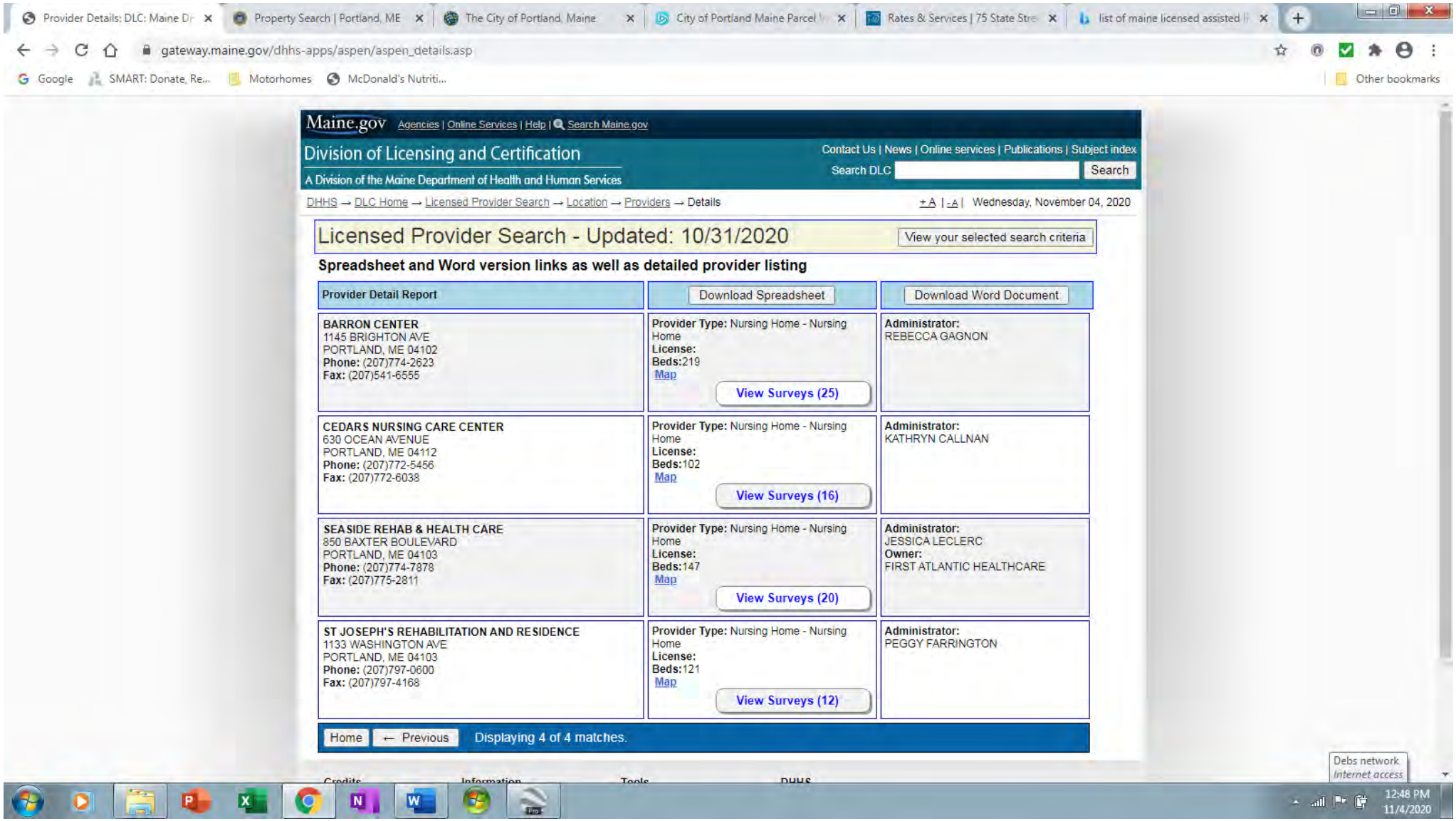
This facility is listed as independent and assisted living. A check with the State of Maine Licensing did not indicate any license for Assisted Living under the name of 75 State Street. This facility is located on State Street with property backing up to Park Street. Both are main roadways through the city. This facility is located in a mix of businesses, condo's and Mercy Hospital.




Google Earth Pro
File Edit View Tools Add Help
Search
75 State Street, Portland, ME
Search
Get Directions History
75 State St
Places
My Places
Sightseeing Tour
Make sure 3D Buildings layer is checked
Start tour here
The Eiffel Tower
Located in Paris, France
Christ the Redeemer
Located in Rio, Brazil
The Grand Canyon
Located in Arizona, USA
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Weather
Gallery
More
Terrain
Pleasant St
State St
Gray St
Bracket St
75 State St
Danforth St
Park St
Stratton Pl
Ivy St
Stetson Ct
© 2020 Google
Google Earth
Imagery Date: 7/17/2019 43°39'05.92" N 70°15'41.48" W elev 89 ft eye alt 1360 ft
4:31 PM
10/28/2020

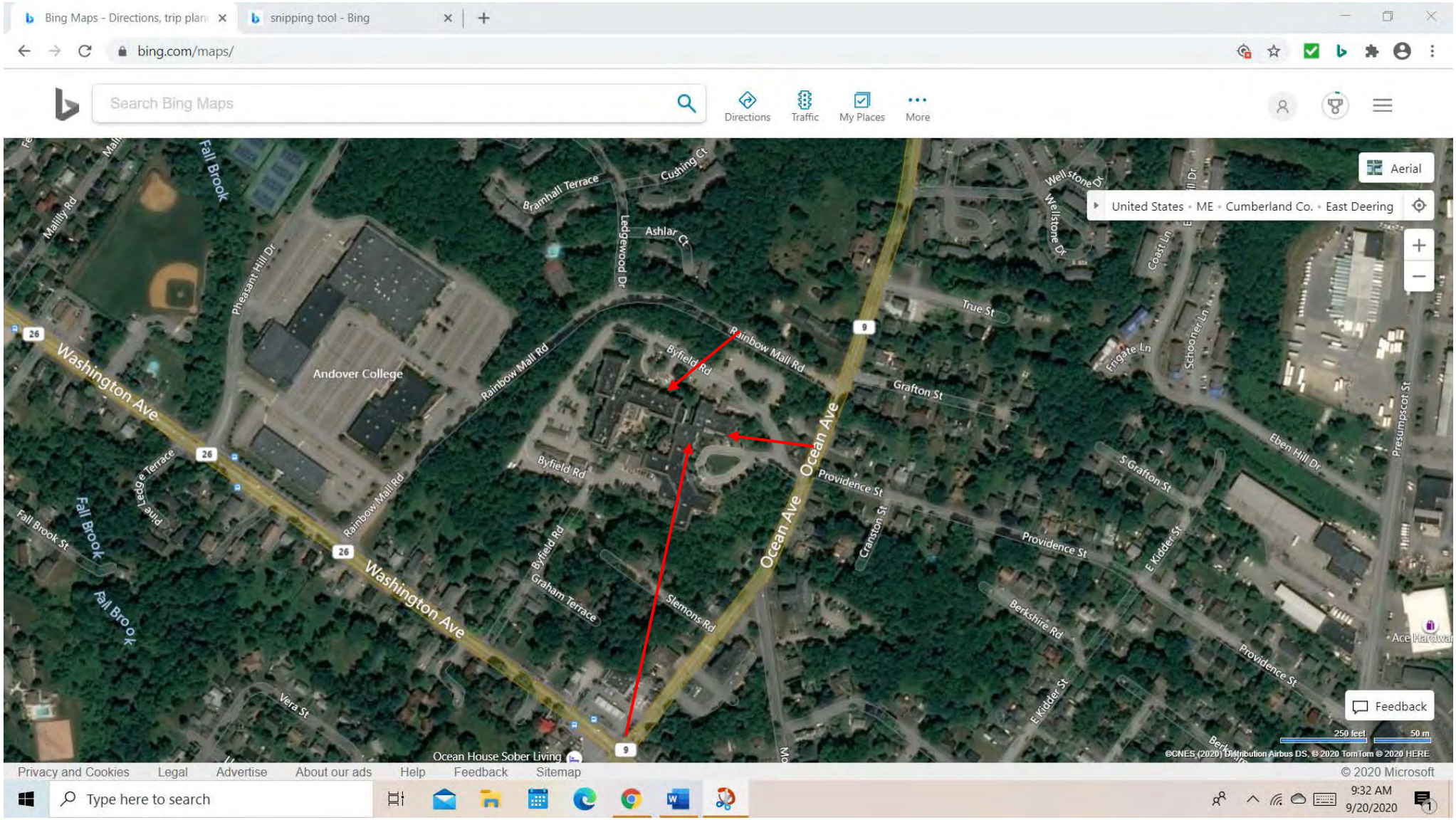
Group Two

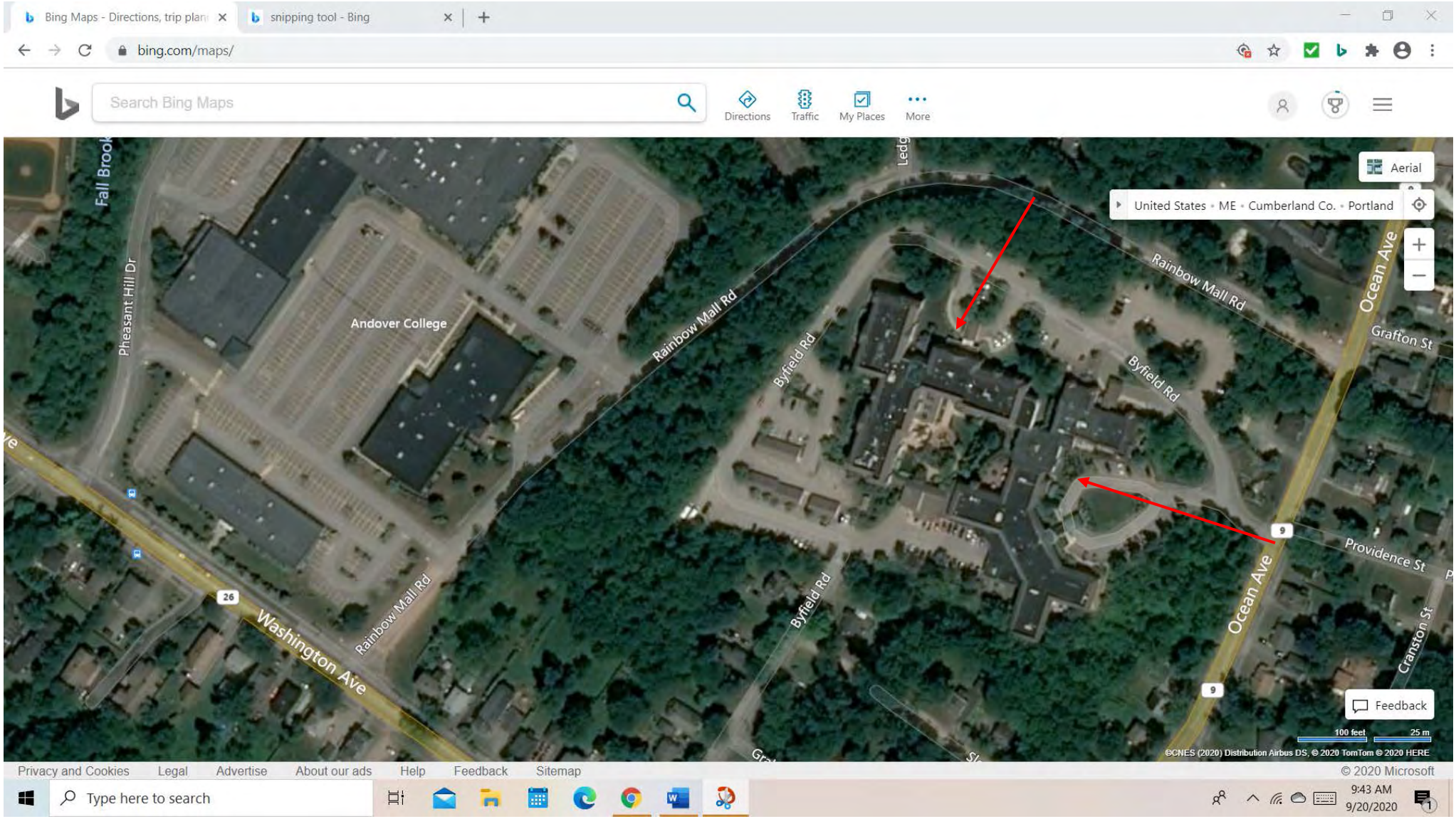
Below you will find the list of Skilled Nursing Facilities in Portland which are licensed the with the State of Maine under Medical Facility Unit as Nursing Homes. All provide the same services as St Josephs.



The Cedars Nursing Care Center 630 Ocean Ave. Licensed as a Nursing Home.

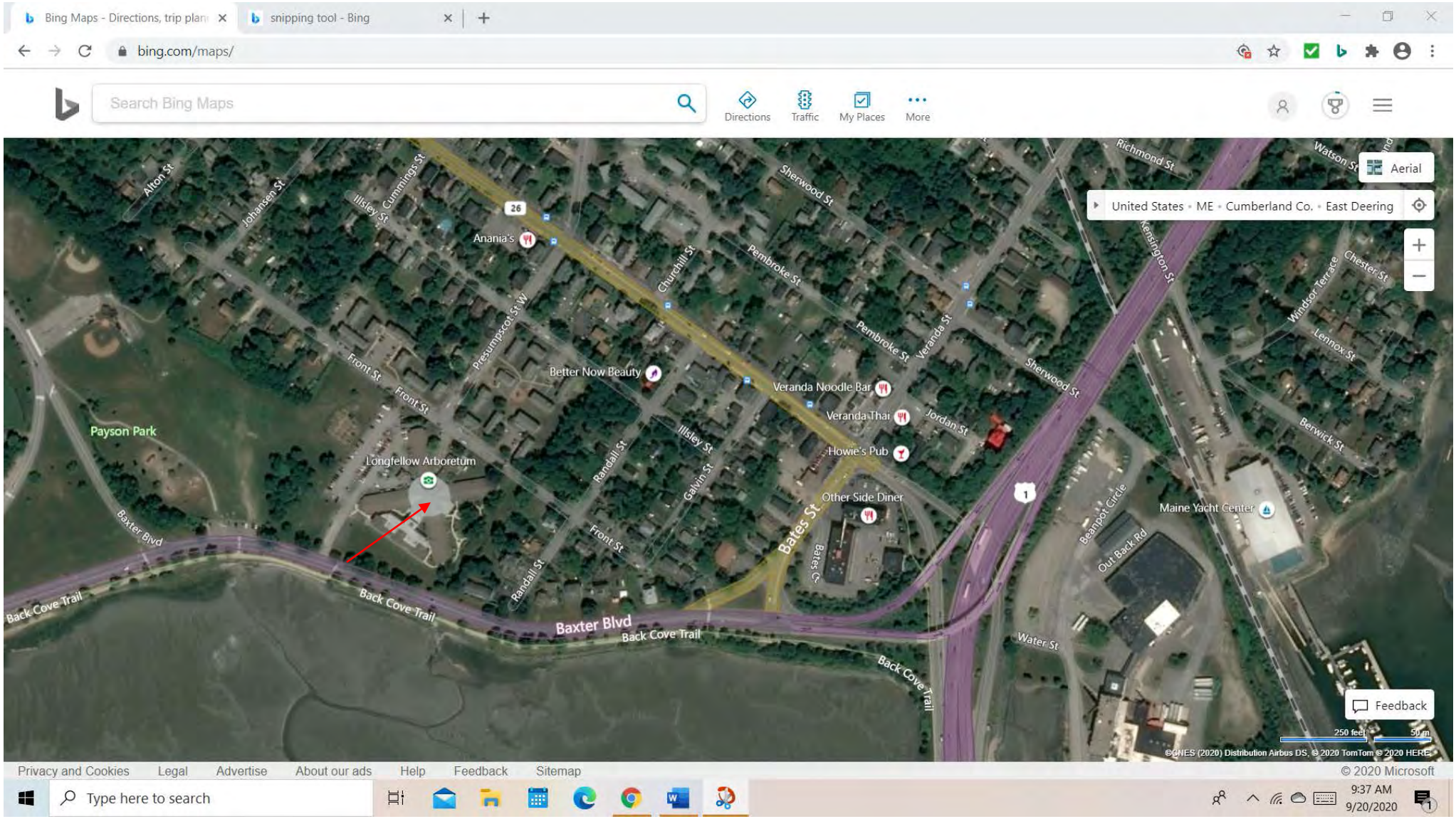
This facility has independent living, assisted living, skilled nursing and rehabilitation services. It was built in 2008. It is required to be licensed as a Nursing home with the State Medical Facility Unit. This facility is located on Ocean Ave near the intersection of Washington Ave, both very heavily traveled streets. The Rainbow Mall Road travels from Ocean Avenue beside and to the rear of the facility and exits onto Washington Ave as well. There is a well-defined buffer area of mature trees separating all houses bordering the facility. This area is a mixture of business, residences and apartments.

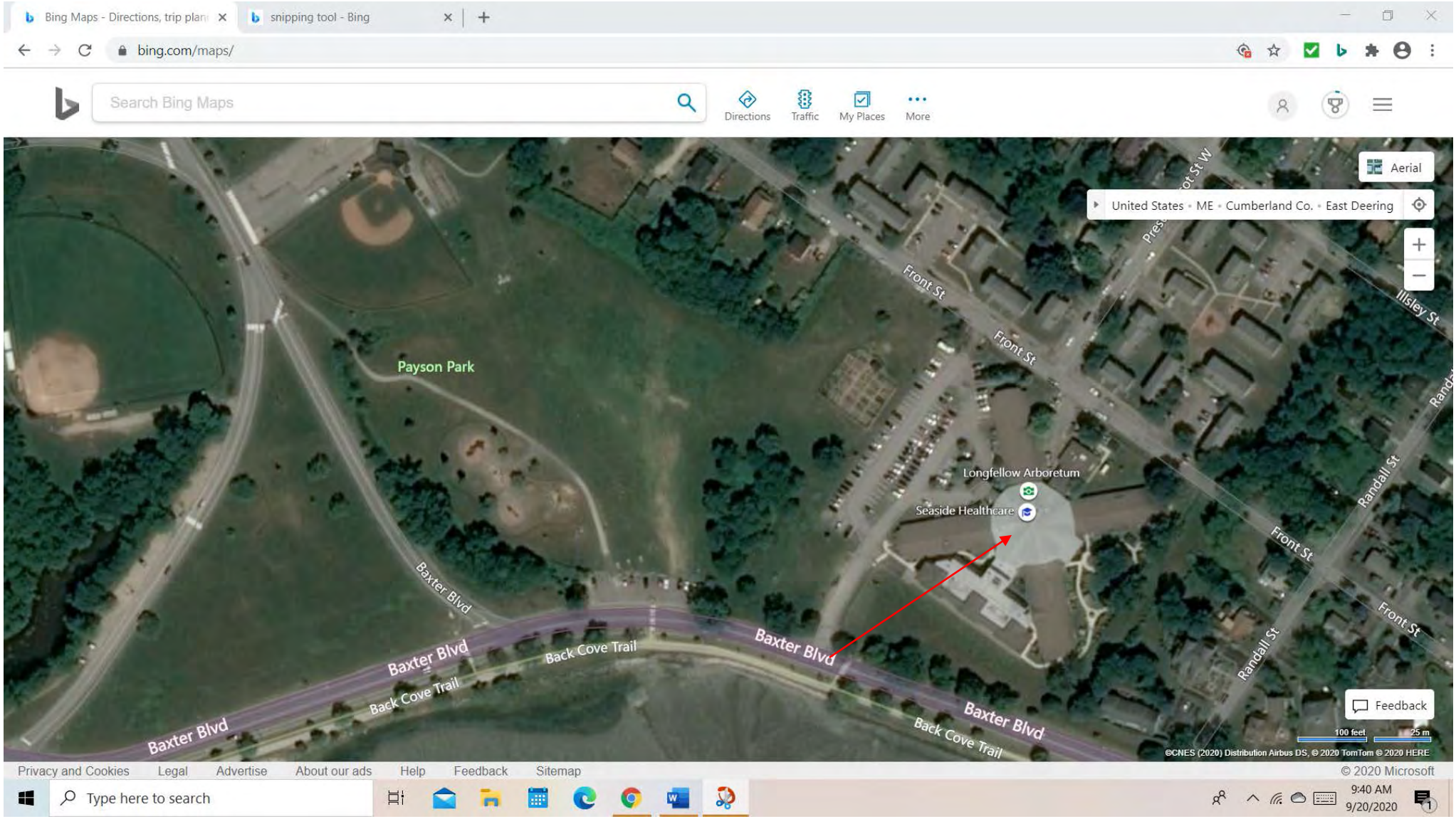



Bing Maps - Directions, trip plan
snipping tool - Bing
bing.com/maps/
Search Bing Maps
Directions
Traffic
My Places
More
Aerial
United States • ME • Cumberland Co. • Portland
Andover College
Rainbow Mall Rd
Byfield Rd
Ocean Ave
Grafton St
Providence St
Cranston St
Washington Ave
Pheasant Hill Dr
Fall Brook
26
9
Feedback
100 feet
25 m
©CNES (2020) Distribution Airbus DS, © 2020 TomTom © 2020 HERE
Privacy and Cookies
Legal
Advertise
About our ads
Help
Feedback
Sitemap
© 2020 Microsoft
Type here to search
9:43 AM
9/20/2020

Seaside Rehabilitation and Healthcare 850 Baxter Blvd Zoned R5

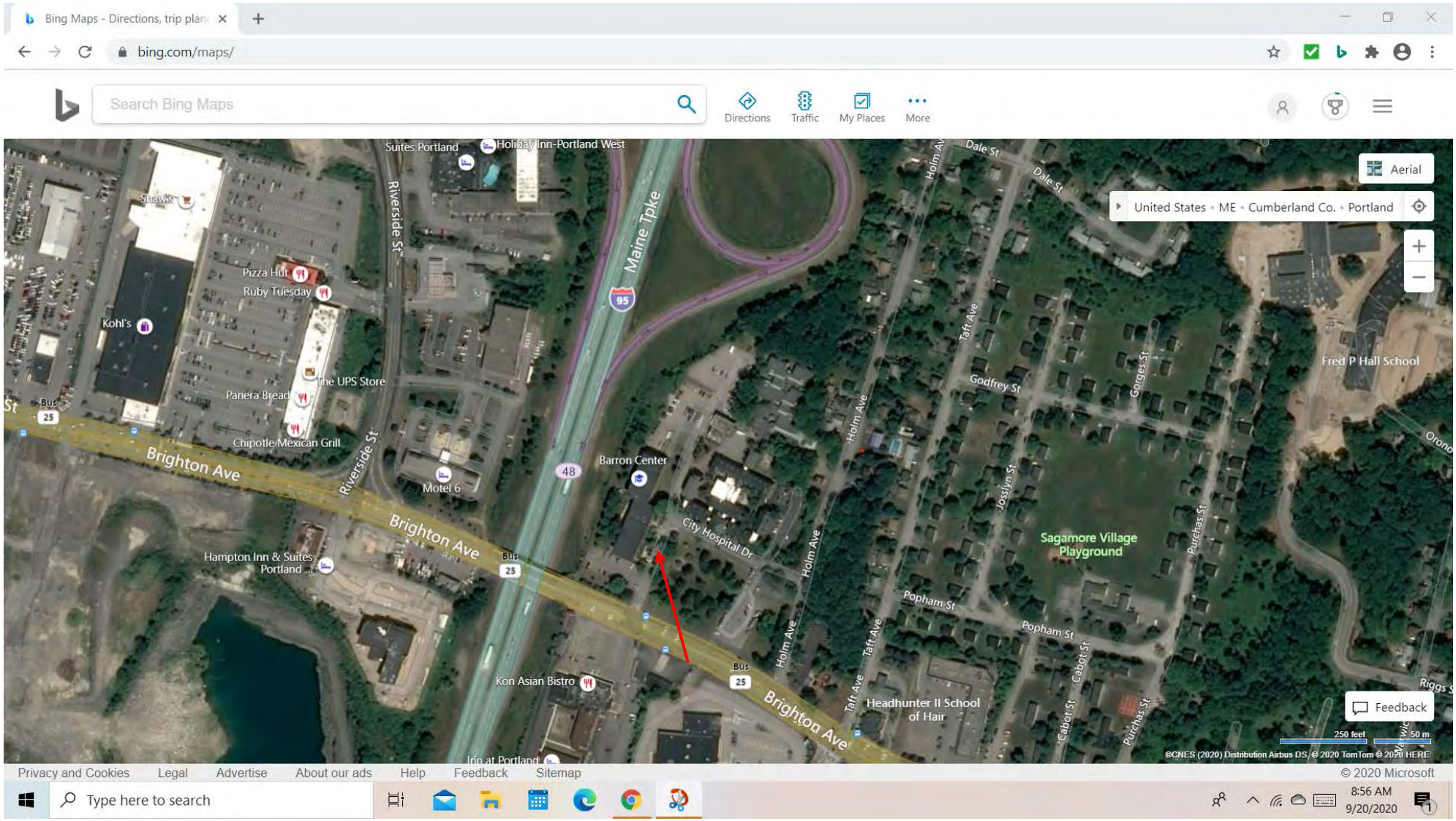
This facility was built in 1970 and recently expanded. This facility has assisted living and rehabilitation services. It licensed with State of Maine Medical Facilities Unit as a Nursing Home. The facility is located on Baxter Blvd, a heavily traveled roadway. The facilty property backs up to Front Street with City of Portland Public Housing apartments and also borders on Payson Park, a city owned Park. This area is mostly city park, ocean on Back Bay and public housing apartments.




