

1. Legal Ad

Documents:

[PB LEGAL AD 2-13-18.PDF](#)

2. Agenda

Documents:

[PB AGENDA 2-13-18.PDF](#)

3. 630 Ocean Avenue

3.I. Report And Attachments

Documents:

[OCEAN AVE. - 630 \(REPORT\).PDF](#)
[OCEAN AVE. - 630 \(REPORT ATTACHMENTS\).PDF](#)
[OCEAN AVE. - 630 \(APPLICANTS SUBMITTAL\).PDF](#)
[OCEAN AVE. - 630 \(PLANS\).PDF](#)

4. Division 30, Affordable Housing

4.I. Report And Attachments

Documents:

[TEXT AMENDMENTS TO DIVISION 30. \(REPORT AND ATTACHMENTS\).PDF](#)

5. B-1 And B-1b Neighborhood Business Zone

5.I. Report And Attachments

Documents:

[B-1B TEXT AMENDMENT PB REPORT \(REPORT AND ATTACHMENT 1\).PDF](#)
[PB REPORT _23 OCEAN \(ATTACHMENT 2\).PDF](#)
[PB REPORT _502 STEVENS AVE \(ATTACHMENT 3\).PDF](#)

6. 56 Parris Street

6.I. Report And Attachments

Documents:

[PARRIS ST. - 56 \(MEMO\).PDF](#)
[PARRIS ST. - 56 \(REPORT ATTACHMENTS\).PDF](#)
[PARRIS ST. - 56 \(APPLICANTS SUBMITTAL\).PDF](#)
[PARRIS ST. - 56 \(PLANS\).PDF](#)

**LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD
MEETING AGENDA**

The Portland Planning Board will hold a meeting on Tuesday, February 13, 2018, Council Chambers, 2nd Floor, City Hall, 389 Congress Street.

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

Workshop – 4:30 p.m.

- i. Level III Site Plan and Conditional Use; The Cedars; 630 Ocean Avenue; JHA Assisted Living, Inc., applicant. (4:30 –5:45 p.m. estimated time) The Portland Planning Board will hold a workshop to consider the expansion of The Cedars, which is an institutional long-term care facility. The expansion will include an assisted living and long-term care facility with a building footprint of 15,108 sq. ft. and total building area of 45,325 sq. ft. Reconfiguring on-site parking and creating an additional 13 new spaces. The site is in both the R-3 and R-5 zone and is subject to review under the R-3 and R-5 conditional use standards for an institutional expansion, Portland’s site plan ordinance and the City’s delegated review under the Site Location of Development Act.
- ii. Text amendments to Division 30. Affordable Housing (Section 14-484-14-487), City of Portland, Applicant (5:45-6:30 p.m. estimated time) The Planning Board will hold a workshop on proposed text amendments to Division 30 Affordable Housing Division of the Land Use Code. The text amendments include (a) recommendations from the Housing Committee to require payment to the Housing Trust in the case of fractional units and make administrative changes to the ordinance; (b) proposals from the Mayor to increase the inclusionary requirement from 10% to 20% and lower the maximum income levels for inclusionary units from workforce levels to low-income levels; and (c) elimination of the sunset clause in the ordinance.

Public Hearing – 7:00 p.m.

- i. Proposed Amendments to Division 9, B-1 and B-1b Neighborhood Business Zones, City of Portland, Applicant (7:00 – 7:45 p.m. estimated time) The Portland Planning Board will hold a public hearing on proposed text amendments to Division 9, B-1 and B-1b Neighborhood Business Zones, intended to promote mixed-use developments in compliance with state and federal regulations for fair housing. The proposed amendments explicitly permit live/work units on the ground floor, allow residential units on the ground floor when set back a minimum of 25 feet from the principal street facing façade, and establish a new fixed density standard for mixed-use projects.

Evening Workshop (immediately following the public hearing)

- i. Level III Site Plan and Subdivision; 23 Unit Condominium; 56 Parris Street; Horton, LLC., Applicant. (7:45 p.m. estimated time) The Portland Planning Board will hold an evening workshop to consider a proposal for the construction of a 14,132 sq. ft., 23 unit condominium. Parking for 23 vehicles and 23 bicycles are also proposed on the site. The property is located in the B-2b zone and is subject to review under Portland’s subdivision and site plan standards.

SEAN DUNDON, CHAIR – PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE

PLANNING BOARD



Sean Dundon, Chair
Brandon Mazer, Vice Chair
Elizabeth Boepple
David Eaton
Carol Morrisette
Maggie Stanley
Lisa Whited

AGENDA

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PUBLIC HEARING – 7:00 p.m.

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATIONS AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETINGS HELD ON JANUARY 23, 2018:

Workshop: Dundon, Mazer, Boepple, Eaton, Stanley and Whited present; Morrisette absent.

Public Hearing: All members were present.

4. REPORT OF DECISIONS AT THE MEETINGS HELD ON JANUARY 23, 2018:

- i. Level III Site Plan, Conditional Use and Site Location of Development Re-approval; 400 West Commercial Street; New Yard, LLC - Canal Landing, LLC., Applicant. Mazer moved and Morrisette seconded the motion to waive requirement for granite curbing. Vote: 7-0. Mazer moved and Morrisette seconded the motion to waive requirement for a sidewalk along the street frontage. Vote: 7-0. Mazer moved and Morrisette seconded the motion to waive requirement for maximum driveway width from 30 to 40 feet. Vote: 7-0. Mazer moved and Morrisette seconded the motion to waive the stormwater flooding requirement to allow direct discharge into the Fore River. Vote: 7-0. Mazer moved and Morrisette seconded the motion to waive requirement internal parking lot landscaping. Vote: 7-0. Mazer moved and Morrisette seconded the motion to waive standard of 2 curb cuts to allow 3 curb cuts on the site. Vote: 7-0. Mazer moved and Morrisette seconded the motion to approve the conditional use application for marine retail and wholesale sales. Vote: 7-0. Mazer moved and Morrisette seconded the motion to approve the site plan application with eleven (11) conditions of approval. Vote: 7-0.
- ii. Level III Site Plan; Lyseth/Lyman-Moore Campus; 171 Auburn Street; Portland Department of Parks, Recreation and Facilities, Applicant. Mazer moved and Morrisette seconded the motion to approve the site plan application with five (5) conditions of approval. Vote: 7-0.
- iii. Level III Site Plan; St. Lawrence Arts Center; 66 Congress Street; Friends of the St. Lawrence Church, Applicant. Mazer moved and Morrisette seconded a motion to waive the driveway separation requirement to allow the Munjoy Street curb cut to be 20 feet from the adjacent driveway. Vote: 7-0. Mazer moved and Morrisette seconded a motion to approve the Traffic Movement Permit. Vote: 7-0. Mazer moved and Morrisette seconded a motion to approve the site plan application with seven (7) conditions of approval. Vote: 7-0.

5. NEW BUSINESS

- i. Proposed Amendments to Division 9, B-1 and B-1b Neighborhood Business Zones, City of Portland, Applicant (7:00 – 7:45 p.m. estimated time) The Portland Planning Board will hold a public hearing on proposed text amendments to Division 9, B-1 and B-1b Neighborhood Business Zones, intended to promote mixed-use developments in compliance with state and federal regulations for fair housing. The proposed amendments explicitly permit live/work units on the ground floor, allow residential units on the ground floor when set back a minimum of 25 feet from the principal street facing façade, and establish a new fixed density standard for mixed-use projects.

6. EVENING WORKSHOP (immediately following the public hearing)

- i. Level III Site Plan and Subdivision; 23 Unit Condominium; 56 Parris Street; Horton, LLC., Applicant. (7:45 p.m. estimated time) The Portland Planning Board will hold an evening workshop to consider a proposal for the construction of a 14,132 sq. ft., 23 unit condominium. Parking for 23 vehicles and 23 bicycles are also proposed on the site. The property is located in the B-2b zone and is subject to review under Portland's subdivision and site plan standards.



Memorandum

Planning and Urban Development Department

Planning Division

To: Sean Dundon, Chair, and Members of the Portland Planning Board

From: Matthew Grooms, Planner

Date: February 8, 2018

Re: The Cedars Expansion

Project #: 2017-278, 2017-298 CBL: 170-A-020

Meeting Date: February 13, 2018

I. INTRODUCTION

JHA Assisted Living, INC and Cedars Nursing Care, INC are requesting a Level III site plan, conditional use, and site location of development amendment review for a proposed expansion of their campus located at 630 Ocean Avenue. The proposed development scheme, which includes demolition of an existing single-family building, reconfiguration of existing parking and construction of a new three-story building, is derived from recent trends in the long-term care model where residents are provided with private rooms as opposed to semi-private rooms. The proposed expansion represents a minimal increase in the number of residents, which are accommodated through additional on-site parking.



Figure 1: The Cedars Campus with view of surrounding context. The area outlined in red represents the proposed expansion area.

This development is being referred to the Planning Board for compliance with site plan and conditional use standards of the land use code. The applicant has submitted preliminary plans for review prior to submitting a final site plan. A total of 280 notices were sent to property owners within 500 feet of the site and a legal ad ran on February 5, and 6 2018.

Applicant: JHA Assisted Living, INC and Cedars Nursing Care, INC
Consultants: Jan Wiegman, Wright-Pierce; Alex Toye, Action Pact Design

II. REQUIRED REVIEWS

Review	Applicable Standards
Site Plan	Section 14-526
Conditional Use	Section 14-474
Site Location of Development	Section 14-Technical Manual

III. PROJECT DATA

Existing Zoning	R-3 and R-5 Residential
Existing Use	Institutional Long-Term Care
Proposed Use	Institutional Long-Term Care
Parcel Size	460,350 SF

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	81,114 SF	96,956 SF	15,842 SF
Building Floor Area	N/A	45,000 SF	45,000 SF
Impervious Surface Area	4.98 acres	5.37 acres	0.39 acres
Parking Spaces (on site)	170	183	13
Bicycle Parking Spaces	0	4	4
Estimated Cost of Project	\$16,000,000		

IV. EXISTING CONDITIONS

The applicant proposes to develop on a 10.5 acres site located on the west side of Ocean Avenue between Rainbow Mall Road to the north Washington Avenue to the south. At present, the site is occupied by the Cedars long-term care facility campus, which consists of three connected buildings, two two-story buildings identified as “The Osher Inn” and “The Hoffman Center”, as well as a larger three-story building identified as “The Atrium”, along with off-street parking for 170 vehicles distributed across seven (7) parking areas, and a series of individual unit parking garages. The campus is organized around a central courtyard, with the three existing buildings situated around the perimeter of that courtyard. An internal driveway system provides multiple opportunities for resident drop-off and pick-up, and internal pedestrian pathways are provided alongside the internal driveway. This site features primary access off of Ocean Avenue with secondary access off of Byfield Road. A former single-family structure is located at the northeast corner of the site and is currently being utilized as office space. This building fronts Ocean Avenue and is accessible via a second-curb cut located just north of the primary facility entrance.



Figure 2: View of the existing entrance with single-family structure in the background.



Figure 3: Single-family structure to be demolished under proposed expansion.

The development site itself is located along a ridge, and generally slopes from higher areas in the northern portions of the site towards the south, with a portion of the property conveying surface flows towards the west. The far western portion of the site discharges to Fall Brook. This property also contains significant bedrock, and with prior projects, blasting work has been required.

BACKGROUND

In 1988, the Planning Board approved a 99-bed long term care facility and a 50-bed intermediate care facility for this site. The property totaled 5.93 acres at that time. The long-term care facility was built with 102 beds (23,200 sq. ft. footprint/65,648 sq ft floor area) and is now known as Cedars Care Center and is the location of the Rehabilitation Center. The intermediate care facility was deferred. In 1997 Cedars acquired an additional 4 acres and received approval to add a 61-bed intermediate care facility (95,332 sq. ft. total floor area) now known as the Atrium.

In 2005 approval was given for a 2-story addition for 30 assisted living units (12,371 sq. ft. footprint/ 26,119 sq. ft. floor area), now almost complete and known as the Cedars Assisted Living Facility. At that time the site was reorganized into a condominium form of ownership so that each facility is a condominium unit and the balance of the site is a “common element” to be used in common by all three units.

The first two Cedar projects (Cedars Care Center and Atrium) impacted wetlands and a Tier II wetlands permit was issued by DEP/ACE subject to on-site provision of three mitigation parcels identified as Parcels A, B and C. The assisted living development approved in 2005 was constructed over part of Mitigation Parcel B and an underground storm water detention/treatment system was incorporated into the project on the side nearest Ocean Avenue. The most recent development (the assisted living facility) triggered a Tier III review and was permitted by the MDEP.

In 2008, The Planning Board considered a conditional use application submitted by The Cedars to renovate the rehabilitation center located on the first floor on the westerly side of the Cedars Care Center.

The above listed background was identified and described in a prior Planning Board report written for the conditional use application heard by the Planning Board back in 2008 and can reviewed in greater detail under *Attachment 8*.

V. PROPOSED DEVELOPMENT

The applicant proposes to demolish the single-family structure at the northeast corner of the site, as well as a portion of the parking area located north of the internal driveway. The existing curb cut which serves the single-family structure will be closed and the existing sidewalk along Ocean Avenue will be reconstructed to be continuous between the principal site entrance and the intersection of Ocean Avenue and Rainbow Mall Road. In place of the single-family structure, the applicant is proposing to construct a new three-story institutional building with approximately 45,000 square feet of floor area.

The project is largely driven by the evolution of the care model with a shift towards the household model of care delivery and private rooms for residents. The existing long-term care facility at the Hoffman Center has semi-private rooms and will be converted into three households with private rooms. The 40 displaced beds will be moved to the proposed new facility and two households will be created, occupying two floors of the building. A new 20 bed assisted living memory care household will occupy the first floor of the new facility as well.

The parking area located to the north of the internal driveway is being reconfigured to incorporate additional parking spaces in accordance with the city’s off-street parking standards. This parking area will extend further west by approximately 90 feet and will involve some tree clearing regrading. An additional 14 parking spaces

are being constructed further west within the applicant's property, and includes a space for motorcycle parking. Altogether, the projects results in a net gain of 13 parking spaces from what currently exists.

Other site improvements include landscaping, consisting of trees, shrubs, ornamental grasses and lawn areas, proposed around the perimeter of the newly proposed building and along the property's Ocean Avenue frontage. The existing drainage system will largely remain in place and will feature minimal upgrades, including revisions to the existing detention basins, new underdrained soil filters and new storm drain structures to accommodate the site revisions and new facility.

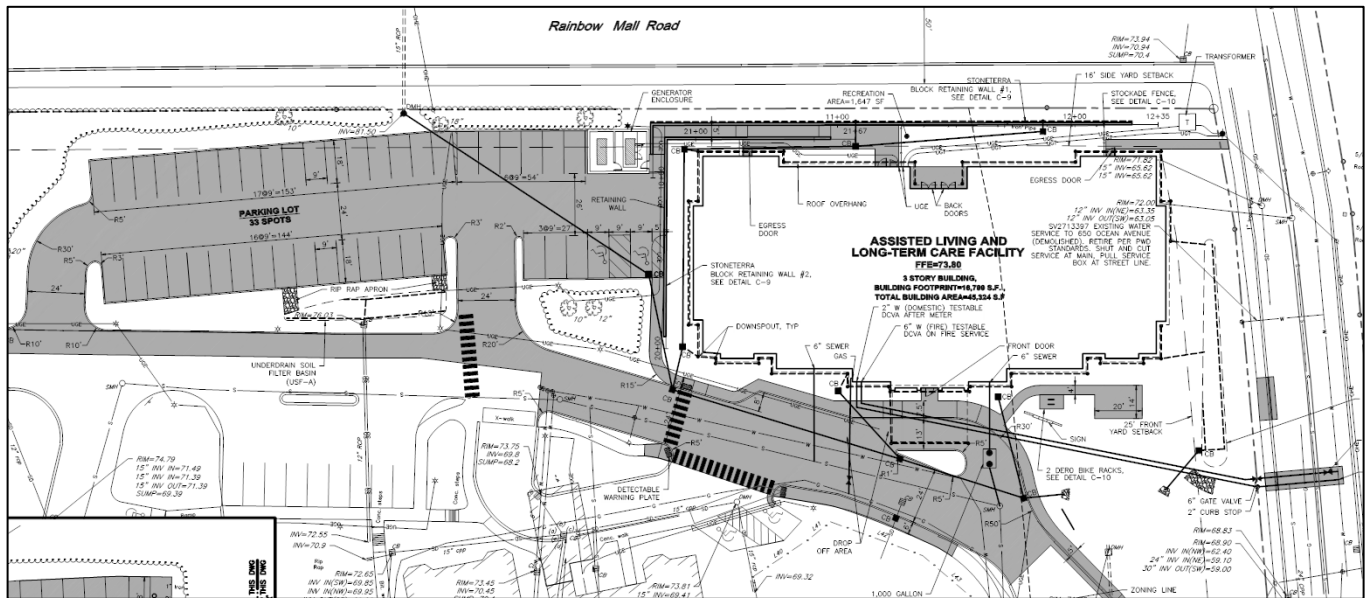


Figure 4: Proposed site plan showing parking lot reconfiguration, utility connections and pedestrian infrastructure improvements

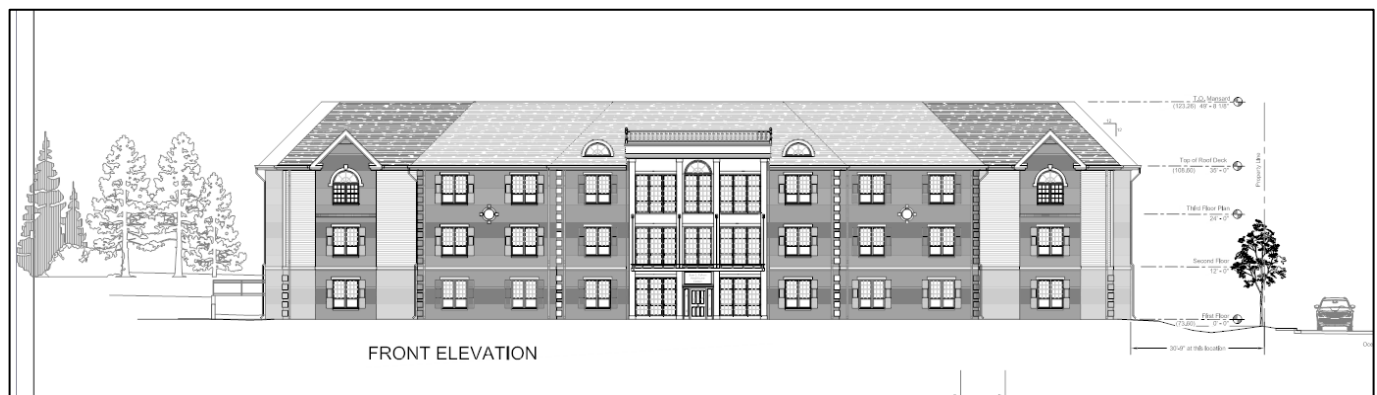


Figure 5: Proposed building elevation (front). Note, the building is oriented inward to the site, away from Ocean Avenue.

VI. PUBLIC COMMENT & NEIGHBORHOOD MEETING

The Planning Division has received two written comments in regards to this project as of the writing of this report. These comments have raised concerns regarding previous blasting work that was carried out in previous projects at The Cedars facility, and concerns related generally to site grading and stormwater runoff.

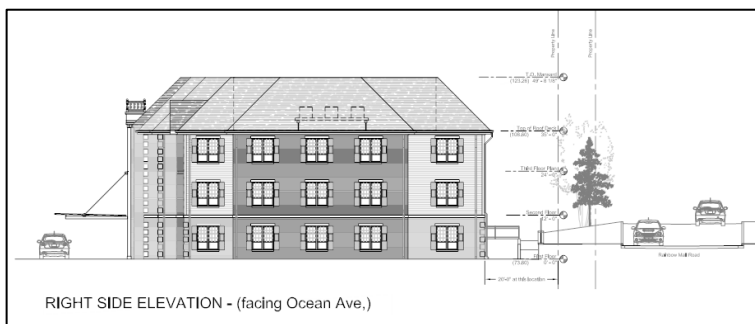


Figure 6: Proposed side elevation which is oriented towards Ocean Avenue.

City staff, in a meeting with the applicant on January 30th, discussed these public comments and raised questions regarding the potential for blasting work to occur. At that time, a geotechnical had not yet been received and it was not known whether or not blasting would be required. We informed the applicant of blasting requirements within the City, with which the applicant has agreed to comply. A neighborhood meeting for this project was held on January 29th and staff have requested that the sign in sheet and meeting minutes be provided.

VII. RIGHT, TITLE, & INTEREST

The applicant has provided a deed demonstrating ownership of the subject property (*Attachment E*).

VIII. FINANCIAL & TECHNICAL CAPACITY

The Cedars, a non-profit organization, will be utilizing three sources of funding for the project, that include fundraising, Cedars social impact bonds and bank financing. The Cedars is working with a fundraising consultant, Steve Braverman, to guide their capital campaign which they have set a goal to raise \$10 million in donations and \$10 million in social impact bonds. With the help of an investment banker, the Cedars will be negotiating with their current lender Bangor Savings Bank to borrow any additional necessary funds, anticipated not to exceed \$10 - \$12 million. It is anticipated that the fundraising and bank lending will be in place by April 2018. (*Attachment H*).

In regards to Technical Capacity, the applicant has provided resumes for their consulting team demonstrating necessary expertise to complete this project.

IX. ZONING ANALYSIS

The proposed project is located within both the R-3 and R-5 Residential zones and as such, is subject to the standards of the more restrictive zone, that being the R-3 zone. The proposed use, “institutional long-term care” is identified as a conditional use, and is subject to the conditional use standards listed under Section 14-474. Discussion of compliance with applicable conditional use standards can be found on the next page of this report.

In regards to dimensional standards, the proposed expansion was found to meet all applicable standards. The proposed building height, which reaches a maximum peak of approximately 50’ feet above grade, was determined to meet the city’s requirements given the proposed roof type and measurement criteria for mansard roofs, which are measured from the deck of the roof. The City’s Zoning Administrator, Ann

Machado, reviewed the proposal and found it to be satisfactory (*Attachment V*).

Cedars Site Plan Dimensional Requirements				
Code	Item	Proposed	Conditions R-5	Conditions R-3
14-87, 14-88(c)2.a.	Permitted Uses	Institutional	Allowed with conditional permit	Allowed with conditional permit
14-90	Dimensions			
a	Lot Size	10.5 acres	2 acres	2 acres
c	Frontage	578 feet	50	50 Feet
d	Front Setback	25	20	25
	Side Setback (Street)	20	20	20
	Side Setback	Variable	14	16
	Rear Setback	No Change		25
e	Max. Lot Cover	20.3%	40%	35%
f	Min Lot Width	Varies; over 400'	90 feet	65 feet
g	Max Str. Height	35'	35 feet	35 feet
h	Units/Building	N/A	12 max	2 max
i-q	N/A	N/A		N/A
14-91	Others			
a	Parking	0	(See Div 20)	(See Div 20)
c	N/A	N/A	N/A	N/A
14-92-6	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
Parking			From Division 20	
Off-Street	Residential Use	N/A	2/Dwelling Unit	
	LT Care	4	4; 1/5 Beds	
	LT Care	9	9; 1/Employee during day shift	
14-526A	Bike Parking	4	2.6; 2/10 new required parking spaces	
	Motor/Scooter	1	1	

Conditional Use Review

Sec. 14-88 (c) Conditional Uses

- 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 building and will not cause significant physical encroachment into established residential areas.*

The proposed expansion is located on a parcel dedicated as a long-term care facility and does not encroach upon existing residential areas within the vicinity. The existing single-family structure has been utilized as administrative offices since 1991 and is physically located on the parcel occupied by The Cedars Long-Term Care Facility.

- b. *The proposed use will not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or thereafter.*

The proposed use will displace a residential structure that has been used as administrative offices by the Cedars since approximately 1991. It is not clear when this structure was last used as a residence. Further, the proposed three-story building cannot be located elsewhere on the Cedars

campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas located on this parcel are subject to mitigation easements for prior wetland impacts, and they will not be impacted by the proposed redevelopment.

- 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.*

The minimum lot size is met.

Sec. 14-474. Conditional Use Standards

- d. *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;*

The proposed expansion will result in minimal additional traffic, with 20 additional beds and 9 additional staff. The project site is self-contained and no changes are proposed to the existing curb-cut off of Ocean Avenue. Similarly, Ocean Avenue is a minor arterial, with other commercial and institutional uses in the immediate vicinity, and according to the city's consulting traffic engineer, Ocean Avenue has sufficient capacity to serve this expansion.

- e. *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;*

The proposed use, "institutional long-term care" does not inherently create unsanitary or harmful conditions and it is not anticipated that any adverse conditions as stated in this standard will result from the proposed use.

- f. *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.*

As mentioned previously, the Cedars campus is self-contained and largely screened from residential properties and public rights-of-way by means of extensive vegetation located around the perimeter of the site. It is not anticipated that this project will result in any detrimental impacts to surrounding properties beyond what currently exists.

The proposed building differs from other buildings on the campus in that it will be constructed within 25 feet of the property line along Ocean Avenue and will be highly visible from public spaces. The proposed building, while located in close proximity to Ocean Avenue, is not oriented towards the street. As a result, a design review of the project was held, and city staff have requested that

the applicant revise the building's design to be more contextually appropriate and as well, to better screen the street-facing façade by means of vegetation.