Bing Maps - Directions, trip plan
snipping tool - Bing
bing.com/maps/
Search Bing Maps
Directions
Traffic
My Places
More
Aerial
United States • ME • Cumberland Co. • East Deering
Payson Park
Front St
Front St
Illsley St
Longfellow Arboretum
Seaside Healthcare
Randall St
Front St
Front St
Randall St
Baxter Blvd
Baxter Blvd
Back Cove Trail
Baxter Blvd
Back Cove Trail
Baxter Blvd
Back Cove Trail
Baxter Blvd
Feedback
100 feet
25 m
©CNES (2020) Distribution Airbus DS, © 2020 TomTom © 2020 HERE
Privacy and Cookies
Legal
Advertise
About our ads
Help
Feedback
Sitemap
© 2020 Microsoft
Type here to search
9:40 AM
9/20/2020

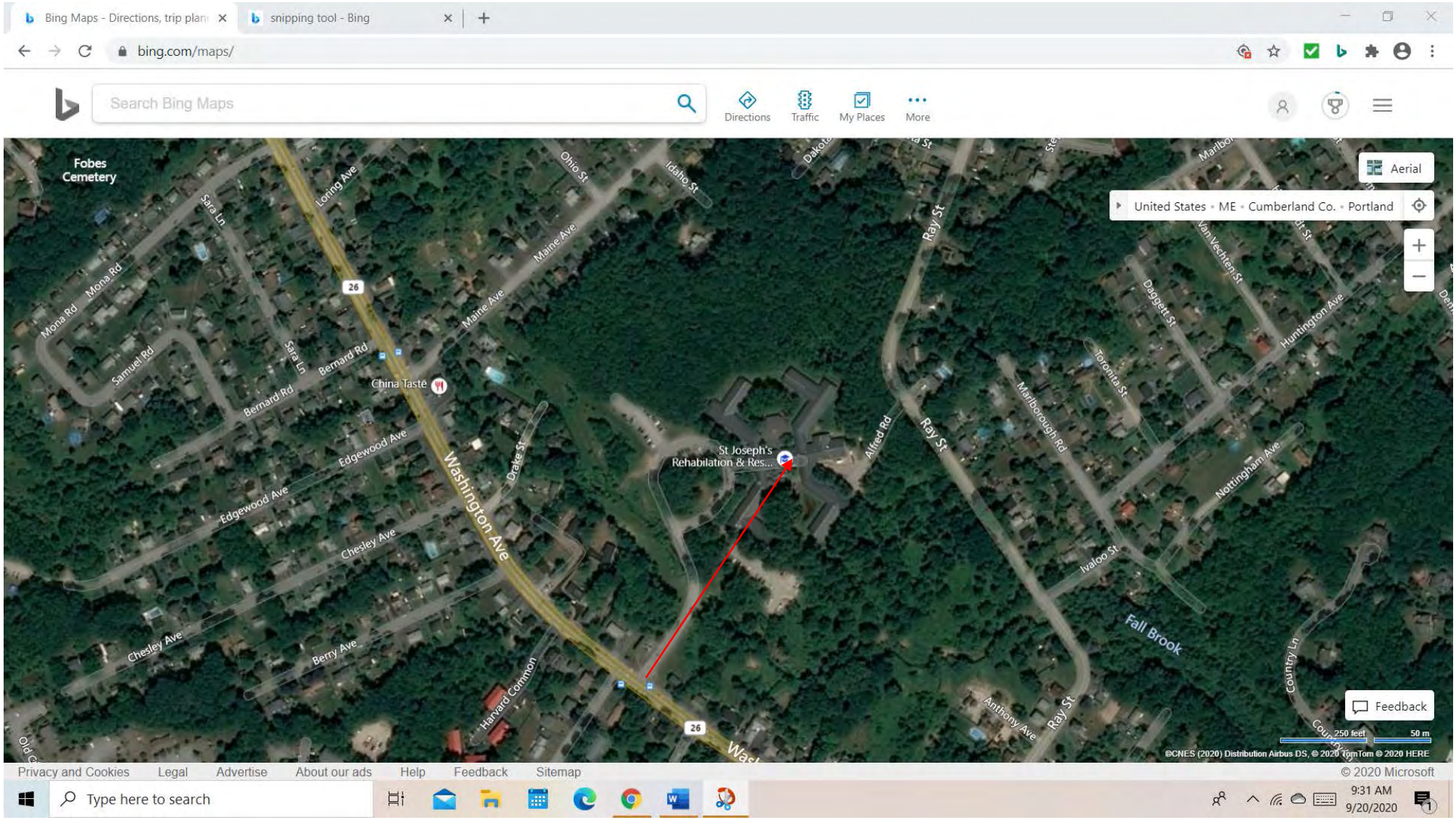
Barron Center Long Term Care and Rehabilitation 1145 Brighton Avenue Zoned R5

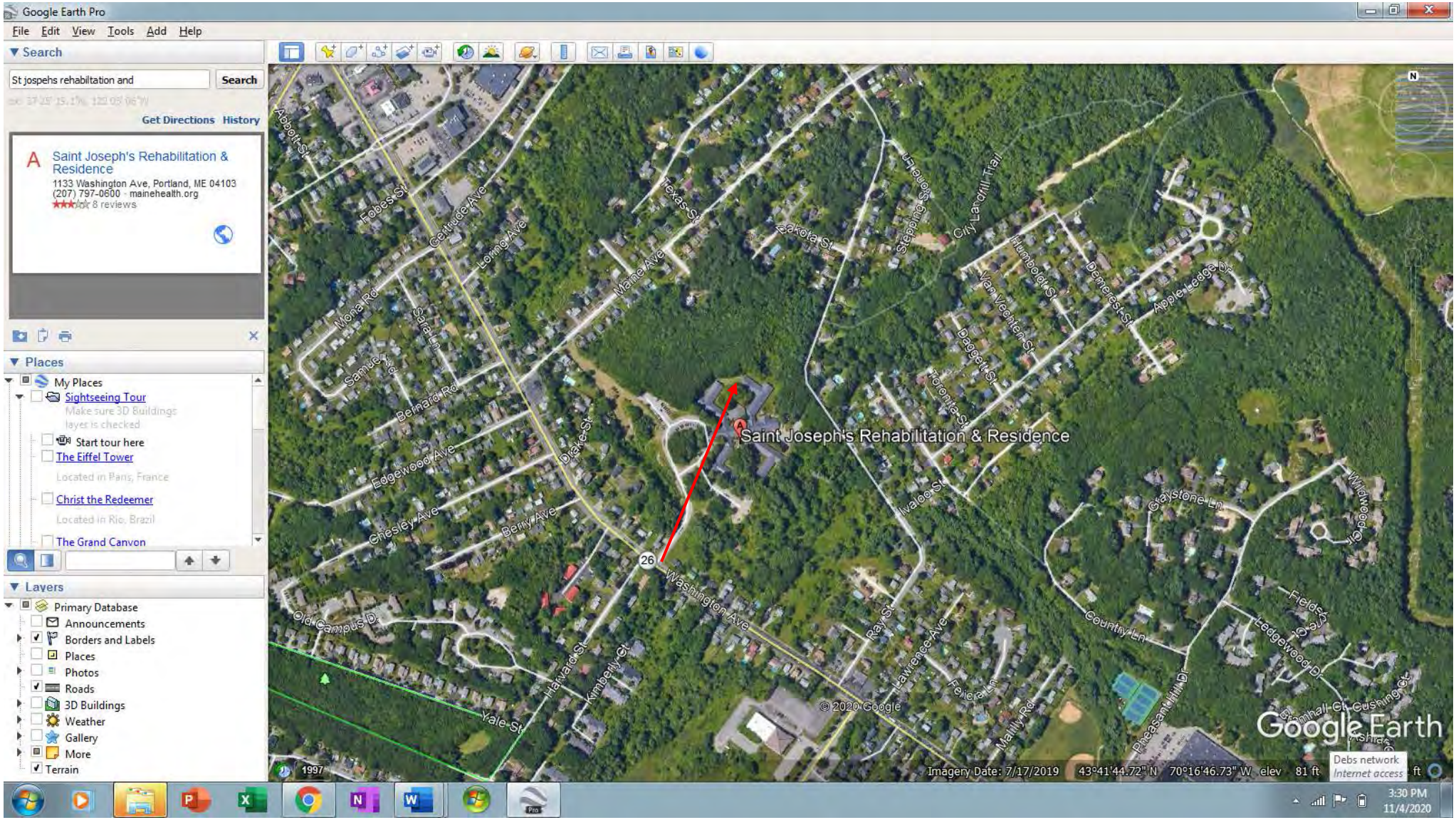
This building has been established on site for a lengthly amount of time, surrounding neighborhoods and homes built well before zoning became as large an issue as it is today. The Barron Center is located on a major roadway in Portland (Brighton Ave) and alongside Interstate 95. The area is a well developed commercial area. Even given this placement, buffers have been placed in attempt to accommodate the housing surrounding the facility. Houses in the area of Barron Center were built from the 1940's to 1950's. The facility was a hospital prior to the building of these homes. Distances from the parking lots to most of the homes in the area is over 200 feet and filled with an existing and mature forested area. In 1974 the facility was accredited as a long-term care facility and two years later withdrew from the acute care program. It is licensed with the State of Maine Medical Facilities Unit as a Nursing Home.



St Joseph's Rehabilitation and Residence 1133 Washington Ave Zone 3

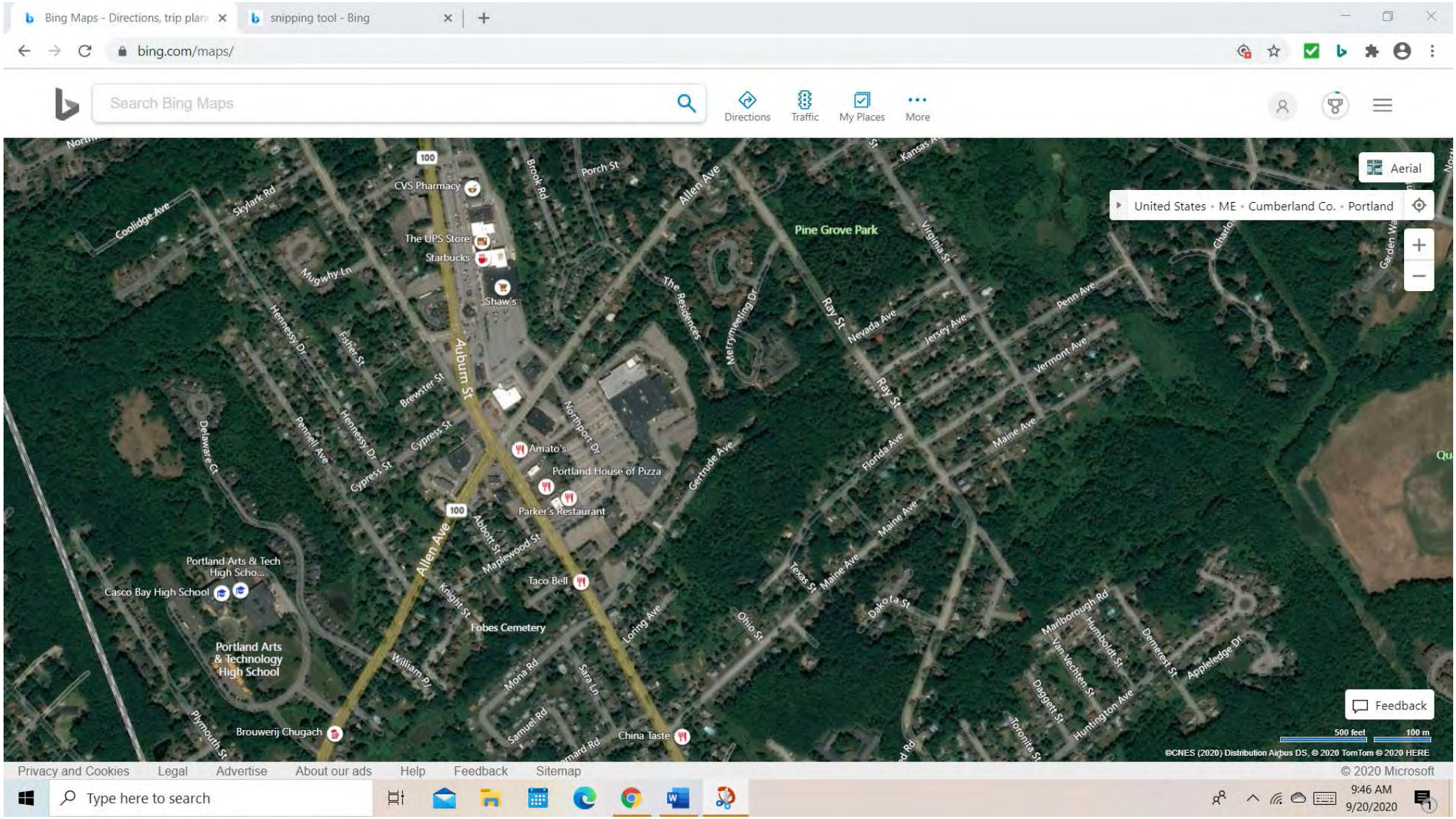
St Josephs Manor was built in 1975 and was purchased by Maine Medical Center in 2017 with the intent to continue and upgrade the skilled nursing home. However ownership is still listed as St Josephs. It is required to be licensed with the State of Maine Medical Facilities Unit as a Nursing Home. Prior to November of 2019, contact was made between MMC and Fallbrook LLC. MMC wants to close St Josephs and has agreed with Fallbrook LLC to transfer some of the patients to the proposed facility for a fee after the facility is built. St Josephs is located on Washington Ave which is a major roadway through Portland. The entrance to the facility for both public and commercial vehicle traffic is from Washington Ave. Ray St which borders the rear of the facility is posted "No Trucks" at both ends. St Jospehs is surrounded by a large mature forested area on all sides.

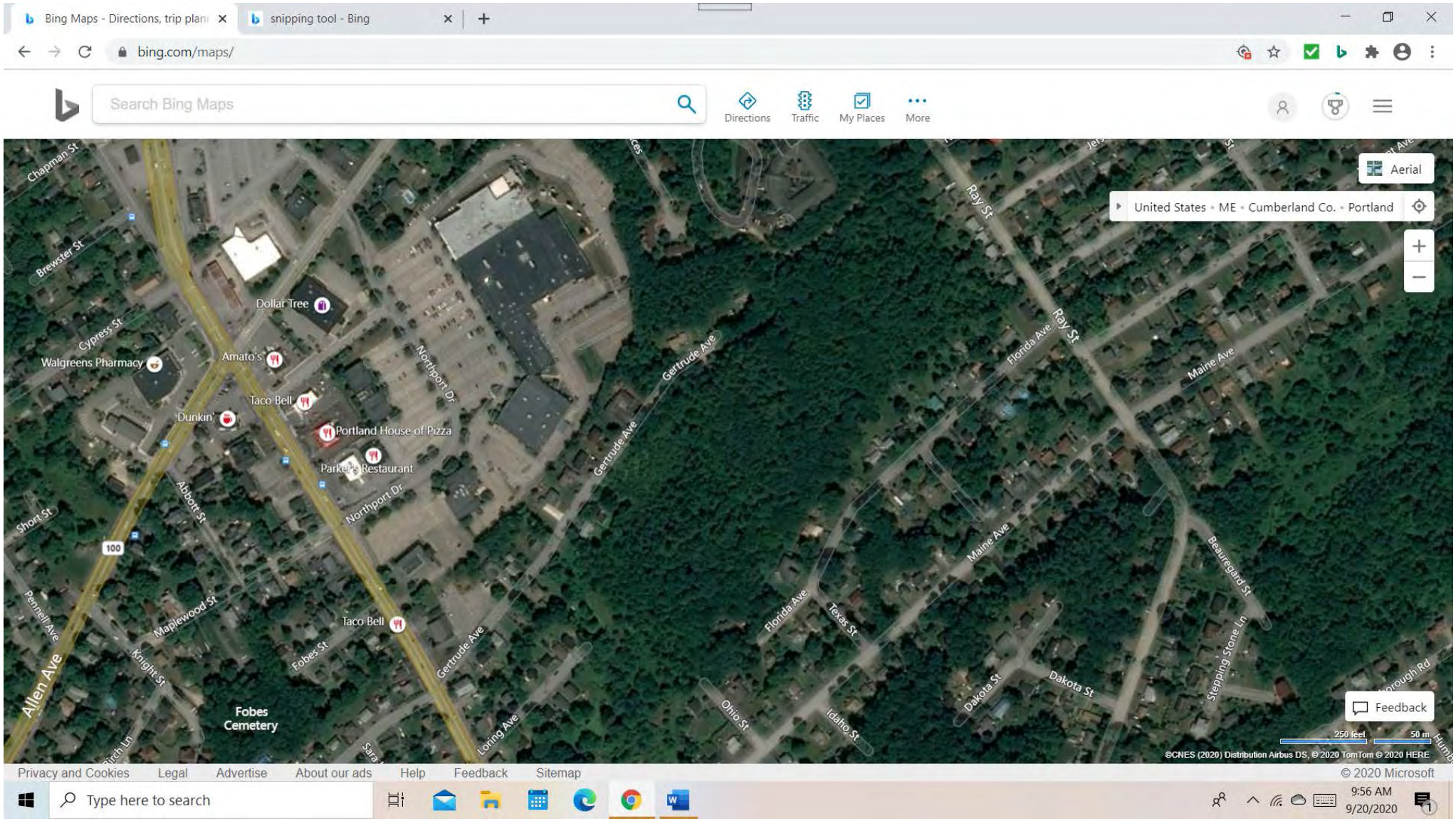



Google Earth Pro
File Edit View Tools Add Help
Search
St jospehs rehabiltation and
Search
Get Directions History
A Saint Joseph's Rehabilitation & Residence
1133 Washington Ave, Portland, ME 04103
(207) 797-0600 · mainehealth.org
8 reviews
Places
My Places
Sightseeing Tour
Make sure 3D Buildings layer is checked
Start tour here
The Eiffel Tower
Located in Paris, France
Christ the Redeemer
Located in Rio, Brazil
The Grand Canyon
Layers
Primary Database
Announcements
Borders and Labels
Places
Photos
Roads
3D Buildings
Weather
Gallery
More
Terrain
Saint Joseph's Rehabilitation & Residence
Washington Ave
26
Abbott St
Forbes St
Gertrude Ave
Lorne Ave
Maine Ave
Texas St
Dakota St
Stepping Stone Rd
City Landfill Trail
Humboldt St
Van Veechten St
Denver St
Apple Ledge Dr
Daggett St
Toronto St
Ivaloo St
Graystone Ln
Wildwood Ct
Fields Dr
Ledgewood Dr
Country Ln
Ray St
Lawrence Ave
Felicia Ln
Mailly Rd
Pine Grove Dr
Cushing Cir
Old Campus Dr
Harvard St
Kimberly Ct
Yale St
Mona Rd
Samuel Ln
Safari Ln
Bernard Rd
Edgewood Ave
Chesley Ave
Berry Ave
Diane St
© 2020 Google
Google Earth
Imagery Date: 7/17/2019 43°41'44.72" N 70°16'46.73" W elev 81 ft
Debs network
Internet access
3:30 PM
11/4/2020

Proposed Fallbrooks LLC 60Merrymeeting Dr Zoned R3

This facility will be required to obtain and maintain a license as a nursing home with the State of Maine Medical Facilities Unit. This is due to the type of nursing care that will be provided and the intent to have a rehabilitation unit. The main roadway from the facility will be a private road (Merrymeeting Drive) leading to Ray Street, a residential road. There are no businesses along Ray St, only residences and other residential roads leading to established neighborhoods. Ray Street is posted No Trucks at both ends.




Bing Maps - Directions, trip plan
snipping tool - Bing
bing.com/maps/
Search Bing Maps
Directions
Traffic
My Places
More
Aerial
United States • ME • Cumberland Co. • Portland
Chapman St
Brewster St
Cypress St
Walgreens Pharmacy
Dollar Tree
Amato's
Taco Bell
Dunkin'
Portland House of Pizza
Parker's Restaurant
Northport Dr
Gertrude Ave
Ray St
Florida Ave
Maine Ave
Abbott St
Short St
100
Pennell Ave
Maplewood St
Knight St
Fobes St
Allen Ave
Fobes Cemetery
Loring Ave
Texas St
Dakota St
Ohio St
Idaho St
Beauregard St
Stepping Stone Ln
Feedback
250 feet
50 m
©CNES (2020) Distribution Airbus DS, © 2020 TomTom © 2020 HERE
Privacy and Cookies
Legal
Advertise
About our ads
Help
Feedback
Sitemap
© 2020 Microsoft
Type here to search
9:56 AM
9/20/2020

This proposed facility will remove most of the mature trees from the Florida and Gertrude Ave side of the project. This will allow light and noise from the facility to be enhanced into these neighborhoods. Several direct abutting neighbors will have significant intrusion into their personal space by light, noise and lack of privacy. An extremely large retaining wall will be built close to these abutting neighbors, removing sunlight, allowing headlights from a parking lot to shine into their homes at night and remove the overall esthetics of the properties they live on. This type of construction and current plan will not blend with the neighborhood and will impact dramatically the feeling and overall well-being of this established area.

By taking the examples provided by Daniel McGuire, I would like to point out several items that were not mentioned in his presentation. All of the existing facilities in Portland whether they are licensed Assisted Living Facilities, Independent Living Facilities or Skilled Nursing Facilities have several things in common with each other and not with this proposed project.

- All have Entrance and Exits onto major roadways which allow for commercial and large vehicle transportation for deliveries of goods and services and easy access for emergency services such as the fire department. The proposed Fallbrook facility does not. The long private roadway exits onto Ray Street, a residential roadway.
- All have extensive mature forested growth around the facilities which allow them to blend into the surrounding community and reduce the amount of visual, noise and light impact. The exceptions are Seaside which is on Baxter Blvd Zone R5, 75 State Street Zone R5 which is in the center of Portland, and Park Danforth Zone 6a which is located in a heavily traveled and business area. All of these existing facilities blend with the type of neighborhood they are located in. The proposed Fallbrook facility will not.
- All have maintained the neighborhood environment that allows the surrounding neighborhoods to not feel overly impacted by the facilities. The proposed Fallbrook facility will not.

The proposed Fallbrook LLC and their planners have put some residential siding on the facility to attempt to make it look residential, but it is important to point out, this will be a Licensed Nursing Home, a medical facility, and will be operated 24 hours a day, 7 days a week as such. Its requirements for operation will be more intrusive to the neighborhood then an independent living facility with assisted living services.

If the planning board grants any conditional use to this facility, I request that at least the following be placed:

- A required setback from all properties of a minimum of 200 feet of mature forested area to provide some buffer from this medical facility and its impact on the neighborhood. This forested area is to remain in place and shall not be removed at any time.
- Where the parking lots are located and along the border of the property that abuts to neighbors, a stand of evergreens to be planted to buffer noise, light, and visual intrusion into the neighboring properties. These evergreens should be a minimum of 20 feet high when planted and spaced to prevent intrusion from the beginning of the project. This will replace the existing privacy this neighborhood enjoys, especially in winter when the leaves fall off of the trees.
- The project and facility entrance/exit be onto a main roadway, i.e. Washington Ave, not a residential street like Ray Street that is posted “No Trucks”.

In closing, I would like to point out, if the developers and Fallbrook LLC had approached the neighborhood in the beginning with a, “We want to be good neighbors and work with the neighborhood” and asked for our input instead of the “This is the way it is going to be” approach, then most of us would have been happier with the outcome. No one is against facilities like this, a lot of us in the neighborhood are approaching the age where there is a possibility of being in one eventually. I personally if placed into a facility like this would not want to disrupt a long existing neighborhood that everyone loves. The existing design of this facility and the amount of negative impact on this established neighborhood is not appropriate. I request the planning board not grant a conditional use to Fallbrook LLC until at least these and other matters be addressed and required. I would request that if/when the project was to be granted conditional use permits that changes/ recommendations afterward, be made between a representative of the Fallbrook LLC and members of the abutting neighborhoods before reaching the planning board for approval. Thank You.

R. Michael Denbow

Merrymeeting Drive - 60 (Fallbrook Commons)

Michaela Veillette <michveillette@gmail.com> Feb 25, 2020 2:09 PM
Posted in group: **Planning Board**

To Whom It May Concern,

I am writing against the proposed Site Plan PL-000925-2019 - Main Parcel 400 D023001 - 60 Merrymeeting Drive.

This proposed facility would have direct **negative** impacts on our neighborhood:

- Increasing traffic flow
- Impact the surrounding wildlife and ecological value of the land
- Lower the value of our homes
- Reduce residential privacy
- Increased light pollution

As part of the North Deering community, I ask that you remain mindful of our neighborhood's best interests by voting against this request.

Sincerely,

Michaela Veillette
72 Florida Ave, Portland, ME 04103

Merrymeeting Drive - 60 (Fallbrook Commons)

Michaela Veillette <michveillette@gmail.com> Mar 12, 2020 9:46 AM
Posted in group: **Planning Board**

To Whom it May Concern,

I am writing against the proposed Site Plan PL-000925-2019 - Main Parcel 400 D023001 - 60 Merrymeeting Drive.

This proposed facility would have direct negative impacts on our neighborhood:

- Increasing traffic flow
- Impact the surrounding wildlife and ecological value of the land
- Lower the value of our homes
- Reduce residential privacy

As part of the North Deering community, I ask that you remain mindful of our neighborhood's best interests.

Sincerely,

Michaela Veillette
72 Florida Ave, Portland, ME 04103

Fallbrook Properties, LLC Plan Number PL-000925-2019

Paul Cournoyer <setsail34@gmail.com> Mar 6, 2020 3:14 PM
Posted in group: **Planning Board**

Hi Andrew,

RE: Fallbrook Properties, LLC Plan Number PL-000925-2019

We are residents of Fallbrook Condominiums located on Merrymeeting Drive, which is the location of the proposed 90 bed facility at 60 Merrymeeting Drive. We attended the February 18th informational meeting hosted by Fallbrook Properties and Sebago Technics. Here are our comments relative to the proposed project, which we ask are taken into consideration during the City's review of the proposal. We understand that a public hearing will be scheduled in the near future but we will be on travel for awhile and may not be able to attend:

- Our understanding is that Fallbrook Properties intends to continue to utilize Merrymeeting Drive as the main entrance for Fallbrook Woods and the new entrance across from Nevada Avenue as the main entrance to Fallbrook Commons. If so, we disagree with this approach - the sole primary entrance for both facilities should be across from Nevada Avenue and Merrymeeting Drive should be the service/emergency vehicle ingress access.
    - This is a concern based on the estimate of ~100 employees who will be employed at the facility and using an already heavily utilized private road for vendor vehicles, emergency vehicles and increased visitor vehicles
    - While the intent is for people going to Fallbrook Commons to use the new entrance, those coming down Ray Street from Allen Ave Ext will use the first entrance road they see, which will be Merrymeeting Drive. This alone will increase the traffic volume on Merrymeeting Drive.
    - A traffic mitigation plan for Merrymeeting Drive needs to be developed to ensure the safety of the residents of Fallbrook Condominiums who use this road as the sole entrance to our homes as well as for recreational walking, bike riding and dog walking.
    - As noted above, Merrymeeting Drive is a private road and is not maintained by the city of Portland. The increased usage of the road, with the development of Fallbrook Commons, is beyond the original intent and among other things will lead to increased road degradation. Additionally, there is an increased risk of liability if a property or personal injury were to occur on our private road

Additional traffic concerns:

- Years ago the city posted a sign stating 'No Trucks' at the beginning of Ray Street on the Allen Ave Ext end. We assume this is an attempt to reduce the amount of commercial cut through traffic that vehicles use as an alternative to get from Washington Avenue to Allen Ave Ext. Ray Street, and all of the side streets off of it, are residential and minimizing excessive traffic is paramount. With the proposed Fallbrook Commons project, is it the city's intent to re-classify Ray Street as non-residential and remove that signage and thereby allowing heavy truck usage? If that is not the intention, what is the enforcement plan to ensure commercial traffic doesn't use Ray Street to the excess?
- Several years ago the city installed Stop signs at the intersection of Merrymeeting Drive and Ray Street as a 'traffic calming' effort. As residents who are in clear view of this intersection it is apparent that a majority of drivers ignore the stop signs and speed right through the intersection. This includes commercial vehicles, city trash trucks and city school buses. This creates more of a hazard than not having the signage there.
    - As a result of drivers ignoring the Stop signs, vehicle speed on Ray Street often exceeds the posted 25MPH limit. Vehicles ignoring the signs and traveling southeast on Ray Street approach the hill at an increased speed, crest the hill and continue down it past the intersection of Nevada Avenue and the proposed main entrance to Fallbrook Commons. As the new main entrance to the facility will be located at the base of this hill, it will create an unsafe condition for vehicles exiting the entrance as well as for the school children who are dropped off by the city buses at Merrymeeting Drive and have to walk on Ray Street. As there are no sidewalks in this area, the safety aspect is compounded. The location of the new main entrance creates a 'blind entrance' hazard.
        - Fallbrook Properties and Sebago Technics stated they have assessed the traffic impact at the new proposed entrance and found it acceptable. However, no study has been demonstrated for the overall neighborhood traffic and safety impact. The City of Portland should assess the overall traffic situation and work with Sebago to improve an already unsafe traffic condition.
- Public transportation:
    - There is currently no year round public bus transportation on Ray Street. During the school year the city buses stop along Ray Street (and in front of Merrymeeting Drive) in the morning and in the afternoon primarily to pickup/drop off students. This service is open to residents only during those scheduled times.
    - The current location of the St. Joseph's facility is ideal for workers and visitors to utilize the city of Portland bus system as there is currently a bus stop on Washington Avenue at the entrance to St Joseph's

    - The new location of Fallbrook Commons does not afford this option for employees and visitors as there is no access point off of Washington Avenue and no year round public transportation on Ray Street, as mentioned above.
        - This is a disservice to those employees of Fallbrook Commons who for financial reasons rely on public transportation
- Alternative location:
    - Has Fallbrook Properties/Sebago Technics considered expanding/renovating the current St. Joseph's Manor site, which already has the infrastructure, vehicle entrance off of Washington Ave and public transportation availability in place?
- Environmental impact:
    - Has an impact assessment been conducted to determine if there'll be any detrimental impact of water runoff to the Fallbrook watershed impacting wildlife, flora and eventually the Back Bay watershed?

Thank you for your consideration of these points during the Planning Board's review of the proposed project.

v/r,
Paul & Kym Cournoyer
Fallbrook Condominiums
Portland, Maine

Re: PL-000925-2019

Paula Urbach <nurseurbach@gmail.com> Feb 21, 2020 12:10 PM
Posted in group: **Planning Board**

Hi Jennifer,

I would like to add that after seeing the plan for this business project, my concerns are amplified. This building is massive and totally inappropriate for an area designated for single family residences. They are requesting to build on a hill, which would mean that the structure would dominate the landscape. Light pollution and noise pollution would be a problem. Additionally the construction would take 2 yrs, clear-cutting and demolishing the natural area, which would be a major aggravation to anyone living in the area.

Thank you, Paula Urbach

On Wed, Feb 19, 2020 at 11:58 AM jmy <jmy@portlandmaine.gov> wrote:

> Hello,
>
> Thanks for your email. We appreciate the time you have taken to offer your thoughts, and will include your comments in the materials and as part of the public record.
>
> If you have any questions, please contact our office.
>
> Jennifer Munson, Office Manager
> jmy@portlandmaine.gov | (207) 874-8719| Fax (207) 756-8258
>
> City of Portland, Department of Planning and Urban Development
> 389 Congress St., 4th Floor, Portland, ME 04101
>
> On Tuesday, February 18, 2020 at 2:52:24 PM UTC-5, Paula Urbach wrote:
>
> > Dear Planning Board Members,
> >
> > I am writing with concern regarding an application of construction proposed by Fallbrook Senior Care Development, LLC. I received notice that this company is applying for a permit to amend the Site Location of Development Act and intending to file a Natural Resource Protection Act.
> >
> > As a resident of Portland, North Deering neighborhood, I have serious concerns about these proposed changes. Any construction in the area would severely affect my health and my wellbeing. The woods provide valuable fresh air, oxygen, and windbreak, as well as invaluable peace and quiet. The woods are home to many flocks of migratory songbirds and beneficial insects, woodpeckers, hawk, deer, fox, reptiles, and amphibians. I believe the area in discussion serves as a greenway for the wildlife and allows the wildlife to function normally and maintain their health. Many people enjoy walking through the woods, which connects to Portland Trails areas such as Pine Grove. Destruction of these woods would encroach on wildlife habitat, with the result that the displaced fauna would likely become a nuisance in the residential neighborhood.
> >
> > This application should be rejected on the grounds that the owner has already built to capacity his property with a concentrated living facility and condominiums. Overdeveloping this area would lead to more crowding, noise, burden on tax-maintained infrastructure, and could negatively affect the health, quality of life, and property values of the community. This is a residential area of single-family homes. The proposed business is not appropriate for this area and construction of this scale would profoundly change the landscape. I have serious concerns about this proposal and feel that more information on all outcomes is needed.
> >
> > -- Thank you,
> > Paula Urbach, PMH-NP

781-304-8656

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

--
Paula Urbach, PMH-NP

fallbrook woods

Paula Urbach <nurseurbach@gmail.com> Jun 16, 2020 11:31 AM
Posted in group: **Planning Board**

Dear board members,

Just an additional comment: It seems that people have a hard time articulating how we benefit from nature. Hopefully you as city planners understand how nature and green spaces positively affect our health in many specific ways. Nature filters pollutants and provides oxygen. Nature has restorative effects on our nervous system, respiratory system, and overall health through actions of the parasympathetic nervous system.

One of the neighbors mentioned in the meeting that he was taking care of elderly relatives living at home. It occurred to me that in-home care is really the model of care we as a city should be supporting, rather than expensive and depressive care facilities. Elderly people are happier at home., and in-home care is often better and more cost effective.

Thank you, Paula Urbach

--
Paula Urbach, PMH-NP

Written testimony - St. Joseph's / Fallbrook Commons

Peggy Farrington <pfarrington@sjrme.org> Nov 2, 2020 2:10 PM
Posted in group: **Planning Board**

Hello,

The attached are written testimonies for support of Fallbrook Commons, which is on the Planning Board Agenda next Tuesday, November 10th. Please find seven (7) written testimonies from St. Joseph's [current] residents. Also, attached is one written testimony from an expert in senior living.

Regards,

Peggy

Peggy Farrington, MPH, MHA, CDP, CADDCT

CEO/Administrator

St. Joseph's Rehabilitation & Residence

1133 Washington Avenue

Portland, ME 04103

(207) 797-0600

pfarrington@sjm-me.org



Confidentiality Notice:

This e-mail, including any attachments is the property of Saint Joseph's Rehabilitation and Residence and is intended for the sole use of the intended recipient(s). It may contain information that is privileged and confidential. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please reply to the sender that you have received the message in error, and then delete this message.

Testimony in support of:
Fallbrook Nursing Facility at 60 Merrymeeting Drive

Submitted By:
Carol Grant
1133 Washington Avenue
Portland, ME 04103

November 2, 2020

Dear Chair Mazer and Members of the Portland Planning Board,

My name is Carol Grant. I am 83 years old and have been a patient at St Joseph's for three years.

I am anxious to move to the new picturesque facility and have a private room, which I do not have here. It will provide private space for family and friends to visit and allow me to make private phone calls.

I know there have been objections to the new building but I think the facility will be beneficial for the neighbors. There may be a time in the future when their relatives and friends may wish to become a patient.

Sincerely,



Carol Grant

9.15.20

To whom it may concern,

As a resident of the SJRR community for two plus years, I have earned the distinction of "Long Term Care Facility expert." I would like to present some of my top reasons why a new building is needed and why it should remain in Portland.

Cost effective. I was here the day the building opened and participated in the ribbon cutting ceremony. Two weeks after the ceremony I received a call from the Bishop who was frantic, "the roof over at the manor is leaking." Well, guess what folks? It still leaks. The cost of heat that is pouring out of the roof each winter is enormous. The roof is just one feature of the building that has exceeded its life expectancy. With modified/modern construction, updated technical resources, and new innovative features the cost in savings would cross over resulting in more efficient day to day operations.

The need for private rooms is a necessity in today's culture. Every person has different needs and these needs require different types of care. We each come with different personalities and temperaments. To expect an individual to adapt their lifestyle, routines and relationships that have made up their core for, in my case, eighty some odd years, is ludicrous. As an elder, and a human being, I am entitled to privacy, space, freedom from contagions, possessing my own belongings and maintaining a sense of self. Beyond personal differences, private rooms allow more opportunity to prevent the spread of infection, virus and disease.

It is important to me that as many beds as possible be kept in the Portland area. Portland's aging population is increasing and it is critical that they have proximity to family, friends and the community they have lived in and love. In the long history of the state of Maine and the city of Portland we have become known for our hospitality, friendliness and sense of caring. Most of all, we should remember that we are people, frail human beings who one day may be visiting our own loved one in a Nursing Facility, or looking for a bed ourselves.

Respectfully,

Fr. Albin Andrus, resident SJR

Testimony in support of:
Fallbrook Nursing Facility at 60 Merrymeeting Drive

Submitted By:
Geraldine Penatzer
St Joseph's Rehabilitation & Residence
1133 Washington Avenue
Portland, ME 04103

November 2nd, 2020

Dear Chair Mazer and Members of the Portland Planning Board,

I'm really looking forward to the new building and was excited when I heard about it. I was disappointed when I heard it would be delayed.

I am looking forward to having my own room and bathroom. It would provide more space and uplift my mood. Having privacy when family visits to talk and play games will be nice. Private rooms will also be quieter.

Sincerely, Geraldine Penatzer

Geraldine Penatzer

Testimony in support of:
Fallbrook Nursing Facility at 60 Merrymeeting Drive

Submitted By:
Lewis Kelley
St Joseph's Rehabilitation & Residence
1133 Washington Avenue
Portland, ME 04103

November 2nd, 2020

Dear Chair Mazer and Members of the Portland Planning Board,

We will be grateful recipients of the new space. Larger rooms and sufficient and ample meeting space will be appreciated.

Sincerely,



Lewis Kelley

LeadingAge™
Maine & New Hampshire
Educate. Collaborate. Inspire.

September 15, 2020

I'm writing on behalf of LeadingAge Maine & New Hampshire, an association of not-for-profit, senior housing communities and long-term care providers. Of our 48 member facilities, 24 are located in Maine.

I was asked to provide some background on the need for high quality nursing facility care in Portland, such as Fallbrook Commons will provide.

Maine's Aging Demographics

- By 2025, 26 percent of Maine's population is projected to be age 65 and older. In Cumberland County, the projection is just slightly lower, estimated between 21.1-24%.

- Maine's median age is the oldest in the country (44.9 years in 2018) and is projected to increase, with the projected population loss for other age groups, especially working age adults between ages 18 and 54, contributing to Maine's disproportionate share of older adults.

(Source: *Charting a Pathway Forward / Redesigning and Realigning Supports and Services for Maine's Older Adults*: https://digitalcommons.usm.maine.edu/aging/108/)

Current Landscape

There are currently 93 nursing homes in Maine, averaging 70 bed and 63 residents. Portland is home to four nursing facilities:

- St Joseph's Rehabilitation and Residence
- The Cedars
- Barron Center
- Seaside Rehab & Health Care

All are currently rated either 4 or 5-Star facilities (out of 5) by Nursing Home Compare.

57% of nursing home residents in Maine have a dementia diagnosis.

(Sources: Centers for Medicare & Medicaid Services and *Adults Using Long Term Services and Supports: Population and Service Use Trends in Maine, SFY 2016 Service Use Trends in Maine, SFY 2016*: https://digitalcommons.usm.maine.edu/aging/110/)

Nursing Home Trends for the Future

Occupancy in the next 5-10 years for nursing facilities is expected to grow as the entire 'Baby Boomer' generation reaches the age of 65 by 2030. Nursing homes will make focused, competitive efforts to attract rehab patients due to shorter overall lengths of stay, prompting many to partner with hospitals and update and modernize their facilities.

There is also a concerted effort to shed the "institutional" feel of nursing homes in favor of a resident-centered philosophy and a homelike atmosphere, including offering many more private rooms (also a mitigation strategy to limit the transmission COVID-19).

As the authors of Charting a Pathway Forward: Redesigning and Realigning Supports and Services for Maine's Older Adults state,

> *"As Maine moves forward, it will need to be strategic about fostering desired models of nursing facility and residential care and determining where these services should be located... Where a setting is located, the number of people residing in it, its design, and the level of privacy and individual autonomy offered all play a role in making a residential setting feel more like a home or more like an institution to its residents."*

The Opportunity Presented by Fallbrook Commons

Portland is fortunate to be home to St. Joseph's Rehabilitation & Residence which is expertly run by competent and caring staff. Yet the age and layout of their building, like so many nursing homes of its era, offer limited functionality for today's population of older adults.

The need for nursing beds in Portland remains strong. With Fallbrook Commons, the City has a great opportunity to retain needed beds but house them in a thoughtfully-designed, modern building adjacent to Fallbrook Woods, a 56-unit assisted living center. Today's seniors and their families especially appreciate a campus setting, enabling more streamlined and comfortable transitions as care needs increase.

This project stands to improve quality of life for older adults in the Greater Portland area.

Sincerely,

Lisa Henderson
Executive Director
LeadingAge Maine & New Hampshire

Testimony in support of:
Fallbrook Nursing Facility at 60 Merrymeeting Drive

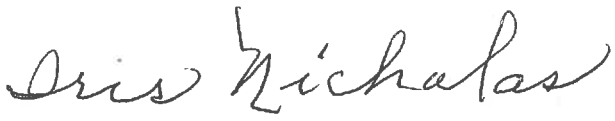
Submitted By:
Iris Nicholas
St Joseph's Rehabilitation & Residence
1133 Washington Avenue
Portland, ME 04103

October 30th, 2020

Dear Chair Mazer and Members of the Portland Planning Board,

I've been told about a new building that might be available for us. I'm very interested and in my opinion it would be better to keep the building in Portland.

Sincerely,

Iris Nicholas 

Testimony in support of:
Fallbrook Nursing Facility at 60 Merrymeeting Drive

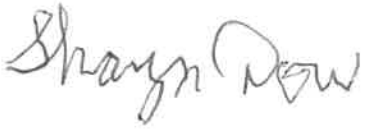
Submitted By:
Sharyn Dow
St Joseph's Rehabilitation & Residence
1133 Washington Avenue
Portland, ME 04103

November 2nd, 2020

Dear Chair Mazer and Members of the Portland Planning Board,

The rooms in the new building will allow for more space for belongings and give us more privacy. They will also be more comfortable and more restful.

Sincerely,



Sharyn Dow

Testimony in support of:
Fallbrook Nursing Facility at 60 Merrymeeting Drive

Submitted By:
Arthur Kemp
St Joseph's Rehabilitation & Residence
1133 Washington Avenue
Portland, ME 04103

October 30th, 2020

Dear Chair Mazer and Members of the Portland Planning Board,

My name is Arthur Kemp and I live at St. Joseph's. I think a new building would be good for the patients. It's been a long time and the patients deserve it. A new building would really make a big difference.

Sincerely,



Arthur Kemp

To: City of Portland, Planning and Development Office

From: Peter Minvielle
25 Merrymeeting Drive

Re: Site Location for Fallbrook Commons

Parcel: 400D 023001

Attached please find my more significant conclusions as to the proposed "campus" location for Fallbrook Commons, the successor Nursing care facility to ST Joseph's Manor.

I have reduced my comments / concerns to a minimum. (I was heading to a submittal of over 2500 words but curtailed my writing in order to meet time constraints).

I also wish to acknowledge and thank staff at Portland's Planning Department and Maine's Department of Environmental Protection as to the source(s) for public information and as to the review process itself.

Re: Site Location for Fallbrook Commons

Parcel: 400D 023001

Major Credits

The site, grading, landscape, erosion and remediation plans, etc. are amazing in scope and detail. (Would that the residents of Florida Avenue have drier backyards!)

A Concern

The internal vehicle flow anticipated at the two sites will depend almost entirely as to how well such traffic separation is enforced. Otherwise drivers (employees, visitors, and suppliers, etc.) will choose exits/entrances at their convenience and there will not be the orderly and controlled flow and parking suggested in the proposal. Are there enforcement plans?

Major Concerns

The submittal seems to assume there will be no or very little impact/interaction between the proposed fallbrook Commons and its abutters, with the exception of fallbrook Woods. In the latter case both fallbrook institutions see a synergistic effect. Indeed one might ultimately see/describe the setting as a nursing care "campus."

Was the public informed that this "campus" would be de facto the second or third largest nursing care facility (by combined bedcount/occupancy) in Cumberland County?

Given such large, prominent, regional and atleast somewhat "public" institutes (St Joseph's Manor, fallbrook Woods, and now also the proposed fallbrook Commons), one would think that there would have been some sort of "open public" presentation/discussion. After all the project is already planned out even to the flower color of certain plantings .... Certainly not in the spirit of the healthcare

RE: Site Location for Fallbrook Commons

Parcel: 400D 023001

planning and development legislation.

Further, to the best of this writer's knowledge, none of the local Portland area daily or weekly publications (or radio and TV media) have been notified of such major changes or have, for some unknown reason, chosen to remain silent. Yet the project is proposed to be completed by the end of 2021 ...

An Overriding Concern

While we have many concerns at various levels as to the proposed location of Fallbrook Commons, my biggest concern is safety. According to a November 12, 2019 report from the landscape architect, there are "no threats" to public safety.

It appears that these words might apply only to the infrastructure within the boundaries of the proposed facility and do not account for any impact of any increased vehicular traffic on City streets, in this case the intersection with and the traffic on Ray St. I conservatively estimate there would be 44,000 to 66,000 entrances/exits each year (all new to the Ray St traffic count). And here comes the scary part... Due to the side-saddle shape of Ray Street's hill, every car that leaves/enters on the new road would be potentially within or activating a blind spot for another driver(s), with the exception of the driver heading up Ray St. towards Allen Ave from the Maine Ave plain.

Ray St above Florida Avenue is already a dangerous street (likewise from Allen Ave): a poorly designed, well-outdated, low visibility, pre-Eisenhower macadam with water flow/drainage frequently crossing the street from one side to the other, no shoulders, little sidewalk coverage, and still used by school kids, bicyclists, dogwalkers, and too many drivers who have no regard for stop signs, speed limits, etc.

As indicated above, safety is my first concern. If nothing else comes from my readings/writings, the situation begs for an unbiased traffic engineering study. The neighborhood and city deserve such a study.

Thank you for the opportunity to express my concerns.

Meeting follow-up

Sabrina Christian <schristian026@gmail.com> Jun 10, 2020 12:28 PM
Posted in group: **Planning Board**

Dear Portland Planning Board,

I listened in on the Fallbrook agenda item during the workshop meeting yesterday (6/9) and I just wanted to send a note to say thank you. I have never been a part of these types of public meetings before, so I had no idea what to expect or how the meeting structure typically works. Although I did not speak myself (however I think my neighbors contributed beautifully!) I was incredibly impressed at how patient the Board was in making sure everyone had their chance to be heard, and not rushing the process or seeming eager to get past the public comment phase in any way. Then, I was pleasantly surprised to hear the discussion that resulted after both parties (applicant and public) made their remarks: I was very appreciative that the Board had clearly kept notes of the public comments, and made sure to address each individual item with the applicant team – even after we went 1.5 hours over the prescribed schedule!

Before the meeting I was unsure if this item would be quickly dismissed or not taken very seriously, meant to humor us neighbors who are upset about the project (large companies vs small insignificant neighborhood scenario), but as the meeting went on I did not get that impression at all. I am glad that it appears the Board sees the validity in our objections, and I am hopeful that we can all work together on a resolution for this project that will appease everyone. Now, after the fact, I would assume that this is likely how most town planning board meetings are run, but nonetheless I can't help but feel that the Portland board clearly emulates the overall standards and care of the wonderful city of Portland that I appreciate so much. I just wanted to send along a sincere thank you and appreciation for how the meeting was handled yesterday, as someone who is new to this realm. I look forward to our discussions in the future.

Take care! Best regards,

Sabrina Christian

(110 Florida Ave)

A Letter Regarding the Fallbrook Nursing Home Project

Sabrina Christian <schristian026@gmail.com> May 26, 2020 5:21 PM
Posted in group: **Planning Board**

Dear Portland Maine Planning Board,

I own a home at 110 Florida Ave in Portland. I purchased my house 4 years ago and appreciate it so much for its location and neighborhood quality in this portion of Portland. The wooded land and wildlife that have been evident throughout my years here give this area a lovely, country atmosphere where you wouldn't know you were still in a city. This neighborhood is a mix of young and older adults, young families with small children, single adults, and retirees. I have highly enjoyed the sense of community which has been present, and have felt it to be a great place to live.

However, the recent notification and meeting with the proposed builders of Fallbrook LLC about a large-scale skilled nursing facility that will be built in the wooded section abutting our neighborhood has been quite a shock to all of us. We have of course been notified that Fallbrook LLC (with the cooperation of Maine Medical Center) has decided to build a facility and in doing so will completely remove the entire wooded section in the neighborhood, covering wet lands and placing parking lots up to the allowed distances from property lines.

Now families in the neighborhood have been quickly selling their homes to avoid the anticipated approval by city planning board for this immense construction project. They along with the rest of us feel this will not only change the neighborhood, but will have significant impact on land, housing values, drainage, wildlife, wetlands, noise, traffic, safety, and loss of community.

I am sure you have been receiving several versions of this letter from others, but I would like to state a few of the reasons why I personally highly oppose this project, as a member of this city and neighborhood, and as an environmentally-conscious citizen.

My first concern is fairly obvious, I'm sure. People's homes on Florida Ave would be directly abutted against the parking lot of this new project. In order to achieve this, first there will be continued construction and blasting for months during excavation of cutting down all of the trees. Construction noise and traffic will take over our once-quiet and calm neighborhood, one of the things I love most about it. This will cause stress for all of us who will be forced to directly watch our once-wooded backyards be completely decimated and replaced with concrete and bricks. If this project goes through, I will undoubtedly begin considering also selling my home to move to a new quiet, peaceful neighborhood without a parking lot in my backyard - something I never would have considered before learning of this project. The impending decisions on this project have undoubtedly brought significant stress to myself and my neighbors, even before any construction has begun.