X. SITE LOCATION OF DEVELOPMENT REVIEW

Technical Manual Section 14.3. Standards

- a. *Financial and technical capacity.* The developer has the financial capacity and technical ability to develop the project in a manner consistent with state environmental standards and with the provisions of Portland's Code of Ordinances . The Planning Board may issue a permit that conditions any site alterations upon a developer providing the Planning Board with evidence that the developer has been granted a line of credit or a loan by a financial institution authorized to do business in this State or with evidence of any other form of financial assurance the Planning Board determines to be adequate. The Planning Board shall also assess any such application in accordance with the standards set forth in Chapter 373 of the Maine Department of Environmental Protection Site Law Regulations, as may be amended from time to time.

The project application includes a description of financial and technical capacity. The applicant intends to fundraise and utilize bonds to cover the cost of the project. Additional funds required will be secured through financing provided by Gorham Savings Bank. Technical capacity has similarly been provided.

- b. *Traffic movement.* – Not Applicable
- c. *No adverse effect on the natural environment.* The developer has made adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities. In making a determination under this subsection, the Planning Board shall apply the standards set forth in Chapter 375 of the Maine Department of Environmental Protection Site Law Regulations, as may be amended from time to time.

The applicant has provided documentation regarding identified wetlands on their property as well as areas of the site which drain into Fall Brook. Under this development proposal, those areas will not be impacted.

XI. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527)

Per the city's land use ordinance, the following materials should be submitted at the time of final review:

- Final plan submittal requirements as noted in 14-527(e) and (f); and
- Information regarding site lighting should be identified on the site plan.

XII. SITE PLAN REVIEW

The preliminary plans for the Cedars Expansion project have been reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance. Staff comments are below.

1. Transportation Standards

a. Impact on Surrounding Street Systems

As stated previously, the proposed expansion is due to changes in industry best practices, where preference has changed from semi-private rooms to private rooms. The new building, while adding some additional capacity, will result in a net increase of just 20 beds and 9 additional employees. Tom Errico, the city's consulting traffic engineer, has reviewed the applicant's proposal and has offered the following comment (*Attachment 4*):

Based upon the number of new employees and project details the proposed expansion is not expected to generate a significant amount of new traffic. The project is not expected to significantly impact traffic mobility and safety and a traffic study is not required.

b. Access and Circulation

Under this application, minimal changes to site circulation and access are proposed. An existing curb cut which serves the single-family structure at the northeast corner of the site is being closed, and the site will now only be accessible via the principal entrance located along Ocean Avenue, and from Byfield Road which is maintained as a fire lane and secondary access point. Interior site circulation remains almost entirely unchanged, with the exception of one reconfigured parking area located north of the existing internal driveway. The proposal also features pedestrian infrastructure improvements, including new ADA accessible sidewalks and crosswalks, and a new, direct sidewalk connection between the proposed building and Ocean Avenue.

City staff in reviewing site circulation and access have confined their review largely to the area of proposed disturbance, however several deficiencies have been identified and brought to the attention of the applicant.

Of particular note is the lack of a sidewalk along Rainbow Mall Road which was found to be a city accepted public street. At present, there is a sidewalk along the northern side of Rainbow Mall Road which extends from Washington Avenue to just south of Ledgewood Drive. Typically, under the site plan ordinance an applicant would be required to install or repair sidewalk along their street frontage in accordance with city standards. However, in this particular case, the applicant's property does not extend all the way to Rainbow Mall Road, and is separated from that right-of-way by a parcel owned by Old Port Realty Company, which measures approximately 10' feet in width closer to the intersection with Ocean Avenue. This parcel eventually widens as one moves



Figure 7: Existing extent of sidewalk is shown in blue. The portion of sidewalk not constructed is shown in red.

closer to Washington Avenue along Rainbow Mall Road. Given this fact, the applicant is not required by the site plan ordinance to provide this improvement.

Bruce Hyman, Transportation Program Manager in the Planning Office, has reviewed the proposed plans, looking largely at pedestrian infrastructure and offers the following comments (Attachment 5):

- *An ADA-compliant pedestrian-way/sidewalk, a minimum of 5' in width, is to be provided on the north side of the driveway from the sidewalk on Ocean Avenue to the proposed new building's entrance - this may require moving the bicycle parking to be adjacent to the sidewalk.*
- *Efforts should be made to improve the ADA-accessibility of the existing sidewalk route on the south side of the driveway - there appears to be no existing curb ramp connecting a crosswalk across the existing driveway*
- *It would be desirable to have more pedestrian connectivity/facilities between the new parking lot and other buildings without walking within parking lots and within the vehicular paths of driveways.*
- *Detail Sheet Co7, Crosswalk Layout: The applicant may want to consider a more visible crosswalk pattern similar to the city's standard: 24" stripes in width, 8' in length with 24" of spacing in between stripes - the detail shows 12" wide stripes rather than 24"*
- *General Neighborhood pedestrian circulation: The topic of the lack of a pedestrian route/sidewalk on Rainbow Mall Road was raised at the neighborhood meeting. The applicant does not directly own the frontage on the south side of Rainbow Mall Road but it should collaborate to the extent practicable with the Ledgewood Owners Association on planning for a sidewalk along it at least for the portion from Ocean Avenue to connect to the Ledgewood Drive sidewalk. This would potentially benefit some Cedars residents, staff and visitors to increase access and physical activity opportunities.*

c. *Public Transit Access*

The proposed development is not located along a public transit route.

d. *Parking*

Division 20 of the land use ordinance requires the provision of one parking space per five beds in a long-term care facility, and one parking space per employee working the daytime shift. The proposed expansion will result in a net gain of 20 new beds and 9 new day-time employees, for a total required parking increase of 13 spaces, which is met with new parking being provided. Tom Errico, has reviewed the plans and has provided the following comment (Attachment 4):

The applicant is expanding the proposed parking supply by 13 spaces to accommodate 9 additional employees and parking for the 20 residential units. I find the supply increase to be reasonable.

In addition to vehicle parking, the applicant is also providing space to park 4 bicycles and 1 motorcycle or scooter in accordance with site plan standards.

e. *Transportation Demand Management*

A transportation demand management plan is not technically required given that the project constitutes an expansion of approximately 45,000 square feet and the threshold for TDM is 50,000 square feet for institutional uses. The project total exceeds 50,000 square feet of floor area and would qualify if being developed today, however when the site was initially developed, TDM standards had not yet been adopted. The staff is evaluating whether the newly proposed expansion would trigger this requirement and a TDM plan.

2. *Environmental Quality Standards*

a. *Preservation of Significant Natural Features*

A portion of the applicant's property, at the southeast corner of the site along Ocean Avenue, is identified as a freshwater wetland community, and is conserved via easement as an undeveloped portion of the site. Under this development proposal, the applicant does not propose to impact any wetland or other significant natural feature.

b. *Landscaping and Landscape Preservation*

The preliminary plans show site landscaping around the perimeter of the proposed building, and notably a buffer of Karpick Red Maple between the proposed building and Ocean Avenue. The northeast corner of the project site, where the new building is proposed, is currently occupied by a single-family structure and includes extensive existing vegetation between the building and Rainbow Mall Road. A significant portion of that vegetation will be removed under this proposal to accommodate the much larger three-story building institutional building. To compensate for this tree loss, the applicant is proposing a variety of shrubs and trees to be planted at the rear of the building, including American Red Oak and American Hornbeam.

The applicant does not have frontage along Rainbow Mall Road, as a separate parcel that is owned by Old Port Realty, features an approximately 10' foot-wide strip of land along the entirety of Rainbow Mall Road. This parcel will remain undisturbed, and will similarly provide a visual buffer between the project site and the proposed building.

In terms of other site landscaping features, the project is providing additional landscaping elements towards the property entrance and a mixture of shrubs and trees in and around the proposed off-street parking area in accordance with site plan standards.

Jeff Tarling, the City Arborist, has reviewed the preliminary plans and has provided the following comment regarding landscaping and landscape preservation (*Attachment 6*).

- *Entrance-way landscape - how does the existing landscape blend into the new project. The final approval should show the details of the more formal ornamental landscape beds and limit of work*

- *Parking lot landscape - 'should meet parking lot landscape standards', The parking lot island appears to have a stormwater feature which is good, additional trees and shrubs could be used to meet parking lot standards. There appears to be room for a few trees, recommend Tupelo & or Red Maple 2" caliper size, (Tupelo is a slow growing native tree that tolerates wet conditions) and for shrubs Winterberry, Sweetern for examples. Ideally the island below would contain taller trees mentioned.*
- *Rainbow Mall Road edge - The Rainbow Mall Road edge has been an important feature for the Cedar's since the original approval. The goal is to maintain a tree and vegetated edge that allows window views into to site for safety / security but maintains the wooded feel of the residential properties nearby.*

From a quick review, it would be important to establish a limit of work and 'tree save' protection for the vegetation between the proposed project and Rainbow Mall, this should be a condition. The proposed tree and landscape treatment may need to be enhanced with additional trees and shrubs. A condition could be that if existing trees and vegetation is lost that additional plants be added. 'Tree Save' areas should be defined on site and part of the Pre-Construction meeting. This would included the usual requirements of not storing equipment or materials in or near the root zone of the tree save areas. Projection should include temporary construction fencing. The parking lot edge along Rainbow Mall Road could include low wooden guardrail along the edge to reduce vehicle encroachment into the buffer area. The Tree Protection web links below may be useful

c. *Water Quality/Storm Water Management/Erosion Control*

According to the applicant's application, the proposed development will result in a net increase in impervious surface of 0.39 acres. The existing site includes buildings, parking and roadway infrastructure, plantings/trees within parking islands, several detention areas and wetlands. The site is located along a ridge, and generally slopes from higher areas in the northern portions of the site towards the south, with a portion of the property conveying surface flows towards the west. The majority of surface runoff flows from the northern edge of the property, is conveyed through a series of drainage pipes into several detention and retention facilities, and then into the wetland complex at the southern portion of the site. From this wetland, surface flows then discharge into Ocean Avenue. The far western portion of the site discharges to Fall Brook and will not be disturbed as part of this project.

The proposed conditions will not substantially alter the existing drainage patterns. The proposed improvements include incorporating two new stormwater treatment measures, and modification to the outlet control structure of one of the existing detention basins.

Lauren Swett, the consulting peer review engineer for this project, has reviewed the applicant's plans and offers the following comments (*Attachment 2*):

- a) *Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.*

b) *General Standard: The project will result in an increase in impervious surface of 16,339 square feet and is required to comply with the General Standard. The Applicant is proposing to install underdrain soil filters to provide for adequate treatment. We have the following comment on the proposed design.*

- *The soil filters do not have defined emergency overflow spillways. USF-A could overflow internal to the site; however, it appears that USF-B may overflow into Ocean Avenue. In the 25-year storm, the peak elevation calculated in the HydroCAD model indicates, that water levels may be higher than the soil filter berm and the elevation of the adjacent section of Ocean Avenue. The Applicant should address peak flow elevations, and provide for adequate emergency overflow to prevent the soil filter from draining into Ocean Avenue. (Note, this comment was not discussed at the January 30 meeting.)*

c) *Flooding Standard: The project will result in an increase in impervious surface of 16,339 square feet and is required to comply with the Flooding Standard. The Applicant's HydroCAD model indicates that the project will adequately manage stormwater to meet the Flooding Standard.*

d) *Urban Impaired Stream Standard: Portions of the project area are located within the delineated Fall Brook Watershed, which is identified as an Urban Impaired Stream by the Maine DEP; however, the project area discharges outside of the watershed, and is not required to comply with the Urban Impaired Stream Standard.*

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

The project is generally consistent with related master plans.

b. Public Safety and Fire Prevention

Mike Thompson, Fire Division Chief, has reviewed the preliminary plans and has found them to be satisfactory, though he has requested that two knox boxes be provided, one at the front entrance and the other at the rear (utility) entrance (*Attachment 7*).

c. Availability and Capacity of Public Utilities

The applicant proposes a new 2" water service, 6" fire service and 6" wastewater line. A gas line is also being installed and underground electric is proposed. At this time, staff have not received 'ability to serve' letters from utility providers, and are asking that these be provided with the final plan set or be made a condition of approval.

4. Site Design Standards

a. Massing, Ventilation, and Wind Impact

The maximum building height in both the R-3 and R-5 zones is 35' feet above grade. The peak of the proposed building is approximately 50' feet above grade, however due to the way building heights are measured for buildings with mansard roofs (to the highest point on the deck of mansard roofs), the proposed building has been found to be in compliance with the dimensional standards of this zone

by the Zoning Administrator (*Attachment V*). Given that the project is in compliance with zoning dimensional standards, it is not anticipated that the project will result in adverse conditions related to massing, ventilation and wind.

b. Shadows

No shadow impacts on publicly accessible open spaces are anticipated.

c. Snow and Ice Loading

Staff has asked that the applicant label their site plan to include areas for snow storage.

d. View Corridors

The site is not located within an established view corridor and is not anticipated to cause adverse impacts to view protection areas within the city.

e. Historic Resources

The proposed project is not located within an established historic district or landscape.

f. Exterior Lighting

As part of the applicant's preliminary submittal, they provided a photometric plan which demonstrated compliance with the city's standards for light trespass. However, lighting locations on the site plan and lighting details have not yet been provided. This information has been requested as part of the final plan submittal.

g. Noise and Vibration

Information on the HVAC and mechanical equipment should be provided with the final plans.

h. Signage and Wayfinding

No signage or wayfinding is proposed at this time.

i. Zoning-Related Design Standards

The applicant is proposing a three-story, 45,000 square foot institutional building, designed to complement the existing buildings on the campus while incorporating design cues from surrounding residential and institutional buildings within the vicinity. With the preliminary submittal, the applicant provided building elevations and renderings, which were reviewed by city staff during a design review attended by Caitlin Cameron, Urban Designer; Jean Fraser, Planner; Matthew Grooms, Planner against the City of Portland Design Manual: Special Needs Independent Living Units, Multiple-Family Standards. These renderings show a building oriented away from the principal street frontage with significant fenestration along the front façade, a porte cochere for resident pick-up and drop-off, a half-brick and half-clapboard façade, and numerous decorative elements such as quoins, keystones and fan windows. The city's urban designer offers the following comments based upon the design review process (*Attachment 3*):



Figure 8: Rendering of front facade, oriented towards the interior of the Cedars campus



Figure 9: Rendering of Street facing facade as seen from Ocean Avenue

(i) *Two-Family, Special Needs Independent Living Units, Multiple-Family . . . :*

Standard (1) . *Exterior Design – Building is an institutional use and its scale and basic design relate that use. The context includes other institutional buildings such as the existing campus, a school, but also many small-scale vernacular residential buildings. Most of the context is from the early 20th century with the Cedars campus as more recent buildings. The project varies the forms through a hipped roof line and with plane changes – this helps to mitigate the scale of this institutional building which is larger than the single-family homes nearby. The central entrance is emphasized with a canopy and highly glazed atrium space.*

The project references historical styles not found in this context and also includes a mix of styles within one building.

Staff found that the architectural characteristics of the context are more simple than is found in the proposal. Staff suggest the applicant make revisions to simplify the overall design, for example (also see attached):

- *Use all brick siding rather than introduce clapboard*
- *Remove extraneous details such as the quoins, “key stones,” fan windows*
- *Shutters are more appropriate for a small-scale residential building but not for this large-scale institutional building*
- *The entrance canopy is quite contemporary compared with the style of the building – staff suggest revising the central balustrade to reflect that contemporary design of the canopy.*

Standard (2). *Relationship to Street – Building placement is in relationship to the campus and put the side to the street. This is mostly to accommodate vehicle circulation and provide some buffer from the street for the occupants.*

Standard (3). *Open Space – Open spaces provided on property – landscaping surrounding building but no seating or similar occupiable open space within or immediately adjacent to this building. Building relationship to the street varies in this context – some buildings face*

the street, some are set back from the street, some turn the side to the street. Staff found this placement to be compatible with the street and the proposed use. Side/back facades have some massing variation and fenestration.

Standard (4). Light and Air – All units provided with ample windows.

Standard (5). Parking – Parking is away from the street and screened from view.

Standard (6). Not applicable

XIII. NEXT STEPS

1. Address staff comments;
2. Address additional comments of the Planning Board;
3. Prepare final plan submission
4. Hold final Planning Board Hearing.

XIV. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Preliminary Planning Review Comments
2. Woodard and Curran Review Memo
3. Design Review Memo
4. T.Y. Lin Review Comments
5. Transportation Program Manager Comments
6. City Arborist Comments
7. Fire Review Comments
8. Planning Board Hearing Report (2008)
9. Public Comment
 - a. PC1: Art Sears (01.18.2018)
 - b. PC2: Manduca Music (01.26.2018)

APPLICANT'S SUBMITTALS

- A. Cover Letter and Table of Contents
- B. Site Plan Application
- C. Application Fee
- D. Description of Project
- E. Right, Title and Interest
- F. Zoning
- G. Easements
- H. Financial and Technical Capacity
- I. Construction Management
- J. Traffic
- K. Significant Natural Features
- L. Stormwater Management Plan
- M. Consistency with Master Plans

- N. Capacity to Serve
- O. Solid Waste Generation
- P. Fire Department Technical Standards
- Q. Consistency with City of Portland Technical Design Manual
- R. HVAC
- S. Site Plan Requirements and Parking
- T. Conditional Use Application
- U. Geotechnical Report
- V. Mansard Roof Definition
- W. Comments Response Letter

PLANS

- Plan 1 Front Elevation
- Plan 2 Rear Elevation
- Plan 3 Building Street Sections
- Plan 4 Building Renderings
- Plan 5 Cover Sheet
- Plan 6 General Notes
- Plan 7 Overall Existing Conditions Plan
- Plan 8 Overall Existing Conditions
- Plan 9 Site Specific Existing Conditions and Demolition
- Plan 10 Overall Site Layout Plan
- Plan 11 Site Layout and Utilities Plan
- Plan 12 Site Grading and Erosion Control Plan
- Plan 13 Details I
- Plan 14 Details II
- Plan 15 Details III
- Plan 16 Details IV
- Plan 17 Erosion and Sedimentation Control Details
- Plan 18 Pre Development Stormwater Plan
- Plan 19 Post-Development Stormwater Plan
- Plan 20 Landscape Plan
- Plan 21 Landscape Details

Planning and Urban Development Department Planning Division



February 5, 2018

John Watson
JHA Assisted Living, INC and Cedars
Nursing Care, INC
630 Ocean Avenue
Portland, ME 04103

Jan Wiegman, P.E.
Wright Pierce
11 Bowdoin Mill Island, Suite 140
Topsham, ME 04086

RE: Staff Review Comments for The Cedars Expansion – New Institutional Long Term Care Facility (2017-278) – Planning Board Review

Project Name:	The Cedars Expansion	Project ID:	(2017-278)
Project Address:	630 Ocean Avenue	CBL:	170-A-020
Applicant:	John Watson		
Planner:	Matthew Grooms		

Dear Mr. Watson and Mr. Wiegman,

Thank you for submitting a preliminary Level III Site Plan and Conditional Use application to construct a new three-story building proposed for institutional long-term care use, and reconfigure on-site parking at the Cedars facility, located at 630 Ocean Avenue in the R-3 and R-5 Residential zones. This project is being reviewed as a preliminary plan subject to the following applicable Land Use Code provisions:

- Site Plan Ordinance, Article V
- Division 4. R-3 Residential Zone
- Division 6. R-5 Residential Zone
- Division 20. Off-Street Parking Standards
- Neighborhood Meeting Regulations, Section 14-32

Final Plan for Planning Board Review: Staff Review Comments

I. Site Design Standards

1. Please provide renderings of the proposed building as it will be seen from on-street locations, specifically the intersection of Ocean Avenue and Rainbow Mall Road.
2. As part of this expansion project, a private internal pathway should be provided with direct connection to the existing public sidewalk located along the property's Ocean Avenue frontage.

3. Please provide a geotechnical report detailing the necessity for blasting work as part of this project. Please note, if blasting is to occur, the project shall adhere to the standards of Article VIII of the land-use code and Section 3.7 of the City's Technical Manual.
4. All proposed site lighting shall be illustrated on the site plan.
5. On the site plan, identify any improvements proposed within the areas labeled as 'recreation areas'. Please provide applicable details for proposed fencing as well.
6. The City has reverted to cast-iron set-in-place detectable warning panels as opposed to replaceable panels. As the proposed panels are not located within the public right-of-way, please note that this is not a site plan review requirement.
7. City staff are reviewing the project's public transit access requirement, and will provide additional direction prior to the Planning Board workshop.
8. Utility capacity letters shall be provided when available. In the event that these are not available prior to the public hearing, their submission shall be made a condition of approval.

Additional Submittals Required:

Please upload the digital plans and documents to address staff comments. Upon receipt of the revised material, the City of Portland will review the additional plans and information for conformance with applicable ordinances. Please be aware that an application expires within 120 days of the date upon which this written request for additional information was made.

If you have any questions, feel free to contact me at (207) 874-8725 or by email at mgrooms@portlandmaine.gov.

Sincerely,
Matthew Grooms
Planner

MEMORANDUM



TO: Matt Grooms, Planner
FROM: Lauren Swett, P.E. & Amy LeBel, E.I.T.
DATE: January 31, 2018
RE: 630 Ocean Avenue Cedars Assisted Living, Level III Site Plan

Woodard & Curran has reviewed the Level III Site Plan Application for the proposed assisted living and long-term care facility located on *The Cedars Condominiums* campus at 630 Ocean Avenue in Portland, Maine. The proposed expansion involves construction of a three-story building and associated site improvements.

We met with the Applicant on January 30, 2018. Most of the following comments were discussed at that meeting.

Documents Reviewed by Woodard & Curran

- Level III Site Plan Application and attachments, dated December 2017, prepared by Wright-Pierce, on behalf of JHA Assisted Living, Inc. and Cedars Nursing Care, Inc.
- Engineering Plans, Sheets C1-C11, PRE and POST, dated November 15, 2017, prepared by Wright-Pierce, on behalf of JHA Assisted Living, Inc. and Cedars Nursing Care, Inc.

Comments

- 1) In accordance with the City of Portland Land Use Code (Chapter 14) Site Plan Standards, please address the following comment:
 - a) The plans should note a location for snow storage or provide a snow removal plan. The snow storage location should be sited outside of existing and proposed drainage courses.
- 2) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. The City is also reviewing the project as part of their Delegated Review Authority from the Maine DEP. We offer the following comments:
 - a) Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
 - b) General Standard: The project will result in an increase in impervious surface of 16,339 square feet and is required to comply with the General Standard. The Applicant is proposing to install underdrain soil filters to provide for adequate treatment. We have the following comment on the proposed design.
 - The soil filters do not have defined emergency overflow spillways. USF-A could overflow internal to the site; however, it appears that USF-B may overflow into Ocean Avenue. In the 25-year storm, the peak elevation calculated in the HydroCAD model indicates, that water levels may be higher than the soil filter berm and the elevation of the adjacent section of Ocean Avenue. The Applicant should address peak flow elevations, and provide for adequate emergency overflow to prevent the soil filter from draining into Ocean Avenue. (Note, this comment was not discussed at the January 30 meeting.)
 - c) Flooding Standard: The project will result in an increase in impervious surface of 16,339 square feet and is required to comply with the Flooding Standard. The Applicant's HydroCAD model indicates that the project will adequately manage stormwater to meet the Flooding Standard.
 - d) Urban Impaired Stream Standard: Portions of the project area are located within the delineated Fall Brook Watershed, which is identified as an Urban Impaired Stream by the Maine DEP; however, the project area discharges outside of the watershed, and is not required to comply with the Urban Impaired Stream Standard.



3) General Comments

- a) The Applicant should provide ability to serve letters for the project upon receipt from the utilities.
- b) The proposed disturbance exceeds one acre; therefore, a Maine Construction General Permit is required for this project.
- c) A retaining wall is proposed around the site. Please note that a geotechnical evaluation including soil types and soil bearing capacities is required for retaining walls over three feet in height.
- d) Please indicate the location of the 4" underdrain outlet behind the retaining wall, as shown on the Stoneterra Block Wall detail on Sheet C-9.
- e) The Applicant should review for potential utility conflicts between underground electrical and proposed stormdrain infrastructure. In particular, note the location of CB4.

Planning and Urban Development Department

Planning Division



Subject: Design Review – 630 Ocean Avenue Expansion
Written by: Caitlin Cameron, Urban Designer
Date of Review: Thursday, February 1 2018

The project at 630 Ocean Avenue was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Matt Grooms, Planner, and Jean Fraser, Planner against the *City of Portland Design Manual: Special Needs Independent Living Units, Multiple-Family Standards*.

Design Review Comments:

- Please provide renderings/views from the street

(i) Two-Family, Special Needs Independent Living Units, Multiple-Family . . . :

Standard (1) . Exterior Design – Building is an institutional use and its scale and basic design relate that use. The context includes other institutional buildings such as the existing campus, a school, but also many small-scale vernacular residential buildings. Most of the context is from the early 20th century with the Cedars campus as more recent buildings. The project varies the forms through a hipped roof line and with plane changes – this helps to mitigate the scale of this institutional building which is larger than the single-family homes nearby. The central entrance is emphasized with a canopy and highly glazed atrium space.

The project references historical styles not found in this context and also includes a mix of styles within one building.

Staff found that the architectural characteristics of the context are more simple than is found in the proposal. Staff suggest the applicant make revisions to simplify the overall design, for example (also see attached):

- Use all brick siding rather than introduce clapboard
- Remove extraneous details such as the quoins, “key stones,” fan windows
- Shutters are more appropriate for a small-scale residential building but not for this large-scale institutional building
- The entrance canopy is quite contemporary compared with the style of the building – staff suggest revising the central balustrade to reflect that contemporary design of the canopy.

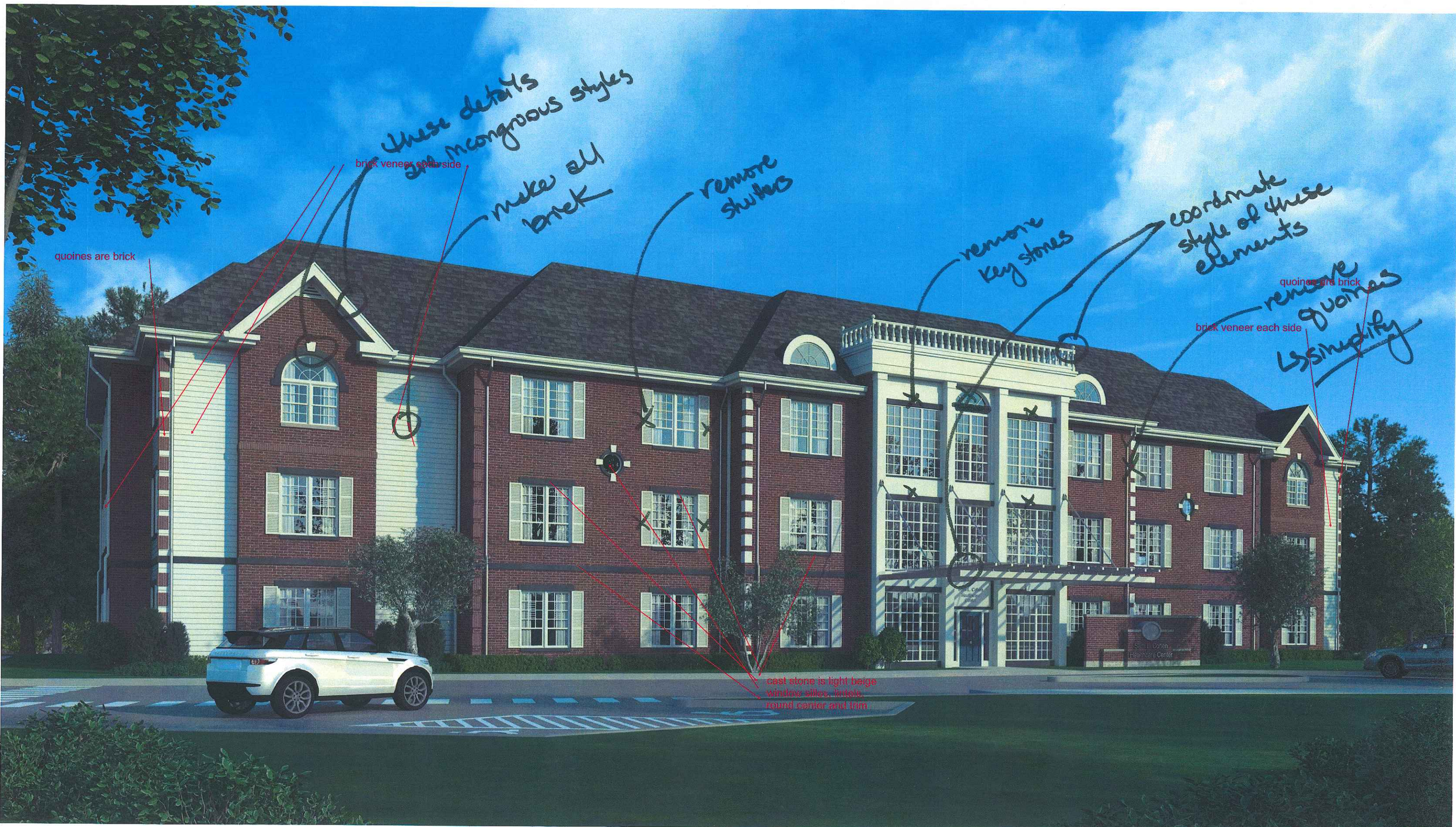
Standard (2). Relationship to Street – Building placement is in relationship to the campus and put the side to the street. This is mostly to accommodate vehicle circulation and provide some buffer from the street for the occupants.

Standard (3). Open Space – Open spaces provided on property – landscaping surrounding building but no seating or similar occupiable open space within or immediately adjacent to this building. Building relationship to the street varies in this context – some buildings face the street, some are set back from the street, some turn the side to the street. Staff found this placement to be compatible with the street and the proposed use. Side/back facades have some massing variation and fenestration.

Standard (4). Light and Air – All units provided with ample windows.

Standard (5). Parking – Parking is away from the street and screened from view.

Standard (6). Not applicable



2/1/18 Design Review

Re: Review Comments - The Cedars, PEZ 2017-278

Bruce Hyman <bhyman@portlandmaine.gov>

Mon, Feb 5, 2018 at 1:23 PM

To: Matthew Grooms <mgrooms@portlandmaine.gov>

Cc: Robert Thompson <rmt@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Tom Errico <thomas.errico@tylin.com>, Jeff Tarling <jst@portlandmaine.gov>

My review comments for The Cedars are as follows:

Sheet C04, Overall Site Layout

- An ADA-compliant pedestrian-way/sidewalk, a minimum of 5' in width, is to be provided on the north side of the driveway from the sidewalk on Ocean Avenue to the proposed new building's entrance - this may require moving the bicycle parking to be adjacent to the sidewalk.



- Efforts should be made to improve the ADA-accessibility of the existing sidewalk route on the south side of the driveway - there appears to be no existing curb ramp connecting a crosswalk across the existing driveway (see below) - construction activity is shown in this vicinity on the opposite side of the driveway (in the right foreground of the photo)



- The sidewalk is to be extended (to extend past the bench) at the pedestrian crossing along/near the frontage of the existing Assisted Living facility as part of the construction of this sidewalk segment and crosswalk.



- It would be desirable to have more pedestrian connectivity/facilities between the new parking lot and other buildings without walking within parking lots and within the vehicular paths of driveways.

Detail Sheet C07, Crosswalk Layout: The applicant may want to consider a more visible crosswalk pattern similar to the city's standard: 24" stripes in width, 8' in length with 24" of spacing in between stripes - the detail shows 12" wide stripes rather than 24".

General Neighborhood pedestrian circulation: The topic of the lack of a pedestrian route/sidewalk on Rainbow Mall Road was raised at the neighborhood meeting. The applicant does not directly own the frontage on the south side of Rainbow Mall Road but it should collaborate to the extent practicable with the Ledgewood Owners Association on planning for a sidewalk along it at least for the portion from Ocean Avenue to connect to the Ledgewood Drive sidewalk. This would potentially benefit some Cedars residents, staff and visitors to increase access and physical activity opportunities.

Please do not hesitate to contact me if you or the applicant have questions.

Bruce

On Mon, Feb 5, 2018 at 8:57 AM, Matthew Grooms <mgrooms@portlandmaine.gov> wrote:

Good Morning All,

Please get me your review comments for the Cedars expansion project and [25 Monument Street](#) as soon as possible. I would like to distribute these comments today if possible.

Thank you,

Matt

--

Matthew Grooms
Planner
Planning Division
City Hall, [389 Congress Street, 4th Floor](#)
[Portland, Maine 04101](#)
(207) 874-8725 (T)
(207) 756-8258 (F)
mgrooms@portlandmaine.gov

--

Bruce Hyman
Transportation Program Manager
Transportation Division

Department of Planning & Urban Development
389 Congress Street
[Portland, Maine 04101](#)
(207) 874-8717 phone

bhyman@portlandmaine.gov
<http://www.portlandmaine.gov/1363/Transportation-Division>
Yes! Transportation's Good Here

Review Comments - The Cedars and 25 Monument

Jeff Tarling <jst@portlandmaine.gov>

Mon, Feb 5, 2018 at 11:16 AM

To: Matthew Grooms <mgrooms@portlandmaine.gov>

Cc: Bruce Hyman <bhyman@portlandmaine.gov>, Errico Thomas <thomas.errico@tylin.com>, "lswett@woodardcurran.com" <lswett@woodardcurran.com>

Hi Matt -

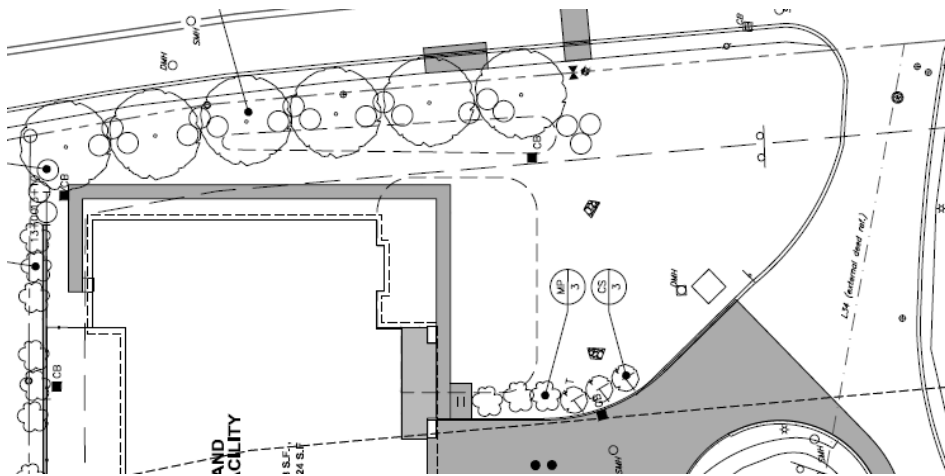
Cedars Expansion Project - Tree & Landscape Comment Review

The latest expansion project at the Cedar's seeks to blend the corner lot of Ocean Avenue & Rainbow Mall Road together with the various past projects.

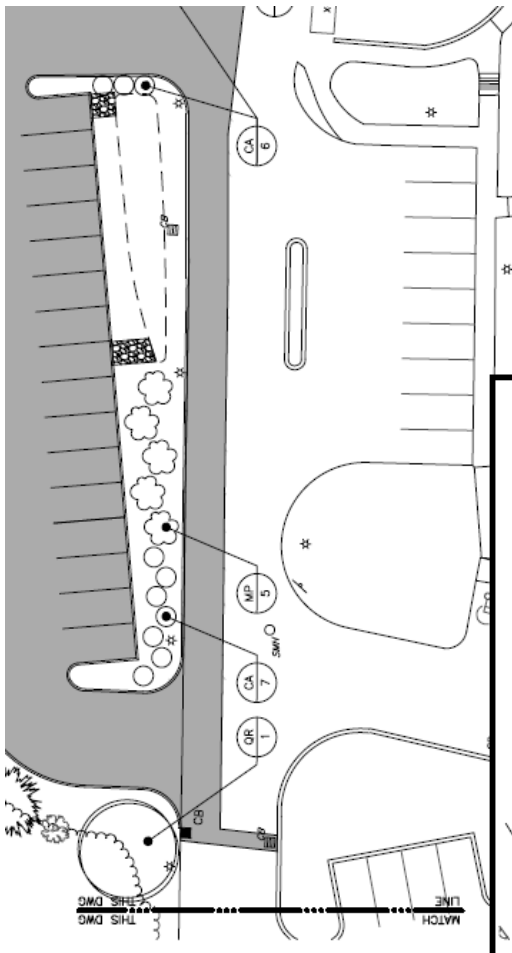
Tree & Landscape goals would include continuing the street tree line along Ocean Avenue that dates back to the original approval, protecting existing natural vegetation along Rainbow Mall Road also similar to past projects and improving the existing landscape features internally near the project.

a) Street trees - the project proposes 6 'Karpick' Red Maple which is a good choice for this location and matches the existing trees planted west of the drive along Ocean Avenue.

b) Entrance-way landscape - how does the existing landscape blend into the new project. The final approval should show the details of the more formal ornamental landscape beds and limit of work.



c) Parking lot landscape - 'should meet parking lot landscape standards', The parking lot island appears to have a **stormwater feature** which is good, additional trees and shrubs could be used to meet parking lot standards. There appears to be room for a few trees, recommend Tupelo & or Red Maple 2" caliper size, (Tupelo is a slow growing native tree that tolerates wet conditions) and for shrubs Winterberry, Sweetern for examples. Ideally the island below would contain taller trees mentioned.

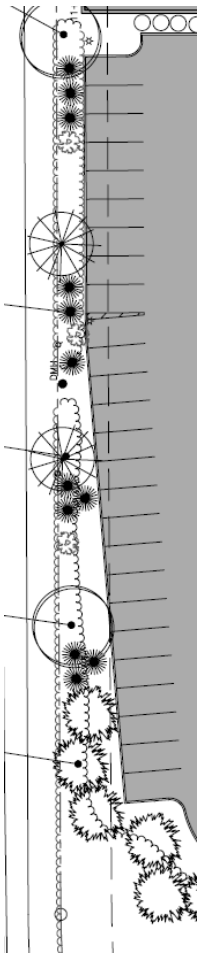


d) Rainbow Mall Road edge - The Rainbow Mall Road edge has been an important feature for the Cedar's since the original approval. The goal is to maintain a tree and vegetated edge that allows window views into to site for safety / security but maintains the wooded feel of the residential properties nearby.

From a quick review, it would be important to establish a limit of work and 'tree save' protection for the vegetation between the proposed project and Rainbow Mall, this should be a condition. The proposed tree and landscape treatment may need to be enhanced with additional trees and shrubs. A condition could be that if existing trees and vegetation is lost that additional plants be added. 'Tree Save' areas should be defined on site and part of the Pre-Construction meeting. This would include the usual requirements of not storing equipment or materials in or near the root zone of the tree save areas. Projection should include temporary construction fencing. The parking lot edge along Rainbow Mall Road could include low wooden guardrail along the edge to reduce vehicle encroachment into the buffer area. The Tree Protection web links below may be useful

<https://www.treesaregood.org/portals/0/docs/treecare/AvoidingTreeDamage.pdf>

<https://www.treesaregood.org/portals/0/docs/treecare/ConstructionDamage.pdf>



e) Tree Planting Details - Revised tree planting specifications, The International Society of Arboriculture (ISA) have released improved tree and shrub planting details and spec sheets that no longer modify the sub-base beneath the planting in most situations. We would recommend that the Project revise the spec sheet in the Landscape Details to reflect these changes so the future landscape contractor installs the trees and plants correctly. We can supply with additional information, the web links below outline' these changes.

https://www.treesaregood.org/portals/0/docs/treecare/New_TreePlanting.pdf

http://www.isa-arbor.com/education/onlineresources/cad/drawings/Planting/L_tree%20planting_24inch%20to%2036inch%20box_compacted%20soil_K.pdf

<http://www.isa-arbor.com/education/onlineresources/cadplanningspecifications.aspx#Planting>



Jeff Tarling
 City Arborist - City of Portland Maine
 Parks, Recreation & Facilities Department
 Forestry & Horticulture
 212 Canco Road
 Portland, ME. 04103
 (207) 808-5446
jst@portlandmaine.gov

On Mon, Feb 5, 2018 at 8:57 AM, Matthew Grooms <mgrooms@portlandmaine.gov> wrote:
 [Quoted text hidden]

MEMORANDUM

To: FILE
From: Matthew Grooms
Subject: Application ID: 2017-278
Date: 2/5/2018

Comments Submitted by: Robert Thompson/Fire on 1/17/2018

Adequate fire hydrants are in the area

Comments Submitted by: Robert Thompson/Fire on 1/17/2018

Access to the building is easily achieved with the proposed location of the building

Comments Submitted by: Robert Thompson/Fire on 1/17/2018

Two knox boxes will be required for the building, one at the front entrance, and one at the rear entrance/utility area

Comments Submitted by: Robert Thompson/Fire on 1/17/2018



Memorandum
Department of Planning and Urban Development
Planning Division

To: Chair Tevanian and Members of the Portland Planning Board

From: Jean Fraser, Planner

Date: Prepared on September 19, 2008
Prepared for September 23, 2008 Planning Board Workshop

Re: Cedars Healthcare Center: Rehabilitation Center Addition;
Vicinity of 630 Ocean Avenue

Introduction

Cedars Healthcare requests minor site plan and conditional use approval for the proposed expansion of the rehabilitation center within the Cedars Care Center part of this complex at 630 Ocean Avenue. The proposed expansion would comprise an 890 sq ft addition to the existing building footprint to facilitate a 1500 sq ft renovation and enlargement of the rehabilitation center. The renovation is stated to be a reorganization and modernization of the existing rehabilitation center to improve the current level of service; it is not intended to increase the capacity to serve additional patients.

The project is referred to the Planning Board as it is a conditional use under the R-3 zone; it is also being reviewed for compliance with the Site Plan Standards.

Summary of the Proposal

Zone:	R-3
Site Area:	Overall complex: 10.57 acres
Existing Use:	Healthcare Rehabilitation Center
Proposed Use:	Continued use as Rehabilitation Center
Existing Bldg. Floor Area:	71,840 sq ft
Proposed Bldg. Floor Area:	72,730 sq ft
Net inc. in footprint for Rehabilitation Center renovation:	890 sq ft
Building Addition Height:	single story
Existing Parking:	188 spaces
Proposed Parking:	186 spaces
Required Parking:	186 spaces

Background

In 1988, the Planning Board approved a 99 bed long term care facility and a 50 bed intermediate care facility for this site. The property totaled 5.93 acres at that time. The long term care facility was built with 102 beds (23,200 sq. ft. footprint/65,648 sq ft floor area) and is now known as Cedars Care Center and is the location of the Rehabilitation Center. The intermediate care facility was deferred. In 1997 Cedars acquired an additional 4 acres and received approval to add a 61 bed intermediate care facility (95,332 sq. ft. total floor area) now known as the Atrium.

In 2005 approval was given for a 2-story addition for 30 assisted living units (12,371 sq. ft. footprint/ 26,119 sq. ft. floor area), now almost complete and known as the Cedars Assisted Living Facility (Approval letter in [Attachment Aiii](#)). At that time the site was reorganized into a condominium form of ownership so that each facility is a condominium unit and the balance of the site is a “common element” to be used in common by all three units (Condominium documents were submitted and are included at [Attachment Aiv](#)).

The first two Cedar projects (Cedars Care Center and Atrium) impacted wetlands and a Tier II wetlands permit was issued by DEP/ACE subject to on-site provision of three mitigation parcels identified as Parcels A, B and C. The assisted living development approved in 2005 was constructed over part of Mitigation Parcel B and an underground storm water detention/treatment system was incorporated into the project on the side nearest Ocean Avenue. The most recent development (the assisted living facility) triggered a Tier III review and was permitted by the MDEP (Permit submitted and attached as in [Attachment Aiii](#)).

All of these projects secured an SLDA permit which at that time was permitted by the City on behalf of MDEP. The current proposal is a modification of the SLDA and is now subject to MDEP review for storm water; an application has been submitted to the MDEP (not included in the applicant’s submission to the City except for the Storm water Management Plan in [Attachment Aviii](#)). A summary of the storm water and drainage improvements on the overall site was requested by staff and is included in [Attachment B](#) as the site is close to residential properties.

Current proposal

Cedars Healthcare is proposing to renovate the existing rehabilitation center located on the first floor on the westerly side of the Cedars Care Center (approved 1988; completed 1991). The proposal involves an addition of 1500 sq ft to the current first floor area to allow for modernization of the rehabilitation center and associated infrastructure (further description by the applicant is contained in [Attachment Ai](#), with the layout shown in [Attachments Fiii](#) and elevations/floor plan in [Attachment Fv](#).)

The aerial photograph in [Attachment E](#) shows the location and scale of the proposal within the Cedars complex.

The photograph below shows the existing loading area and external wall of the existing rehabilitation center, as viewed from the parking areas to the west.



The 1500 sq ft will be made up as follows:

- 610 sq ft within the existing loading dock, which is redundant (another loading dock was created in another phase)
- 890 sq ft building footprint expansion partly under the existing roof and into the paved parking and loading areas adjacent to the existing building.

The proposal includes removal of 350 sq ft of existing paved area which will be revegetated, which results in a net reduction in impervious area of 108 sq ft. (described in Attachment Aviii and illustrated with calculations in Attachment Fiv).

Conditional Use Review

Sec. 14-88 (c)

- 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 building and will not cause significant physical encroachment into established residential areas.*

The proposed expansion takes place on the existing site on the rear elevation of the existing Care Center. It appears to efficiently utilize the former loading area, and otherwise is located beneath a section of the existing roof overhang and partly within paved parking and loading areas.

- b. *The proposed use will not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or thereafter.*

This project does not result in a displacement or conversion of a residential use.

- 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.*

The minimum lot size is met.

Sec. 14-474

- a. *There are unique or distinctive characteristics or effects associated with the proposed conditional use.*

There are no known or distinctive characteristics associated with this use. It is a small expansion of the original Cedars long term care use which has been on this site since 1988.

- b. *There will be an adverse impact upon the health, safety, or welfare of the public or the surrounding area.*

The Cedars facility has been on this site since 1988 with no reported adverse impact upon the public health, safety or welfare. The proposal involves minor construction within the building/activity envelope. The applicants state that the proposal does not increase the capacity to serve additional patients but aims to improve the level of service for existing patients.

- c. *Such impact differs substantially from the impact which would normally occur from such a use in that zone.*

There are no known technical issues associated with this expanded use that would lead one to conclude that the project impact would differ from other such uses.

- (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.*

The proposal does not appear to have any adverse impacts upon other property in the neighborhood.

Site Plan Review

Traffic/Parking

The project does not generate any additional traffic or parking as no increase in patient numbers is envisaged.

The expanded footprint results in the loss of two parking spaces, leaving 186 spaces on the site. The submitted cover letter and 2005 Parking Study ([Attachment A](#)) refer to a zoning requirement of 149 spaces, but the approval in 2005 was based on the provision of 186 spaces to meet the zoning requirement. The Zoning Administrator has confirmed that the proposal meets parking and other zoning requirements ([Attachment C](#)).

Trees

The proposal results in the loss of one mid-size pine tree which currently helps screen a condenser and above-ground oil tank enclosure. Staff suggests that replacement planting (large shrubs) should be required near the location of the removed tree.

Drainage

The proposed addition will expand over existing developed areas and the storm water runoff from the building addition will drain into the detention pond to the southeast (towards Ocean Avenue) and then into the municipal storm water system in Ocean Avenue.

The Storm Water Management Plan in [Attachment Aviii](#) outlines how the addition will reduce net impervious surface and potential pollution. The City's Engineering Reviewer has confirmed that there are no storm water concerns ([Attachment D](#)).

Staff has received one telephone call from a neighbor, Ms Manduka, who owns the property approximately 500 feet to the west of the proposed addition. It is understood that Ms Manduka considers that the Cedars development has increased the storm water impact on her property, particularly from the road around the western edge of the site and snow dumping in the vicinity of the wetlands near her lot.

Staff notes that the proposal under review would not affect Ms Manduka since it is downhill from the western roadway and drains to the south east ie the opposite direction.

It is possible that some other part of the Cedars complex or the operation of snow removal is contributing to impacts on neighbors. Staff requested additional background on this question. John Watson (Cedars CFO) submitted an e-mail on 9.18.2008 that summarizes previous storm water and drainage issues and how Cedars has sought to address concerns raised by reviewers and neighbors in the past.

Neighborhood Meeting

The proposal was noticed to 465 parties including interested citizens and neighbors within 500 feet of the outer boundary of the Cedars site. To date one neighbor (Ms Manduka) has contacted Planning staff. A Neighborhood Meeting is not legally required by the City's Ordinance for this type of project.

Staff recommends that the applicant hold a voluntary Neighborhood Meeting between the Workshop and the Hearing to ensure that nearby neighbors understand the nature of the current project and to review any residual concerns regarding storm water. Given the small scale of the proposal, staff suggests that the meeting notices be sent to neighbors located within 500 feet of the Cedars boundary on the south side of the site.

Attachments

- A. Original Submission
 - i. Cover letter and Site Plan Application Form
 - ii. Conditional Use Application Form
 - iii. Previous Approval documents
 - iv. Right, title and Interest (Declaration of Condominium Document)
 - v. Technical and financial Capability
 - vi. Project maps
 - vii. Parking Study (from 2005)
 - viii. Storm water Management Plan (August 2008)
- B. E-mail from Cedars CFO John Watson dated Sept 18, 2008 presenting further clarification re Storm Water Management for the entire Cedars complex
- C. Memo from City Zoning Administrator dated Sept 10, 2008
- D. Memo from City Engineering Reviewer, Dan Goyette (Woodard & Curran) dated Sept 18, 2008
- E. Aerial Location Plan (prepared by staff)
- F. Plan Set
 - i. Boundary survey
 - ii. Project Location Map
 - iii. Site Plan
 - iv. Alterations to Land Cover Map (re impervious area calculations)
 - v. Architectural Plan and Elevations

Google Groups

ID# 2017-278

asears@maine.rr.com <asears@maine.rr.com>

Jan 18, 2018 2:53 PM

Posted in group: **Planning Board**

Comments on Cedars expansion!

Based on the last expansion I have concerns. The requirement to have a tree berm along Rainbow Mall Road was never followed through and some of the added trees have passed on. This should be placed on the agenda again. Parking along side Rainbow mall Road is an issue from time to time and should not be allowed. This is a driving test area as well as a driver test area so is already dangerous. If Maine Blasting and Drilling is being used again the City needs to require a bond as they have already caused significant damage in the area and have numerous lawyers to deny ALL claims. Let's allow our elected officials to protect and prioritize property owners this time.