There are a multitude of environmental issues that I would also like to note. The undeveloped land in question is complete wetlands and absorbs most of the water. Currently many of our houses along the border of the proposed building area do have some flooding, but this is mostly mitigated by the property makeups. However the proposed building plan will remove all of the trees and land mass and replace it with a building and large tarred section of driveway - this will significantly increase the potential for large amounts of runoff that would normally be absorbed by the forested area. Furthermore, removing all of the trees which currently absorb wind and severe weather could also cause potential further problems for the structures/trees once they are no longer there to absorb these impacts. Will any of us with our remaining properties have any recourse should this negatively impact our homes in such a way? Overall it does not seem that this area of wetlands would be the most prudent, efficient place to build.

Just as importantly, this area has a vast variety of wildlife who live in and among this land. There are deer and fawns, foxes, coyotes, racoons and their kits, hawks, owls, turkeys, ducks and ducklings, bats, tree frogs, migratory birds, and the list goes on. Simply in my own backyard, just recently I witnessed a family of turkeys roaming around. I have also personally seen a groundhog, raccoons, deer, squirrels of course, not to mention the variety of lovely birds, including hummingbirds! Living in the city, this is invaluable for me. Removing this environment will significantly impact the ecological balance of the wildlife that lives in this area. I will be heartbroken for all of the lost wildlife and still-wild area that still exists even within our relatively well-populated neighborhood.

Finally, this project will cause reduction in value for those of us still living here. Per neighbors who have spoken to real estate agents, building this facility in the proposed manner is also going to negatively affect property values, causing a 5-10% reduction in value. Again, if this project is approved I will seriously have to consider whether I want to remain in this location - a true tragedy for me as I had hoped to own this home for years to come.

Of course I am not an expert, but to me it seems that there might be another space of land better suited to this project, which won't need to be squeezed into the midst of a previously peaceful neighborhood. The area is complete wetlands; surely it would be more cost effective and efficient to build at a better-suited location (which wouldn't also negatively impact a significant number of people and the quality of their homes)?

Please consider, if this were your backyard, would you want the beautiful, wild woods and all of the wildlife that comes with it to be replaced by the removal of trees, and cold, hard concrete and buildings? This project will tear apart our wooded backyards, which in my case was one of the primary reasons for purchasing a home in this location to begin with.

I sincerely hope the Portland Planning Board is closely reviewing this project and will make a wise, prudent, and honestly – compassionate – decision on its outcome. Perhaps there is an alternative building site which makes more financial and ecological sense, with not as many significant negative ramifications. Or perhaps, if we cannot save our neighborhood from this decision, some compromises can be made which would allow us at least retain a portion of this important wooded area.

If you read this to the end, thank you so much. I believe you can see many valid reasons (and even many others which I have saved for the sake of length) to reconsider this devastating project in this location. I appreciate your attention to this matter and I request that this e-mail be placed into the public record for the review for this site. Please do not hesitate to reach out if needed.

Best regards,

Sabrina Christian
110 Florida Ave, Portland ME
schristian026@gmail.com

No to Fallbrook Nursing Home

Sue Rowan <rowan.0425@gmail.com> Jun 30, 2020 10:31 AM
Posted in group: **Planning Board**

I am an abutting property owner of the proposed Nursing Home development. I reside at Fallbrook Woods condominium, #18.

After 20 years in South Portland my husband and I choose this location for it's convenience, peaceful quiet and abundance of nature. It's a wonderful walkable neighborhood with many homes and families surrounding the proposed development site. If the sight is developed with size and scope proposed, the neighborhood will be negatively changed forever. The wetlands, home to several species including ducks, frogs and turtles, will be destroyed. The woods will be torn down, eliminating habitat of fox, coyote and a multitude of birds.

The current Memory Care Center blends in well, with a small size and minimal vehicle traffic. The much larger proposed Nursing Home requires an enlarged road, new sidewalk, a multitude of parking spaces, increased traffic 24 hours, noise and lights. It will negatively impact the value of homes and the quality of life this residential area now provides.

It is too large a project for this sight.

Susan Rowan
18 Merrymeeting Drive
Portland ME 04103
207-671-3043

60 Merrymeeting Drive Nursing home plan

Sue Rowan <rowan.0425@gmail.com> Nov 5, 2020 2:34 PM
Posted in group: **Planning Board**

11/5/2020

I am writing in opposition to the current plan to build a 58,197 square foot nursing home on 12.78 acres at 60 Merrymeeting Drive.

This property is bounded on all sides by a modest and comfortable residential community whose taxpaying families value the existing green space and water table that will be forever changed with this build.

The scope of the project is IMMENSE for the land in question. The existing Fallbrook Memory Care Center is already in place to serve an aging population. As a resident of Fallbrook Woods Condominiums for the past two years I have not noticed a great deal of impingement from this facility. Only a dozen or so cars are ever parked there. The new nursing home, however, will be vastly impactful on the neighborhood, replacing wildlife, plants and trees with a large building, paved parking areas, industrial lights, an imposing retention wall, and greatly increased traffic on quiet Merrymeeting Drive.

I urge you to disapprove this plan.

Susan Rowan
18 Merrymeeting Drive
Portland ME 04103

FALLBROOK COMMONS

RAY STREET
PORTLAND, MAINE

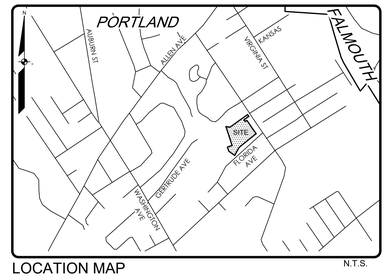
APPLICANT:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

ENGINEER/SURVEYOR/ LANDSCAPE ARCHITECT:
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

ARCHITECT
GAWRON TURGEON ARCHITECTS, P.C.
27 BLACK POINT ROAD
SCARBOROUGH, MAINE



SCALE:1"=50'



LOCATION MAP N.T.S.

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
1 OF 1	EXISTING CONDITIONS
2	NOTES AND LEGEND
3	OVERALL SITE PLAN
4	SITE PLAN 1
5	SITE PLAN 2
6	SITE PLAN 3
7	SIGNAGE AND WAYFINDING PLAN
8	GRADING PLAN 1
9	GRADING PLAN 2
10	GRADING PLAN 3
11	GRAVEL WETLAND DETAIL
12	UNDERDRAINED SOIL FILTER DETAIL
13	UTILITY PLAN 1
14	UTILITY PLAN 2
15	UTILITY PLAN 3
16	OVERALL LANDSCAPE PLAN
17	LANDSCAPE PLAN 1
18	LANDSCAPE PLAN 2
19	LANDSCAPE PLAN 3
20	EROSION CONTROL NOTES AND DETAILS
21	DETAILS 1
22	DETAILS 2
23	DETAILS 3
24	PRE-DEVELOPMENT STORMWATER PLAN
25	POST-DEVELOPMENT STORMWATER PLAN

REVISED THROUGH 10-07-20

DANIEL L. RILEY PE 9967
STATE OF MAINE — DANIEL L RILEY — REGISTERED PROFESSIONAL ENGINEER — 10/07/2020

DANIEL M. DANYERS RLA 481S
LANDSCAPE ARCHITECT — DANIEL M. DANYERS 481S — STATE OF MAINE — 10/07/2020

NOT FOR CONSTRUCTION

REV:	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

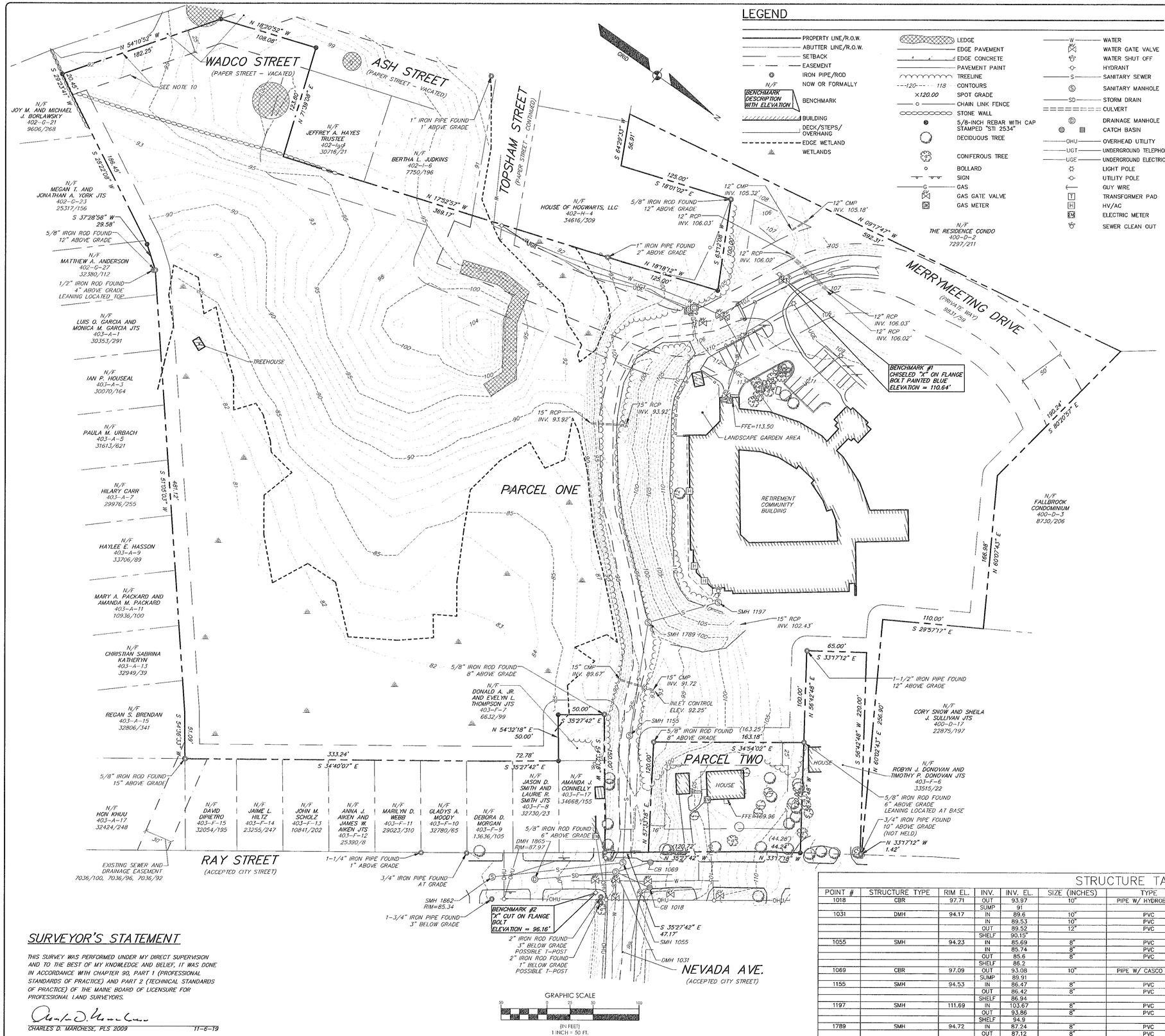
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

COVER SHEET
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	AS SHOWN
PROJECT	18347

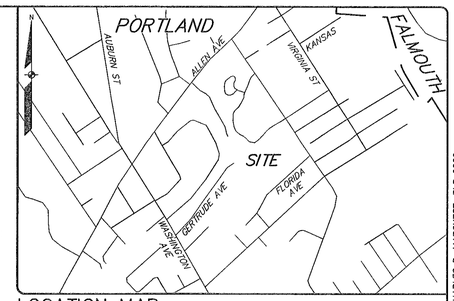
18347C dwg, TAB C

SHEET 1 OF 24



LEGEND

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- SETBACK
- EASEMENT
- IRON PIPE/ROD
- N/F NOW OR FORMALLY
- BENCHMARK DESCRIPTION WITH ELEVATION
- BENCHMARK
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE WETLAND
- WETLANDS
- LEDGE
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- TREELINE
- 120 118 CONTOURS
- ×120.00 SPOT GRADE
- CHAIN LINK FENCE
- STONE WALL
- 5/8-INCH REBAR WITH CAP STAMPED "STI 2534"
- DECIDUOUS TREE
- CONIFEROUS TREE
- BOLLARD
- SIGN
- GAS
- GAS GATE VALVE
- GAS METER
- W WATER
- WATER GATE VALVE
- WATER SHUT OFF
- HYDRANT
- S SANITARY SEWER
- SANITARY MANHOLE
- SD STORM DRAIN
- CULVERT
- DRAINAGE MANHOLE
- CATCH BASIN
- OHU OVERHEAD UTILITY
- UGT UNDERGROUND TELEPHONE
- UGE UNDERGROUND ELECTRIC
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- T TRANSFORMER PAD
- H HV/AC
- EM ELECTRIC METER
- SEWER CLEAN OUT



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF PARCEL ONE IS FALLBROOK PROPERTIES, LLC BY DEED DATED DECEMBER 15, 2009 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 27501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JULY 7, 1989 AND RECORDED AT THE CCRD IN BOOK 8818, PAGE 50.
2. PARCEL ONE IS SHOWN AS LOT F-001 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE. PARCEL TWO IS SHOWN AS LOT F-005 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE.
3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

MINIMUM LOT SIZE:	6,500 SQUARE FEET*
MINIMUM STREET FRONTAGE:	50 FEET*
MINIMUM FRONT YARD:	25 FEET*
MINIMUM SIDE YARD:	16 FEET*
MINIMUM REAR YARD:	25 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET
MAXIMUM LOT COVERAGE:	35%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL ONE IS APPROXIMATELY 12.78 ACRES. TOTAL AREA OF PARCEL TWO IS APPROXIMATELY 19,573 SQUARE FEET OR 0.449 ACRES.
5. BOUNDARY INFORMATION FOR PARCEL ONE IS AS DEPICTED ON PLAN REFERENCE 6A, SEBAGO TECHNICS, INC. HAS NOT PERFORMED AN INDEPENDENT BOUNDARY RETRACEMENT SURVEY. BOUNDARY INFORMATION FOR PARCEL TWO IS BASED UPON AN INDEPENDENT BOUNDARY SURVEY. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. IN MAY OF 2019 AND IN JULY OF 2019.
6. PLAN REFERENCES:
   A. "PLAN OF LAND OF FALLBROOK WOODS ON RAY STREET, PORTLAND, MAINE PREPARED FOR OWNER OF RECORD FALLBROOK, INC., 7 SHADY LANE, FALMOUTH, MAINE" BY LAND USE CONSULTANTS, DATED SEPTEMBER 25, 1992 AND REVISED THROUGH OCTOBER 9, 1992 AND RECORDED AT THE CCRD IN PLAN BOOK 193, PAGE 248.
   B. "CONDOMINIUM PLAT III FOR FALLBROOK, A CONDOMINIUM ON RAY STREET, PORTLAND, MAINE FOR MERREAL CORP. BY OWEN HASKELL, INC. DATED MAY 10, 1990 AND RECORDED AT THE CCRD IN PLAN BOOK 185, PAGE 15.
   C. "PLAN OF WADCO PARK, PROPERTY OF DERRAH AND WESCOTT, WASHINGTON AVE. PORTLAND, MAINE" DATED AUGUST 1905 AND RECORDED AT THE CCRD IN PLAN BOOK 12, PAGE 17.
   D. "THE PINES, PORTLAND MAINE, OWNED BY THE A.H. CHAPMAN LAND CO., PORTLAND, MAINE, SECTION A" BY PERCY H. RICHARDSON, C.E. DATED APRIL 1925.
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NGVD29, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
8. PER STANDARDS ASCE/CI 38-02: SANITARY AND STORM DRAINAGE LINES SHOWN HEREON ARE QUALITY LEVEL C; ELECTRIC, COMMUNICATION, AND WATER LINES SHOWN HEREON ARE QUALITY LEVEL B, AS DELINEATED BY DIGSMART OF MAINE IN MAY 2019; GAS LINES SHOWN HEREON ARE QUALITY LEVEL D BASED UPON FOUND ABOVE GROUND EVIDENCE. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
9. THE LOCUS PROPERTIES AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230051 0002 C, HAVING AN EFFECTIVE DATE OF DECEMBER 8, 1998. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
10. PER THE CITY OF PORTLAND, MAINE, ASH STREET AND WADCO STREET HAVE BEEN VACATED. THIS REVERTS THE PROPERTY LINE TO THE CENTERLINE OF THE PAPER STREETS (23 M.R.S.A. 3027). THERE MAY STILL BE RIGHTS ASSOCIATED WITH THE PAPER STREET FOR THE LOTS AS DEPICTED IN PLAN REFERENCE 6C.
11. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROPOSED DEVELOPMENT AREAS WERE LOCATED USING GLOBAL POSITIONING SYSTEMS (GPS) TECHNOLOGY CAPABLE OF DECIMETER ACCURACY.

A VERNAL POOL SURVEY WAS PERFORMED ON MAY 6, 2019 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS SURVEY CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN CHAPTER 335, SECTION 9, OF THE NATURAL RESOURCE PROTECTION ACT, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MARCHESE, PLS 2009 — 11-6-19

STRUCTURE TABLE

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE (INCHES)	TYPE	LOCATION (N=12)	COMMENTS
1018	CBR	97.71	OUT	93.97	10"	PIPE W/ HYDROBRAKE	7	PVC PIPE MEASURED TOP WATER
			SUMP	91				
1031	DMH	94.17	IN	89.6	10"	PVC	11	
			IN	89.53	10"	PVC	1	
			OUT	89.52	12"	PVC	6	
			SHELF	90.15"				
1055	SMH	94.23	IN	85.69	8"	PVC	9	
			IN	85.74	8"	PVC	1	
			OUT	85.6	8"	PVC	5	
			SHELF	86.2				
1069	CBR	97.09	OUT	93.08	10"	PIPE W/ CASCO TRAP	5	HOOD TRAP INSTALLED MEASURED TOP OF WATER
			SUMP	89.91				APPROX 1 FOOT SILT ON BOTTOM
1155	SMH	94.53	IN	86.47	8"	PVC	10	
			OUT	86.42	8"	PVC	3	
			SHELF	86.94				
1197	SMH	111.69	IN	103.67	8"	PVC	9	WITH DOWNSPOUT
			OUT	93.86	8"	PVC	5	
			SHELF	94.9				
1789	SMH	94.72	IN	87.24	8"	PVC	11	
			OUT	87.12	8"	PVC	3	
			SHELF	87.81				

CHARLES D. MARCHESE, PLS 2009

DRAWN	CHECKED
AJS	TSL/CDM

REV.	BY:	DATE:	STATUS:
C	CDM	12-18-19	SUBMITTED TO CITY OF PORTLAND
B	AJS	7-10-19	REVISED TO SHOW EXPANDED SCOPE
A	AJS	5-30-19	ISSUED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100
WWW.SEBAGOTECHNICS.COM

RECORD OWNER:
FALLBROOK PROPERTIES, LLC
418 RAY STREET
PORTLAND, MAINE 04103

EXISTING CONDITIONS
OF:
FALLBROOK COMMONS
MERRYMEETING DRIVE
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC
217 COMMERCIAL ST., SUITE 201
PORTLAND, MAINE 04112

PROJECT NO.	SCALE
18347	1" = 50'

SHEET 1 OF 1

18347EC.dwg, TAB: EC

GENERAL NOTES

1. THE RECORD OWNER OF PARCEL ONE IS FALLBROOK PROPERTIES, LLC BY DEED DATED DECEMBER 15, 2009 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 27501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JULY 7, 1989 AND RECORDED AT THE CCRD IN BOOK 6818, PAGE 50.
2. PARCEL ONE IS SHOWN AS LOT F-001 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE. PARCEL TWO IS SHOWN AS LOT F-005 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE.
3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

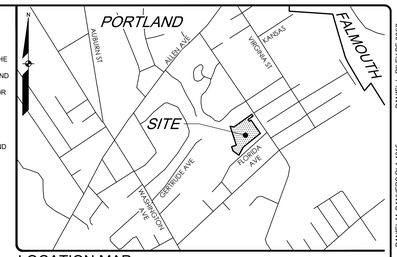
	REQUIRED	FALLBROOK COMMONS	FALLBROOK WOODS
MINIMUM LOT SIZE:	2.0 ACRES*	8.3 ACRES	4.5 ACERS
MINIMUM STREET FRONTAGE:	50 FEET*	55 FEET	157 FEET
MINIMUM FRONT YARD:	25 FEET*	348 FEET	238 FEET
MINIMUM SIDE YARD:	16 FEET*	88 FEET	29 FEET
MINIMUM REAR YARD:	25 FEET	84 FEET	227 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET	34 FEET	30 FEET
MAXIMUM COVERAGE:	35%	34%	31%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA (FALLBROOK COMMONS LOT) APPROXIMATELY: 360,771 SQUARE FEET OR 8.3 ACRES.
   TOTAL AREA (FALLBROOK WOODS LOT) APPROXIMATELY: 215,734 SQUARE FEET OR 4.95 ACERS.
5. ORDINANCE SEC. 14-332 (n): LONG-TERM, EXTENDED CARE AND INTERMEDIATE CARE FACILITIES: ONE (1) PARKING SPACE FOR EACH FIVE (5) BEDS, OR MAJOR FRACTION THEREOF, PLUS ONE (1) PARKING SPACE PER EACH EMPLOYEE NORMALLY PRESENT DURING ONE (1) WEEKDAY MORNING SHIFT.
   OFF STREET PARKING:

	FALLBROOK COMMONS	FALLBROOK WOODS (EXISTING)
EXISTING:	0 SPACES	24 SPACES
ORDINANCE:	73 SPACES	37 SPACES
PROPOSED:	83 SPACES	37 SPACES

6. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROPOSED DEVELOPMENT AREAS WERE LOCATED USING GLOBAL POSITIONING SYSTEMS (GPS) TECHNOLOGY CAPABLE OF DECIMETER ACCURACY. A VERNAL POOL SURVEY WAS PERFORMED ON MAY 6, 2019 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS SURVEY CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN CHAPTER 335, SECTION 9, OF THE NATURAL RESOURCE PROTECTION ACT, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
7. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
8. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
9. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
10. PROVIDE ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
12. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC. STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
13. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
14. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
15. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OCTOBER 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
16. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
17. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
18. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGEMENT OF SEBAGO TECHNICS, INC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.



LOCATION MAP N.T.S.

IMPACT SCHEDULE

WETLAND IMPACTS
A: 4,714 ± S.F.
B: 23 ± S.F.
C: 28,095 ± S.F.
D: 4,059 ± S.F.
E: 227 ± S.F.
F: 447 ± S.F.
TOTAL: 37,565 ± S.F.

TREE CLEARING: 217,078 ± S.F.

WETLAND IMPACT

DANIEL L. RILEY PE 9967 — STATE OF MAINE — DANIEL L. RILEY — PROFESSIONAL ENGINEER — 10/07/2020

DANIEL M. DANVERS RLA 481S — LANDSCAPE ARCHITECT — DANIEL M. DANVERS — 481S — STATE OF MAINE — 10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	06-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	08-07-20	SUBMITTED FOR PLANNING BOARD WORKSHOP
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite A
South Portland, ME 04106
Tel: 207-200-2100

OVERALL SITE PLAN
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

SHEET 3 OF 24

18347S.dwg, TAB.S

SIGN SCHEDULE

S-1	STOP SIGN
S-2	ADA PARKING SIGN
S-3	SERVICE PARKING ONLY SIGN
S-4	YIELD TO REDESTRIAN

CURB SCHEDULE

SCC	SLIPFORM CONCRETE CURB

LIGHT SCHEDULE

	VIPER FIXTURE ON 20' POLE
	KIM BOLLARD LIGHT

GRID N

ASH STREET
(PAPER STREET - VACATED)

TOPSHAM STREET
(PAPER STREET - CONTINUED)

PROPOSED PORTLAND TRAILS CONNECTION. TRAIL CONSTRUCTION SHALL NOT DISTURB THE LOCATION OF ANY EXISTING TREES OVER 8" CALIPER

4'X10' CONCRETE FOR BENCH AREA

BENCH

PORTLAND TRAILS TRAIL HEAD SIGN

EXISTING STONE WALL TO REMAIN, STOCK PILE BOULDERS FROM DEMOLISHED PORTION OF WALL TO BE RE-USED ON SITE

LEDGE TO BE REMOVED

10' SETBACK

UNDERDRAINED SOIL FILTER UDSF-1

STRIPED PARKING LAWN (11' X 18' PARKING)

(11) 9' X 18' PARKING SPACES

(10) 8' X 18' COMPACT PARKING SPACES

4" MOUNTABLE SLIPFORM CURB AND CONCRETE SIDEWALK

TRANSITION CURB

BITUMINOUS PAVING

(4) 9' X 18' (FUTURE EV) PARKING SPACES

LSA

SCC

4" CONCRETE PAVING

BOLLARD LIGHT, TYPICAL

UPPER LEVEL COURTYARD - SEE SHEET 5

BIKE PARKING (8 SPACES)

STONE DRIP EDGE, TYPICAL

ROOF OVERHANG, TYPICAL

TRUNCATED DOME PAVERS, TYPICAL

4" CONCRETE PAVING

MAIN ENTRANCE

GATE

6' WOOD SCREEN FENCE

PROPOSED BUILDING OVERALL FOOTPRINT 37,455 SQ. FT.

SERVICE ENTRANCE

METAL BOLLARD, TYPICAL

LEDGE TO BE REMOVED

STONE DRIP EDGE, TYP.