Art Sears
6 Ashlar Court
Portland

Another example parking not allowed on Pheasant Hill road as well as the Brown parking lot due to the Cheverus all ball field and it is abused annually and the City does nothing to enforce the original agreement. Can the city planners get the Police involved?????

Art or Anne

Google Groups

Cedars expansion

Manduca Music <mark@manducamusic.com>

Jan 26, 2018 7:51 PM

Posted in group: **Planning Board**

To: Portland, Maine Planning Board members

From: Elizabeth Manduca 861 Washington Ave. Portland, ME 04103 207-233-9401 or 207-233-7012

January 26, 2018

I am writing concerning the expansion of The Cedars facility on Ocean Ave. While I believe the facility provides a great service to our elderly, I have not had a good experience with Cedars as a neighbor. During their last expansion, we had substantial damage to our property (owned since 1971) which is outlined below. I met with city officials and the Cedars staff concerning these damages. I provided photographs and eyewitness testimony. Cedars promised to do a number of things to rectify this situation and to this day, many years later, they have done nothing.

The only thing the city did was to make new rules about development run-off and blasting, all too late to help us or our neighbors. We should have filed a lawsuit against both the city and Cedars, but they promised in good faith to help and then did nothing.

Here is what happened during their last expansion.

BLASTING

1. The blasting of the ledge was so powerful that it blew the glass out of one of my doors. Thankfully no one was hurt. The blasts lifted the children right off the floor of my piano studio. All of my family members experienced a lift and rolling of our floors as each blast occurred.

2. The blasts split my new cellar floor, cracked my walls and made it so that I am still not able to close some doors properly. My neighbors complained about this also.

Cedars offered nothing to repair this damage.

WATER

1. After the blasting, my backyard was flooded with water to the point that I could no longer use 1/4 of my backyard.

2. Their road is graded at a downhill slope and the run-off spills into our yard. They continued to pile snow at the end of this road further exacerbating the situation. I asked them to move the snow away from that area and they only moved it over a few feet, thus still sending debris in this area.

3. The run-off from the road contains salt, gas, and sand. The gas was showing up in trenches we had dug to redirect the water. I showed them photos of this. The plant life has changed and a lot of plants or trees will not grow in this area.

4. I showed them pictures of gardens we had in this area before they split the ledge and photos of things underwater afterwards. We eventually had to pay to a landscaper to raise our garden beds.

MEETINGS

1. Cedars sent engineers to look at my cellar floor. They wore little monocle glasses and looked into the cracks on the floor. They sent a report saying that due to the material in the cracks on the floor, they couldn't have caused the damage. The cellar floor was new...I spoke with a blaster who said of course the blasting did all this damage.

2. I was invited to a meeting at Cedars to discuss the water problem. I was ushered into a room with a number of people including an attorney. I believe they were trying to intimidate me. They told me that based on their studies, the blasting couldn't have caused the change in the flow of the water. This was a wetlands anyway. I replied, "if this is a wetlands area, how are you allowed to build on it?" No answer.

I told them that I had lived at this property since 1971. I wasn't stupid-I can obviously see the changes in my own backyard."

3. This is what they offered. They would build a drain at the end of the road, put gutters on all the garages to redirect run-off from rain; they would put trees along the edge of the roadway leading to our backyards. They didn't do any of these things. All three properties abutting the woods by Cedars have had substantial water damage to the point that you cannot even walk out to the ends of the property in the spring.

4. I complained repeatedly to our town councilor during the weeks of blasting, but no one from the city responded.

Cedars has quietly acquired a few private properties on Slemons Rd. I spoke with one of the residents who said they are pressuring him to sell as well. They will destroy this residential area to build this gargantuan structure. I don't know how it is possible that Cedars can build it without significant damage to the surrounding area.

We will be keeping a close eye on this project. We'll have meetings with the neighbors to try and ensure that further damage and degradation of property is not allowed again.

Sincerely, Elizabeth Manduca

LEVEL III SITE PLAN APPLICATION

for the

THE CEDARS LONG-TERM & ASSISTED LIVING MEMORY CARE FACILITY

PORTLAND, MAINE



Cedars Nursing Care, Inc. and JHA Assisted Living, Inc.
630 Ocean Avenue
Portland, Maine 04103

December 2017



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Level III – Preliminary and Final Site Plans Development Review Application Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the [Land Use Code \(Chapter 14\)](#), [Design Manual](#) and [Technical Manual](#).

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	The Cedars - Long Term and Assisted Living Memory Care Facility
Proposed Development Address:	630 Ocean Avenue, Portland, ME 04103
Project Description:	Institutional Long Term Care and A.L. Memory Care Expansion
Chart/Block/Lot:	174 A013
Preliminary Plan	N/A
Final Plan	✓

II. Contact Information (Please enter n/a on those fields that are not applicable)**APPLICANT**

Name:	The Cedars c/o John Watson
Business Name:	JHA Assisted Living, Inc. and Cedars Nursing Care, Inc.
Address:	630 Ocean Avenue
City/State:	Portland, ME
Zip Code:	04103
Work #:	207.221.7000
Home #:	-
Cell #:	-
Fax #:	-
E-mail:	JWatson@thecedarsportland.org

OWNER

Name:	JHA Services, Inc.
Address:	630 Ocean Avenue
City/State:	Portland, ME
Zip Code:	04103
Work #:	207.221.7000
Home #:	-
Cell #:	-
Fax #:	-
E-mail:	JWatson@thecedarsportland.org

AGENT/REPRESENTATIVE

Name:	Wright-Pierce, c/o Jan Wiegman
Address:	11 Bowdoin Mill Island, Suite 140
City/State:	Topsham, ME
Zip Code:	04086
Work #:	207-725-8721
Home #:	-
Cell #:	-
Fax #:	207-729-8414
E-mail:	jan.wiegman@wright-pierce.com

BILLING (to whom invoices will be forwarded to)

Name:	Cedars Nursing Care, Inc.
Address:	630 Ocean Avenue
City/State:	Portland, ME
Zip Code:	04103
Work #:	207.221.7000
Home #:	-
Cell #:	-
Fax #:	-
E-mail:	JWatson@thecedarsportland.org

ENGINEER

Name:	Jan Wiegman c/o Wright-Pierce
Address:	11 Bowdoin Mill Island, Suite 140
City/State:	Topsham, ME
Zip Code:	04086
Work #:	207-725-8721
Home #:	-
Cell #:	-
Fax #:	207-729-8414
E-mail:	jan.wiegman@wright-pierce.com

SURVEYOR

Name:	Titcomb Associates
Address:	133 Gray Road
City/State:	Falmouth, ME
Zip Code:	04105
Work #:	207-797-9199
Home #:	-
Cell #:	-
Fax #:	207-878-3142
E-mail:	rcroteau@titcombsurvey.com

ARCHITECT

Name:	Action Pact Design
Address:	423 Westport Road
City/State:	Kansas City, MO
Zip Code:	64111
Work #:	785-477-1126
Home #:	-
Cell #:	-
Fax #:	-
E-mail:	Alex Toye; alex.toye@actionpact.com

ATTORNEY

Name:	Natilie Burns : Jensen Baird Gardner & Henry
Address:	Ten Free Street, PO Box 4510
City/State:	Portland, ME
Zip Code:	04112-4510
Work #:	207-775-7221
Home #:	-
Cell #:	-
Fax #:	207-775-7935
E-mail:	nburns@jbgh.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Michael Guethle
E-mail:	michael.guethle@wright-pierce.com
Name:	Alex Toye
E-mail:	alex.toye@actionpact.com
Name:	Matt LaPierre
E-mail:	matthew.lapierre@wright-pierce.com

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☒	Less than 50,000 sq. ft.	\$750.00
☐	50,000 – 100,000 sq. ft.	\$1,000.00
☐	100,000 – 200,000 sq. ft.	\$2,000.00
☐	200,000 – 300,000 sq. ft.	\$3,000.00
☐	Over 300,000 sq. ft.	\$5,000.00
☐	Parking lots over 100 spaces	\$1,000.00
☐	After-the-fact Review	\$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	\$250.00
☐	Planning Board Review	\$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	\$1,500.00
☒	Stormwater Quality	\$250.00
☐	Subdivision	\$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [] x \$25.00 each	\$
☒	Site Location	\$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [] x \$200.00 each	\$ -0.00-
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		\$ 4,500.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) (\$.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review (\$52.00 hour)
- Legal Review (\$75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

TOTAL AREA OF SITE	10.5 ac / 460,350	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	45,000	sq. ft.
<i>If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.</i>		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	4.98 acres	sq. ft.
Impervious Area (Total Proposed)	5.37 acres	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)	81,114	sq. ft.
Building Footprint (Total Proposed)	96,956	sq. ft.
Building Floor Area (Total Existing)	N/A	sq. ft.
Building Floor Area (Total Proposed)	+/- 45,000 additional	sq. ft.
ZONING		
Existing	R-3, R-5	
Proposed, if applicable	N/A	
LAND USE		
Existing	Institutional Long Term Care	
Proposed	Institutional Long Term Care	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	N/A	
# of Residential Units (Total Proposed)	N/A	
# of Lots (Total Proposed)	N/A	
# of Affordable Housing Units (Total Proposed)	N/A	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)	N/A	
# of One-Bedroom Units (Total Proposed)	N/A	
# of Two-Bedroom Units (Total Proposed)	N/A	
# of Three-Bedroom Units (Total Proposed)	N/A	
PARKING SPACES		
# of Parking Spaces (Total Existing)	170	
# of Parking Spaces (Total Proposed)	183	
# of Handicapped Spaces (Total Proposed)	12 total (2 new prop'd)	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)	No Racks, Storage Avail.	
# of Bicycle Spaces (Total Proposed)	4 outside spaces	
ESTIMATED COST OF THE PROJECT	\$16,000,000	

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a **legal signature** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	
Date:	11-21-17

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
		1	Completed Application form
		1	Application fees
		1	Written description of project
		1	Evidence of right, title and interest
		1	Evidence of state and/or federal approvals, if applicable
		1	Written assessment of proposed project's compliance with applicable zoning requirements
		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
		1	Written requests for waivers from site plan or technical standards, if applicable.
		1	Evidence of financial and technical capacity
		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	SITE PLAN SUBMISSIONS CHECKLIST
		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)
			Proposed grading and contours;
			Existing structures with distances from property line;
			Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;
			Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);
			Preliminary infrastructure improvements;
			Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;
			Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);
			Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);
			Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;
			Exterior building elevations.

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)
✓		1	* Completed Application form
		1	* Application fees
✓		1	* Written description of project
✓		1	* Evidence of right, title and interest
✓		1	* Evidence of state and/or federal permits
✓		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
✓		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
✓		1	* Evidence of financial and technical capacity
✓		1	Construction Management Plan
✓		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
✓		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
✓		1	Stormwater management plan and stormwater calculations
✓		1	Written summary of project's consistency with related city master plans
✓		1	Evidence of utility capacity to serve
✓		1	Written summary of solid waste generation and proposed management of solid waste
✓		1	A code summary referencing NFPA 1 and all Fire Department technical standards
✓		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
		1	Manufacturer's verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	SITE PLAN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)
✓		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
		1	Final Site Plans including the following:
✓			Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);
✓			Existing and proposed structures on parcels abutting site;
✓			All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;
✓			Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;
✓			Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;
✓			Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;
N/A			Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;
✓			Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;
✓			Location of all snow storage areas and/or a snow removal plan;
			A traffic control plan as detailed in Section 1 of the Technical Manual;
✓			Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);
N/A			Location and proposed alteration to any watercourse;
✓			A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;
✓			Proposed buffers and preservation measures for wetlands;
✓			Existing soil conditions and location of test pits and test borings;
✓			Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;
✓			A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;
✓			Grading plan;
N/A			Ground water protection measures;
✓			Existing and proposed sewer mains and connections;

- Continued on next page -

✓		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
✓		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
✓		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
✓		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
✓		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
✓		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
✓		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
✓		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.



**PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST**



A separate drawing[s] shall be provided as part of the site plan application for the Portland Fire Department's review.

1. Name, address, telephone number of applicant
- 2.
3. Name address, telephone number of architect
4. Proposed uses of any structures [NFPA and IBC classification]
- 5.
6. Square footage of all structures [total and per story]
7. Elevation of all structures
8. Proposed fire protection of all structures
 - **As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)**
9. Hydrant locations
10. Water main[s] size and location
11. Access to all structures [min. 2 sides]
12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

Some structures may require Fire flows using annex H of NFPA 1

Section 3: Application Fees

3.0 Application Fees

Application fees have been calculated and have been confirmed by the Planning division. The fees are based on:

- | | |
|--|-----------------|
| 1. Level III Development – Less than 50,000 s.f. | \$ 750. |
| 2. Stormwater Quality | \$ 250. |
| 3. Site Location Review | <u>\$3,500.</u> |
| <u>Total:</u> | \$ 4,500. |

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☒	Less than 50,000 sq. ft.	\$750.00
☐	50,000 – 100,000 sq. ft.	\$1,000.00
☐	100,000 – 200,000 sq. ft.	\$2,000.00
☐	200,000 – 300,000 sq. ft.	\$3,000.00
☐	Over 300,000 sq. ft.	\$5,000.00
☐	Parking lots over 100 spaces	\$1,000.00
☐	After-the-fact Review	\$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☐	Planning Staff Review	\$250.00
☐	Planning Board Review	\$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	\$1,500.00
☐	Stormwater Quality	\$250.00
☐	Subdivision	\$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [] x \$25.00 each	\$
☒	Site Location	\$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [] x \$200.00 each	\$ -0.00-
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☐	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		\$ 4,250.00

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) (\$.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review (\$52.00 hour)
- Legal Review (\$75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

Section 4: Description of Project

4.0 Proposed Project

The Cedars long term care facility, located at 630 Ocean Avenue in Portland, Maine, is proposing an expansion and redevelopment of a portion of its facilities. The project is largely driven by the evolution of the care model with a shift towards the household model of care delivery and private rooms for residents. The existing long term care facility at the Hoffman Center has semi-private rooms and will be converted in three households with private rooms. The 40 displaced beds will be moved to the proposed new facility and two household will be created, occupying two floors of the building. A new 20 bed assisted living memory care household will occupy the first floor of the new facility as well.

The Assisted Living/Memory care represents an expansion of services and beds for the campus. The new facility will be located on the campus near the intersection with Ocean Avenue and Rainbow Mall Road and will have a footprint of approximately 15,000 s.f. The Hoffman Center renovations will not add to the existing building but will be interior renovations.

Parking improvements associated with the proposed project, are designed to accommodate the City Code requirements for the new institutional use, the AL Memory Care household, and to replace any parking spaces that are displaced by the new building. Site demolition will include the removal of an administrative building, parking areas, trees, and lawn space.

Landscaping is proposed around the perimeter of the site and other areas adjacent to proposed improvements. Landscaping will include trees, shrubs, ornamental grasses and lawns areas.

The existing drainage system will largely remain in place and in some cases upgraded with new underdrains, structures, and pipe. The drainage upgrades will include revisions to the existing detention basins, new underdrained soil filters and new storm drain structures to accommodate the site revisions and the new facility.

Section 5: Evidence of Right, Title, and Interest

5.0 Existing Deeds

A list of deeds and easements for the parcels for this project have been attached to this section.

A discussion of easements and similar land use information can be found in Section 7 of this permit.

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that JHA Properties, Inc., a Maine nonprofit corporation, of Portland, County of Cumberland, and State of Maine, for consideration paid, grants to JHA Assisted Living, Inc., a Maine nonprofit corporation organized and existing under the laws of the State of Maine, and having its principal place of business at Portland, in the County of Cumberland, and State of Maine, whose mailing address is 630 Ocean Avenue, Portland, Maine, with **WARRANTY COVENANTS**, the land in Portland, County of Cumberland, State of Maine, described as follows: The Unit ("Unit") designated as Number 3 of the Cedars Condominium located at 630 Ocean Avenue, Portland, Cumberland County, Maine, ("Condominium"), together with the Unit's undivided percentage interest in the Common Elements of the Condominium as set forth in the Declaration, created pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended, and set forth in Declaration of Cedars Condominiums, dated as of June 30, 2006 and recorded in Cumberland County Registry of Deeds in Book 24129, Page 276, as may be amended, and shown on the related plats and plans recorded in Plan Book 206, Page 430. The Unit is subject to and has the benefit of the Declaration, the Plats, Plans and the Act which are incorporated herein by reference, to which reference is hereby made for a more particular specification of the definition, location and description of the real property hereby conveyed and of the rights, obligations, easements, development rights, special Declarant rights, restrictions, covenants and conditions pertaining thereto.

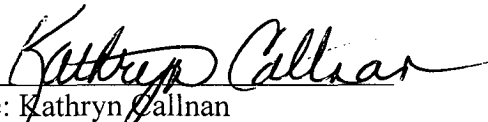
IN WITNESS WHEREOF, it, the said JHA Properties, Inc., has caused this deed to be signed and sealed in its corporate name by Kathryn Callnan, its President/Chief Executive Officer, thereunto duly authorized, this 1st day of May, 2014.

WITNESS:

JHA Properties, Inc.

Received
Recorded Register of Deeds
May 06, 2014 09:12:50A
Cumberland County
Pamela E. Lovley

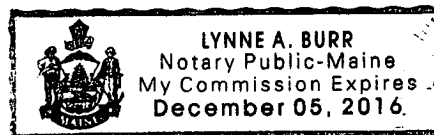


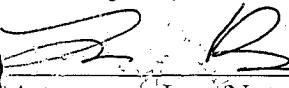
By: 
Name: Kathryn Callnan
Title: President/Chief Executive Officer

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

May 1, 2014

Then personally appeared the above named Kathryn Callnan, President/Chief Executive Officer of said Corporation, as aforesaid, and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity and the free act and deed of said Corporation, before me,




Attorney at Law/Notary Public

SEAL

AMENDMENT TO DECLARATION OF COVENANTS AND RESTRICTIONS

THIS AMENDMENT TO DECLARATION OF COVENANTS AND RESTRICTIONS is made this 30th day of June, 2006 by, Cedars Nursing Care Center, Inc., and JHA Properties, Inc., both Maine non-profit corporations having a place of business at 630 Ocean Avenue, Portland, Cumberland County, Maine, 04103, (herein collectively referred to as the "Declarants") and the State of Maine Department of Environmental Protection, a governmental agency having a place of business in Augusta, Kennebec County, Maine, and a mailing address of 17 State House Station, Augusta, Maine 04333-0017 (referred to as the "MDEP"), pursuant to MDEP Natural Resource Protection Act Project Number 97-441-S (formerly Tier #T-00441-TE-A-N), dated September 26, 1997 (collectively referred to as "Order"), as amended by the MDEP Order #L-22483-TG-B-M, dated February 20, 2006 (hereinafter referred to as "New Order"), relating to preservation of portions of an approximately ten (10) acre parcel of land near 630 Ocean Avenue, Portland, Maine.

RECITALS

WHEREAS, the Declarants made a Declaration of Covenants and Restrictions, dated March 27, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75 (the "Original Declaration"), pursuant to MDEP Natural Resource Protection Act Project Number 97-441-S (formerly Tier #T-00441-TE-A-N), dated September 26, 1997 (collectively referred to as "Order"), relating to preservation of three certain parcels of land bounded and described as set forth on Exhibits A and A-1 to the Original Declaration and respectively described therein (and herein) as "Mitigation Parcel A," "Mitigation Parcel B" and "Mitigation Parcel C;"

WHEREAS, MDEP Natural Resource Protection Act Project Number 97-441-S (formerly Tier #T-00441-TE-A-N) was amended by MDEP Order #L-22483-TG-B-M, dated February 20, 2006 (hereinafter referred to as "New Order");

WHEREAS, the Site Plan Location Permit issued by the City of Portland, Maine, Permit No. _____, dated September 13, 2005, and the application of JHA Assisted Living, Inc. for a MDEP Natural Resources Protection Act permit, Application No. DEP #L-22483-TE-B-M both contemplate (1) that certain portions of the property included in Mitigation Parcel A and Mitigation Parcel B as set forth in the Original Declaration would be released from the Original Declaration by amendment to the legal descriptions of said Mitigation Parcel A and Mitigation Parcel B and (2) that additional mitigation parcels would be created in replacement thereof;

WHEREAS, the Declarants have executed and delivered a Declaration of Covenants and Restrictions of even date herewith creating the two additional mitigation parcels (designated as "Mitigation Parcel A-1" and "Mitigation Parcel D," both as shown on Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, revised April 5, 2006, and to be recorded in the Cumberland County Registry of Deeds;

WHEREAS, Declarant Cedars Nursing Care Center, Inc., holds title to Mitigation Parcel A as described in the Original Declaration by virtue of a certain real property situated in Portland, Maine, described in a deed from Sidney J. Haijar to The Jewish Home for the Aged, dated April 24, 1987, and recorded in Book 7732, Page 282 at the Cumberland County Registry of Deeds and to certain real property situated in Portland, Maine, described in a deed from JHA Services, Inc., to Cedars Nursing Care Center, Inc., dated March 27, 1988, and recorded in Book 13696, Page 315 at the Cumberland County Registry of Deeds, all of which real property is subject to a certain Loan Agreement and Mortgage given by Cedars Nursing Care Center, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of May 1, 1993, recorded in the Cumberland County Registry of Deeds in Book 10717, Page 311;

WHEREAS, Declarant JHA Properties, Inc., holds title to Mitigation Parcel B as described in the Original Declaration by virtue of a deed from JHA Services, Inc., to JHA Properties, Inc., dated March 27, 1998, recorded in Book 13696, Page 317 at the Cumberland County Registry of Deeds, which real property is subject to a certain Loan Agreement and Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of March 1, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 1 and as amended and supplemented by a Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of October 9, 1998, and recorded in the Cumberland County Registry of Deeds in Book 14221, Page 222;

WHEREAS, the New Order permits the Declarant to fill 16,018 square feet of forested freshwater wetlands and for the after-the-fact filling of 1,000 square feet of forested freshwater wetlands in order to construct an Independent Living Facility, subject to the conditions set forth therein;

WHEREAS, pursuant to the Natural Resources Protection Act, Title 38 M.R.S.A. Section 480-A et seq. and Chapter 310 of regulations promulgated by the MDEP (the "Wetland Protection Rules") and in satisfaction of the New Order, Declarants desire by this Amendment to Declaration of Covenants and Restrictions, to amend the description of Mitigation Parcel A and Mitigation Parcel B as described in the Original Declaration as more particularly set forth herein and to confirm their agreement that the Original Declaration, as so amended, may be enforced by the MDEP;

NOW, THEREFORE, Cedars Nursing Care Center, Inc., and JHA Properties, Inc., as Declarants, and MDEP, hereby covenant and agree as follows:

1. Declarants and the MDEP hereby AMEND the description of Mitigation Parcel A to read as set forth on Exhibit I attached hereto and made a part hereof and hereby RELEASE from the Original Declaration the following released area from said Mitigation Parcel A as described in the Original Declaration:

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point lying N 40°48'48" E a distance of One Hundred Fifty-Three and 38/100 (153.38) feet from the southerly corner of Mitigation Parcel A as described in a deed recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75; **thence, from said point of beginning**, N 38°27'46" W a distance of Eight-Four and 24/100 (84.24) feet to a point; thence N 55°39'58" E a distance of Six and 40/100 (6.40) feet to a point; thence S 83°16'49" E a distance of Thirty-Three and 51/100 (33.51) feet to a point; thence S 58°44'00" E a distance of Eight and 31/100 (8.31) feet to a point; thence S 34°11'12" E a distance of Twenty-Six and 44/100 (26.44) feet to a point; thence S 12°22'27" E a distance of Twenty-Four and 54/100 (24.54) feet to a point; thence S 40°48'48" W a distance Twenty and 47/100 (20.47) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described released easement area contains 2,121 square feet and lies over a portion of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282, and is a portion of Mitigation Parcel A as described in a Declaration of Covenants and Restrictions recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75.

2. Declarants and MDEP hereby AMEND the description of Mitigation Parcel B to read as set forth on **Exhibit II** attached hereto and made a part hereof and hereby RELEASE from the Original Declaration the following the following released area from said Mitigation Parcel B as described in the Original Declaration:

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point lying the following two courses and distances from said Ocean Avenue and the easterly corner of land now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282: thence N 33°52'30" W by said land of Cedars Nursing Care Center, Inc. a distance of One Hundred Sixty-Four and 46/100 (164.46) feet to a 5/8" capped iron rod ("PLS 509") and land now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in said Registry in Book 13696, Page 315; thence N 52°41'19" W by said land of Cedars Nursing Care Center, Inc. a distance of Fifty-Three and 55/100 (53.55) feet to said point of beginning; **thence, from said point of beginning**, S 35°08'49" W a distance of Nineteen and 01/100 (19.01) feet to a point; thence S 62°52'24" E a distance of Sixteen and 66/100 (16.66) feet to a point; thence S 10°12'08" E a distance of Twenty-Three and 48/100 (23.48) feet to a point; thence N 66°31'23" W a distance of Twenty-One and 47/100 (21.47) feet to a point; thence N 25°23'48" E a distance of Seventeen and 68/100 (17.68) feet to a point; thence N 64°36'12" W a distance of Eighty-Two and 00/100 (82.00) feet

to a point; thence S 25°23'48" W a distance of Eighteen and 39/100 (18.39) feet to a point; thence N 89°17'25" W a distance of Thirty-Six and 41/100 (36.41) feet to a point; thence N 19°30'34" E a distance of Sixty-Eight and 29/100 (68.29) feet to a point; thence N 01°46'29" W a distance of Thirty-Four and 09/100 (34.09) feet to a point; thence N 46°36'49" E a distance of Eighty-Seven and 87/100 (87.87) feet to a point; thence S 82°01'39" E a distance of Seventeen and 23/100 (17.23) feet to a point; thence S 33°39'21" E a distance of Twenty-Three and 77/100 (23.77) feet to a point; thence S 03°35'26" W a distance of Sixty-Three and 84/100 (63.84) feet to a point; thence S 67°26'24" E a distance of Sixty and 83/100 (60.83) feet to a point; thence S 24°08'41" E a distance of Thirty and 34/100 (30.34) feet to a point; thence N 83°22'48" W a distance of Eleven and 21/100 (11.21) feet to a point; thence N 78°14'02" W a distance of Twenty-Eight and 91/100 (28.91) feet to a point; thence S 35°08'49" W a distance of Thirty-Two and 24/100 (32.24) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described released easement area contains 15,956 square feet and lies over portions of property now or formerly of Cedars Nursing Care Center, Inc. as described in deeds recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282 and Book 13696, Page 315; also lying over a portion of property now or formerly of JHA Properties, Inc. as described in a deed recorded in said Registry in Book 13696, Page 317. The above-described released easement area is a portion of Mitigation Parcel B as described in a Declaration of Covenants and Restrictions recorded in said Registry in Book 13709, Page 75.

Declarants hereby confirm all other covenants and restrictions in the Original Declaration

Any provision contained in the Original Declaration or in this Amendment to Declaration of Covenants and Restrictions may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of all of the Property subject thereto and by the MDEP.

Each provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions, and any agreement, promise, covenant and undertaking to comply with each provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions, shall be deemed a covenant running with the land as a burden and upon the title to the property subject thereto.

Invalidity or unenforceability of any provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions in whole or in part shall not affect the validity of enforceability of any other provision or any valid and enforceable part of a provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions.

This Amendment to Declaration of Covenants and Restrictions shall be governed by and interpreted in accordance with the laws of the State of Maine.

IN WITNESS WHEREOF, each of the Declarants has caused this Amendment to Declaration of Covenants to be signed and sealed in its corporate name by its duly authorized officer as of the day and year first above written.

CEDARS NURSING CARE CENTER, INC.

By: Kathryn J. Callnan
Kathryn J. Callnan
Its President

JHA PROPERTIES, INC.

By: Kathryn J. Callnan
Kathryn J. Callnan
Its President

STATE OF MAINE
Cumberland, ss.

April 24, 2006

Personally appeared before me the above named Kathryn J. Callnan, President of Cedars Nursing Care Center, Inc., and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said non-profit corporation.

Sylvia Gill
Notary Public
Print Name: Sylvia Gill
Commission Expires: 10/21/2006

STATE OF MAINE
Cumberland, ss.

April 24, 2006

Personally appeared before me the above named Kathryn J. Callnan, President of JHA Properties, Inc., and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said non-profit corporation.

Sylvia Gill
Notary Public
Print Name: Sylvia Gill
Commission Expires: 10/21/2006

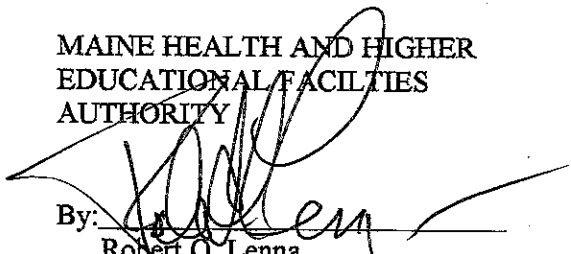
MAINE HEALTH AND HIGHER EDUCATIONAL FACILITIES AUTHORITY (the "Authority") joins herein for purposes of

(1) consenting to the execution and delivery of the foregoing Amendment to Declaration of Covenants and Restrictions, and

(2) agreeing, for itself and its successors and assigns, that the mortgage lien and other rights of the Authority under (a) that certain Loan Agreement and Mortgage, given by Cedars Nursing Care Center, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of May 1, 1993, recorded in the Cumberland County Registry of Deeds in Book 10717, Page 311 and/or (b) that certain Loan Agreement and Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of March 1, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 1, and as amended and supplemented by a Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of October 9, 1998, and recorded in the Cumberland County Registry of Deeds in Book 14221, Page 222, shall be subject and subordinate to the Declaration of Covenants and Restrictions, dated March 27, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75, as amended by the foregoing Amendment to Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, Maine Health and Higher Educational Facilities Authority has caused this Amendment to Declaration of Covenants and Restrictions to be signed and sealed in its corporate name by its duly authorized officer as of the day and year first above written.

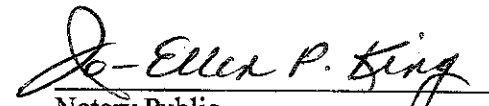
MAINE HEALTH AND HIGHER
EDUCATIONAL FACILITIES
AUTHORITY

By: 
Robert O. Lenna
Its Executive Director

STATE OF MAINE
Kennebec, ss.

JUNE 29th, 2006

Personally appeared before me the above named Robert O. Lenna, Executive Director of Maine Health and Higher Educational Facilities Authority and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Maine Health and Higher Educational Facilities Authority.


Notary Public

Print Name: JO-ELLEN P. KING

Commission Expires: OCTOBER 27, 2011

1110838.1

6

Jo-Ellen P. King
Notary Public, Maine
My Commission Expires
October 27, 2011

THE STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION HEREBY
JOINS IN THE RELEASE AND AMENDMENT AS SET FORTH ABOVE AND HEREBY
ACKNOWLEDGES THE FOREGOING:

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:

Name:

Title:

ANDREW FISK
BUREAU DIRECTOR

STATE OF MAINE

Kennebec, ss.

May 26, 2006

Personally appeared before me the above named Andrew Fisk, Director
of the Maine Department of Environmental Protection, and acknowledged the foregoing
instrument to be his/her free act and deed in his/her said capacity and the free act and deed of the
Maine Department of Environmental Protection.

Lynn Boutilier
Notary Public Lynn Boutilier
Print Name:
Commission Expires: 4/10/11

EXHIBIT I

DESCRIPTION OF MITIGATION PARCEL A - REVISED

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point being the southerly corner of Mitigation Parcel A as described in a deed recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75;

Thence N 57°43'44" W a distance of Twenty-Four and 95/100 (24.95) feet to a point;

Thence N 20°00'29" E a distance of Sixty-Nine and 06/100 (69.06) feet to a point;

Thence N 88°05'33" W a distance of Thirty-Nine and 67/100 (39.67) feet to a point;

Thence N 52°36'18" W a distance of Thirty-Two and 69/100 (32.69) feet to a point;

Thence N 25°47'25" W a distance of Twenty-Nine and 33/100 (29.33) feet to a point;

Thence N 60°36'26" E a distance of Sixteen and 83/100 (16.83) feet to a point;

Thence N 68°16'52" E a distance of One Hundred and 11/100 (100.11) feet to a point;

Thence N 55°39'58" E a distance of Nineteen and 41/100 (19.41) feet to a point;

Thence S 38°27'46" E a distance of Eighty-Four and 24/100 (84.24) feet to a point;

Thence S 40°48'48" W a distance of One Hundred Fifty-Three and 38/100 (153.38) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described easement contains 14,972 square feet and lies over a portion of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282. The above described easement is a portion of Mitigation Parcel A as described in a Declaration of Covenants and Restrictions recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75.

Reference is made to "Mitigation Parcel A—Revised" as shown on the Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, to be recorded in the Cumberland County Registry of Deeds, for a depiction of Mitigation Parcel A as revised by this Amendment.

EXHIBIT I

DESCRIPTION OF MITIGATION PARCEL A - REVISED

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point being the southerly corner of Mitigation Parcel A as described in a deed recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75;

Thence N 57°43'44" W a distance of Twenty-Four and 95/100 (24.95) feet to a point;

Thence N 20°00'29" E a distance of Sixty-Nine and 06/100 (69.06) feet to a point;

Thence N 88°05'33" W a distance of Thirty-Nine and 67/100 (39.67) feet to a point;

Thence N 52°36'18" W a distance of Thirty-Two and 69/100 (32.69) feet to a point;

Thence N 25°47'25" W a distance of Twenty-Nine and 33/100 (29.33) feet to a point;

Thence N 60°36'26" E a distance of Sixteen and 83/100 (16.83) feet to a point;

Thence N 68°16'52" E a distance of One Hundred and 11/100 (100.11) feet to a point;

Thence N 55°39'58" E a distance of Nineteen and 41/100 (19.41) feet to a point;

Thence S 38°27'46" E a distance of Eighty- Four and 24/100 (84.24) feet to a point;

Thence S 40°48'48" W a distance of One Hundred Fifty-Three and 38/100 (153.38) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described easement contains 14,972 square feet and lies over a portion of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282. The above described easement is a portion of Mitigation Parcel A as described in a Declaration of Covenants and Restrictions recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75.

Reference is made to "Mitigation Parcel A—Revised" as shown on the Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, to be recorded in the Cumberland County Registry of Deeds, for a depiction of Mitigation Parcel A as revised by this Amendment.

EXHIBIT II

DESCRIPTION OF MITIGATION PARCEL B - REVISED

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point lying N 33°52'30" W by land now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282, a distance of One Hundred Thirty-Two and 37/100 (132.37) feet from said Ocean Avenue and the easterly corner of said land of Cedars Nursing Care Center, Inc.;

Thence S 58°09'19" W a distance of Eleven and 06/100 (11.06) feet to a point;

Thence N 66°31'23" W a distance of Forty-Six and 92/100 (46.92) feet to a point;

Thence N 10°12'08" W a distance of Twenty-Three and 48/100 (23.48) feet to a point;

Thence N 62°52'24" W a distance of Sixteen and 66/100 (16.66) feet to a point;

Thence N 35°08'49" E a distance of Fifty-One and 25/100 (51.25) feet to a point;

Thence S 78°14'02" E a distance of Twenty-Eight and 91/100 (28.91) feet to a point;

Thence S 83°22'48" E a distance of Eleven and 21/100 (11.21) feet to a point;

Thence S 24°08'41" E a distance of Forty-One and 40/100 (41.40) feet to a point;

Thence S 03°56'26" E a distance of Thirty and 30/100 (30.30) feet to a point;

Thence S 58°09'19" W a distance of Nineteen and 47/100 (19.47) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described easement contains 5,277 square feet and lies over portions of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deeds recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282 and book 13696, Page 315; also lying over a portion of property now or formerly of JHA Properties, Inc. as described in a deed recorded in said Registry in Book 13696, Page 317. The above described easement is a portion of Mitigation Parcel B as described in a Declaration of Covenants and Restrictions recorded in said Registry in Book 13709, Page 75.

Reference is made to "Mitigation Parcel B—Revised" as shown on the Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, to be recorded in the Cumberland County Registry of Deeds, for a depiction of Mitigation Parcel B as revised by this Amendment.

Received
Recorded Register of Deeds
Jun 30:2006 01:31:55P
Cumberland County
John B O'Brien

DECLARATION OF CONDOMINIUM

OF

CEDARS CONDOMINIUMS

Portland, Maine

June 30, 2006

DECLARATION OF CONDOMINIUM
OF
CEDARS CONDOMINIUMS
PORTLAND, MAINE

THIS DECLARATION OF CONDOMINIUM is made this 30th day of June 2006, by and between JHA Properties, Inc. a Maine non-profit corporation, its successors and assigns ("JHA Properties"), and Cedars Nursing Care Center, Inc., a Maine non-profit corporation, its successors and assigns ("Cedars"; together with JHA Properties, the "Declarants"), each with a place of business at 630 Ocean Avenue, Portland, Maine 04103, as the owners in fee simple of the Real Estate (as hereinafter defined).

ARTICLE I
SUBMISSION

Section 1.1. Property. Declarants hereby submit the real estate described in Exhibit A attached hereto and made a part hereof (the "Real Estate") situated in the City of Portland, County of Cumberland and State of Maine, together with and subject to all easements, rights and appurtenances thereto belonging and the Buildings (as hereinafter defined) thereon (collectively, the "Property") to the provisions of Chapter 31 of Title 33 of the Maine Revised Statutes Annotated, as the same may be amended from time to time, known as the Maine Condominium Act (the "Act") and hereby creates with respect to the Property a condominium to be known as "Cedars Condominiums" (the "Condominium"). The Condominium consists of the land described in Exhibit A and those Units (as hereinafter defined) listed in Exhibit B, attached hereto and made a part hereof, and depicted on the Plat (as hereinafter defined).

The submission of the Real Estate to the Condominium shall create three (3) Condominium Units, as more particularly described herein, which upon recording of the Declaration shall be owned in fee by the Declarants as follows:

(a) Unit No. 1 shall be owned in fee by Cedars, its successors and assigns, and JHA Properties, for itself and its successors and assigns, hereby **grants and releases** to Cedars, its successors and assigns all right, title and interest JHA Properties may have in and to Unit No.1 and the development rights associated therewith.

(b) Unit No. 2 shall be owned in fee by Cedars, its successors and assigns, and JHA Properties, its successors and assigns, as tenants in common, in the following percentages:

- (i) Cedars 33.6% ("Cedars' Tenancy-in-Common Interest"); and
- (ii) JHA Properties 66.4% ("JHA Properties' Tenancy-in-Common Interest").

JHA Properties, for itself and its successors and assigns, hereby **grants and releases** to Cedars, its successors and assigns all right, title and interest JHA Properties may have in and to Cedars' Tenancy-in-Common Interest in Unit No.2 and the development rights associated therewith. Cedars, for itself and its successors and assigns, hereby **grants and releases** to JHA Properties, its successors and assigns all right, title and interest Cedars may have in and to JHA Properties' Tenancy-in-Common Interest in Unit No.2 and the development rights associated therewith.

(c) Unit No. 3 shall be owned in fee by JHA Properties, its successors and assigns, and Cedars, for itself and its successors and assigns, hereby **grants and releases** to JHA Properties, its successors and assigns all right, title and interest Cedars may have in and to Unit No.3 and any development rights associated therewith.

(d) In consideration of the rights and easements created under this Declaration each of the Declarants, for itself and its successors and assigns, hereby **grants and releases** to the other all right, title and interest it may have in and to the following easements of record with respect to the Real Estate:

(i) Utility and Access Easement described as Parcel B in easement deed from Cedars Nursing Care Center, Inc., to JHA Services, Inc., dated May 25, 1990, and recorded in the Cumberland County Registry of Deeds, Book 9188, Page 115, as amended and modified Short Form Quitclaim Deed from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 17, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 319, and by Easement Modification, between JHA Services, Inc. and Cedars Nursing Care Center, Inc., dated April 1, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13708, Page 305 (said deed dated May 25, 1990, as so modified being the "Granting Deed");

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(ii) Emergency Access Road Easement described as Parcel C in the Granting Deed;

(iii) Parking Easement, Utility and Access Easement and Loop Road Easement retained as Items 1, 2 and 3 of Parcel C in the Granting Deed;

(iv) Access Easement in easement deed from JHA Properties, Inc., to Cedars Nursing Care Center, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 321;

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(v) Access Easement in easement from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 325; and

reference

(v) Agreement and Reciprocal Easement Deed, between Cedars Nursing Care Center, Inc., and JHA Properties, Inc., dated as of March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 331.

reference

Section 1.2. Maximum Number of Units. The maximum number of Units the Declarants reserve the right to create is three (3).

Section 1.3. Address of Condominium. The address of the Condominium is:

Cedars Condominiums
630 Ocean Avenue
Portland, Maine 04103

ARTICLE 2 DEFINITIONS

Section 2.1. Terms Defined in the Act. Capitalized terms not otherwise defined in this Declaration or in the Plat, shall have the meanings specified or used in the Act.

Section 2.2. Terms Specifically Defined in this Declaration. In addition to the terms defined above, the following terms shall have the following meanings in this Declaration, the Bylaws, and the Plat:

- (a) "Act" has the meaning set forth in Section 1.1.
- (b) "Association" means the Unit owners' association of the Condominium, which shall be known as the Cedars Condominiums Owners Association.
- (c) "Budget" has the meaning set forth in Section 13.1(a).
- (d) "Buildings" (or in the singular, a "Building") means any residential, commercial, long term care, service or recreational structure or other improvement now existing or hereafter constructed on the Real Estate.
- (e) "Bylaws" means the document having that name and providing for the governance of the Association, pursuant to Section 1603-106 of the Act, as such document may be amended from time to time.
- (f) "Cedars" has the meaning set forth in introductory paragraph of this Declaration.
- (g) "Cedars' Tenancy-in-Common Interest" has the meaning set forth in Section 1.1(b).
- (h) "Common Elements" (or in the singular, a "Common Element") means those parts of the Property either described in the Act as being common elements or described in this Declaration or in the Plat as being common elements.
- (i) "Common Expenses" means expenditures made by or financial liabilities of the Association together with any allocations to reserves.

- (j) "Condominium" means the condominium described in Section 1.1.
- (k) "Condominium Documents" means the Declaration, the Plat, Bylaws and Rules and Regulations.
- (l) "Declarants" has the meaning set forth in introductory paragraph of this Declaration.
- (m) "Declaration" means this document, as the same may be amended from time to time.
- (n) "Development Rights" means those rights, if any, which the Declarants have reserved to themselves as set forth in Article 14 and elsewhere in this Declaration.
- (o) "Eligible Mortgage Holder" means the holder of a recorded first mortgage on a Unit which has requested in writing that the Association notify it of actions by the Association upon which such mortgage holders are entitled to vote or whose consent is required under this Declaration.
- (p) "Executive Board" means the executive board of the Association.
- (q) "JHA Properties" has the meaning set forth in introductory paragraph of this Declaration.
- (r) "JHA Properties' Tenancy-in-Common Interest" has the meaning set forth in Section 1.1(b).
- (s) "Identifying Number" means the number assigned to a Unit in the Plat.
- (t) "Insurance Trust Agreement" means that certain agreement, if any, between the Association and the Insurance Trustee providing for the management and disbursement of insurance proceeds in accordance with Section 9.2 hereof.
- (u) "Insurance Trustee" means that certain entity responsible for the management and disbursement of insurance proceeds pursuant to the Insurance Trust Agreement, if any.
- (v) "Limited Common Elements" (or in the singular, a "Limited Common Element") means those parts of the Property either described in the Act as being limited common elements or described herein or in the Plat as being limited common elements.
- (w) "Monthly Assessment" means the Unit owner's share of the anticipated Common Expenses, allocated by Unit, for each month of the Association's fiscal year as reflected in the budget adopted by the Executive Board for such year.

(x) "Mortgagee" means the holder of any recorded first mortgage encumbering one or more of the Units.

(y) "Percentage Interest" means the undivided interest in the Common Elements appurtenant to a Unit, as set forth on Exhibit B attached hereto, as the same may be amended from time to time.

(z) "Plat" means the Cedars Condominiums Recording Plat/Condominium Plan/ALTA/ASCM/Land Title Survey, made for JHA Properties, Inc., & Cedars Nursing Care Center, Inc., JHA Assisted Living, Inc., prepared by Titcomb Associates, dated September 8, 2005, and revised April 5, 2006, recorded in the Cumberland County Registry of Deeds in Plan Book 206 at Page 430 as the same may be amended from time to time, reduced photocopies of which are attached hereto as Exhibit C.

(aa) "Property" has the meaning set forth in Section 1.1.

(bb) "Real Estate" has the meaning set forth in Section 1.1.

(cc) "Record" means to record in the Cumberland County Registry of Deeds.

(dd) "Rules and Regulations" means such rules and regulations as are promulgated by the Declarants or the Executive Board from time to time with respect to the use of all or any portion of the Property.

(ee) "Special Assessment" means a Unit owner's share of any assessment made by the Executive Board in addition to the Monthly Assessment.

(ff) "Special Declarant Rights" means those rights which the Declarants have reserved to themselves as set forth in Article 14 and elsewhere in this Declaration.

(gg) "Unit" means a physical portion of the Condominium created by this Declaration or any amendment thereto and designated for separate ownership or occupancy, the boundaries of which are described in Article 3 or in any amendment creating such Unit.

Section 2.3. Provisions of the Act. The provisions of the Act shall apply to and govern the operation and governance of the Condominium, except to the extent that contrary provisions, not prohibited by the Act, are contained in one or more of the Condominium Documents.

ARTICLE 3 UNIT BOUNDARIES AND MAINTENANCE RESPONSIBILITIES

Section 3.1. Unit Boundaries.

(a) The boundary lines of each Unit are formed by the following planes:

(1) the upper boundary shall be a horizontal plane at an elevation of one hundred and thirty-five feet (135) above sea level (determined by reference to City of Portland datum: masonry nail in Utility Pole #82 located on Ocean Avenue (elevation=70.90) as shown on the Plat),

(2) the lower boundary shall be a horizontal plane at an elevation of forty-five (45) feet above sea level; and

(3) the vertical boundaries shall be perpendicular planes located three (3.00) feet outside the perimeter of the footprint of the building located or to be located within said Unit as shown on the Plat, each projected (A) horizontally to meet the projection of the adjacent vertical planes and (B) downward and upward to meet the upper and lower horizontal boundaries; except that, at those locations where the outside surface of an exterior wall of a Building in one Unit is adjacent to the outside surface of an exterior wall of a Building in another Unit, the vertical boundary of each Unit shall be a vertical plane that is equidistant between the outside of the finish material forming the exterior walls of the Buildings in question, except that in the case of Unit No. 1, Unit No. 1 shall also include:

(i) The enclosed triangular structure on the first floor at the intersection of the north-facing exterior surfaces of the two Building wings at the north end of the Building in Unit No. 1, one wing that extends in a northwesterly direction and the other wing that extends in a northeasterly direction;

(ii) The enclosed triangular structure on the first floor at the intersection of the south-facing exterior surfaces of the two Building wings at the south end of the Building in Unit No. 1, one wing that extends in a southwesterly direction and the other wing that extends in a southeasterly direction; and

(iii) The enclosed vestibule at the entrance of Unit No. 1 on the east side of the Building in Unit No. 1.

NOTE: Although the foundations of each Building will be located as shown on the Plat, the vertical boundaries for each Unit described above are located outside of the perimeter of such foundations in order to accommodate roof eaves and overhangs and other building features that extend beyond such foundation perimeter.

(b) Each Unit consists of all portions of any Building that is located within the aforesaid boundary lines, except the air space displaced Common Elements extending into or within such Unit which serve other Unit(s) and/or the Common Elements, including without limitation chutes, flues, chases, ducts, wires, conduits and pipe runs as described in clause (a)(3) of this section. The finish material, such as plaster or drywall, and furring around chutes, flues, chases, ducts, conduits, pipe runs and similar structures containing wires, vents, pipes, utilities or services that serve another Unit or Units and/or the Common Elements, the Unit to include the thickness of such finish material around chutes, flues, chases, ducts, conduits, pipe runs and

similar structures but not the cavity within such wires, vents, pipes, utilities or services are located.

- (c) Each Unit's Identifying Number is shown on the Plat.

Section 3.2. Relocation of Unit Boundaries; Subdivision of Unit. The owners of any Unit shall be permitted to (i) relocate boundaries between Units or (ii) subdivide a Unit in accordance with the procedures for an amendment of this Declaration as set forth in Article 16 below.

Section 3.3. Maintenance Responsibilities.

(a) The Association, through the Executive Board and as determined by the Unit owners, shall be responsible for (i) maintenance, repair and replacement of the Common Elements, but excluding the Limited Common Elements, and (ii) maintenance, repair and replacements as may be required for the functioning of or for the bringing of utilities, such as water, gas, electricity and sewer to all of the Units, all of which maintenance, repair and replacement shall be furnished by the Association as part of the Common Expenses.

(b) The Association, through the Executive Board and as determined by the Unit owners, shall be responsible for maintenance, repair and replacement of the Limited Common Elements at the cost and expense of the owners of the Unit or Units to which such Limited Common Elements are allocated.

(c) If damage is caused to (i) the Common Elements or (ii) any other part of the Condominium, in each case by any Unit owner, or guests, tenants, or invitees of such Unit owner for which maintenance, repairs and replacements shall be required that would otherwise be a Common Expense, such Unit owner shall pay for such damage and such maintenance, repairs and replacement as may be determined necessary or advisable by the Association. Each Unit owner shall be responsible for the cleanliness, including, but not limited to, ice and snow removal, of any Limited Common Element allocated to such Unit owner's Unit. In addition to the maintenance, repair and replacement of the Common Elements, the Association, through the Executive Board and upon the request of the Unit owners, shall arrange for or provide to each Unit owner trash and garbage removal service on a regular basis. The Executive Board, in its discretion, may provide the maintenance and other services described in this Section 3.2(a) either through its own employees or through independent contractors or both. The cost of the provision of such services shall be a Common Expense.

(d) Each Unit owner is responsible for the maintenance, repair and replacement of such Unit owner's Unit, including, without limitation, exterior glass windows, roofs, skylights, garage doors and other doors included within the Unit. Each Unit owner shall afford to the Association, and other Unit owners, and to their agents and employees, access through such Unit owner's Unit reasonably necessary for the maintenance, repair and replacement of the Common Elements and the shared Limited Common Elements.

(e) Charges for electric, sewer, water service, telephone and cable television service will be separately metered and each Unit owner will be responsible for the cost of such services furnished to such owner's Unit. Utilities that are not separately metered or billed by the respective utility companies and that are used by all of the Units shall be treated as part of the Common Expenses. Electricity for lighting of the Common Elements may be provided by the Association as part of the Common Expenses.