TRANSFORMER PAD

SEE SIGNAGE AND WAYFINDNG PLAN

CONCRETE TIPDOWN

5' SETBACK

LIGHT FIXTURE 5' OFF CURB, TYPICAL (SEE PHOTOMETRIC PLAN)

APPROXIMATE LIMIT OF CLEARING, TYPICAL

LEDGE TO BE REMOVED

(15) 9' X 18' PARKING SPACES

(4) 11'X18' HC SPACES & (6) 9' X 18' PARKING SPACES

BITUMINOUS PAVING

CROSSWALK STRIPING

TIPDOWN-CURB, TYP.

BENCH

4'X10' CONCRETE FOR BENCH AREA

8' EXISTING EASEMENT

PROPOSED UTILITY EASEMENT

SAWCUT, TYPICAL

6' CROSSWALK STRIPING

PROPOSED STOP BAR, TYP.

FLAG POLE

DIRECTIONAL SIGN

BENCH

6' CROSSWALK STRIPING

4" CONCRETE PAVING

4'X10' CONCRETE FOR BENCH AREA

PROPOSED STOP BAR, TYP.

PEDESTRIAN GUIDERAIL

MODULAR BLOCK RETAINING WALL (BY OTHERS)

GUARDRAIL

PROPOSED 5'X5' LANDING ALONG PEDESTRIAN ROUTE

MODULAR BLOCK WALL

4" CONCRETE PAVING

PROPOSED 15' GRADING EASEMENT

5' TYP.

VEHICULAR GUARDRAIL

BITUMINOUS PAVING

APPROXIMATE LIMIT OF CLEARING, TYPICAL

MODULAR BLOCK RETAINING WALL (BY OTHERS)

PEDESTRIAN GUIDERAIL

GENERATOR PAD

PUMP STATION

6' WOOD SCREEN FENCE

DUMPSTER ENCLOSURE FENCING

(9) 8'X18' PARKING SPACES

HEAVY DUTY BITUMINOUS PAVING

CHANGE IN PAVEMENT

LOWER LEVEL COURTYARD - SEE SHEET 5

VEHICULAR GUIDERAIL

MATCHLINE, SEE SHEET 5

MATCHLINE, SEE SHEET 4

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

DANIEL L. RILEY PE 9967
STATE OF MAINE
DANIEL L. RILEY
No. 9967
REGISTERED PROFESSIONAL ENGINEER
10/07/2020

DANIEL M. DANYERS RLA 4815
LICENSED LANDSCAPE ARCHITECT
DANIEL M. DANYERS
4815
STATE OF MAINE
10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	06-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	09-01-20	SUBMITTED TO CITY FOR PUBLIC HEARING
E	DMD	10-07-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED BY OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

SITE PLAN 1
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 4 OF 24

18347S.dwg, TAB.S1

GRID

N

SIGN SCHEDULE

S-1	STOP SIGN
S-2	ADA PARKING SIGN
S-3	SERVICE PARKING ONLY SIGN
S-4	YIELD TO REDESTRIAN

CURB SCHEDULE

SCC	SLIPFORM CONCRETE CURB
VGC	VERTICAL GRANITE CURB

LIGHT SCHEDULE

	VIPER FIXTURE ON 20' POLE
	KIM BOLLARD LIGHT

MATCHLINE, SEE SHEET 5

MATCHLINE, SEE SHEET 4

DUMPSTER ENCLOSURE FENCING

(5) 9'X18' PARKING SPACES

HEAVY DUTY BITUMINOUS PAVING

CHANGE IN PAVEMENT

4" CONCRETE PAVING CONCRETE TIPDOWN

LOWER LEVEL COURTYARD - SEE SHEET 5

LSA

VEHICULAR GUIDERAIL

5' TYP.

BITUMINOUS PAVING, TYPICAL

DIRECTIONAL SIGN

SEE SIGNAGE AND WAYFINDING PLAN

LIGHT FIXTURE, TYPICAL (SEE PHOTOMETRIC PLAN)

GRAVEL WETLAND TREATMENT CELL GW-2

GRAVEL WETLAND TREATMENT CELL GW-1

APPROXIMATE LIMIT OF CLEARING, TYPICAL

PROPOSED 15' GRADING EASEMENT

EXISTING TREES TO REMAIN

24'

SCC

SITE

8' WOOD SCREEN FENCE

EXISTING TREES TO REMAIN

TRANSITION CURB

KNOX BOX

TRANSITION CURB

EXISTING TREES TO BE REMOVED

GRANITE TIPDOWN

S-1

VGC

NEVADA AVENUE

UPPER LEVEL COURTYARD

SCALE: 1" = 10'

4" CONCRETE PAVING

5' GATE

MODULAR BLOCK RETAINING WALL

8' WOOD SCREEN FENCE

PEDESTRIAN GUIDERAIL

PROPOSED BUILDING FOOTPRINT

LSA

BOLLARD LIGHT, TYP.

UNIT BLOCK PAVERS

BENCH, TYP.

ROOF OVERHANG, SEE ARCHITECTURAL PLANS

STONE DRIP EDGE, TYP.

4" CONCRETE PAVING

LOWER LEVEL COURTYARD

SCALE: 1" = 10'

PROPOSED BUILDING FOOTPRINT

LSA

4" CONCRETE PAVING

UNIT BLOCK PAVERS

STONE DRIP EDGE TYPICAL

ROOF OVERHANG, SEE ARCHITECTURAL PLANS

BENCH, TYP.

4" CONCRETE PAVING

5' GATE

BOLLARD LIGHT, TYPICAL

8' WOOD SCREEN FENCE

GRAPHIC SCALE

0 5 10 20 40

(IN FEET)

1 INCH = 20 FT.

DANIEL L. RILEY PE 9967

STATE OF MAINE — DANIEL L. RILEY — 9967 — REGISTERED PROFESSIONAL ENGINEER

10/07/2020

DANIEL M. DANYERS RLA 4915

REGISTERED LANDSCAPE ARCHITECT — DANIEL M. DANYERS — 4915 — STATE OF MAINE

10/07/2020

NOT FOR CONSTRUCTION

REV'S	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMITTED TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	07-09-20	SUBMITTED FOR PLANNING BOARD WORKSHOP
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite A
South Portland, ME 04106
Tel: 207-200-2100

SITE PLAN 2
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	AS NOTED
PROJECT	18347

SHEET 5 OF 24

18347S.dwg, TAB:S2

PROPOSED STOP BAR, TYP.
FLAG POLE
DIRECTIONAL SIGN
BENCH
6' CROSSWALK STRIPING
LSA
4'X10' CONCRETE FOR BENCH AREA
PROPOSED STOP BAR, TYP.
PEDESTRIAN GUIDERAIL
MODULAR BLOCK RETAINING WALL (BY OTHERS)
VEHICULAR GUARDRAIL
BITUMINOUS PAVING
PROPOSED 15' GRADING EASEMENT
GUARDRAIL
PROPOSED 5'X5' LANDING ALONG PEDESTRIAN ROUTE
MODULAR BLOCK WALL
4" CONCRETE PAVING
(2) ADDITIONAL 9' X 18' PARKING SPACES
RIPRAP SPILLWAY
ASPHALT PAVING
(5) 9' X 18' PARKING SPACES
(3) 9' X 18' PARKING SPACES
TREE PROTECTION, TYP. SEE DETAIL
EXISTING FALLBROOK WOODS
SAWCUT
TIPDOWN
PROPOSED EDGE OF PAVING
6' CROSSWALK STRIPING
TRUNCATED DOMES
TIPDOWN
SLIP FORM CONCRETE CURB
(192.24')
189.83'
N 61°17'37" E
(11) 9' X 18' PARKING SPACES
166.88'
(165.98')
N 60°32'04" E
RELOCATED SHED
110.02'
S 29°57'39" E
SLIP FORM CONCRETE CURB
VEHICULAR PAVING
SAW CUT
MATCHLINE SEE SHEET 6
MATCHLINE SEE SHEET 6
PROPOSED STOP BAR, TYP.
6' CROSSWALK STRIPING
TRUNCATED DOMES
PROPOSED STOP BAR, TYP.
CONCRETE PAVING
SLIP FORM CONCRETE CURB
VEHICULAR PAVING
SAW CUT
NEW CAMPUS ENTRANCE SIGN, INCLUDING FALLBROOK CONDOMINIUMS
PROPOSED STOP BAR, TYP.
RAY STREET
TRUNCATED DOMES
PROPOSED STOP BAR, TYP.
8' CROSSWALK STRIPING
TRUNCATED DOMES
MATCH EXISTING
PROPOSED STOP BAR, TYP.
6' CROSSWALK STRIPING
TRUNCATED DOMES
CONCRETE PAVING
SLIP FORM CONCRETE CURB
VEHICULAR PAVING
SAW CUT

SIGN SCHEDULE

S-1	STOP SIGN
S-2	ADA PARKING SIGN
S-3	SERVICE PARKING ONLY SIGN
S-4	YIELD TO REDESTRIAN

CURB SCHEDULE

VGC	VERTICAL GRANITE CURB
SCC	SLIPFORM CONCRETE CURB

LIGHT SCHEDULE

	VIPER FIXTURE ON 20' POLE
	KIM BOLLARD LIGHT

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

DANIEL L. RILEY PE 9967
STATE OF MAINE
DANIEL L. RILEY
No. 9967
REGISTERED PROFESSIONAL ENGINEER
10/07/2020

DANIEL M. DANVERS RLA 4815
LANDSCAPE ARCHITECT
DANIEL M. DANVERS
4815
STATE OF MAINE
10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	06-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN CONSENT OF SEBAGO TECHNICS, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

SITE PLAN 3
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 6 OF 24

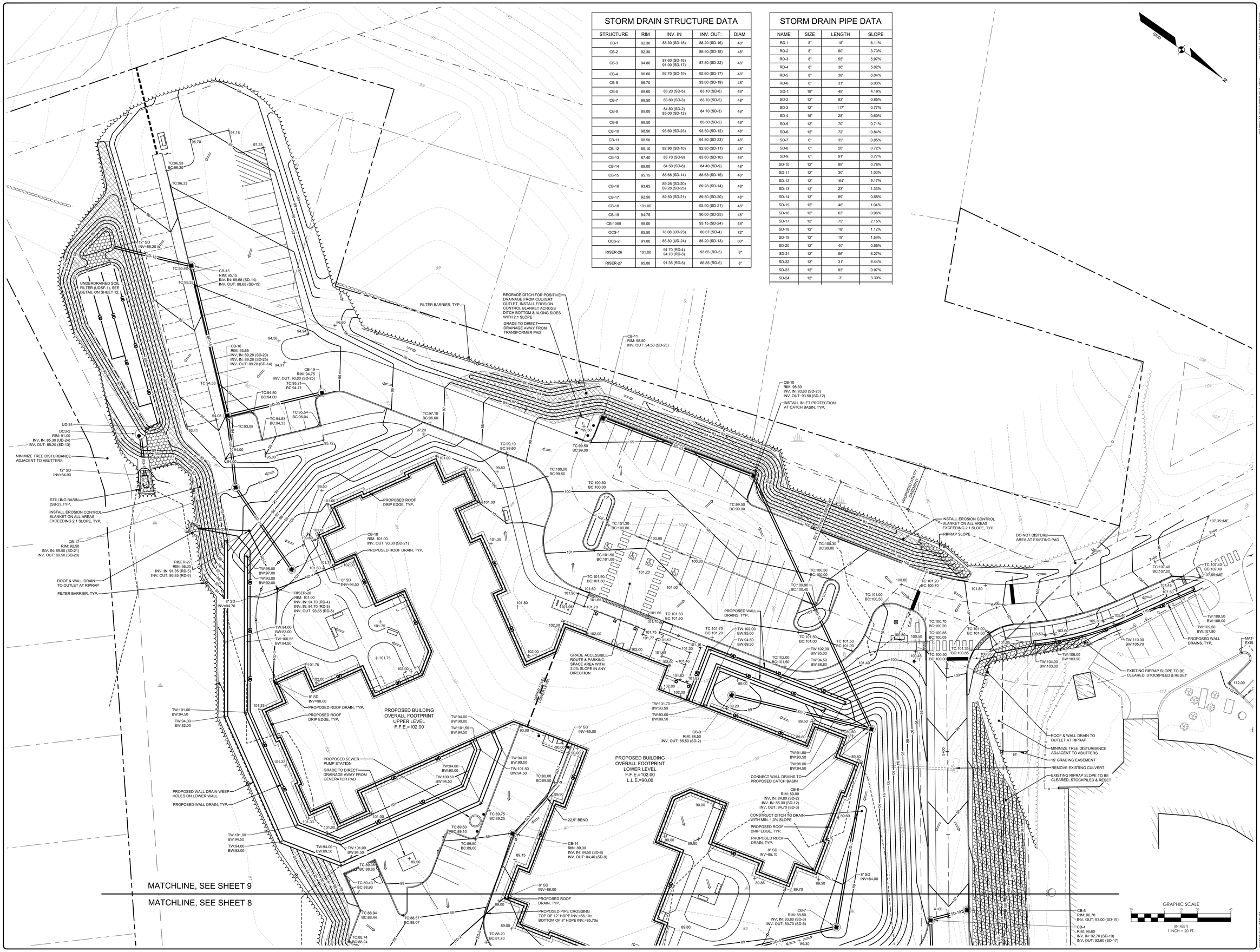
18347S dwg, TAB S3

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	92.30	88.30 (SD-18)	88.20 (SD-16)	48"
CB-2	92.30		88.50 (SD-18)	48"
CB-3	94.80	87.60 (SD-16) 91.00 (SD-17)	87.50 (SD-22)	48"
CB-4	96.60	92.70 (SD-19)	92.60 (SD-17)	48"
CB-5	96.70		93.00 (SD-19)	48"
CB-6	88.60	83.20 (SD-5)	83.10 (SD-6)	48"
CB-7	88.50	83.80 (SD-3)	83.70 (SD-5)	48"
CB-8	89.00	84.80 (SD-2) 85.00 (SD-12)	84.70 (SD-3)	48"
CB-9	88.50		85.50 (SD-2)	48"
CB-10	98.50	93.60 (SD-23)	93.50 (SD-12)	48"
CB-11	98.50		94.50 (SD-23)	48"
CB-12	89.10	82.90 (SD-10)	82.80 (SD-11)	48"
CB-13	87.40	83.70 (SD-9)	83.60 (SD-10)	48"
CB-14	89.00	84.50 (SD-8)	84.40 (SD-9)	48"
CB-15	95.15	88.68 (SD-14)	88.68 (SD-15)	48"
CB-16	93.65	89.28 (SD-20) 89.28 (SD-25)	89.28 (SD-14)	48"
CB-17	92.50	89.50 (SD-21)	89.50 (SD-20)	48"
CB-18	101.00		93.00 (SD-21)	48"
CB-19	94.75		90.00 (SD-25)	48"
CB-1069	98.00		93.15 (SD-24)	48"
OCS-1	85.50	78.08 (UD-23)	80.67 (SD-4)	72"
OCS-2	91.00	85.30 (UD-24)	85.20 (SD-13)	60"
RISER-26	101.00	94.70 (RD-4) 94.70 (RD-3)	93.65 (RD-5)	8"
RISER-27	95.00	91.35 (RD-5)	86.85 (RD-6)	8"

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
RD-1	8"	18'	6.11%
RD-2	8"	80'	3.73%
RD-3	8"	55'	5.97%
RD-4	8"	36'	5.02%
RD-5	8"	38'	6.04%
RD-6	8"	31'	6.03%
SD-1	18"	48'	4.19%
SD-2	12"	83'	0.85%
SD-3	12"	117'	0.77%
SD-4	15"	28'	0.60%
SD-5	12"	70'	0.71%
SD-6	12"	72'	0.84%
SD-7	6"	35'	0.85%
SD-8	6"	28'	0.72%
SD-9	6"	91'	0.77%
SD-10	12"	89'	0.78%
SD-11	12"	30'	1.00%
SD-12	12"	164'	5.17%
SD-13	12"	23'	1.33%
SD-14	12"	89'	0.68%
SD-15	12"	46'	1.04%
SD-16	12"	63'	0.96%
SD-17	12"	75'	2.15%
SD-18	12"	18'	1.12%
SD-19	12"	19'	1.59%
SD-20	12"	40'	0.55%
SD-21	12"	56'	6.27%
SD-22	12"	31'	6.44%
SD-23	12"	93'	0.97%
SD-24	12"	3'	3.39%



DANIEL L. RILEY PE 9967
STATE OF MAINE DANIEL L RILEY 10/07/2020

DANIEL M. DANVERS RLA 481S
LANDSCAPE ARCHITECT DANIEL M. DANVERS 481S STATE OF MAINE 10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	06-26-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN CONSENT OF SEBAGO TECHNICS, INC. AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

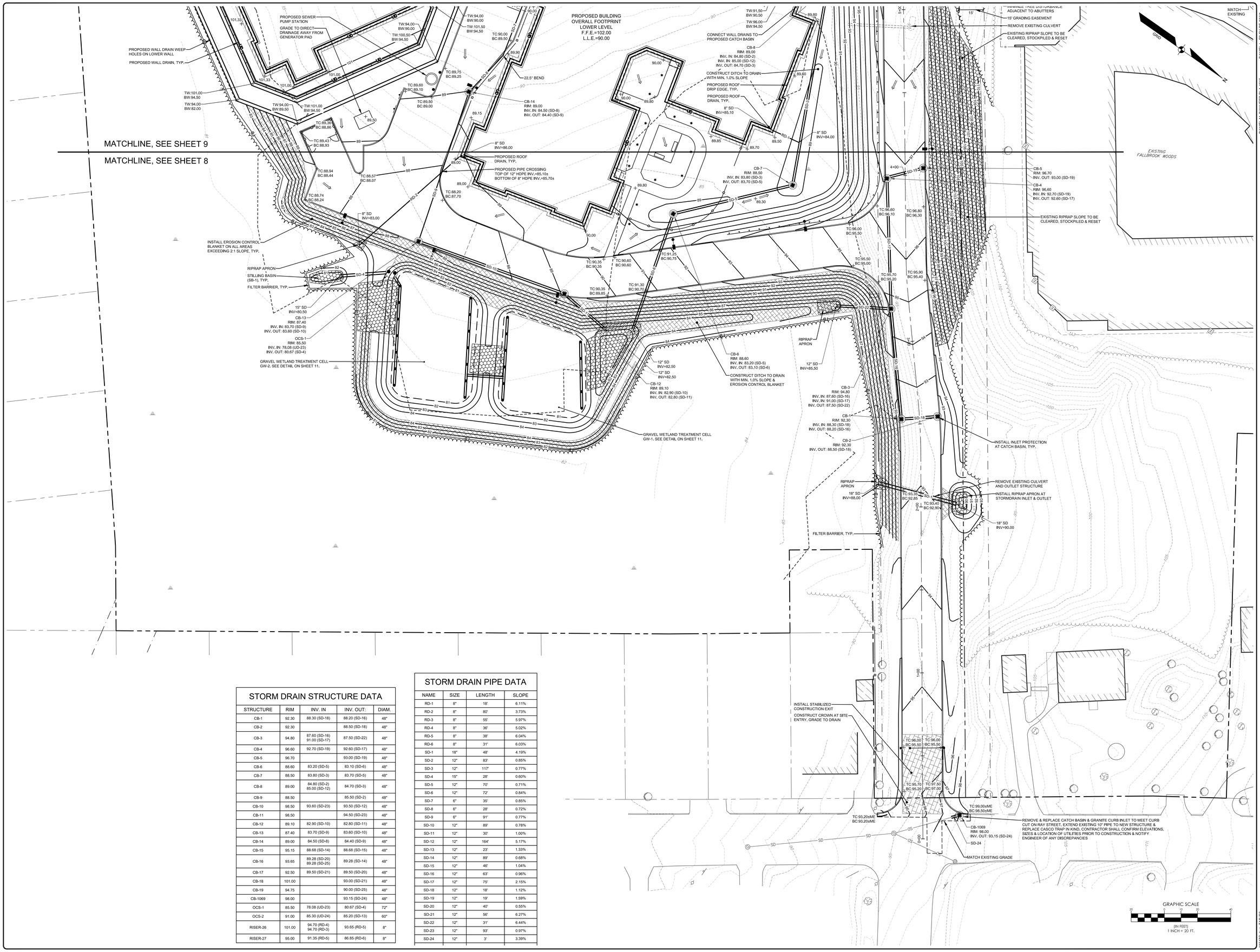
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

GRADING PLAN 1
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 8 OF 24

18347D dwg, TAB G1



STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	92.30	88.30 (SD-18)	88.20 (SD-16)	48"
CB-2	92.30		88.50 (SD-18)	48"
CB-3	94.80	87.60 (SD-16) 91.00 (SD-17)	87.50 (SD-22)	48"
CB-4	96.60	92.70 (SD-19)	92.60 (SD-17)	48"
CB-5	96.70		93.00 (SD-19)	48"
CB-6	88.60	83.20 (SD-5)	83.10 (SD-6)	48"
CB-7	88.50	83.80 (SD-3)	83.70 (SD-5)	48"
CB-8	89.00	84.80 (SD-2) 85.00 (SD-12)	84.70 (SD-3)	48"
CB-9	88.50		85.50 (SD-2)	48"
CB-10	98.50	93.60 (SD-23)	93.50 (SD-12)	48"
CB-11	98.50		94.50 (SD-23)	48"
CB-12	89.10	82.90 (SD-10)	82.80 (SD-11)	48"
CB-13	87.40	83.70 (SD-9)	83.60 (SD-10)	48"
CB-14	89.00	84.50 (SD-8)	84.40 (SD-9)	48"
CB-15	95.15	88.68 (SD-14)	88.68 (SD-15)	48"
CB-16	93.65	89.28 (SD-20) 89.28 (SD-25)	89.28 (SD-14)	48"
CB-17	92.50	89.50 (SD-21)	89.50 (SD-20)	48"
CB-18	101.00		93.00 (SD-21)	48"
CB-19	94.75		90.00 (SD-25)	48"
CB-1069	98.00		93.15 (SD-24)	48"
OCS-1	85.50	78.08 (UD-23)	80.67 (SD-4)	72"
OCS-2	91.00	85.30 (UD-24)	85.20 (SD-13)	60"
RISER-26	101.00	94.70 (RD-4) 94.70 (RD-3)	93.65 (RD-5)	8"
RISER-27	95.00	91.35 (RD-5)	86.85 (RD-6)	8"

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
RD-1	8"	18'	6.11%
RD-2	8"	80'	3.73%
RD-3	8"	55'	5.97%
RD-4	8"	36'	5.02%
RD-5	8"	38'	6.04%
RD-6	8"	31'	6.03%
SD-1	18"	48'	4.19%
SD-2	12"	83'	0.85%
SD-3	12"	117'	0.77%
SD-4	15"	28'	0.60%
SD-5	12"	70'	0.71%
SD-6	12"	72'	0.84%
SD-7	6"	35'	0.85%
SD-8	6"	28'	0.72%
SD-9	6"	91'	0.77%
SD-10	12"	89'	0.78%
SD-11	12"	30'	1.00%
SD-12	12"	164'	5.17%
SD-13	12"	23'	1.33%
SD-14	12"	89'	0.68%
SD-15	12"	46'	1.04%
SD-16	12"	63'	0.96%
SD-17	12"	75'	2.15%
SD-18	12"	18'	1.12%
SD-19	12"	19'	1.59%
SD-20	12"	40'	0.55%
SD-21	12"	56'	6.27%
SD-22	12"	31'	6.44%
SD-23	12"	93'	0.97%
SD-24	12"	3'	3.39%

DANIEL L. RILEY PE 9967 — STATE OF MAINE — 10/07/2020

DANIEL M. DANVERS RLA 481 — LANDSCAPE ARCHITECT — STATE OF MAINE — 10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	07-27-20	SUBMITTED FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, WITHOUT SUCH PERMISSION, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

GRADING PLAN 2
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 9 OF 24

18347G.dwg, TAB C2

GRADING PLAN 3
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 10 OF 24

18347G dwg, TAB G3

REV.	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMITT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USERS SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

NOT FOR CONSTRUCTION

DANIEL L. RILEY PE 9967

DANIEL M. DANAHERS RLA 481S

10/07/2020

10/07/2020

GRID

N

MATCHLINE, SEE SHEET 11

MATCHLINE, SEE SHEET 10

CB-15

SD-1

UGU

UNDERDRAINED SOIL FILTER (UDSF-1). SEE DETAIL ON SHEET 9.

SD-24

CB-19

CB-16

SD-25

UD-24

OCS-2

SD-17

STILLING BASIN (SB-2), TYP.

CB-17

SD-26

RIPRAP APRON

SD-27

RD-4

CB-18

RD-3

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

42" STONE DRIP EDGE, TYP.

PROPOSED BUILDING OVERALL FOOTPRINT UPPER LEVEL F.F.E.=102.00

PROPOSED WALL DRAIN WEEP HOLES ON LOWER WALL

PROPOSED WALL DRAINS, TYP.

GENERATOR & CONCRETE PAD. COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

PUMP DESIGN CONTROL PANEL

EXTEND GENERATOR POWER UNDERGROUND TO BUILDING. COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

INSTALL THRUST BLOCK AT ALL BENDS, TYP.

INSTALL FOUNDATION DRAIN. COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

42" STONE DRIP EDGE, TYP.

MECHANICAL & SPRINKLER ROOM LOCATED AT BUILDING CORNER

COORDINATE SEWER CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS, INV.=83.00

2,000 GALLON GREASE TRAP INV, IN=82.90 INV, OUT=82.65

CLEANOUT, TYP.