ARTICLE 4
DESCRIPTION AND ALLOCATION OF COMMON ELEMENTS AND
LIMITED COMMON ELEMENTS

Section 4.1. Description of Common Elements. Common Elements shall include:

(a) Within Unit Boundaries. The following portions of any Building within the boundaries of a Unit that are not Limited Common Elements: (i) the portion of any chute, flue, duct, wire, conduit, bearing wall, bearing column or any other fixture within the designated boundaries of a Unit that serve, in whole or in part, another Unit or Units and/or the Common Elements, (ii) all driveways on the Property providing access to and from any public way, (iii) those parking areas not designated as Limited Common Elements on the Plat, (iv) any signage not physically attached to a Unit; (v) those portions identified and designated as Common Elements on the Plat, in each case including, by way of description but not limitation, and, if applicable, within the Units' boundaries to the extent that they are constructed:

(b) Land. All lands submitted to the Condominium as described herein, except land (i) directly under a Unit, which land shall be a Limited Common Element allocated to such Unit, and (ii) other Limited Common Elements, all subject to the easements set forth in Article 6 of this Declaration.

(c) Improvements. All improved surfaces, drives, driveways, curbs, sidewalks and parking spaces that are not Limited Common Elements, subject to the easements and provisions set forth in Article 6 of this Declaration.

(d) Ornamentals, Drainage System and Utilities. Lawn areas, drainage systems located on the Property, shrubbery, and waterways, and all conduits and utility lines over, on or under the Land that are not Limited Common Elements, subject to the easements and provisions set forth in Article 6 of this Declaration.

(e) Utilities. Connections for gas, electricity, light, telephone and water not owned by the public utility or other agencies providing such services, provided that any portion of such connections that serves only one or two of the Units shall be a Limited Common Element allocated with the Unit or Units so served.

(f) Lighting. Any exterior lighting or other facilities necessary to the upkeep and safety of the grounds.

(g) After-Constructed Improvements. All other improvements that may be constructed on the property except those improvements that are part of a Unit or a Limited Common Element.

(h) Certain Other Buildings and Improvements. The so-called "White House" located near Ocean Avenue and northeasterly of the entrance drive to the Condominium from Ocean avenue shall be a Common Element.

(i) Other Elements. All other elements of the Condominium rationally of common use and necessary to the existence, upkeep and safety thereof and, in general, all other devices or installations existing for common use that are not Limited Common Elements.

Section 4.2. Description of Limited Common Elements. Limited Common Elements shall include (i) at those locations where the outside surface of an exterior wall of a Building in one Unit is adjacent to the outside surface of an exterior wall of a Building in another Unit, any expansion joints connecting such exterior walls, and any expansion joints connecting the roofs of such Units, all of which shall be a Limited Common Element associated with both of such Units; (ii) the portion of any chute, flue, chase, duct, wire, conduit, bearing wall, bearing column or any other fixture lying within the designated boundaries of a Unit that serves less than all of the Units, which shall be Limited Common Elements associated with the Unit or Units so served, (iii) the portion of any connections for gas, electricity, light, telephone and water not owned by the public utility or other agencies providing such services that serves only one or two of the Units, which shall be a Limited Common Element associated with the Unit or Units so served or (iv) any structure, improvement or other property that is identified and designated as Limited Common Elements on the Plat, including, without limitation, the garages that are assigned as Limited Common Elements to Unit 3. Those portions of the Limited Common Elements serving only the Unit adjacent to such Limited Common Element are Limited Common Elements allocated only to the Unit which they serve. This allocation shall not be changed without the consent of the Unit owners served or benefited by such Limited Common Elements.

Section 4.3. [Intentionally Omitted.]

Section 4.4. [Intentionally Omitted.]

Section 4.5. Reserved Common Elements. The Executive Board shall have the power in its discretion from time to time to grant revocable licenses in designated Common Elements to the Association or to any Unit owners and to establish a reasonable charge to such Unit owners for the use and maintenance thereof. Such designation by the Executive Board shall not be construed as a sale or disposition of the Common Elements.

Section 4.6. Alteration of Common Elements by the Declarant. The Declarants reserve the right to modify, alter, remove or improve portions of the Common Elements, including without limitation, any equipment, fixtures and appurtenances, when in the Declarants' judgment it is necessary or desirable to do so, until the completion of all Units. Such rights do not include rights to add or remove real estate not deemed to be fixtures.

Section 4.7. Allocation of Common Elements. Each Unit owner shall acquire, as an appurtenance to each Unit, its Percentage Interest in the Common Elements as set forth on Exhibit B attached hereto, as the same may be amended from time to time. The said Percentage Interest shall not be divisible from the Unit to which it appertains and shall be deemed to be conveyed or encumbered with the Unit even though such interest is not expressly mentioned or described in the conveyance or other instrument. Except as otherwise permitted under the Act or this Declaration, the Percentage Interest of each Unit owner shall not be altered without the consent of all of the Unit owners expressed in an amendment to this Declaration duly recorded. Said Percentage Interests shall be used to allocate the division of proceeds, if any, resulting from any casualty, loss, eminent domain proceedings, common surplus, or from any other disposition of the Property.

Section 4.8. Allocation of Parking Spaces. The Declarant reserves the right, until the construction of all Units is completed, to allocate to particular Units as Limited Common Elements the parking spaces shown on the Plat that are not otherwise designated Limited Common Elements on said Plat. Such right shall be deemed a Development Right and shall be subject to the terms and conditions set forth in Article 14 of this Declaration. After the expiration of such Development Right pursuant to Article 14 of this Declaration, the Executive Board shall have the power in its discretion from time to time to so allocate those parking spaces.

ARTICLE 5 ALLOCATION OF PERCENTAGE INTERESTS IN COMMON EXPENSES AND VOTING RIGHTS

Section 5.1. Percentage Interests. Attached as Exhibit B hereto is a list of all Units by their Identifying Number and the Percentage Interest appurtenant to each Unit, together with an explanation of the formula by which such Percentage Interest is determined. All calculations on Exhibit B shall be conclusive and binding on all Unit owners, the Executive Board, the Association and any Mortgagees.

Section 5.2. Common Expenses. The liability allocated to each Unit for the Common Expense of the Condominium shall be the same percentage share as the Percentage Interest allocated to such Unit on Exhibit B.

Section 5.3. Allocation of Unit Owner's Voting Rights. Each Unit owner shall be entitled to one (1) vote for each Unit owned by such person to permit equality of voting power among the Units.

ARTICLE 6 EASEMENTS

Section 6.1. Utility Easements. The Units, Common Elements and Limited Common Elements shall be, and hereby are, made subject to easements in favor of the

Declarants, other Unit owners, appropriate utility and service companies, cable television companies and governmental agencies or authorities for such utility and service lines and equipment as may be necessary or desirable to serve any portion of the Property. The easements created by this Section 6.1 shall include, without limitation, rights of the Declarants, any Unit owner or the providing utility or service company, or governmental agency or authority to install, lay, maintain, repair, relocate and replace gas lines, pipes and conduits, water mains and pipes, sewer and drain lines, drainage ditches and pump stations, telephone wires and equipment, television equipment and facilities (cable or otherwise), electrical wires, conduits, and equipment and ducts and vents over, under, through, along and on the Units and Common Elements. Notwithstanding the foregoing provisions of this Section 6.1, any such easement through a Unit shall be located either in substantially the same location as such facilities or similar facilities existed at the time of the completion of the initial construction of the Buildings and other improvements within the affected Unit or so as not to materially interfere with the use or occupancy of such Buildings and other improvements by its occupants. With respect to any utility lines or equipment serving only the Condominium and located upon the Common Elements, the Executive Board shall have the right and power to assign the easement related to such Common Elements to any private or public utility company. The Executive Board shall also have the right and power to convey to any private or public utility company permits, licenses and easements over the Common Elements for the installation, maintenance, repair and replacement of utility poles, lines, wires and other equipment. In addition, the Executive Board shall have the right to grant permits, licenses and easements over the Common Elements for the building and maintenance of roads and for other purposes necessary for the proper operation of the Condominium.

Section 6.2. Maintenance of Surface Water Drainage. Declarants reserve for themselves and the Association an easement on, over and under those portions of the Common Elements not located within a Unit for the purpose of maintaining and/or correcting drainage of surface water in order to maintain reasonable standards of health, safety and appearance and to comply with and observe any conservation easement or declaration now or hereafter recorded with respect of the Property or any portion thereof. The easement created by this Section 6.2 expressly includes the right to cut any trees, bushes, or shrubbery, to grade the soil, or to take any other action reasonably determined to be necessary and otherwise in compliance with applicable standards of health, safety and appearance conservation easements or declarations. The Declarants or the Association, as the case may be, shall restore the affected property as closely to its original condition as is practicable.

Section 6.3. Common Elements Easements. The Common Elements (other than the Limited Common Elements) shall be, and hereby are, made subject to an easement in favor of the Unit owners and their invitees, employees, tenants and servants, the Association and the agents and employees of the Association for access, egress and ingress over, through and across each portion thereof, pursuant to such requirements and subject to such charges as the Executive Board may from time to time prescribe; *provided* that nothing contained herein shall create any access easement in favor of Unit owners with respect to such portions of the Common Elements that are not needed in order to gain access to one or more Units and as to which the Executive Board may from time to time determine it to be necessary or desirable to limit or control access

by Unit owners or the occupants of Units, or both, including, by way of illustration and not limitation, machinery and equipment rooms; *provided, further*, that every Unit owner shall have an unrestricted right of ingress and egress to such Unit owner's Unit.

Section 6.4. Declarant's Easements for Maintenance Repair and Renovation. The Units, Common Elements and Limited Common Elements are subject to an easement in favor of the Declarants for the purposes of construction, reconstruction, maintenance, repair, renovation, replacement or correction of the Common Elements or Limited Common Elements.

Section 6.5. Association's Easements for Maintenance, Repair and Renovation. The Units, Common Elements and the Limited Common Elements shall be and hereby are made subject to an easement in favor of the Association and the agents, employees and independent contractors thereof for the purpose of the inspection, upkeep, maintenance, repair and replacement of the Common Elements and the Limited Common Elements.

Section 6.6. Easements Burdening Common Elements and Limited Common Elements. The Common Elements and the Limited Common Elements shall be and hereby are made subject to the following easements in favor of the Units benefited:

(a) For the installation, repair, maintenance, use, removal and/or replacement of pipes, ducts, heating and air conditioning systems, electrical, telephone and other communication wiring and cables and all other utility lines and conduits which are part of or exclusively serve a single Unit and which pass across or through a portion of the Common Elements;

(b) For the installation, repair, maintenance, use, removal and/or replacement of overhead lighting fixtures, electrical receptacles and the like which are located in a portion of the ceiling, wall or floor adjacent to a Unit which is a part of the Common Elements; *provided that* the installation, repair, maintenance, use, removal or replacement of such fixtures, receptacles and the like does not unreasonably interfere with the common use of any part of the Common Elements or impair or structurally weaken any Building;

(c) For the maintenance of the encroachment of any lighting devices, outlets, exhaust fans, ventilation ducts, registers, grilles and similar fixtures which serve only one Unit but which encroach into any part of any Common Element or Limited Common Element; and

(d) For the construction of improvements upon Limited Common Elements as such construction may be approved in writing by the Executive Board. Each Unit owner shall be liable to the Association for any damage to the Common Elements as the result of such Unit owner's exercise of the easement rights described in this paragraph (e).

Section 6.7. Structural Support Easements. To the extent necessary, each Unit shall have an easement for structural support over every other Unit, the Common Elements and the Limited Common Elements, and each Unit and the Common Elements shall be subject to an

easement for structural support in favor of every other Unit, the Common Elements and the Limited Common Elements.

Section 6.8. Easements Burdening Units and Limited Common Elements. The Units and the Limited Common Elements are hereby made subject to the following easements:

(a) In favor of the Association and its agents, employees and independent contractors, (i) for inspection of the Units and Limited Common Elements in order to verify the performance by Unit owners of all items of maintenance and repair for which they are responsible, (ii) for inspection, maintenance, repair and replacement of the Common Elements or the Limited Common Elements situated in or accessible from such Units or Limited Common Elements or both, (iii) for correction of emergency conditions in one or more Units or Limited Common Elements, or both, or casualties to the Common Elements, the Limited Common Elements and/or the Units, and (iv) to do any other work reasonably necessary for the proper maintenance of the Condominium, it being understood and agreed that the Association and its agents, employees and independent contractors shall take reasonable steps to minimize any interference with a Unit owner's use of his Unit resulting from the Association's exercise of any rights it may have pursuant to this Section 6.8; and

(b) In favor of the Unit owner benefited thereby and the Association, and their respective agents, employees and independent contractors, for the installation, repair, maintenance, use, removal and/or replacement of pipes, ducts, electrical, telephone, telegraph or other communication systems and all other utility lines and conduits which are part of the Common Elements and which pass across or through a portion of one or more Units.

(c) In favor of the Unit owner or owners benefited thereby and the Association and their respective patients, residents, tenants, invitees, agents, employees and independent contractors to the full extent from time to time required in order that the Units and the Buildings conform with all applicable life safety and other governmental and licensing requirements (i) for egress from Unit No. 1 through adjacent first floor corridors and hallways of the so-called "Service Connector" portion of Unit No. 3 to exterior exits located in said "Service Connector"; (ii) for egress from Unit No. 2 through adjacent first floor corridors and hallways in Unit No. 1 to exterior exits located in Unit No. 1; (iii) for egress from the exterior court yard area enclosed by the Buildings in Unit No. 1, Unit No. 2 and Unit No. 3, through the first floor corridors and hallways in the "Service Connector" portion of Unit No. 3 to exterior exits located in said Service Connector; and (iv) for egress from any Unit through adjacent corridors and hallways in any other for purposes of providing access to exits or other life safety features now or hereafter required for compliance with applicable life safety and other governmental and licensing requirements.

(d) In favor of the Unit owners benefited thereby and the Association and their agents, employees and independent contractors, for the installation, repair, maintenance, use, removal and/or replacement of walls, doors, jambs and doorframes in any corridor providing passage from one Unit to another in order to regulate or restrict passage between the Units

through such corridor (a "Corridor Separation Structure"), *provided that* (i) the Association shall be required to install a Corridor Separation Structure only at the written request of the Unit owner and Mortgagee of at least one of the Units in question; (ii) the costs of design and installation of a Corridor Separation Structure shall be born by the Unit owner or Unit owners requesting such Corridor Separation Structure; (iii) a Corridor Separation Structure shall be designed, installed, maintained and operated so that the requirements of all applicable life safety and other governmental and licensing requirements are satisfied; (iv) each Corridor Separation Structure shall be a Limited Common Element with the costs of maintenance, operation, repair, replacement and removal thereof allocated to the Units in question; and (v) a Corridor Separation Structure shall be removed only at the written request of the Unit owners and Mortgagees of both of the Units in question.

Section 6.9. Easements for Encroachments. If construction, reconstruction, repair, shifting, settlement or other movement of any portion of the Condominium results either in the Common Elements encroaching on any Unit, or in any Unit encroaching on the Common Elements or on any other Unit, a valid easement shall exist during the period of the encroachment for the encroachment and for the maintenance thereof.

Section 6.10. Duration of Easements. All easements, rights and restrictions described and mentioned in this Declaration are easements appurtenant, running with the land and the Property, including by way of illustration but not limitation, the Units, the Common Elements and the Limited Common Elements, and (except as expressly may be otherwise provided herein or in the instrument creating the same) shall continue in full force and effect until the termination of this Declaration.

Section 6.11. Certain Other Easements. The Property is subject to, and benefited by, the following easements:

(a) Snow Plowing Easement given by Cedars Nursing Care Center, Inc. to the City of Portland, dated April 17, 1990, and recorded in the Cumberland County Registry of Deeds, Book 9260, Page 236;

(b) Utility Easements given by Cedars Nursing Care Center, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 7, 1990 and September 5, 1990, and recorded in the Cumberland County Registry of Deeds respectively in Book 9162, Page 206 and Book 9306, Page 219;

(c) Utility Easements given by JHA Properties, Inc. to Central Maine Power Company, dated July 26, 1990, and recorded in the Cumberland County Registry of Deeds, Book 14382, Pages 187 and 188;

(d) Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. dated March 27, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13709, Page 75, as amended by Amendment to Declaration of Covenants and Restrictions, among the Maine Department of Environmental Protection, Cedars

Nursing Care Center, Inc. and JHA Properties, Inc., dated June ___, 2006, to be recorded in the Cumberland County Registry of Deeds;

(e) Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc., dated June ___, 2006, to be recorded in the Cumberland County Registry of Deeds;

(f) Certificate of Variance Approval, dated February 6, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13595, Page 182;

ARTICLE 7 RESTRICTIONS ON USE, SALE AND LEASE OF UNITS

Section 7.1. Use. The following restrictions shall apply to the use of the Condominium:

(a) The Units shall be used as part of an integrated campus providing skilled nursing care, assisted living residences and independent living residences, and such other uses as shall be determined from time to time by the Association through the Executive Board.

(b) No Unit owner may obstruct the Common Elements in any way. No Unit owner may store anything in or on the Common Elements other than in or on any Common Element storage area without the prior written consent of the Executive Board.

(c) No Unit owner may carry on any practice, or permit any practice to be carried on, which unreasonably interferes with the quiet enjoyment of the occupants of any other Unit. The Property is to be maintained in a clean and sanitary condition, and no Unit owner may place any garbage, trash or rubbish anywhere in the Property other than in a Unit owner's own Unit and in or on such parts of the Common Elements as may be designated for such purpose by the Executive Board.

(d) No Unit shall be used, occupied or kept in a manner that in any way increases the fire insurance premiums for the Property without the prior written consent of the Executive Board.

(e) The Executive Board may from time to time promulgate reasonable Rules and Regulations, not in conflict with the provisions of this Declaration, concerning the use and enjoyment of the Property. Copies of the then current Rules and Regulations and any amendments thereto shall be furnished to all Unit owners by the Association promptly after the adoption of such Rules and Regulations and any amendments thereto.

(f) The owner of a Unit shall be responsible for maintaining such Unit in good order and repair, at the expense of such owner, including (but not limited to) cleaning and replacing glass panes in any window serving such Unit.

(g) The owner of a Unit shall be responsible for the cleanliness of any Limited Common Element serving such Unit, at the expense of such Unit owner.

(h) Without the prior written consent of the Executive Board, the owner of a Unit shall not alter in any way any portion of such Unit owner's Unit that is part of the exterior facade of the Units, including by way of example, but not by way of limitation, roofing materials or design, exterior doors, siding type and color, and windows.

Section 7.2. Sale and Lease of Units.

A Unit owner, including but not limited to any Declarant, may sell or lease such Unit owner's Unit at any time and from time to time, *provided* that each tenant and lease shall be subject to and be bound by all of the covenants, restrictions and conditions set forth in the Condominium Documents.

ARTICLE 8 RIGHTS OF MORTGAGE HOLDERS, INSURERS AND GUARANTORS

Section 8.1. Subject to Declaration. Whether or not it expressly so states, any mortgage constituting a lien against a Unit and an obligation secured thereby shall provide generally that the mortgage and the rights and obligations of the parties thereto shall be subject to the terms and conditions of the Act, the Declaration, the Plat and any Rules and Regulations.

Section 8.2. Rights of Eligible Mortgage Holders.

(a) The Association shall send reasonable prior written notice by prepaid United States mail to Eligible Mortgage Holders of the consideration by the Association of the following proposed actions:

- (1) The termination of the Condominium pursuant to Section 1602-118 of the Act;
- (2) A change in the allocated interest of a Unit, a change in the boundaries of a Unit or a subdivision of a Unit;
- (3) The merger or consolidation of the Condominium with another condominium;
- (4) The conveyance or subjection to a security interest of any portion of the Common Elements;
- (5) The proposed use of any proceeds of hazard insurance required to be maintained by the Association under Section 1603-113(a) of the Act for purposes other than the repair or restoration of the damaged property;

(6) The adoption of any proposed budget by the Executive Board under Section 1603-103(c) of the Act, and of the date of the scheduled Unit owners meeting to consider ratification thereof, which notice shall be accompanied by a summary of the proposed Budget; and

(7) Any default in the performance or payment by a Unit owner of any obligations under this Declaration, including, without limitation, default in the payment of Common Expense liabilities.

(b) In the event of any proposed actions described in clauses (1) through (5) of paragraph (a) of this Section 8.2, an Eligible Mortgage Holder shall have the right, but not the obligation, in place of the Unit owner to cast the votes allocated to that Unit or give or withhold any consent required of the Unit owner for such action by delivering written notice to the Association with a copy to the Unit owner prior to or at the time of the taking of the proposed action, which notice shall be sent by prepaid United States mail, return receipt requested, or by delivery in hand. Failure of the Eligible Mortgage Holder to so exercise such rights shall not constitute a waiver thereof and shall not preclude the Unit owner from exercising such right. In the event of any default described in subsection (a), paragraph (7) of this Section 8.2, the Eligible Mortgage Holder shall have the right, but not the obligation, to cure such default.

(c) An Eligible Mortgage Holder, or its representative, shall have the right to attend Association and Executive Board meetings for the purposes of discussing the matters described in paragraphs (1) through (6) of Section 8.2 (a).

Section 8.3. Rights of Mortgage Holders, Insurers or Guarantors.

(a) The Association shall send timely prior written notice of the following matters by prepaid United States mail to holders, insurers and guarantors of a mortgage on any Unit:

(1) Any condemnation or casualty loss that affects either a material portion of the Condominium or the Unit securing the mortgage;

(2) A lapse, cancellation or material modification of any insurance policy maintained by the Association; and

(3) Any proposed action that requires the consent of fifty-one percent (51%) of the Eligible Mortgage Holders.

(b) To receive such notice, the mortgage holder, insurer or guarantor shall send a written request therefor to the Association, stating its name and address and the Unit identifying number or address of the Unit on which it holds, insures or guarantees the mortgage.

Section 8.4. Liability for Use and Charges. Notwithstanding any term in Section 10.1 hereof to the contrary, any Mortgagee who obtains title to a Unit pursuant to the remedies provided in a mortgage for foreclosure of such mortgage or a deed in lieu of foreclosure shall not

be liable for such Unit owner's unpaid assessments or charges which accrue prior to the acquisition of title to such Unit by the Mortgagee, except to the extent otherwise provided for in the Act and except to the extent that such Mortgagee is liable as a Unit owner for the payment of such unpaid assessment or charge that is assessed against the Mortgagee as a result of all Unit owners being reassessed for the aggregate amount of such deficiency.

Section 8.5. Condemnation Rights. No provision of this Declaration shall give a Unit owner, or any other party, priority over any rights of the Mortgagee of a Unit pursuant to its mortgage in the case of a distribution to such Unit owner of insurance proceeds or condemnation award for loss to or a taking of one or more Units and/or Common Elements.

Section 8.6. Books and Records. Any Mortgagee shall have the right, exercisable by written notice to the Executive Board, to examine the books and records of the Association and to require that it be provided with a copy of each annual report of the Association and other financial data of the Association reasonably requested by such Mortgagee.

ARTICLE 9 INSURANCE

Section 9.1. Types and Amounts. The Association shall maintain at a minimum, as a Common Expense and to the extent reasonably available, the following types and amounts of insurance:

(a) Property insurance on the Common Elements, insuring against all risks of direct physical loss commonly insured against under the fire and extended coverage endorsement and such other insurance as the Executive Board deems necessary or desirable. The total amount of any insurance after application of any deductions shall not be less than 80% of the actual cash value of the insured property at the time the insurance is purchased and at each renewal date exclusive of land, foundations, excavation and other items normally excluded from property policies. The loss payable clause of such policy shall show the Association or the Insurance Trustee, if any, as a trustee for each Unit owner and each Mortgagee of a Unit. Such policy may also contain the standard mortgagee clause, naming each Mortgagee, its successors and assigns. If the Executive Board fails within sixty (60) days after the date of an insured loss to initiate a claim for damages recoverable under the policy or policies obtained pursuant to this paragraph (a), any Mortgagee may initiate such a claim on behalf of the Association.

(b) Liability insurance, including medical payments insurance, complying with the requirements of Section 9.2 hereof, covering all occurrences commonly insured against for death, bodily injury and property damage arising out of or in connection with the use, ownership or maintenance of the Common Elements. Such insurance policy shall contain a "severability of interest endorsement" or equivalent coverage which precludes the insurer from denying the claim of a Unit owner because of the negligent acts of the Association or another Unit owner. The amount of such liability insurance shall be at least \$1,000,000.00 for bodily injury and property damage for any single occurrence. The scope and amount of coverage of all liability insurance policies shall be reviewed at least once each year by the Executive Board and may be changed in

its discretion, *provided* that such policies shall continue to comply with the requirements of this Section 9.1 and Section 9.2 hereof.

(c) If the insurance described in paragraphs (a) and (b) of this Section 9.1 is not reasonably available, the Association shall provide notice of the same to the Unit owners and shall carry any other insurance that will provide similar coverage that can be reasonably obtained.

(d) Such worker's compensation insurance as applicable laws may require.

(e) Insurance to satisfy the indemnification obligation of the Association set out in Section 10.2 hereof, if and to the extent reasonably available, including but not limited to insurance coverage commonly referred to as "directors and officers insurance".

(f) If at any time it is determined that all or any part of the Property lies within a special flood hazard area, a master or blanket policy of flood insurance covering the Property, including but not limited to, all Common Elements and Limited Common Elements, the Units and all improvements, fixtures and appliances contained within the Unit as of the date of settlement on the Unit or the value thereof, and building service equipment and common equipment, fixtures, personal property and supplies owned by the Association, but excluding any improvements or appliances subsequently added by a Unit owner and all other personal property of the Unit owner. The amount of any such flood insurance obtained pursuant to this paragraph (f) shall be equal to the lesser of one hundred percent (100%) of the insurable value of the property insured or the maximum coverage available under the appropriate National Flood Insurance Administration program. Such flood insurance policy may, at the option of the Association, contain a "deductible" provision in an amount not to exceed the lesser of \$5,000 or one percent (1%) of the policy face amount. Funds to cover this amount shall be included in the Association reserve fund.

Section 9.2. Required Provisions. Insurance obtained by the Association shall be in accordance with the following provisions:

(a) Exclusive authority to adjust losses under policies hereafter in force on the Common Elements and the Limited Common Elements shall be vested in the Executive Board or its authorized representative.

(b) Each Unit owner may obtain additional insurance at his own expense; *provided, however*, that: (1) such policies shall not be invalidated by the waivers of subrogation required to be contained in policies required by this Declaration; and (2) no Unit owner shall be entitled to exercise his right to maintain insurance coverage in such a way as to decrease the amount which the Association may realize under any insurance policy which the Association may have in force on the Property at any particular time.

(c) With respect to the insurance policies described in paragraphs (a) and (b) of Section 9.1 issued to the Association and covering all or any part of the Property, the Association shall cause such policies to provide that:

(1) Each Unit owner is an insured person under such policies with respect to liability arising out of such Unit owner's ownership of an undivided interest in the Common Elements or membership in the Association.

(2) The insurer waives its right to subrogation under the policy against any Unit owner or members of such Unit owner's household.

(3) No act or omission by any Unit owner, unless acting within the scope of his authority on behalf of the Association, will void such policies or be a condition to recovery under such policies.

(4) If at the time of a loss under such policies there is other insurance in the name of a Unit owner covering the same risk covered by the policy, the Association's policy provides primary insurance.

(5) The liability of the insurer shall not be affected by, and the insurer shall not claim, any right of set-off, counterclaim, apportionment, proration, or contribution by reason of any other insurance obtained by or for any Unit owner.

(6) An insurer that has issued an insurance policy under this Article shall issue certificates or memoranda of insurance to the Association and, upon request, to any Unit owner or Mortgagee. Such policies may not be canceled nor may coverage thereunder be substantially changed (whether or not requested by the Executive Board) except by the insurer giving at least twenty (20) days prior written notice thereof to the Executive Board, the Insurance Trustee, if any, Unit owners, each holder of a first mortgage on a Unit, and every other party in interest who shall have requested such notice of the insurer;

(7) The insurer will recognize any Insurance Trust Agreement entered into by the Association.

Section 9.3. Additional Insurance. Nothing in this Declaration shall be construed to limit the authority of the Executive Board to obtain additional insurance which it deems advisable.

ARTICLE 10

UNITS SUBJECT TO CONDOMINIUM DOCUMENTS; EMINENT DOMAIN

Section 10.1. Applicability of Condominium Documents. Each present and future owner, tenant, occupant and holder of a mortgage on a Unit shall be subject to and shall comply with the provisions of the Act, and with the covenants, conditions and restrictions as set forth in the Condominium Documents and the deed to such Unit; *provided that*, nothing contained herein shall impose upon any tenant or holder of a mortgage on a Unit any obligation which the Act or one or more of the Condominium Documents, or both, make applicable only to Unit owners (including, without limitation, the obligation to pay assessments for Common Expenses). The acceptance of a deed or mortgage to any Unit, or the entering into of a lease or the entering into

occupancy of any Unit shall constitute an agreement that the provisions of the Act and the covenants, conditions and restrictions set forth in the Condominium Documents and the deed to such Unit are accepted and ratified by such grantee, holder of a mortgage on a Unit or tenant. All of such provisions shall be covenants running with the land and shall bind any person having at any time any interest or estate in such Unit, as though such provisions were recited and stipulated at length in each and every deed, conveyance mortgage or lease thereof. Failure to comply with the covenants, conditions and restrictions set forth in the Condominium Documents and the deed to such Unit shall be grounds for an action to recover damages or for injunctive relief, or both, maintainable by the Executive Board on behalf of the Association or by an aggrieved Unit owner.

Section 10.2. Eminent Domain. Whenever all or part of the Common Elements shall be taken, injured or destroyed by eminent domain, each Unit owner shall be entitled to notice thereof and to participate in the proceedings incident thereto; *provided, however*, that the Association shall officially represent the Unit owners in such proceedings. In any proceedings for the determination of damages, such damages shall be determined for such taking, injury or destruction as a whole and not for each Unit owner's interest therein and any award for such damage shall be payable to the Association for the benefit of the Unit owners and of the Mortgagees.

ARTICLE 11

ASSOCIATION; EXECUTIVE BOARD OF THE ASSOCIATION

Section 11.1. The Association. The Association is the governing body for all Unit owners with respect to the administration, maintenance, repair, replacements, cleaning and management of the Common Elements. The membership of the Association shall at all times consist exclusively of all Unit owners. Each Unit owner shall automatically become and be a member of the Association as long as such person is a Unit owner and upon the termination of the interest of a Unit owner in the Condominium, such Unit owner's membership and any interest in the common funds of the Association shall thereupon automatically terminate and transfer and inure to the next Unit owner or Unit owners succeeding such Unit owner in interest. The Association shall have all of the powers granted pursuant to Section 1603-102 of the Act, including the powers to assign its right to future income.

Section 11.2. Members of the Executive Board.

- (a) The initial Executive Board shall consist of three (3) members.
- (b) There shall be no Declarant control period. The Unit owners (including the Declarants to the extent of any Units owned by a Declarant at that time) shall each have the right to appoint one person to be its designated representative on and a member of the Executive Board in accordance with the Bylaws. The members of the Executive Board so appointed shall serve until the first regular election of the Executive Board held at the next annual meeting of the Association held in accordance with the Bylaws; thereafter, members of the Executive Board shall be elected in accordance with the Bylaws. The Bylaws may provide for the members of the Executive Board to serve staggered terms.

(c) Subject to the terms and provision of the Act, this Declaration or the Bylaws, the Executive Board shall have the power to act on behalf of the Association. The Executive Board shall possess all of the duties and powers granted to the Executive Board by the Act.

Section 11.3. Disputes. In the event of any dispute or disagreement between any Unit owners relating to the Property, or any questions of interpretation or application of the provisions of the Condominium Documents, the determination thereof by the Executive Board shall be final and binding on each and all such Unit owners. The Executive Board shall have the authority to seek a declaratory judgment or other appropriate judicial relief in order to assist it in carrying out its responsibilities under this Section 11.3. All costs of obtaining such judgment shall be borne by the disputants, or in the absence of disputants, by the Association as a Common Expense.

Section 11.4. Abating and Enjoining Violations by Unit Owners. The violation of any Rules and Regulations adopted by the Executive Board, the breach of any provision contained in the Condominium Documents, the deed to any Unit, or the Act by any Unit owner or any tenant of such Unit owner, shall give the Executive Board the right, in addition to any other rights to which it may be entitled, to enjoin, abate or remedy by appropriate legal proceedings, either by law or in equity, the continuance of any such violation or breach.

Section 11.5. Limited Liability of the Executive Board. To the maximum extent permitted by applicable law, the Executive Board, and its members in their capacity as members, officers and employees:

(a) Shall not be liable for the failure of any service to be obtained by the Executive Board and paid for by the Association, or for injury or damage to persons or property caused by the elements or by another Unit owner or person on the Property, or resulting from electricity, gas, water, rain, dust or sand which may leak or flow from the outside or from any part of the Units, or from any of its pipes, drains, conduits, appliances, or equipment, or from any other place unless in each such instance such injury or damage has been caused by the willful misconduct or gross negligence of the Association or the Executive Board;

(b) Shall not be liable as a result of the performance of the Executive Board members' duties for any mistakes of judgment, negligence or otherwise, except for the Executive Board members' own willful misconduct or gross negligence;

(c) Shall have no personal liability in contract to a Unit owner or any other person or entity under any agreement, check, contract, deed, lease, mortgage, instrument or transaction entered into by them on behalf of the Executive Board or the Association in the performance of the Executive Board members' duties;

(d) Shall not be liable to a Unit owner, or such Unit owner's tenants, employees, agents, customers or guests, for loss or damage caused by theft of or damage to personal property left by such Unit owner or his tenants, employees, agents, customers or guests in a Unit, or in or

on the Common Elements or Limited Common Elements, except for the Executive Board members' own willful misconduct or gross negligence;

(e) Shall have no personal liability in tort to a Unit owner or any other person or entity, direct or imputed, by virtue of acts performed by or for them, except for the Executive Board members' own willful misconduct or gross negligence in the performance of their duties; and

(f) Shall have no personal liability arising out of the use, misuse or condition of the Buildings, or which might in any other way be assessed against or imputed to the Executive Board members as a result of or by virtue of their performance of their duties, except for the Executive Board members' own willful misconduct or gross negligence.

Section 11.6. Indemnification. Each member of the Executive Board in his capacity as an Executive Board member, officer or both, shall be indemnified by the Association against all expenses and liabilities, including attorneys' fees, reasonably incurred by or imposed upon the Executive Board Member in connection with any proceeding in which the Executive Board member may become involved by reason of the Executive Board member being or having been a member and/or officer of the Executive Board, or any settlement of any such proceeding, whether or not the Executive Board member is an Executive Board member, officer or both at the time such expenses are incurred, except with respect to any matter as to which such Executive Board member shall have been finally adjudicated in any action, suit or proceeding not to have acted in good faith in the reasonable belief that his or her action was in the best interests of the corporation or, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful; *provided that*, in the event of a settlement, this indemnification shall apply only if and when the Executive Board (with the affected member abstaining if still an Executive Board member at the time of settlement) approves such settlement and reimbursement as being in the best interests of the Association. The indemnification by the Unit owners set forth in this Section 11.6 shall be paid by the Association on behalf of the Unit owners and shall constitute a Common Expense and shall be assessed and collectible as such. Such right of indemnification shall not be deemed exclusive of any other rights to which such Executive Board member and/or officer may be entitled as a matter of law or agreement or by vote of the Unit owners or otherwise.

Section 11.7. Defense of Claims. Complaints brought against the Association, the Executive Board or the officers, employees or agents thereof in their respective capacities as such, or the Condominium as a whole, shall be directed to the Executive Board of the Association, which shall promptly give written notice thereof to the Unit owners and the Eligible Mortgage Holders and such complaints shall be defended by the Association. The Unit owners and the Eligible Mortgage Holders shall have no right to participate other than through the Association in such defense. Complaints of a nature specified in Section 3.3. hereof against one or more but less than all Unit owners shall be defended by such Unit owners who are defendants themselves and such Unit owners shall promptly give written notice of the institution of any such suit to the Association and to the holders of any mortgages encumbering such Units.

Section 11.8. Storage; Disclaimer of Bailee Liability. Neither the Executive Board, the Association, any Unit owner nor the Declarant shall be considered a bailee of any personal property stored on the Common Elements (including property located in storage areas on the Common Elements, including the Limited Common Elements), whether or not exclusive possession of the particular area is given to a Unit owner for storage purposes, and shall not be responsible for the security of such personal property or for any loss or damage thereto, whether or not due to negligence, except to the extent covered by insurance in excess of any applicable deductible.

ARTICLE 12 MANAGEMENT

The Association shall have the right to employ a professional, experienced managing agent who shall oversee the daily operation of the Condominium in accordance with the provisions of the Act and the Condominium Documents.

ARTICLE 13 ASSESSMENTS; LIABILITY OF UNIT OWNERS

Section 13.1. Power to Assess.

(a) The Association, acting through the Executive Board in accordance with the Bylaws, shall have the power to fix and determine, from time to time, the sums necessary and adequate to provide for the Common Expenses (based on the Budget for such fiscal period), including, but not limited to, such amounts as are necessary for (i) the maintenance, repair and replacement of the Common Elements and the Limited Common Elements, as set forth in Section 3.3(a) hereof, (ii) uncollectable assessments, (iii) budget deficits, (iv) such other reserves as are hereinafter described, (v) such additional reserves as the Executive Board shall deem necessary or prudent, and (vi) such other expenses as are specifically provided for in the Act, this Declaration, and the Bylaws. The Association may establish an adequate reserve fund for maintenance, repair and replacement of those Common Elements and Limited Common Elements for which the Association is responsible that are anticipated to require replacement, repair or maintenance on a periodic basis, and to cover any deductible amount for insurance policies maintained by the Association. If such reserve fund is established by the Association, the Association may fund it by the Monthly Assessments. Common Expenses, to the extent they are imposed, shall be assessed against each Unit in accordance with the allocation set forth in Section 5.2 above and Section 1602-107 of the Act. Charges incurred by the Association and related to Limited Common Elements shall be assessed against only those Units benefiting from the Limited Common Elements. After the adoption of the first annual proposed budget by the Executive Board, the Executive Board shall annually adopt a proposed budget (the "Budget"), and, within thirty (30) days of adoption shall provide a summary of the proposed Budget to all Unit owners, *provided that* the Association shall have no obligation to adopt the first Budget unless requested to do so by all of the Unit owners. The Executive Board shall also schedule a meeting of the

Unit owners to consider ratification of the Budget not less than fourteen (14) days nor more than thirty (30) days after the mailing of such summary. Unless at that meeting a majority of all of the Unit owners reject the Budget, the Budget is ratified, whether or not a quorum is present. In the event the Budget is not ratified, the current Monthly Assessment, if any, shall continue until the adoption of a new Budget is made at a meeting of the Association called for that purpose no sooner than fifteen (15) days nor later than thirty (30) days after the initial ratification meeting of the Unit owners. The Declarant shall pay the Monthly Assessment for Units owned by the Declarant in the same manner as the other Unit owners, beginning with the first Monthly Assessment as provided in Section 13.3 hereof.

(b) In addition to paragraph (a) of this Section 13.1, the following shall apply:

(1) Any Common Expense associated with the maintenance, repair or replacement of a Limited Common Element shall be assessed against the Unit or Units to which that Limited Common Element is assigned.

(2) Any payments, fees or charges for the use, rental or operation of any Common Element shall be applied first, to reduce the Common Expense relating to such Common Element and, second, any excess shall be applied to Common Expenses generally.

(3) Assessments to pay a judgment against the Association shall be a lien only against the Units in the Condominium at the time the judgment was entered, in proportion to their Common Expense liability.

(4) If any Common Expense is caused by the misconduct of any Unit owner, the Association may assess that expense exclusively against such Unit owner's Unit.

(5) If Common Expense liabilities are reallocated, Common Expense assessments and any installment thereof not yet due shall be recalculated in accordance with the reallocated Common Expense liabilities.

(6) Any Common Expense that is to be reimbursed by Unit owners according to use shall be paid as part of the Common Expense installment billed at the same time as the reimbursable expense, and for all purposes except allocation by Percentage Interest in the Common Elements, all such reimbursable expenses shall be treated as Common Expenses.

Section 13.2. Special Assessments. If the cash requirement estimated at the beginning of any fiscal year shall prove to be insufficient to cover the actual Common Expenses for such fiscal year for any reason (including by way of illustration and not limitation, any Unit owner's non-payment of its assessment or municipal assessments not yet assessed), the Executive Board shall have the power, at any time it deems necessary and proper, to levy one or more Special Assessments against each Unit owner. Special Assessments shall be due and payable in the manner and on the date set forth in the notice thereof.

Section 13.3. Payment of Assessments. Each Unit owner, including each Declarant to the extent a Declarant owns a Unit, shall pay all Monthly Assessments and Special Assessments levied by the Association in accordance with this Declaration and the Bylaws. Liability for such assessments shall be determined in accordance with Section 5.2 hereof. Such assessments shall begin accruing at the time of the creation of the Condominium and they shall be due and payable on a monthly basis as and if designated by the Executive Board. Assessments that are unpaid for over fifteen (15) days after the due date shall bear interest at the rate determined from time to time by the Executive Board from the due date until paid. In the sole discretion of the Executive Board, a late charge may be assessed against the delinquent Unit owner.

Section 13.4. New Assessments. After the initial assessment has been made by the Association, subsequent assessments shall be made by the Association annually on or before the anniversary date of the initial assessment or such other date as the Association may choose, based on the Budget adopted by the Association not later than sixty (60) days prior to the assessment. If the Executive Board shall fail to fix new Monthly Assessments for Common Expenses for the subsequent fiscal year before the expiration of any fiscal year, the Unit owners shall continue to pay the same sums they were paying for such Monthly Assessments during the fiscal year just ended and such sum shall be deemed to be the new Monthly Assessments for the succeeding fiscal year. If the Executive Board shall change the Monthly Assessment at a later date, the difference between the new Monthly Assessment, if greater, and the previous year's Monthly Assessment up to the effective date of the new Monthly Assessment shall be treated as if it were a Special Assessment under Section 13.2. hereof; thereafter each Unit owner shall pay the new Monthly Assessment. In the event the new Monthly Assessment is less than the previous year's Monthly Assessment, in the sole discretion of the Executive Board, the excess shall either be refunded to the Unit owners, credited against future Monthly Assessments or retained by the Association for reserves.

Section 13.5. No Exemption by Waiver. No Unit owner may exempt himself from liability for the Common Expenses by waiver of the enjoyment of the right to use any of the Common Elements or by the abandonment of such Unit owner's Unit or otherwise.

Section 13.6. Personal Liability of Unit Owners. All sums assessed by the Association as a Monthly Assessment or Special Assessment shall constitute the personal liability of the owner of the Unit so assessed and also, until fully paid, shall constitute a lien against such Unit pursuant to Section 1603-116 of the Act. Multiple owners of a Unit shall each be jointly and severally liable for all unpaid Monthly Assessments and Special Assessments. The Association may take such actions as are permitted by Section 1603-116 of the Act for failure to pay any assessment or other charges. The delinquent owner shall be obligated to pay (a) all expenses of the Executive Board, including reasonable attorneys' fees, incurred in the collection of the delinquent assessment by legal proceedings or otherwise, and (b) any amounts paid by the Executive Board for taxes or on account of superior liens or otherwise to protect its lien, which expenses and amounts, together with accrued interest, shall be deemed to constitute part of the delinquent assessment and shall be collectible as such.

Section 13.7. Liability of Purchaser of Unit for Unpaid Assessments.

(a) Upon the voluntary sale, conveyance or any other voluntary transfer of a Unit or any interest therein, the grantee thereof shall not be personally liable with the grantor thereof for all unpaid assessments for Common Expenses which are a charge against the Unit as of the date of consummation of the sale, conveyance or transfer, unless such grantee agrees to assume the obligation therefor; *provided, however*, except as provided in clause (b), a lien against the Unit so purchased for assessments imposed pursuant to this Declaration or the Act shall not be affected by such sale, conveyance or other transfer.

(b) Prior to or at the time of any conveyance of a Unit by Unit Owner, all unpaid assessments shall be paid in full. Any purchaser of a Unit shall be entitled to a written statement by the Association setting forth the accrued assessments for Common Expenses that are then unpaid, and such purchaser shall not be liable for, nor shall the Unit conveyed be subject to a lien for, accrued but unpaid assessments in excess of the amount therein set forth.

Section 13.8. Subordination of Certain Charges. The lien for any Monthly Assessments or any fees, charges, late charges, fines and interest that may be levied by the Association pursuant to Section 1603-102 of the Act shall be subordinate to any first mortgage lien recorded before or after such Monthly Assessment, fee, charge, late charge, fine or interest was due.

ARTICLE 14

SPECIAL DECLARANT RIGHTS AND DEVELOPMENT RIGHTS

Section 14.1. Special Declarant Rights and Development Rights. In addition to the easement rights reserved in Article 6, the Declarants reserve to themselves and for the benefit of their respective successors and assigns, and subjects the Property to, the right:

(a) to effect the construction of the Building and other improvements constituting Unit No. 2, in accordance with the description thereof set forth on the Plat.

(b) to effect an expansion of Unit No. 1, by (i) modifying the vertical boundaries thereof in the area of the single story structure attached to the west side of the Building constituting Unit No. 1 between the wing of said Building that extends southwesterly and the wing of said Building that extends in a northwesterly direction (the "Loading Structure"), as follows: (A) projecting in a northwesterly direction the vertical boundary that is three feet outside the southwest facing exterior wall of the Loading Structure that extends in a northwesterly direction from the northwest side of the southwesterly wing of said Building to the intersection of such projected vertical boundary with the extended vertical boundary described in clause (B); and (B) projecting the vertical boundary that is three feet outside the northwest facing fascia of overhanging roof of the Loading Structure that extends in a southwesterly direction from the westerly side of the Loading Structure to the intersection of such projected vertical

boundary with the projected vertical boundary described in clause (A); and (ii) constructing within the boundaries so modified additions to the Building and other improvements constituting Unit No. 1.

(b) until the construction of all Units is completed, to connect with and make use of utility lines, wires, pipes and conduits located on the Property for construction and sales purposes;

(c) until the construction of all Units is completed, to use the Common Elements for ingress and egress, for the repair and construction of Units and Common Elements, including, but not limited to, the movement and temporary storage of construction materials and equipment, and for the installation of signs and lighting for sales and promotional purposes; and

(d) to use easements through the Common Elements for the purposes of making improvements within the Condominium.

The real estate subject to these Development Rights and Special Declarant Rights is the Property.

Section 14.2 Amendment. This Article 14 shall not be amended without the written consent of the Declarants duly recorded in the Cumberland County Registry of Deeds.

ARTICLE 15 ASSIGNABILITY OF DECLARANT'S RIGHTS

The Declarants may assign any or all of their respective rights or privileges reserved or established by this Declaration or the Act in accordance with the provisions of the Act.

ARTICLE 16 AMENDMENT OF DECLARATION

Section 16.1. Amendments to Declaration. Except as otherwise provided herein or in Section 1602-117 of the Act, this Declaration may be amended only by unanimous vote or agreement of the Unit owners.

Section 16.2. Rights of Mortgagees. Approval of amendments of a material nature must be obtained from Eligible Mortgage Holders representing at least 51% of the votes of Units that are subject to mortgages held by Eligible Mortgage Holders. A change to any of the following, except where such change may be effected by the Declarants, the Association or certain Unit owners under the Act or this Declaration, are deemed to be material:

- (a) voting rights;
- (b) reallocation of interests in the Common Elements or Limited Common Elements, or rights to their use;

- (c) boundaries of any Unit;
- (d) convertibility of Units into Common Elements or Common Elements into Units;
- (e) expansion or contraction of the Condominium, or the addition, annexation or withdrawal of property to or from the Condominium;
- (i) insurance;
- (j) restoration or repair of the Condominium (after a hazard damage or partial condemnation) in a manner other than that specified in the Condominium Documents;
- (k) any action to terminate the legal status of the Condominium after substantial destruction or condemnation occurs; or
- (l) any provisions that expressly benefit holders of mortgages on the Units.

The approval of an Eligible Mortgage Holder may be assumed when that Eligible Mortgage Holder has failed to submit a response to any written proposal for an amendment within thirty (30) days after the proposal is made. No amendment to the Condominium Documents shall diminish or impair the rights of the Declarants under the Condominium Documents without the prior written consent of the Declarants. No amendment may modify this Article 16 or the rights of any person hereunder. Except as specifically provided in the Condominium Documents, no provision of the Condominium Documents shall be construed to grant to any Unit owner, or to any other person, any priority over any rights of mortgagees of any Unit owner.

ARTICLE 17 TERMINATION

The Condominium may be terminated only by agreement of the Unit owners representing one hundred percent (100%) of the Percentage Interests. Termination of the Condominium will be governed by the provisions of Section 1602-118 of the Act.

ARTICLE 18 GENERAL PROVISIONS

Section 18.1. Headings. The headings used in this Declaration and any table of contents are inserted solely as a matter of convenience for the readers of this Declaration and shall not be relied upon or used in construing the effect or meaning of any of the provisions of this Declaration.

Section 18.2. Severability. The provisions of this Declaration shall be deemed independent and severable, and the invalidity or unenforceability of any provision or portion

thereof shall not affect the validity or enforceability of any other provision or portion hereof unless such deletions shall destroy the uniform plan of development and operation of the Condominium which this Declaration is intended to create.

Section 18.3. Applicable Law. This Declaration shall be governed by and construed according to the laws of the State of Maine.

Section 18.4. Interpretation. The provisions of this Declaration shall be liberally construed in order to effect Declarants' desire to create a uniform plan for development and operation of the Condominium. In the event of any conflict or discrepancy between this Declaration, the Bylaws and the Plat, the provisions of this Declaration shall govern.

Section 18.5. Effective Date. This Declaration shall become effective when it and the Plat have been recorded.

Section 18.6. Notices. All notices and other communications required or permitted to be given under or in connection with this Declaration shall be in writing and shall be deemed given when delivered in person or on the second business day after the day on which mailed by certified mail, return receipt requested, addressed to the address maintained in the register of current addresses established by the Association.

Section 18.7. Exhibits. All exhibits attached to this Declaration are hereby made a part of this Declaration.

Section 18.8. Pronouns. Wherever used, the singular number shall include the plural, the plural the singular and the use of any gender shall include all genders.

[The balance of this page is left blank intentionally. Signature page follows.]

IN WITNESS WHEREOF, the Declarants have caused this Declaration to be executed by their duly authorized representatives as of this 21 day of June, 2006.

JHA PROPERTIES, INC.