SS-5

SS-4

SS-2

SS-3

SMH-1

SS-2.1

SD-7

22.5° BEND

10' MIN. SEPARATION BETWEEN SEWER AND WATER

22.5° BEND

CB-14

SEWER PUMP STATION RIM = 90.50 INV, IN = 82.00 INV, OUT = 85.00 (DESIGN BY MANUFACTURER, SEE DETAILS)

SD-18

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

PROPOSED PIPE CROSSING TOP OF 12" HDPE INV.=85.10± BOTTOM OF 8" HDPE INV.=85.70±

45° BEND

INSTALL SINGLE-PHASE TRANSFORMER ON 7'x7' CONCRETE PAD

INSTALL TEL/DATA PULL-BOX

CB-11

SD-23

SINGLE-PHASE ELECTRIC & TEL/DATA

EXTEND SINGLE-PHASE POWER & TEL/DATA UNDERGROUND TO BUILDING. COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

CB-10

SD-12

PROPOSED WALL DRAINS, TYP.

COORDINATE ELECTRICAL CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

COORDINATE WATER CONNECTIONS AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

INSTALL GAS METER & RISER ASSEMBLY. COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

FIRE ALARM PANEL/ REMOTE ANNUNCIATOR AT FRONT DOOR

PROPOSED BUILDING OVERALL FOOTPRINT LOWER LOWER LEVEL L.L.F.=90.00

CB-9

SD-2

INSTALL FOUNDATION DRAIN. COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

42" STONE DRIP EDGE, TYP.

RD-1

CB-7

6" GATE VALVE

SD-8

EXTEND SINGLE-PHASE ELECTRIC & TEL/DATA UNDERGROUND FROM UTILITY POLE RISER TO PROPOSED TRANSFORMER. INSTALL TEL/DATA IN SEPARATE TRENCH, TYP.

INSTALL SINGLE-PHASE POWER & TEL/DATA RISERS ON EXISTING UTILITY POLE & EXTEND CONDUIT. COORDINATE CONNECTION & UNDERGROUND EXTENSION WITH CMP & OTHER UTILITY COMPANIES. PROVIDE 30" MINIMUM COVER OVER CONDUIT. SEE GRADING PLAN FOR ELEVATIONS.

PROTECT EXISTING OVERHEAD UTILITY LINES, POLE & GUY WIRES

PROTECT EXISTING UNDERGROUND UTILITIES & CONDUIT

UGT

UGE

W

O

G

PROPOSED UTILITY EASEMENT

60' EXISTING EASEMENT

CONNECT TO EXISTING GAS MAIN, COORDINATE CONNECTION WITH UNITIL GAS COMPANY

CONTRACTOR SHALL VERIFY EXISTING WATER MAIN SIZE AND VALVING LOCATION PRIOR TO CONSTRUCTION

8" GATE VALVE

RIPRAP SLOPE

PROPOSED WALL DRAINS, TYP.

PROTECT EXISTING GAS, WATER & ELECTRIC UTILITY DURING INSTALLATION OF PROPOSED WALL

INSTALL 6"X6" MJ TEE, 6" GATE VALVE & HYDRANT ASSEMBLY, INSTALL MECHANICAL JOINT CAP ON BLIND TEE END

CONNECT WALL DRAINS TO PROPOSED CATCH BASIN

CB-8

8" WATER MAIN

CONNECT FIRE SERVICE TO PROPOSED FIRE HYDRANT

PROPOSED HYDRANT LOCATION TO BE CONFIRMED BY FIRE DEPARTMENT

15' GRADING EASEMENT

REMOVE EXISTING CULVERT

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

CONNECT DRIPLINE & FOUNDATION DRAIN TO STORMDRAIN WITH WYE FITTING, TYP.

SD-3

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE

MAINTAIN MIN. 12" VERTICAL SEPARATION BETWEEN STORMDRAIN & GAS SERVICE

CB-4

SD-19

CB-5

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 INCH = 20 FT.

DANIEL L. RILEY PE 9967

STATE OF MAINE · DANIEL L RILEY · 9967 · REGISTERED PROFESSIONAL ENGINEER

10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	06-26-20	SUBMITTED FOR RESPONSE TO COMMENTS AND BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC

SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd.
Suite E
South Portland, ME 04106
Tel. 207-200-2100

UTILITY PLAN 1
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 13 OF 24

18347U.Dwg, TAB:U1

PUMP DESIGN CONTROL PANEL

EXTEND GENERATOR POWER UNDERGROUND TO BUILDING, COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

SS-3

SMH-1

SS-2.1

PROPOSED BUILDING OVERALL FOOTPRINT LOWER LOWER LEVEL L.L.E.=90.00

22.5° BEND

10' MIN. SEPARATION BETWEEN SEWER AND WATER

22.5° BEND

CB-14

SEWER PUMP STATION RIM = 90.50 INV. IN = 82.00 INV. OUT = 85.00 (DESIGN BY MANUFACTURER, SEE DETAILS)

PROPOSED WALL DRAIN WEEP HOLES ON LOWER WALL

PROPOSED WALL DRAINS, TYP.

GENERATOR & CONCRETE PAD, COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

INSTALL FOUNDATION DRAIN, COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

42" STONE DRIP EDGE, TYP.

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

CONNECT DRIPLINE & FOUNDATION DRAIN TO STORMDRAIN WITH WYE FITTING, TYP.

MATCHLINE, SEE SHEET 11

MATCHLINE, SEE SHEET 10

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

PROPOSED PIPE CROSSING TOP OF 12" HDPE INV.=85.10± BOTTOM OF 8" HDPE INV.=85.70±

INSTALL THRUST BLOCK AT ALL BENDS, TYP.

45° BEND

45° BEND

8' MIN. SEPARATION BETWEEN SEWER FORCEMAIN AND WATER

CB-13

11.25° BEND

RIPRAP APRON

STILLING BASIN (SB-1) TYP.

OCS-1

UD-23

SD-4

CB-12

GRAVEL WETLAND TREATMENT CELL GW-2, SEE DETAIL ON SHEET 11.

GRAVEL WETLAND TREATMENT CELL GW-1, SEE DETAIL ON SHEET 11.

CB-4

CB-7

SD-19

CB-5

6" GATE VALVE

6" D.I. FIRE SERVICE

2" WATER SERVICE

CB-6

2" GATE VALVE

11.25° BEND

CB-3

SD-22

RIPRAP APRON

15' GRADING EASEMENT

REMOVE EXISTING CULVERT

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE

MAINTAIN MIN. 12" VERTICAL SEPARATION BETWEEN STORMDRAIN & GAS SERVICE

EXISTING FALLBROOK WOODS

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN WATER & GAS SERVICE

MAINTAIN MIN. 12" VERTICAL SEPARATION BETWEEN STORMDRAIN & GAS SERVICE

8" GATE VALVE

6"X8" TEE

INSTALL BENDS & THRUST BLOCKS FOR WATER PIPE & FIRE SERVICE PIPE AS REQUIRED

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE

INSTALL BENDS & THRUST BLOCKS FOR WATER PIPE & FIRE SERVICE PIPE AS REQUIRED

4" HDPE SDR 11 FORCEMAIN, MAINTAIN MINIMUM 5.0' OF COVER OVER FORCE MAIN ENTIRE LENGTH, CONFIRM MAIN SIZE WITH MANUFACTURER

SMH 1197

SMH 1789

PROPOSED INV. IN = 87.40 (CORE EXISTING STRUCTURE FOR INSTALLATION OF BOOT FOR FORCEMAIN, RECONSTRUCT CHANNEL & BENCH FOR NEW SERVICE)

CB-1

SD-18

CB-2

SD-17

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE

22.5° BEND

PROPOSED STORMDRAIN & SEWER PIPE CROSSING BOTTOM OF 12" HDPE INV.=89.35± TOP OF 8" HDPE SEWER INV.=87.45±

REMOVE EXISTING CULVERT AND OUTLET STRUCTURE TO BE REPLACED

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN SEWER & WATER SERVICE

22.5° BEND

SMH 1155

LIGHT POLE, TYP.

8" GATE VALVE

CB-1069

SD-24

PROTECT EXISTING UTILITIES IN RIGHT OF WAY

SMH 1862 RIM=85.34

SMH 1055

APPROXIMATE LOCATION OF EXISTING 8" TO 6" WATER MAIN REDUCER

EXISTING 8" WATER MAIN

PROTECT EXISTING 6" WATERMAIN & FORCEMAIN AS REQUIRED FOR NEW UTILITY INSTALLATION

WATER MAIN CONNECTION, INSTALL 6"X8" TAPPING SLEEVE, CONNECTION TO BE CONFIRMED WITH PWD

GRAPHIC SCALE

30 0 10 20 40

(IN FEET)
1 INCH = 20 FT.

GRID N

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-1	8"	23'	1.50%
SS-2	8"	10'	1.09%
SS-2.1	8"	9'	1.02%
SS-3	8"	6'	1.75%
SS-4	8"	22'	1.81%
SS-5	8"	6'	0.88%

SANITARY SEWER STRUCTURE DATA

STRUCTURE	*RIM*	*INV. IN*	*INV. OUT:*	*DIAM.*
SMH 1055	94.23	85.69 (EX.SS-6) 85.74 (EX.SS-1)	85.60 (EX.SS-2)	48"
SMH 1155	94.53		86.42 (EX.SS-6)	48"
SMH 1197	111.69	103.67 (EX.SS-4)	93.86 (EX.SS-3)	48"
SMH 1789	94.72	87.24 (EX.SS-3)	87.12 (EX.SS-5)	48"

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-1	89.62	82.54 (SS-2) 82.50 (SS-3)	82.44 (SS-2.1)	48"

DANIEL L. RILEY PE 9967

STATE OF MAINE — DANIEL L RILEY — No. 9967 — REGISTERED PROFESSIONAL ENGINEER

10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, MODIFICATIONS OR REVISIONS TO THIS PLAN SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC. UNLESS OTHERWISE AUTHORIZED IN WRITING.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

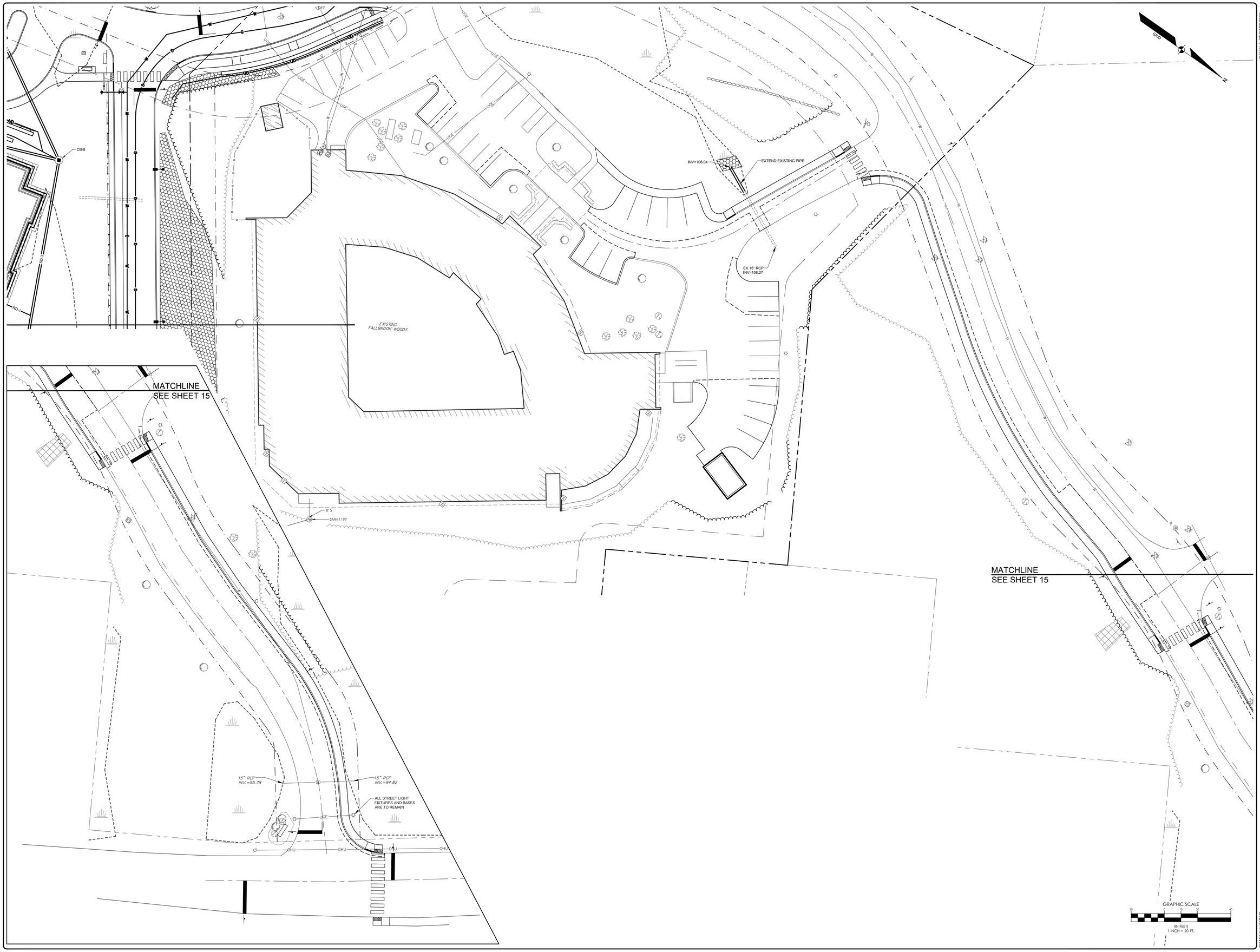
UTILITY PLAN 2
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET14 OF 24

18347U.dwg TAB:U2



DANIEL L. RILEY PE 9967
STATE OF MAINE
DANIEL L RILEY
No. 9967
REGISTERED PROFESSIONAL ENGINEER
10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

UTILITY PLAN 3
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 15 OF 24

18347UtilDwg, TAB:U3

FALLBROOK COMMONS
PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE | NOTES
AR	ACER RUBRUM 'NORTHWOOD'	NORTHWOOD RED MAPLE	3" CAL
CS	CATALPA SPECIOSA	CATALPA	3" CAL
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL
MA	MAGNOLIA ACUMINATA 'DAY BREAK'	DAYBREAK CUCUMBER MAGNOLIA	3" CAL
MP	MALUS 'PURPLE PRINCE'	PURPLE PRINCE CHERRY	3" CAL
BN	BETULA NIGRA	RIVERBIRCH	10'-12' HGT MIN 3 TRUNKS
PR	PINUS RESINOSA	RED PINE	10'-12' HGT
CT	CHAMAECYPARIS THYOIDES 'GLAUCA'	WHITE CEDAR	10'-12'HGT
BP	BETULA PAPYRIFERA 'RENAISSANCE REFLECTON'	PAPER BIRCH	8'-10' HGT
CV	CHIONANTHUS VIRGINICUS	FRINGETREE	8'-10' HGT
CP	CHAMAECYPARIS PISIFERA 'FILIFERA'	GREENTHREAD CYPRESS	8'-10' HGT
PO	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HGT
JS	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	WITCHITA BLUE JUNIPER	6'-8' HGT
AL	AMELANCHIER LAEVIS	SERVICE BERRY	6'-8' HGT
VR	VIBURNUM RHYTIDOPHYLLOIDES	LEATHERLEAF VIBURNUM	3'-5' HGT
RH	RHODODENDRON 'NOVA ZEMBLA'	RHODODENDRON	3'-5' HGT
JC	JUNIPERUS CHINENSIS 'HETZII GLAUCA'	BLUE HETZII JUNIPER	3'-5' HGT
LB	LINDERA BENZOIN	SPICEBUSH	3'-5' HGT
AS	AZALEA SCHLIPPENBACHII	ROYAL AZALEA	2'-3' HGT
DL	DIERVILLA LONICERA	BUSH HONEYSUCKLE	18"-24" HGT
HAI	HYDRANGEA ARBORESCENS 'INVINCIBELLE SPIRIT'	INVINCIBELLE SPIRIT HYDRANGEA	18"-24" HGT
RP	RHODODENDRON 'PJM'	PJM RHODODENDRON	18"-24" HGT
HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" HGT
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCHGRASS	18"-24" HGT
MD	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	#5 CONTAINER
EF	EUONYMUS F. 'EMERALD GAITY'	EUONYMUS	#2 CONTAINER
CP	CARAX 'PENNSYLVANICA'	SEDGE	#1 CONTAINER
HAR	HELLEBORUS 'ANNES RED'	LENTEN ROSE	#1 CONTAINER
LS	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SHASTA DAISY	#1 CONTAINER
HPR	HEUCHERELLA 'PINK REVOLUTION'	FOAMY BELLS	#1 CONTAINER
AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 CONTAINER
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	#1 CONTAINER
DF	DRYOPTERIS FILIX-MAS	WOOD FERN	#1 CONTAINER
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	#1 CONTAINER

SEED MIX A MEDOT- PARK MIX SEED METHOD A
SEED MIX B NEW ENGLAND WETLAND PLANTS- WETLAND MIX
SEED MIX C NEW ENGLAND WETLAND PLANTS- CONSERVATION MIX

GRID N

SEED MIX C (NATIVE GROUNDCOVER MIX)
VEGETATED EVENT OVERFLOW PARKING
SEED MIX B (WETLAND MIX)
VEGETATED STORM WATER TREATMENT SYSTEM
SEED MIX A (TURF)
PROPOSED BUILDING OVERALL FOOTPRINT
SEED MIX A (TURF)
SEED MIX C (NATIVE GROUNDCOVER MIX)
GRAVEL WETLAND TREATMENT CELL GW-1
GRAVEL WETLAND TREATMENT CELL GW-2
SEED MIX B (WETLAND MIX)
VEGETATED STORM WATER TREATMENT SYSTEM
SEED MIX C (NATIVE GROUNDCOVER MIX)
EXISTING TREE CANOPY TO REMAIN
EXISTING FALLBROOK WOODS
(44.28')
(166.24')
(80.24')
6"C.I.
8"D.I.
OHU
OHI

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FT.

DANIEL M. DANYERS RLA 4815
LANDSCAPE ARCHITECT
DANIEL M. DANYERS
4815
STATE OF MAINE
10/07/2020

NOT FOR CONSTRUCTION

REV	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	06-26-20	SUBMITTED FOR PLANNING BOARD WORKSHOP
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, MODIFICATIONS OR REVISIONS MADE TO THIS PLAN SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

OVERALL LANDSCAPE PLAN
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

SHEET16 OF 24

18347L.dwg TAB:OAL

FALLBROOK COMMONS
PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE | NOTES
AR	ACER RUBRUM 'NORTHWOOD'	NORTHWOOD RED MAPLE	3" CAL
CS	CATALPA SPECIOSA	CATALPA	3" CAL
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL
MA	MAGNOLIA ACUMINATA 'DAY BREAK'	DAYBREAK CUCUMBER MAGNOLIA	3" CAL
MP	MALUS 'PURPLE PRINCE'	PURPLE PRINCE CHERRY	3" CAL
BN	BETULA NIGRA	RIVERBIRCH	10'-12' HGT MIN 3 TRUNKS
PR	PINUS RESINOSA	RED PINE	10'-12' HGT
CT	CHAMAECYPARIS THYOIDES 'GLAUCA'	WHITE CEDAR	10'-12'HGT
BP	BETULA PAPYRIFERA 'RENAISSANCE REFLECTON'	PAPER BIRCH	8'-10' HGT
CV	CHIONANTHUS VIRGINICUS	FRINGETREE	8'-10' HGT
CP	CHAMAECYPARIS PISIFERA 'FILIFERA'	GREENTHREAD CYPRESS	8'-10' HGT
PO	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HGT
JS	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	WITCHITA BLUE JUNIPER	6'-8' HGT
AL	AMELANCHIER LAEVIS	SERVICE BERRY	6'-8' HGT
VR	VIBURNUM RHYTIDOPHYLLOIDES	LEATHERLEAF VIBURNUM	3'-5' HGT
RH	RHODODENDRON 'NOVA ZEMBLA'	RHODODENDRON	3'-5' HGT
JC	JUNIPERUS CHINENSIS 'HETZII GLAUCA'	BLUE HETZII JUNIPER	3'-5' HGT
LB	LINDERA BENZOIN	SPICEBUSH	3'-5' HGT
AS	AZALEA SCHLIPPENBACHII	ROYAL AZALEA	2'-3' HGT
DL	DIERVILLA LONICERA	BUSH HONEYSUCKLE	18"-24" HGT
HAI	HYDRANGEA ARBORESCENS 'INVINCIBELLE SPIRIT'	INVINCIBELLE SPIRIT HYDRANGEA	18"-24" HGT
RP	RHODODENDRON 'PJM'	PJM RHODODENDRON	18"-24" HGT
HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" HGT
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCHGRASS	18"-24" HGT
MD	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	#5 CONTAINER
EF	EUONYMUS F. 'EMERALD GAITY'	EUONYMUS	#2 CONTAINER
CP	CARAX 'PENNSYLVANICA'	SEDGE	#1 CONTAINER
HAR	HELLEBORUS 'ANNES RED'	LENTEN ROSE	#1 CONTAINER
LS	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SHASTA DAISY	#1 CONTAINER
HPR	HEUCHERELLA 'PINK REVOLUTION'	FOAMY BELLS	#1 CONTAINER
AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 CONTAINER
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	#1 CONTAINER
DF	DRYOPTERIS FILIX-MAS	WOOD FERN	#1 CONTAINER
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	#1 CONTAINER

SEED MIX A MEDOT- PARK MIX SEED METHOD A
SEED MIX B NEW ENGLAND WETLAND PLANTS- WETLAND MIX
SEED MIX C NEW ENGLAND WETLAND PLANTS- CONSERVATION MIX

SEE SHEET 13 - UPPER LEVEL COURTYARD

SEE SHEET 13 - LOWER LEVEL COURTYARD

MATCHLINE, SEE SHEET 18

PROPOSED BUILDING OVERALL FOOTPRINT

PROPOSED UTILITY EASEMENT

30' EASEMENT AGREEMENT

GENERATOR PAD

GRAPHIC SCALE
(IN FEET)
1 INCH = 20 FT.

STATE OF MAINE DANIEL L PALEY 10/07/2020

LANDSCAPE ARCHITECT DANIEL M. DAMYERS 4815 STATE OF MAINE 10/07/2020
DANIEL M. DAMYERS RLA 4815

NOT FOR CONSTRUCTION

REV:	BY:	DATE:
E	DMD	10-07-20
D	DMD	07-09-20
C	DMD	05-21-20
B	DMD	05-15-20
A	DMD	12-18-19

STATUS: SUBMITTED TO CITY FOR PUBLIC HEARING
SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
SUBMITTED FOR RESPONSE TO COMMENTS
SUBMITTED FOR RESPONSE TO COMMENTS
SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

LANDSCAPE PLAN 1
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

18347L.dwg TAB:L1

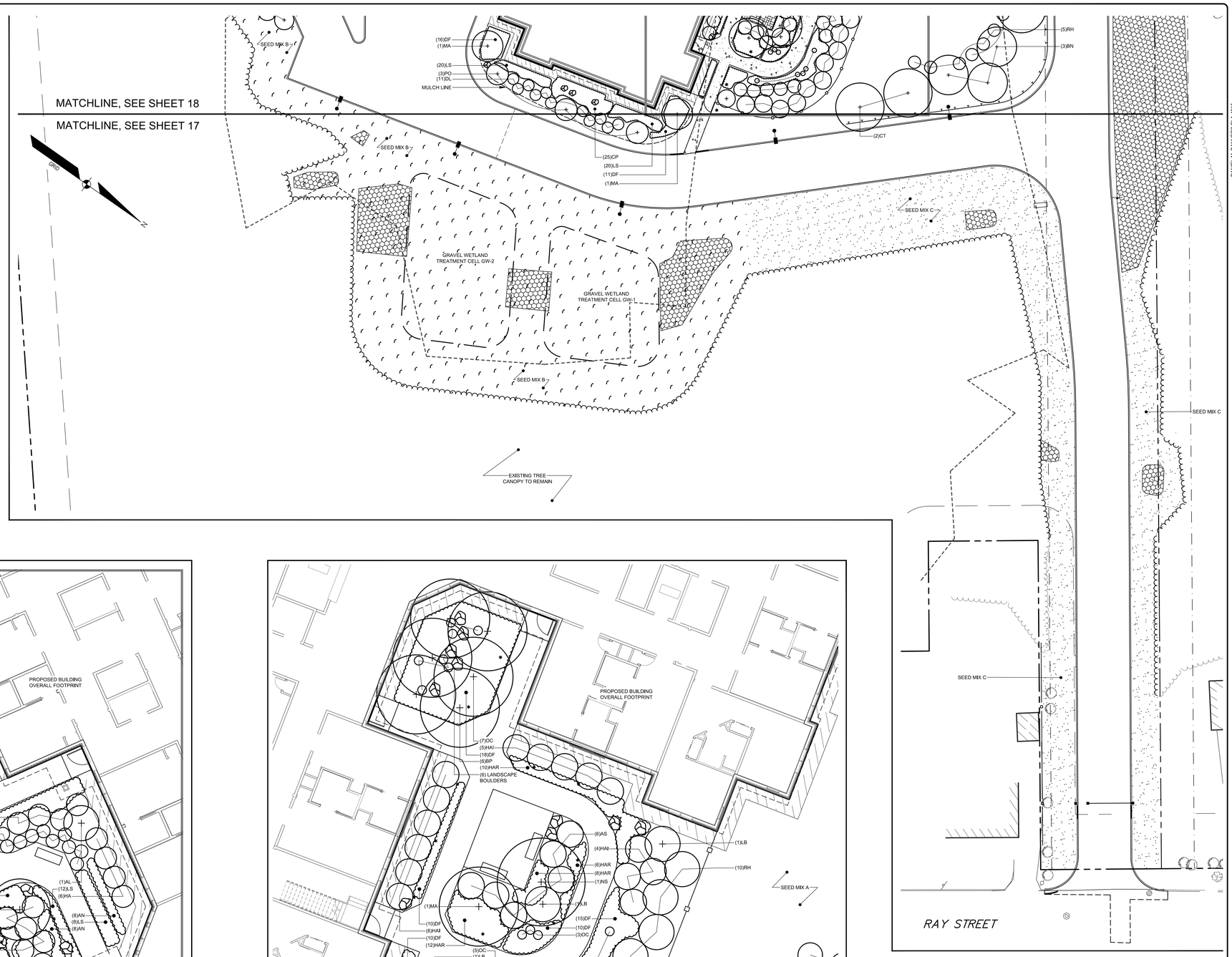
SHEET 17 OF 24

FALLBROOK COMMONS

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE | NOTES
AR	ACER RUBRUM 'NORTHWOOD'	NORTHWOOD RED MAPLE	3" CAL
CS	CATALPA SPECIOSA	CATALPA	3" CAL
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL
MA	MAGNOLIA ACUMINATA 'DAY BREAK'	DAYBREAK CUCUMBER MAGNOLIA	3" CAL
MP	MALUS 'PURPLE PRINCE'	PURPLE PRINCE CHERRY	3" CAL
BN	BETULA NIGRA	RIVERBIRCH	10'-12' HGT MIN 3 TRUNKS
PR	PINUS RESINOSA	RED PINE	10'-12' HGT
CT	CHAMAECYPARIS THYOIDES 'GLAUCA'	WHITE CEDAR	10'-12'HGT
BP	BETULA PAPYRIFERA 'RENAISSANCE REFLECTON'	PAPER BIRCH	8'-10' HGT
CV	CHIONANTHUS VIRGINICUS	FRINGETREE	8'-10' HGT
CP	CHAMAECYPARIS PISIFERA 'FILIFERA'	GREENTHREAD CYPRESS	8'-10' HGT
PO	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HGT
JS	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	WITCHITA BLUE JUNIPER	6'-8' HGT
AL	AMELANCHIER LAEVIS	SERVICE BERRY	6'-8' HGT
VR	VIBURNUM RHYTIDOPHYLLOIDES	LEATHERLEAF VIBURNUM	3'-5' HGT
RH	RHODODENDRON 'NOVA ZEMBLA'	RHODODENDRON	3'-5' HGT
JC	JUNIPERUS CHINENSIS 'HETZII GLAUCA'	BLUE HETZII JUNIPER	3'-5' HGT
LB	LINDERA BENZOIN	SPICEBUSH	3'-5' HGT
AS	AZALEA SCHLIPPENBACHII	ROYAL AZALEA	2'-3' HGT
DL	DIERVILLA LONICERA	BUSH HONEYSUCKLE	18"-24" HGT
HAI	HYDRANGEA ARBORESCENS 'INVINCIBELLE SPIRIT'	INVINCIBELLE SPIRIT HYDRANGEA	18"-24" HGT
RP	RHODODENDRON 'PJM'	PJM RHODODENDRON	18"-24" HGT
HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" HGT
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCHGRASS	18"-24" HGT
MD	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	#5 CONTAINER
EF	EUONYMUS F. 'EMERALD GAITY'	EUONYMUS	#2 CONTAINER
CP	CARAX 'PENNSYLVANICA'	SEDGE	#1 CONTAINER
HAR	HELLEBORUS 'ANNES RED'	LENTEN ROSE	#1 CONTAINER
LS	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SHASTA DAISY	#1 CONTAINER
HPR	HEUCHERELLA 'PINK REVOLUTION'	FOAMY BELLS	#1 CONTAINER
AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 CONTAINER
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	#1 CONTAINER
DF	DRYOPTERIS FILIX-MAS	WOOD FERN	#1 CONTAINER
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	#1 CONTAINER

SEED MIX A MEDOT- PARK MIX SEED METHOD A
SEED MIX B NEW ENGLAND WETLAND PLANTS- WETLAND MIX
SEED MIX C NEW ENGLAND WETLAND PLANTS- CONSERVATION MIX



UPPER LEVEL COURTYARD
SCALE: 1" = 10'

LOWER LEVEL COURTYARD
SCALE: 1" = 10'

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

DANIEL M. DANVERS RLA 4815
LICENSED LANDSCAPE ARCHITECT DANIEL M. DANVERS 4815 STATE OF MAINE
10/07/2020

NOT FOR CONSTRUCTION

REV:	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	06-26-20	SUBMITTED FOR PLANNING BOARD WORKSHOP
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED BY OTHERWISE SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

LANDSCAPE PLAN 2
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

18347LDwg, TAB L2

SHEET 18 OF 24

(3)BN
(8)PV
(3)BN
MULCH LINE
50' BUFFER
SEED MIX C
SEED MIX A
MULCH LINE
SEED MIX C
MULCH LINE
(1)PO
(2)CT
(3)AR
(1)LB
SEED MIX A
(1)LB
(5)RH
(3)LB
(1)CT
SEED MIX A
EXISTING FALLBROOK WOODS
SEED MIX A
SEED MIX A
SEED MIX A
TREE PROTECTION, TYP, SEE DETAIL
SEED MIX C
(1)CT
(190.24')
SEED MIX A
(166.84')
(1)CT
SEED MIX A
SEED MIX A
MATCHLINE
SEE SHEET 19
SEED MIX A
SEED MIX A
SEED MIX A
OHU
OHU
OHU
OHU
MATCHLINE
SEE SHEET 19
GRID
N
GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

FALLBROOK COMMONS

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE | NOTES
AR	ACER RUBRUM 'NORTHWOOD'	NORTHWOOD RED MAPLE	3" CAL
CS	CATALPA SPECIOSA	CATALPA	3" CAL
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL
MA	MAGNOLIA ACUMINATA 'DAY BREAK'	DAYBREAK CUCUMBER MAGNOLIA	3" CAL
MP	MALUS 'PURPLE PRINCE'	PURPLE PRINCE CHERRY	3" CAL
BN	BETULA NIGRA	RIVERBIRCH	10'-12' HGT MIN 3 TRUNKS
PR	PINUS RESINOSA	RED PINE	10'-12' HGT
CT	CHAMAECYPARIS THYOIDES 'GLAUCA'	WHITE CEDAR	10'-12'HGT
BP	BETULA PAPYRIFERA 'RENAISSANCE REFLECTON'	PAPER BIRCH	8'-10' HGT
CV	CHIONANTHUS VIRGINICUS	FRINGETREE	8'-10' HGT
CP	CHAMAECYPARIS PISIFERA 'FILIFERA'	GREENTHREAD CYPRESS	8'-10' HGT
PO	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HGT
JS	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	WITCHITA BLUE JUNIPER	6'-8' HGT
AL	AMELANCHIER LAEVIS	SERVICE BERRY	6'-8' HGT
VR	VIBURNUM RHYTIDOPHYLLOIDES	LEATHERLEAF VIBURNUM	3'-5' HGT
RH	RHODODENDRON 'NOVA ZEMBLA'	RHODODENDRON	3'-5' HGT
JC	JUNIPERUS CHINENSIS 'HETZII GLAUCA'	BLUE HETZII JUNIPER	3'-5' HGT
LB	LINDERA BENZOIN	SPICEBUSH	3'-5' HGT
AS	AZALEA SCHLIPPENBACHII	ROYAL AZALEA	2'-3' HGT
DL	DIERVILLA LONICERA	BUSH HONEYSUCKLE	18"-24" HGT
HAI	HYDRANGEA ARBORESCENS 'INVINCIBELLE SPIRIT'	INVINCIBELLE SPIRIT HYDRANGEA	18"-24" HGT
RP	RHODODENDRON 'PJM'	PJM RHODODENDRON	18"-24" HGT
HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" HGT
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCHGRASS	18"-24" HGT
MD	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	#5 CONTAINER
EF	EUONYMUS F. 'EMERALD GAITY'	EUONYMUS	#2 CONTAINER
CP	CARAX 'PENNSYLVANICA'	SEDGE	#1 CONTAINER
HAR	HELLEBORUS 'ANNES RED'	LENTEN ROSE	#1 CONTAINER
LS	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SHASTA DAISY	#1 CONTAINER
HPR	HEUCHERELLA 'PINK REVOLUTION'	FOAMY BELLS	#1 CONTAINER
AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 CONTAINER
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	#1 CONTAINER
DF	DRYOPTERIS FILIX-MAS	WOOD FERN	#1 CONTAINER
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	#1 CONTAINER

SEED MIX A MEDOT- PARK MIX SEED METHOD A
SEED MIX B NEW ENGLAND WETLAND PLANTS- WETLAND MIX
SEED MIX C NEW ENGLAND WETLAND PLANTS- CONSERVATION MIX

STATE OF MAINE DANIEL L RILEY 3082 REGISTERED PROFESSIONAL ENGINEER 10/07/2020

LICENSED LANDSCAPE ARCHITECT DANIEL M. DANYERS 461 STATE OF MAINE 10/07/2020

DANIEL M. DANYERS RLA 461

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	06-26-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

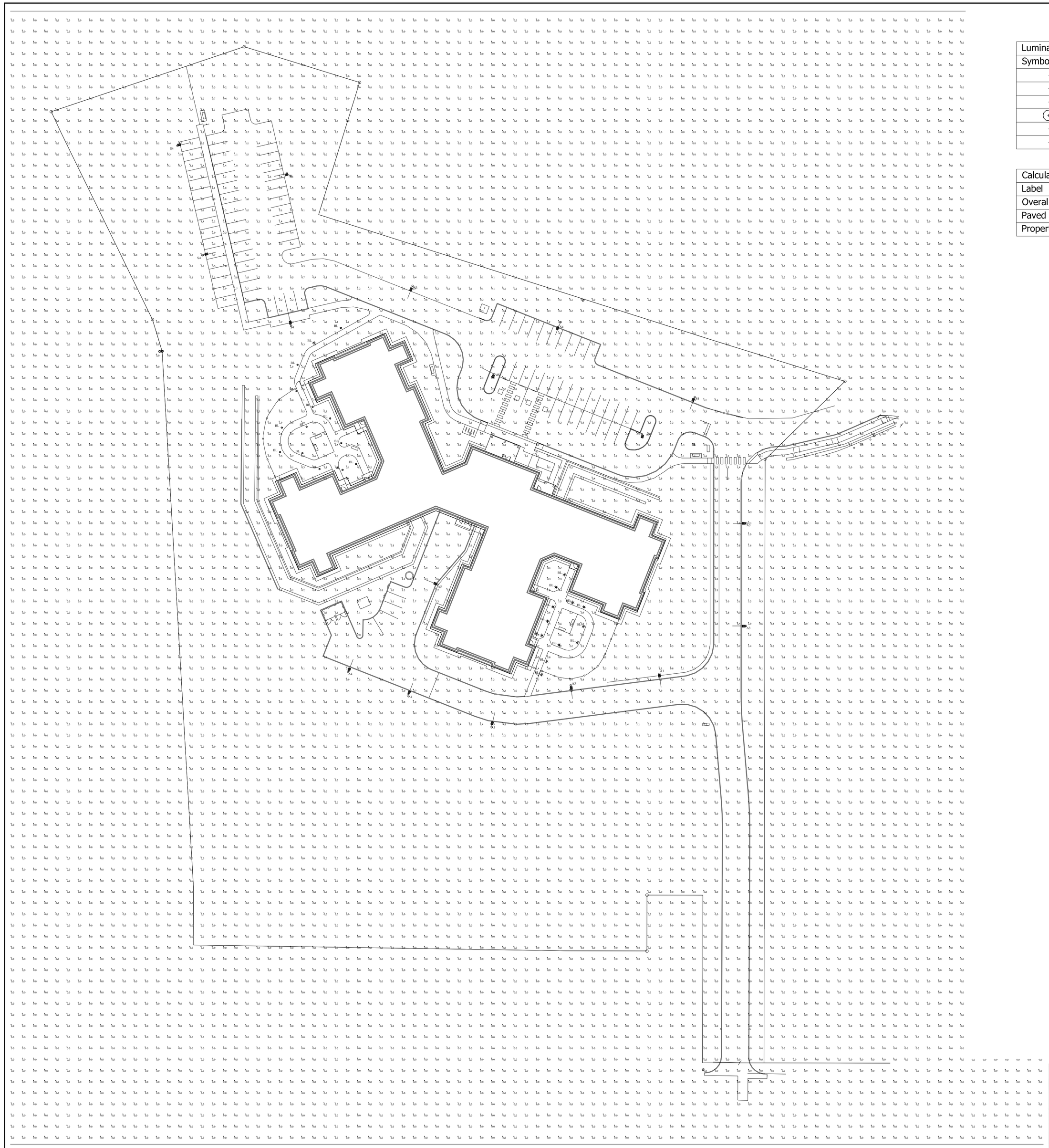
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

LANDSCAPE PLAN 3
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

18347L.dwg, T-ABL3

SHEET 19 OF 24



Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
	5	A3	20' - 0" AFG	0.850	15344	136	VP-S-60L-136-4K7-3
	2	A4	20' - 0" AFG	0.850	14774	136	VP-S-60L-136-4K7-4W
	3	A5	20' - 0" AFG	0.850	15071	136	VP-S-60L-136-4K7-5W
	26	BL	3' - 6" AFG	0.900	873	25	B30-8R-20L4K
	1	S3	20' - 0" AFG	0.850	10544	136	VP-S-60L-136-4K7-3-BC
	6	S4	20' - 0" AFG	0.850	9537	136	VP-S-60L-136-4K7-4W-BC

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Overall Area	Illuminance	Fc	0.16	7.8	0.0	N.A.	N.A.
Paved Area	Illuminance	Fc	2.04	5.8	0.2	10.20	29.00
Property Line	Illuminance	Fc	0.00	0.1	0.0	N.A.	N.A.

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

FALLBROOK HEALTH CENTER
PORTLAND, ME
SITE PHOTOMETRIC PLAN

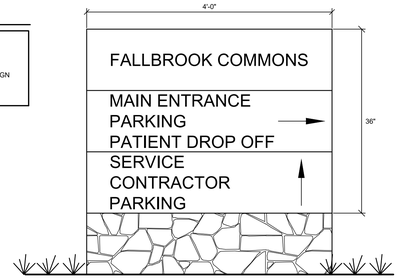
REVISED FROM DRAWING NUMBER(S):	
R1: 10/30/19	R5: 10/15/20
R2: 11/06/20	
R3: 07/13/20	
R4: 10/12/20	

Hubbell Lighting, Inc.
701 MILLENNIUM BLVD.
GREENVILLE, SC 29607

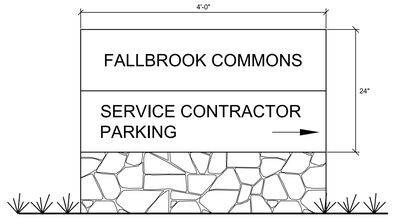
DN BY: DHK	DATE: 07/13/20	CHK BY: N/A	
REV. BY: DHK	DATE: 10/15/20	SCALE: AS NOTED	
QUOTE: N/A	DRAWING / DESIGN NO.: 2025238R5		

SIGN SCHEDULE

S-1	STOP SIGN
S-2	ADA PARKING SIGN
S-3	SERVICE PARKING ONLY SIGN
S-4	YIELD TO REDESTRIAN



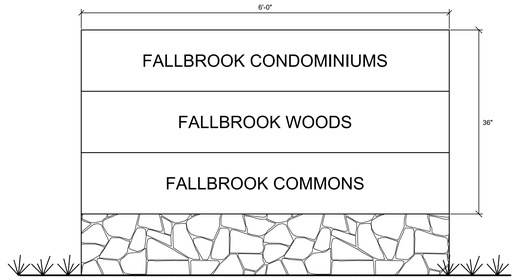
KIOSK SIGN 1
NOT TO SCALE



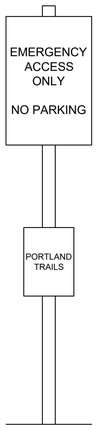
KIOSK SIGN 2
NOT TO SCALE



KIOSK SIGN 3
NOT TO SCALE



KIOSK SIGN AT ENTRANCE
NOT TO SCALE



PEDESTRIAN ENTRANCE
SIGNS AT RAY STREET
NOT TO SCALE

DANIEL L. RILEY PE 9967
STATE OF MAINE
DANIEL L. RILEY
No. 9967
PROFESSIONAL ENGINEER
10/07/2020

DANIEL M. DANVERS RLA 4815
LANDSCAPE ARCHITECT
DANIEL M. DANVERS
4815
STATE OF MAINE
10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	07-09-20	SUBMITTED FOR PLANNING BOARD WORKSHOP
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

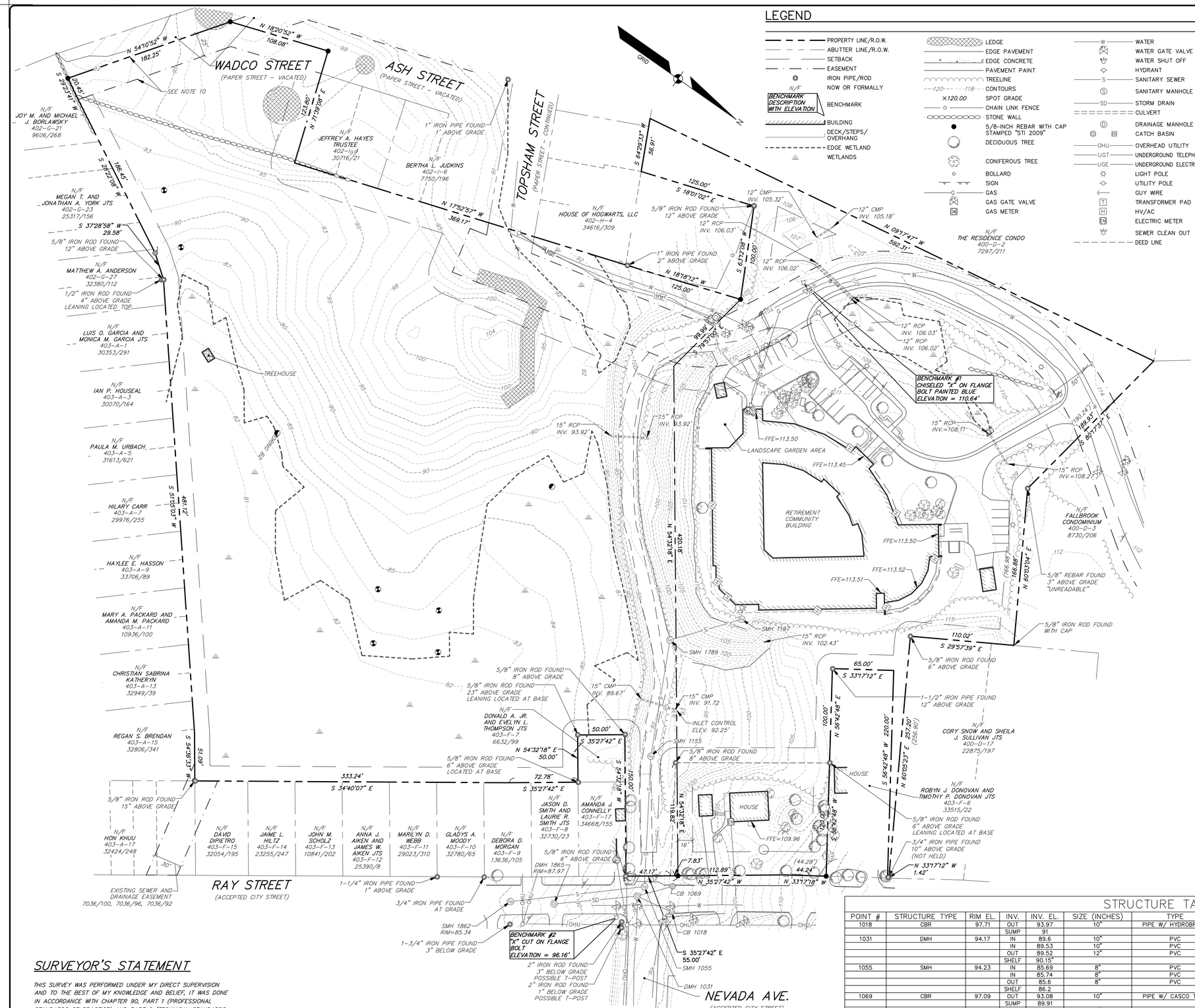
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite E
South Portland, ME 04106
Tel: 207-200-2100

SIGNAGE AND WAYFINDING PLAN
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

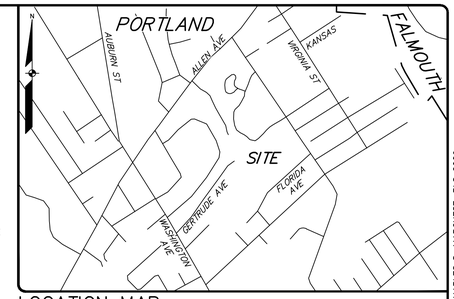
18347 Signage and Wayfinding.dwg, TAB:S

SHEET 7 OF 24



LEGEND

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- SETBACK
- EASEMENT
- IRON PIPE/ROD
- N/F NOW OR FORMALLY
- BENCHMARK DESCRIPTION WITH ELEVATION — BENCHMARK
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE WETLAND
- WETLANDS
- LEDGE
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- TREELINE
- 120 118 CONTOURS
- ×120.00 SPOT GRADE
- CHAIN LINK FENCE
- STONE WALL
- 5/8-INCH REBAR WITH CAP STAMPED "STI 2009"
- DECIDUOUS TREE
- CONIFEROUS TREE
- BOLLARD
- SIGN
- GAS
- GAS GATE VALVE
- GM GAS METER
- W WATER
- WATER GATE VALVE
- WATER SHUT OFF
- HYDRANT
- S SANITARY SEWER
- SANITARY MANHOLE
- SD STORM DRAIN
- CULVERT
- DRAINAGE MANHOLE
- CATCH BASIN
- OHU OVERHEAD UTILITY
- UGT UNDERGROUND TELEPHONE
- UGE UNDERGROUND ELECTRIC
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- T TRANSFORMER PAD
- H HV/AC
- EM ELECTRIC METER
- SEWER CLEAN OUT
- DEED LINE



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF PARCEL ONE IS FALLBROOK PROPERTIES, LLC BY DEED DATED DECEMBER 15, 2009 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 27501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JULY 7, 1989 AND RECORDED AT THE CCRD IN BOOK 8818, PAGE 50.
2. PARCEL ONE IS SHOWN AS LOT F-001 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE. PARCEL TWO IS SHOWN AS LOT F-005 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE.
3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

MINIMUM LOT SIZE:	6,500 SQUARE FEET•
MINIMUM STREET FRONTAGE:	50 FEET•
MINIMUM FRONT YARD:	25 FEET•
MINIMUM SIDE YARD:	16 FEET•
MINIMUM REAR YARD:	25 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET
MAXIMUM LOT COVERAGE:	35%

• SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL ONE IS APPROXIMATELY 12.78 ACRES. TOTAL AREA OF PARCEL TWO IS APPROXIMATELY 19,573 SQUARE FEET OR 0.449 ACRES.
5. BOUNDARY INFORMATION FOR PARCEL ONE IS AS DEPICTED ON PLAN REFERENCE 6A, SEBAGO TECHNICS, INC. HAS NOT PERFORMED AN INDEPENDENT BOUNDARY RETRACEMENT SURVEY. BOUNDARY INFORMATION FOR PARCEL TWO IS BASED UPON AN INDEPENDENT BOUNDARY SURVEY. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. IN MAY OF 2019 AND IN JULY OF 2019.
6. PLAN REFERENCES:
   A. "PLAN OF LAND OF FALLBROOK WOODS ON RAY STREET, PORTLAND, MAINE PREPARED FOR OWNER OF RECORD FALLBROOK, INC., 7 SHADY LANE, FALMOUTH, MAINE" BY LAND USE CONSULTANTS, DATED SEPTEMBER 25, 1992 AND REVISED THROUGH OCTOBER 9, 1992 AND RECORDED AT THE CCRD IN PLAN BOOK 193, PAGE 248.
   B. "CONDOMINIUM PLAT III FOR FALLBROOK, A CONDOMINIUM ON RAY STREET, PORTLAND, MAINE FOR MERREAL CORP. BY OWEN HASKELL, INC. DATED MAY 10, 1990 AND RECORDED AT THE CCRD IN PLAN BOOK 185, PAGE 15.
   C. "PLAN OF WADCO PARK, PROPERTY OF DERRAH AND WESCOTT, WASHINGTON AVE. PORTLAND, MAINE" DATED AUGUST 1905 AND RECORDED AT THE CCRD IN PLAN BOOK 12, PAGE 17.
   D. "THE PINES, PORTLAND MAINE, OWNED BY THE A.H. CHAPMAN LAND CO., PORTLAND, MAINE, SECTION A" BY PERCY H. RICHARDSON, C.E. DATED APRIL 1925.
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NGVD29, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
8. PER STANDARDS ASCE/CI 38-02: SANITARY AND STORM DRAINAGE LINES SHOWN HEREON ARE QUALITY LEVEL C; ELECTRIC, COMMUNICATION, AND WATER LINES SHOWN HEREON ARE QUALITY LEVEL B, AS DELINEATED BY DIGSMART OF MAINE IN MAY 2019; GAS LINES SHOWN HEREON ARE QUALITY LEVEL D BASED UPON FOUND ABOVE GROUND EVIDENCE. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
9. THE LOCUS PROPERTIES AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230051 0002 C, HAVING AN EFFECTIVE DATE OF DECEMBER 8, 1998. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
10. PER THE CITY OF PORTLAND, MAINE, ASH STREET AND WADCO STREET HAVE BEEN VACATED. THIS REVERTS THE PROPERTY LINE TO THE CENTERLINE OF THE PAPER STREETS (23 M.R.S.A. 3027). THERE MAY STILL BE RIGHTS ASSOCIATED WITH THE PAPER STREET FOR THE LOTS AS DEPICTED IN PLAN REFERENCE 6C.
11. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROPOSED DEVELOPMENT AREAS WERE LOCATED USING GLOBAL POSITIONING SYSTEMS (GPS) TECHNOLOGY CAPABLE OF DECIMETER ACCURACY.

   A VERNAL POOL SURVEY WAS PERFORMED ON MAY 6, 2019 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS SURVEY CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN CHAPTER 335, SECTION 9, OF THE NATURAL RESOURCE PROTECTION ACT, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MARCHESE, PLS 2009 06-04-2020

STRUCTURE TABLE

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE (INCHES)	TYPE	LOCATION (N=12)	COMMENTS
1018	CBR	97.71	OUT	93.97	10"	PIPE W/ HYDROBRAKE	7	PVC PIPE MEASURED TOP WATER
			SUMP	91				
1031	DMH	94.17	IN	89.6	10"	PVC	11	
			IN	89.53	10"	PVC	1	
			OUT	89.52	12"	PVC	6	
			SHELF	90.15'				
1055	SMH	94.23	IN	85.69	8"	PVC	9	
			IN	85.74	8"	PVC	1	
			OUT	85.6	8"	PVC	5	
			SHELF	86.2				
1069	CBR	97.09	OUT	93.08	10"	PIPE W/ CASCO TRAP	5	HOOD TRAP INSTALLED MEASURED TOP OF WATER
			SUMP	89.91				APPROX 1 FOOT SILT ON BOTTOM
1155	SMH	94.53	IN	86.47	8"	PVC	10	
			OUT	86.42	8"	PVC	3	
			SHELF	86.94				
1197	SMH	111.69	IN	103.67	8"	PVC	9	WITH DOWNSPOUT
			OUT	93.86	8"	PVC	5	
			SHELF	94.9				
1789	SMH	94.72	IN	87.24	8"	PVC	11	
			OUT	87.12	8"	PVC	3	
			SHELF	87.81				

CHARLES D. MARCHESE, PLS 2009

STATE OF MAINE — CHARLES D. MARCHESE — 10099 — REGISTERED PROFESSIONAL LAND SURVEYOR

DRAWN	CHECKED
AJS/CDM	TSL/CDM

REV:	BY:	DATE:	STATUS:
A	CDM	6-04-20	ISSUED FOR CITY REVIEW

ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC. — ALL RIGHTS RESERVED. WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC.

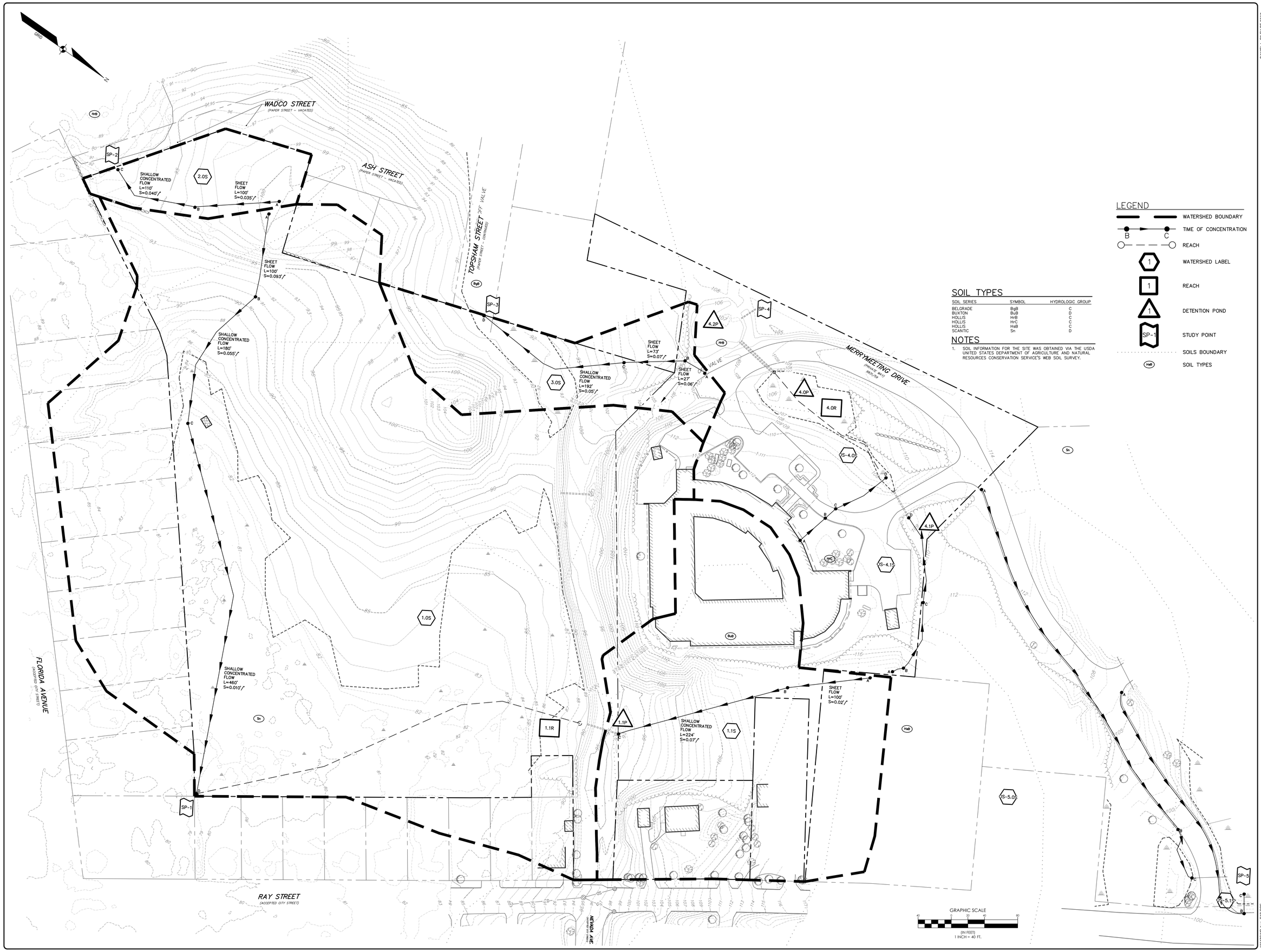
SEBAGO TECHNICS
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100
WWW.SEBAGOTECHNICS.COM

PROPOSED DIVISION PLAN
OF:
FALLBROOK COMMONS
MERRYMEETING DRIVE
PORTLAND, MAINE
RECORD OWNER:
FALLBROOK PROPERTIES, LLC
418 RAY STREET
PORTLAND, MAINE 04103
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC
217 COMMERCIAL ST. SUITE 201
PORTLAND, MAINE 04112

PROJECT NO.	SCALE
18347	1" = 50'

SHEET 1 OF 1

18347DIV.dwg, TAB:EC1



SOIL TYPES

SOIL SERIES	SYMBOL	HYDROLOGIC GROUP
BELGRADE	BgB	C
BUXTON	BuB	D
HOLLIS	HrB	D
HOLLIS	HrC	D
HOLLIS	HsB	D
SCANTIC	Sn	D

NOTES

1. SOIL INFORMATION FOR THE SITE WAS OBTAINED VIA THE USDA UNITED STATES DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE'S WEB SOIL SURVEY.

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (B → C)
- REACH (○ – – – ○)
- WATERSHED LABEL (1)
- REACH (1)
- DETENTION POND (1)
- STUDY POINT (SP-1)
- SOILS BOUNDARY
- SOIL TYPES (HeB)

DANIEL L. RILEY PE 9967
STATE OF MAINE
DANIEL L. RILEY
10/07/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	06-26-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, MODIFICATIONS OR REVISIONS TO THIS PLAN WITHOUT THE EXPRESS WRITTEN CONSENT OF SEBAGO TECHNICS, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite A-4
South Portland, ME 04106
Tel: 207-200-2100

PRE-DEVELOPMENT STORMWATER PLAN
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

18347SWP.dwg, TAB:PRE

SHEET 24 OF 24

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 18347 Fallbrook Commons **Date:** 10/7/2020

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10.0S	197,762	8,676	226	167,582	21,278	21,504	176,258	NO	0	0	0	
10.1S	114,524	24,914	0	85,730	3,880	3,880	110,644	NO	0	0	0	
11.0S	83,879	0	55,667	0	28,212	83,879	0	YES	55,667	28,212	83,879	GW-1
11.1S	23,407	0	0	0	23,407	23,407	0	YES	0	23,407	23,407	GW-1
11.2S	27,173	7,890	700	9,821	8,762	9,462	17,711	YES	8,590	18,583	27,173	GW-1
12.0S	57,628	0	23,776	0	33,852	57,628	0	YES	23,776	33,852	57,628	UDSF-1
13.0S	17,204	0	17,204	0	0	17,204	0	YES	17,204	0	17,204	DL
13.1S	16,974	0	16,974	0	0	16,974	0	YES	16,974	0	16,974	DL
20.0S	10,684	0	0	10,684	0	0	10,684	NO	0	0	0	
30.0S	37,005	0	0	24,501	12,504	12,504	24,501	NO	0	0	0	
OS-40S	53,510	17,041	3,120	33,349	0	3,120	50,390	NO	0	0	0	
OS-41S	39,122	10,996	2,045	26,081	0	2,045	37,077	NO	0	0	0	
OS-50S	107,926	29,442	771	77,713	0	771	107,155	NO	0	0	0	
OS-51S	9,601	4,072	1,485	4,044	0	1,485	8,116	NO	0	0	0	
TOTAL (S.F.)	**796,399**	**103,031**	**121,968**	**439,505**	**131,895**	**253,863**	**542,536**		**122,211**	**104,054**	**226,265**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**121,968**	**TOTAL DEVELOPED AREA (S.F.)**	**253,863**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**122,211**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**226,265**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**100.20%**	**% OF AREA RECEIVING TREATMENT**	**89.13%**

SOIL TYPES

SOIL SERIES	SYMBOL	HYDROLOGIC GROUP
BELGRADE	BgB	C
BUXTON	BuB	C
HOLLIS	HrB	D
HOLLIS	HrC	D
HOLLIS	HsB	C
SCANTIC	Sn	C

NOTES

1. SOIL INFORMATION FOR THE SITE WAS OBTAINED VIA THE USDA UNITED STATES DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE'S WEB SOIL SURVEY.

LEGEND

WATERSHED BOUNDARY
TIME OF CONCENTRATION
REACH
WATERSHED LABEL
REACH
DETENTION POND
STUDY POINT
SOILS BOUNDARY
SOIL TYPES

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

DANIEL L. RILEY PE 9967
STATE OF MAINE
DANIEL L. RILEY
10/07/2020

NOT FOR CONSTRUCTION

REV	BY	DATE	STATUS
E	DMD	10-07-20	SUBMITTED TO CITY FOR PUBLIC HEARING
D	DMD	06-26-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS PLAN SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC. UNLESS AUTHORIZED OTHERWISE.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite E
South Portland, ME 04106
Tel: 207-200-2100

POST-DEVELOPMENT STORMWATER PLAN
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

SHEET 25 OF 24

18347SWP.dwg, TAB:POST



Department Legend

- CIRCULATION
- COMMON AREA
- RESIDENT ROOM
- RESIDENT SERVICES
- STAFF/UTILITIES
- UTILITIES

GAWRON TURGEON ARCHITECTS, P.C.
207-883-6307 | WWW.GAWRONTURGEON.COM

Sandy River COMPANY

NORTH COUNTRY NC Where YOU come first!

FALLBROOK COMMONS
LOWER LEVEL PLAN



FALLBROOK COMMONS
MAIN FLOOR PLAN

GAWRON TURGEON ARCHITECTS, P.C.
207-883-6307 | WWW.GAWRONTURGEON.COM

Sandy River COMPANY

NORTH COUNTRY NC Where YOU come first!

10/29/2019



GAWRON TURGEON ARCHITECTS, PC
207-883-6307 | WWW.GAWRONTURGEON.COM

Sandy River COMPANY

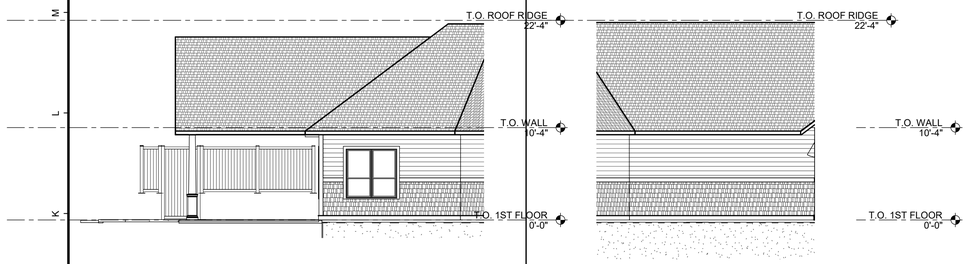
NORTH COUNTRY NC Where YOU come first!

FALLBROOK COMMONS RENDERING



N1 EXTERIOR ELEVATION 1

1/8" = 1'-0"



J1 EXTERIOR ELEVATION 2

1/8" = 1'-0"

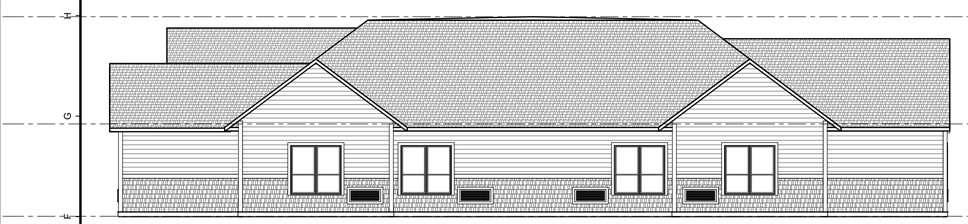
J5 EXTERIOR ELEVATION 3

1/8" = 1'-0"



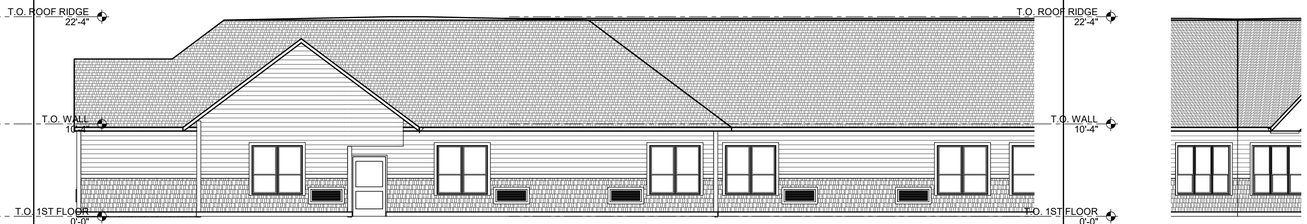
J9 EXTERIOR ELEVATION 4

1/8" = 1'-0"



E1 EXTERIOR ELEVATION 5

1/8" = 1'-0"

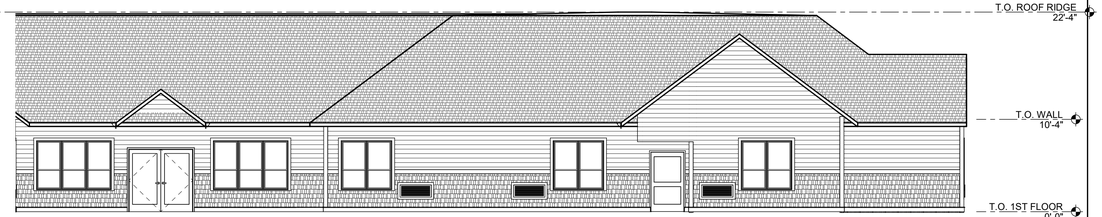


E9 EXTERIOR ELEVATION 6

1/8" = 1'-0"

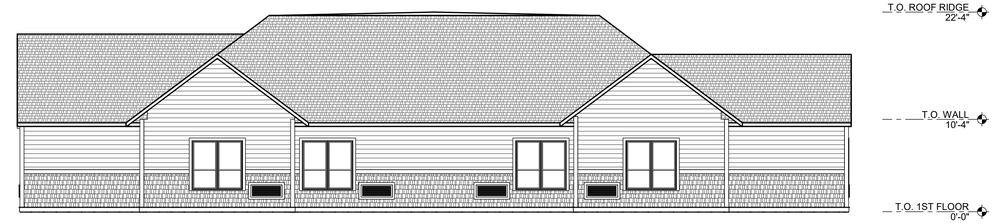
E18 EXTERIOR ELEV. 7

1/8" = 1'-0"



A1 EXTERIOR ELEVATION 8

1/8" = 1'-0"



A11 EXTERIOR ELEVATION 9

1/8" = 1'-0"

5/21/2020 9:30:00 AM MRP

29 BLACK POINT ROAD
SCARBOROUGH, MAINE 04074
207-883-6307
WWW.GAWRONTURGEON.COM

GAWRON TURGEON ARCHITECTS, P.C.

FALLBROOK COMMONS

TBD Ray Street
Portland, Maine 04103

REVISIONS

#	DATE	DESCRIPTION

DATE:	05.21.2020
PROJECT #	080318
DRAWN BY:	MRP
CHECKED BY:	RLD
DRAWING SCALE	1/8" = 1'-0"

SHEET TITLE

SCHEMATIC BUILDING ELEVATIONS

A401

© COPYRIGHT 1985-2017
REPRODUCTION OR REUSE OF THIS DOCUMENT WITHOUT WRITTEN PERMISSION OF GAWRON ARCHITECTS IS PROHIBITED



N1 EXTERIOR ELEVATION 10

1/8" = 1'-0"



N14 EXTERIOR ELEVATION 11

1/8" = 1'-0"



J1 EXTERIOR ELEVATION 12

1/8" = 1'-0"



J11 EXTERIOR ELEVATION 13

1/8" = 1'-0"



E1 EXTERIOR ELEVATION 14

1/8" = 1'-0"



E11 EXTERIOR ELEVATION 15

1/8" = 1'-0"



A1 EXTERIOR ELEVATION 16

1/8" = 1'-0"

5/21/2020 9:30:30 AM MRP

29 BLACK POINT ROAD
SCARBOROUGH, MAINE 04074
207-883-6307
WWW.GAWRONTURGEON.COM

GAWRON TURGEON ARCHITECTS, P.C.

FALLBROOK COMMONS

TBD Ray Street
Portland, Maine 04103

REVISIONS

#	DATE	DESCRIPTION

DATE:	05.21.2020
PROJECT #	080318
DRAWN BY:	MRP
CHECKED BY:	RLD
DRAWING SCALE	1/8" = 1'-0"

SHEET TITLE

SCHEMATIC BUILDING ELEVATIONS

A402

© COPYRIGHT 1985-2017
REPRODUCTION OR REUSE OF THIS DOCUMENT WITHOUT WRITTEN PERMISSION OF GAWRON ARCHITECTS IS PROHIBITED

OVERALL SITE PLAN

FOR:
FALLBROOK COMMONS

OF:
FALLBROOK DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

FOR:
RAY STREET
PORTLAND, MAINE

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	05-15-20
SCALE	1" = 40'
PROJECT	18347

SHEET 3 OF 23

SEBAGO TECHNICS
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100
WWW.SEBAGOTECHNICS.COM

REV.:	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN AUTHORIZATION OF SEBAGO TECHNICS, INC. OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

NOT FOR CONSTRUCTION

DANIEL L. RILEY PE 6696

DANIEL M. DANYERS RLA 4815

183475.dwg, TAB:S

GENERAL NOTES

1. THE PROPERTY SHOWN HEREON IS FALLBROOK PROPERTIES, LLC. DEED DATED DECEMBER 5, 1997 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 12501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JUNE 30, 1994 AND RECORDED IN BOOK 11242, PAGE 253 CCRD.
2. PARCEL ONE IS SHOWN AS LOT 6 ON THE CITY OF PORTLAND TAX MAP 402 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE. PARCEL TWO IS SHOWN AS LOT 7 ON THE CITY OF PORTLAND TAX MAP 402 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE
3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

	REQUIRED	FALLBROOK COMMONS
MINIMUM LOT SIZE	10,000 SF	43 ACRES
MINIMUM STREET FRONTAGE	50 FEET	1,320 FEET
MINIMUM FRONT YARD	25 FEET	29 FEET
MINIMUM SIDE YARD	8 FEET	24 FEET
MINIMUM REAR YARD	25 FEET	227 FEET
MAXIMUM BUILDING HEIGHT	35 FEET	34 FEET
MAXIMUM COVERAGE	30%	13%

- SEE ORDINANCE FOR MORE PARKING INFORMATION.

4. TOTAL AREA (FALLBROOK COMMONS LOT) APPROXIMATELY 382,771 SQUARE FEET OR 8.79 ACRES.
TOTAL AREA (FALLBROOK WOODS LOT) APPROXIMATELY 2,187.26 SQUARE FEET OR 4.99 ACRES.
5. ORDINANCE SEE 14-332.(b) LOW-RISE (ATTACHED CANE) INTERMEDIATE CANE 7 (OUTSIDE), (ON LU)
ORDINANCE SEE 14-332.(c) LOW-RISE (ATTACHED CANE) INTERMEDIATE CANE 7 (OUTSIDE), (ON LU)
EACH EMPLOYEE (NORMALLY PRESENT DURING ONE (1) WEEKDAY MORNING SHIFT
OFF STREET PARKING:

	EXISTING ORDINANCE	PROPOSED
SMALLER THAN 2 CHAMBER	1 SPACE	1 SPACE
LARGER THAN 2 CHAMBER	2 SPACES	2 SPACES
TOTAL	73 SPACES	73 SPACES

6. A WETLAND DELINEATION WAS PERFORMED ON THE PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THE DELINEATION CONFORMS TO THE METHODOLOGY SET FORTH IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT AUTHORIZED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROJECT DEVELOPMENT AREA WERE LOCATED BY SEBAGO TECHNICS, INC. PERSONNEL UTILIZING SUBMETER GPS EQUIPMENT (TRIMBLE GEO XH 2008 SERIES). THE WETLAND BOUNDARIES WERE SURVEYED BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THE SURVEY CONFORMS TO BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THE SURVEY CONFORMS TO THE STANDARDS SPECIFIED IN CHAPTER 10 OF THE MAINE DEP'S RULES.
7. SEE ORDINANCE FOR ADDITIONAL REQUIREMENTS.
8. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE COMPLETION OF THE WORK. CONTRACTOR SHALL TAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
9. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
10. PROVIDE ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REGULATIONS. LAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES OR OTHERWISE ARISING FROM WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
12. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
13. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING UTILITIES AND SERVICES FROM DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
14. RTE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
15. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OCTOBER 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE EXCAVATOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES
16. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS
17. ALL EXPANSION JOINTS SHALL BE CAULKED PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT
18. NO HOSE BIBS OR OTHER STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS OF WAY.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DEFECTS AND DAMAGES OCCURRING WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, UNLESS OTHERWISE NOTED OR SUPERSEDED ON THESE DRAWINGS
21. WHERE THE TERM "APPROVED EQUAL" OR "OTHER APPROVED EQUAL" OCCURS, IT SHALL BE UNDERSTOOD THAT ONLY QUALIFYING ITEMS ARE LISTED IN THESE NOTES. THE ENGINEER SHALL BE FURNISHED SUCH INFORMATION AS HE MAY REQUIRE TO RULING AND JUDGEMENT OF SEBAGO TECHNICS, INC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION AND USE OF ALL TRADES.

LOCATION MAP

NTS



IMPACT SCHEDULE

WETLAND IMPACT A	1,000 SF
WETLAND IMPACT B	4,259 SF
WETLAND IMPACT C	23 SF
WETLAND IMPACT D	4,059 SF
WETLAND IMPACT E	221 SF
TOTAL	9,561 SF
TREE CLEARING	231,912 SF

WETLAND IMPACT



LOCATION MAP N.T.S.

PROGRESS PRINT

NOT FOR CONSTRUCTION

DANIEL M. DANVERS RLA #815 DANIEL L. RILEY PE #8696

REV.:	BY:	DATE:	STATUS:
A	DMD	11-01-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, REVISIONS OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE PLAN
OF:
FALLBROOK NURSING CARE
MERRYMEETING DRIVE
PORTLAND, MAINE
FOR:
SANDY RIVER COMPANY
217 COMMERCIAL ST., SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	BJB
DATE	11/01/19
SCALE	1" = 40'
PROJECT	18347

SHEET 3 OF 16