Holly Nicholson
Witness

By: Kathryn J. Callnan
Kathryn J. Callnan, President

CEDARS NURSING CARE CENTER, INC.

Holly Nicholson
Witness

By: Kathryn J. Callnan
Kathryn J. Callnan, President

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

June 21, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of JHA PROPERTIES, INC., a Maine non-profit corporation, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said JHA PROPERTIES, INC.

Before me,

[Signature]

Lynne A. Burr, Notary Public
State of Maine
My Commission Expires 12/5/2009

Notary Public/Attorney at Law
Print Name: Lynne Burr
My commission expires: 2009

STATE OF MAINE
COUNTY OF CUMBERLAND, ss

June 21, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of CEDARS NURSING CARE CENTER, INC., a Maine non-profit corporation, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said CEDARS NURSING CARE CENTER, INC.,

Before me,

[Signature]

Lynne A. Burr, Notary Public
State of Maine
My Commission Expires 12/5/2009

Notary Public/Attorney at Law
Print Name: Lynne Burr
My commission expires: 2009

LIMITED JOINDER AGREEMENT OF MORTGAGEE

The undersigned, MAINE HEALTH AND HIGHER EDUCATIONAL FACILITIES AUTHORITY, a public body corporate and politic of the State of Maine, created and existing under the Constitution and the laws of the State of Maine, with a place of business at 3 University Drive, P.O. Box 2268, Augusta, Maine 04330 (herein called the "Mortgagee"), as holder of and mortgagee under the following instruments:

1. A certain Loan Agreement and Mortgage by JHA Properties, Inc., a Maine nonprofit corporation ("JHA Properties"), to the Mortgagee, dated as of March 1, 1998 and recorded in the Cumberland County Registry of Deeds in Book 13709, Page 1, and a certain Mortgage by JHA Properties, Inc., to the Mortgagee, dated as of October 9, 1998 and recorded in the Cumberland County Registry of Deeds in Book 14221, Page 222 (the "JHA Properties Mortgage"); and

2. A certain Loan Agreement and Mortgage by Cedars Nursing Care Center, Inc., a Maine nonprofit corporation ("Cedars"), to the Mortgagee, dated as of May 1, 1993 and recorded in the Cumberland County Registry of Deeds in Book 10717, Page 311 (the "Cedars Mortgage");

(herein the instruments described in paragraphs 1 and 2 above are sometimes collectively called the "Mortgages"), for itself and its successors and assigns, hereby

- (i) **joins with** JHA Properties and Cedars (herein collectively called the "Declarants") in submitting the Property, as defined and described in this Declaration, separate portions of which are subject to the lien of one or the other of the Mortgages, to the provisions of the Maine Condominium Act, 33 M.R.S.A. Chapter 31, §§ 1601-101, et seq., as amended, for the sole and limited purposes of evidencing Mortgagee's consent as owner and holder of the Mortgages to the submission of the Property under this Declaration and to the creation and granting of those easements, uses, rights and privileges described in this Declaration and granting and releasing the liens, rights and interests described in clauses (ii) through (vi);
- (ii) **grants and releases** to Cedars, its successors and assigns, all of Mortgagee's right, title and interest under the JHA Properties Mortgage in and to Unit No. 1 as created by this Declaration;
- (iii) **grants and releases** to Cedars, its successors and assigns, and Properties, its successors and assigns, all of Mortgagee's right, title and interest under the Mortgages in and to Unit No. 2 as created by this Declaration and all Development Rights related to the construction of the Building and other improvements constituting Unit No. 2 in accordance with the description thereof set forth on the Plat;

- (iv) **grants and releases** to JHA Properties, its successors and assigns, all of Mortgagee's right, title and interest under the Cedars Mortgage in and to Unit No. 3 as created by this Declaration;
- (v) **grants and releases** to JHA Properties and Cedars, their respective successors and assigns, all of Mortgagee's right, title and interest under either of the Mortgages in and to the following easements of record:
 - (A) Utility and Access Easement described as Parcel B in easement deed from Cedars Nursing Care Center, Inc., to JHA Services, Inc., dated May 25, 1990, and recorded in the Cumberland County Registry of Deeds, Book 9188, Page 115, as amended and modified Short Form Quitclaim Deed from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 17, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 319, and by Easement Modification, between JHA Services, Inc. and Cedars Nursing Care Center, Inc., dated April 1, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13708, Page 305 (the "Granting Deed");
 - (B) Emergency Access Road Easement described as Parcel C in the Granting Deed ;
 - (C) Parking Easement, Utility and Access Easement and Loop Road Easement retained as Items 1, 2 and 3 in the Granting Deed;
 - (D) Access Easement in easement deed from JHA Properties, Inc., to Cedars Nursing Care Center, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 321;
 - (E) Access Easement in easement from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 325; and
 - (F) Agreement and Reciprocal Easement Deed, between Cedars Nursing Care Center, Inc., and JHA Properties, Inc., dated as of March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 331; and
- (vi) **expressly retains, excepts and reserves**, for itself and its successors and assigns, the lien of and all other rights under the Cedars Mortgage in and to Unit No. 1; and

- (vii) **expressly retains, excepts and reserves**, for itself and its successors and assigns, the lien of and all other rights under the JHA Properties Mortgage in and to Unit No. 3;

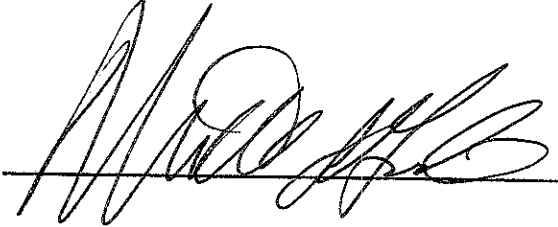
PROVIDED, that such joinder and consent shall not be construed to make said Mortgagee, its successors and assigns, as mortgagee, the Declarant or to impose on it any of the obligations or liabilities of the Declarant under this Declaration, including, without limitation, any obligation or liability of any kind to any purchaser(s) of any condominium unit(s), and said Mortgagee makes no warranties or covenants to any person or party, express or implied, as to title, merchantability, fitness for any particular purpose, physical condition or otherwise as to the Condominium premises.

The Mortgagee hereby agrees that its lien on Unit No. 1 under the Cedars Mortgage and its lien on Unit No. 3 under the JHA Property Mortgage, all as excepted and reserved herein, shall be subject to the provisions of said Maine Condominium Act and shall attach to the Units and Percentage Interests created by this Declaration, as it may be amended. The Mortgagee further agrees that, in the exercise of its rights as mortgagee under the aforesaid Mortgages, the Mortgagee will recognize the establishment of a condominium by this Declaration of Condominium.

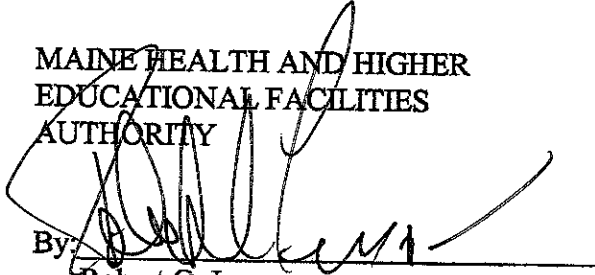
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IN WITNESS WHEREOF, the Mortgagee has caused this instrument to be executed and sealed in its corporate name by its officer thereunto duly authorized as of the date of the foregoing Declaration.

WITNESS:



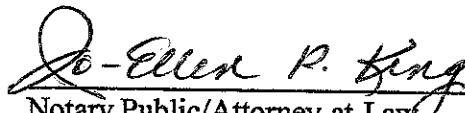
MAINE HEALTH AND HIGHER
EDUCATIONAL FACILITIES
AUTHORITY

By: 
Robert O. Lenna
Its Executive Director

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

JUNE 29th, 2006

Personally appeared before me the above-named Robert O. Lenna, Executive Director of Maine Health and Higher Educational Facilities Authority, and acknowledged the foregoing instrument to be his free act and deed in said capacity, and the free act and deed of said Maine Health and Higher Educational Facilities Authority.


Notary Public/Attorney-at-Law
Print Name: JO-ELLEN P. KING
My Commission Expires: OCTOBER 27, 2011

Jo-Ellen P. King
Notary Public, Maine
My Commission Expires
October 27, 20 11

EXHIBIT A**PROPERTY DESCRIPTION**

A certain lot or parcel of land lying on the northwesterly side of Ocean Avenue and the northeasterly terminus of Byfield Road in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point and the intersection of the northeasterly terminus of said Byfield Road with the northwesterly sideline of said Byfield Road;

Thence S 50°04'08" W by the northwesterly sideline of said Byfield Road a distance of Thirty and 45/100 (30.45) feet to a point and the easterly corner of land now or formerly of Christopher J. King and Elizabeth C. King as described in a deed recorded in the Cumberland County Registry of Deeds in Book 20322, Page 332;

Thence N 39°56'15" W by said land of King a distance of Ninety-Nine and 20/100 (99.20) feet to a point;

Thence S 52°11'01" W by said land of King; by land now or formerly of Barry E. Scott and Mary A. Scott as described in a deed recorded in said Registry in Book 2809, Page 26; and by land now or formerly of N. Penrose Hallowell IV as described in a deed recorded in said Registry in Book 15501, Page 236, a distance of Two Hundred Thirty-Nine and 65/100 (239.65) feet to a point and the northeasterly corner of land now or formerly of Brian R. Sheets and Gaye L. Sheets as described in a deed recorded in said Registry in Book 13242, Page 35;

Thence N 37°59'05" W by said land of Sheets a distance of Sixty and 00/100 (60.00) feet to a point and the southeasterly line of land now or formerly of John Tevanian and Thelma M. Tevanian as described in a deed recorded in said Registry in Book 3627, Page 59;

Thence N 52°11'01" E by said land of Tevanian a distance of One Hundred and 04/100 (100.04) feet to a point;

Thence N 37°52'24" W by said land of Tevanian a distance of Sixty-Four and 64/100 (64.64) feet to a point and the southerly corner of land now or formerly of Old Port Realty Corp. as described in a deed recorded in said Registry in Book 4013, Page 113;

Thence N 52°11'01" E by said land of Old Port Realty Corp. a distance of Six Hundred Sixty-Eight and 07/100 (668.07) feet to a point and land now or formerly of Ledgewood Owners Association as described in a deed recorded in said Registry in Book 4446, Page 125;

Thence S 58°38'42"E by said land of Ledgewood Owners Association a distance of Zero and 97/100 (0.97) feet to a point, said point herein designated as "Point A";

Thence Southeasterly by said land of Ledgewood Owners Association following a non- tangent curve to the right having a radius of Two Hundred Fifty-Two and 54/100 (252.54) feet an arc distance of Two Hundred Fifteen and 57/100 (215.57) feet to a point, said point being located S 69°09'08" E a distance of Two Hundred Nine and 08/100 (209.08) feet from said "Point A";

Thence S 44°41'54" E by said land of Ledgewood Owners Association a distance of One Hundred Thirty-Nine and 56/100 (139.56) feet to a capped 5/8" rebar (PLS #199);

Thence S 44°27'57" E by said land of Ledgewood Owners Association a distance of Two Hundred Ninety-Nine and 33/100 (299.33) feet to a 1" iron pipe;

Thence S 43°59'21" E by said land of Ledgewood Owners Association a distance of Seventy and 26/100 (70.26) feet to a point and the northwesterly sideline of said Ocean Avenue;

Thence S 35°36'51" W by said Ocean Avenue a distance of Fifty-One and 28/100 (51.28) feet to a point;

Thence S 40°42'51" W by said Ocean Avenue a distance of Four Hundred Twenty-Six and 00/100 (426.00) feet to a point and the easterly corner of land now or formerly of David H. Littlefield and Bonnie S. Littlefield as described in a deed recorded in said Registry in Book 4458, Page 44;

Thence N 47°24'30" W by said Littlefield a distance of One Hundred and 58/100 (100.58) feet to a capped 5/8" rebar (PLS #509);

Thence S 45°36'30" W by said land of Littlefield a distance of One Hundred and 00/100 (100.00) feet to a point and land now or formerly of Domenico Floridino and Anna Floridino as described in a deed recorded in said Registry in Book 3029, Page 521;

Thence N 47°19'15" W by said land of Floridino; by land now or formerly of Peter J. Molloy and Elizabeth D. Molloy as described in a deed recorded in said Registry in Book 16537, Page 279; by land now or formerly of Elizabeth F. Searles and Harold E. Searles as described in a deed recorded in said Registry in Book 3122, Page 381; by land now or formerly of Leslie E. Conley and Avis J. Conley as described in deeds recorded in said Registry in Book 2640, Page 412 and Book 2649, Page 394; and by the northeasterly terminus of said Byfield Road a distance of Four Hundred Eighty and 78/100 (480.78) feet to the point of beginning.

Bearings are based on magnetic north 1924.

The above described parcel contains 10.57 acres.

Reference is herein made to a plan entitled "Cedars Condominiums Recording Plat/Condominium Plan, ALTA/ACSM Land Title Survey Cedars Plan/ALTA/ACSM/Land Title Survey" made for JHA Properties, Inc., Cedars Nursing Care Center, and JHA Assisted Living, Inc. dated September 8, 2005, and revised April 5, 2006, made by Titcomb Associates.

EXHIBIT B

<u>Unit Identifying Number</u>	<u>Percentage Interest</u>
Unit 1	33.333%
Unit 2	33.333%
Unit 3	33.333%

Formula Calculating Percentage Interest

All Units shall have an equal Percentage Interest to be calculated by (i) dividing one (1) by three (3).

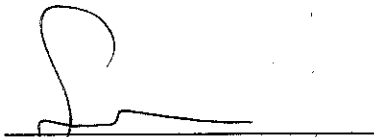
QUIT CLAIM DEED WITH COVENANT

KNOW ALL MEN BY THESE PRESENTS, that, CEDARS NURSING CARE CENTER, INC., a Maine non-profit corporation with a principal place of business in Portland, Cumberland County, Maine, for consideration paid grants to JHA ASSISTED LIVING, INC., a Maine non-profit corporation having a mailing address of 630 Ocean Avenue, Portland, Maine 04103, WITH QUIT CLAIM COVENANT its 33.6% (Thirty-Three and Six-Tenths Percent) tenancy-in-common interest in the following described property:

SEE EXHIBIT A ATTACHED HERETO
AND INCORPORATED HEREIN

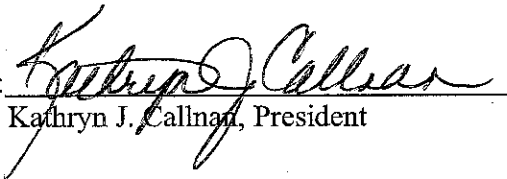
WITNESS my hand and seal this 6th day of July, 2006.

Signed, Sealed and Delivered
in the presence of



Witness

CEDARS NURSING CARE CENTER, INC.

By: 

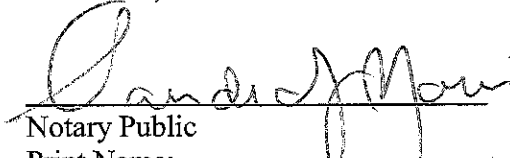
Kathryn J. Callnan, President

State of New Hampshire
County of Hillsborough

July 6, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of Cedars Nursing Care Center, Inc., duly authorized, and acknowledged the foregoing instrument to be her free act and deed, and the free act and deed of Cedars Nursing Care Center, Inc.

Before me,



Notary Public
Print Name:
Commission Expires:

SEAL

SANDRA J. MORIN
Notary Public
My Commission Expires April 3, 2007

MAINE REAL ESTATE TAX PAID

EXHIBIT A

The Unit ("Unit") designated as Number 2 of the Cedars Condominiums located at 630 Ocean Avenue, Portland, Cumberland County, Maine, ("Condominium") created pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended, and set forth in Declaration of Cedars Condominiums, dated as of June 30, 2006, and recorded in Cumberland County Registry of Deeds in Book 24129, Page 276, as may be amended, and shown on the related plats and plans recorded in Plan Book 206, Page 430. The Unit is subject to and has the benefit of the Declaration, the Plats, Plans and the Act which are incorporated herein by reference, to which reference is hereby made for a more particular specification of the definition, location and description of the real property hereby conveyed and of the rights, obligations, easements, development rights, special Declarant rights, restrictions, covenants and conditions pertaining thereto.

Received
Recorded Register of Deeds
Jul 10, 2006 02:40:15P
Cumberland County
John E OBrien

QUIT CLAIM DEED WITH COVENANT

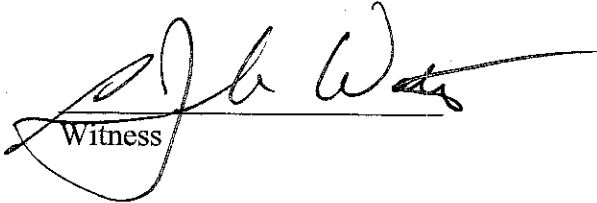
KNOW ALL MEN BY THESE PRESENTS, that, JHA PROPERTIES, INC., a Maine non-profit corporation with a principal place of business in Portland, Cumberland County, Maine, for consideration paid grants to JHA ASSISTED LIVING, INC., a Maine non-profit corporation having a mailing address of 630 Ocean Avenue, Portland, Maine 04103, WITH QUIT CLAIM COVENANT its 66.4% (Sixty-Six and Four Tenths Percent) tenancy-in-common interest in the following described property:

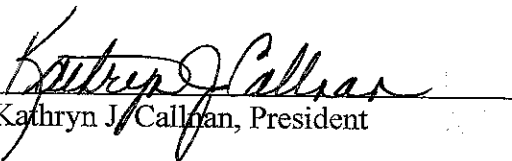
SEE EXHIBIT A ATTACHED HERETO
AND INCORPORATED HEREIN

WITNESS my hand and seal this 27th day of September, 2006.

Signed, Sealed and Delivered
in the presence of

JHA PROPERTIES, INC.


Witness

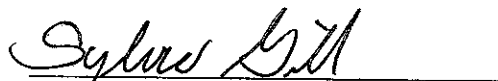
By: 
Kathryn J. Callnan, President

State of Maine
County of Cumberland

September 27, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of JHA Properties, Inc., duly authorized, and acknowledged the foregoing instrument to be her free act and deed, and the free act and deed of JHA Properties, Inc.

Before me,


Notary Public
Print Name:
Commission Expires:

SYLVIA GILL
Notary Public, Maine
My Commission Expires October 21, 2013

EXHIBIT A

The Unit ("Unit") designated as Number 2 of the Cedars Condominiums located at 630 Ocean Avenue, Portland, Cumberland County, Maine, ("Condominium") created pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended, and set forth in Declaration of Cedars Condominiums, dated as of June 30, 2006, and recorded in Cumberland County Registry of Deeds in Book 24129, Page 276, as may be amended, and shown on the related plats and plans recorded in Plan Book 206, Page 430. The Unit is subject to and has the benefit of the Declaration, the Plats, Plans and the Act which are incorporated herein by reference, to which reference is hereby made for a more particular specification of the definition, location and description of the real property hereby conveyed and of the rights, obligations, easements, development rights, special Declarant rights, restrictions, covenants and conditions pertaining thereto.

Received
Recorded Register of Deeds
Oct 10:2006 11:34:34A
Cumberland County
John B O'Brien

Section 6: Compliance with Applicable Zoning Requirements

6.0 Existing Zones

The site exists within a R-3 and R-5 Zones.

Compliance within these zones is indicated below:

R-3:

Use: Institutional use as a long-term care facility is a conditional use in this zone. The applicant requests that the conditional use be granted for the proposed building on the basis that the use is consistent with the existing site and in compliance with the conditional use standards found in Section 14-474 and Section 14-88 (c) of the ordinance as demonstrated below.

Section 14-474 (c) 2.

- a. The volume of traffic will be very similar to the current levels. The proposed facility will be adding approximately 8 to 9 staff during the daytime shift and there will be 20 additional beds at the facility. This will result in approximately 16 additional trips during the peak hour. The site will continue to be served by the single entrance on Ocean Avenue. Because the small increase in beds for the site we do not anticipate any changes in the deliveries to the site.
- b. The proposed use will not create unsanitary or harmful conditions. The building will have mechanical systems located on the roof of the building and trash will be collected and stored at the dumpsters on the site behind the Hoffmann Building. Please see Section 15 for additional information regarding solid waste.
- c. The orientation of the building is such that operational access to the building is from the main campus access drive which is internal to the site. There will be an activity area for residents along Rainbow Mall Road, but this area will be screened by a retaining wall, fence and landscaping. The parking lot will be screened from Rainbow Mall Road by landscaping. The portion of the building facing Ocean Avenue will be landscaped.

Section 14-88 (c)

- b. The proposed use will displace a residential structure, the “White House” that has been used as offices by the Cedars since approximately 1991. It is not clear when it was last used as a residence. The proposed building cannot be located elsewhere on the Cedars campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas are subject to mitigation easements for prior wetland impacts, and they will not be impacted by the proposed redevelopment.

Section 14-91 (a) off street parking: Parking shall be provided as required by Division 20. There will be an additional 14 spaces to accommodate the increase in staff during the day time shift and the 20 assisted living beds as required in Division 20.

R-5:

Use: Institutional use as a long-term care facility is a conditional use in this zone. The applicant requests that the conditional use be granted for the proposed building on the basis that the use is consistent with the existing site and in compliance with the conditional use standards found in Section 14-474 and Section 14-118 (b) of the ordinance. The following responses

Section 14-474 (c) 2.

- d. The volume of traffic will be very similar to the current levels. The proposed facility will be adding approximately 7 to 8 staff during the daytime shift and there will be 20 additional beds at the facility. This will result in approximately 14 additional trips during the peak hour. The site will be served by the single entrance on Ocean Avenue. Because the small increase in beds for the site we do not anticipate any changes in the deliveries to the site.
- e. The proposed use will not create unsanitary or harmful conditions. The building will have mechanical systems located on the roof of the building and trash will be collected in the garage and stored at the dumpsters on the site.
- f. The orientation of the building is such that operational access to the building is from the main campus access drive which is internal to the site. There will be an activity area for residents along Rainbow Mall Road, but this area will be screened by a retaining wall, fence and landscaping. The parking lot will be screened from Rainbow Mall Road by landscaping. The portion of the building facing Ocean Avenue will be landscaped.

Section 14-118 (b)

- b. The proposed use will displace a residential structure, the “White House” that has been used as offices by the Cedars since 1991. It is not clear when it was last used as a residence. The proposed building cannot be located elsewhere on the Cedars campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas are subject to mitigation easements for prior wetland impacts, and no wetland impacts are proposed as part of the redevelopment.

Section 14-91 (a) off street parking: Parking shall be provided as required by Division 20. There will be an additional 13 spaces to accommodate the increase in staff during the day time shift and the 20 assisted living beds as required in Division 20.

Cedars Site Plan Dimensional Requirements				
Code	Item	Proposed	Conditions R-5	Conditions R-3
14-87, 14-88(c)2.a.	Permitted Uses	Institutional	Allowed with conditional permit	Allowed with conditional permit
14-90	Dimensions			
a	Lot Size	10.5 acres	2 acres	2 acres
c	Frontage	578 feet	50	50 Feet
d	Front Setback	25	20	25
	Side Setback (Street)	20	20	20
	Side Setback	Variable	14	16
	Rear Setback	No Change		25
e	Max. Lot Cover	20.3%	40%	35%
f	Min Lot Width	Varies; over 400'	90 feet	65 feet
g	Max Str. Height	35'	35 feet	35 feet
h	Units/Building	N/A	12 max	2 max
i-q	N/A	N/A		N/A
14-91	Others			
a	Parking	0	(See Div 20)	(See Div 20)
c	N/A	N/A	N/A	N/A
14-92-6	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
Parking			From Division 20	
Off-Street	Residential Use	N/A	2/Dwelling Unit	
	LT Care	4	4; 1/5 Beds	
	LT Care	9	9; 1/Employee during day shift	
14-526A	Bike Parking	4	2.6; 2/10 new required parking spaces	
	Motor/Scooter	1	1	

Section 7: Summary of Existing Easements and Covenants

7.0 Existing Easements:

The existing easements are identified on the Boundary Survey Plan provided as part of this submission. The following is a list of easements that are associated with this project:

1. Utility Easement conveyed to Central Maine Power Company and New England Telephone and Telegraph Company by Cedars Nursing Care Center, Inc. described in Book 9306, Page 219. The proposed utility pole mentioned in description was not found on premises.
2. Snow Plowing Easement conveyed to the City of Portland by Cedars Nursing Care Center, Inc. and Jewish Home for the Aged described in Book 9260, Page 236.
3. Underground Line Easement conveyed to Central Maine Power Company by JHA Properties described in Book 14382, Page 187; encumbers the property described in Book 24129, Page 276.
4. The declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. described in Book 13709, Page 75, and the Amendment to Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA properties, Inc. described in Book 24129, Page 254. The amended and unamended Mitigation Parcels have been delineated on plan.
5. Declaration of covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. described in Book 24129, Page 265.
6. Underground Line Easement conveyed to Central Maine Power Company by Cedars Nursing Care Center, Inc. in Book 9162, Page 276.
7. Certification of Variance Approval granted to Cedars Nursing Care Center, Inc., JHA Properties, Inc., and JHA Services, Inc. by the City of Portland in Book 13595, Book 182.
8. Department of Environmental Protection Stormwater Standards and Conditions as set forth in Book 26415, Page 50.

Section 8: Financial and Technical Capacity

8.0 Financial Capacity

The Cedars, a non-profit organization, will be utilizing three sources of funding for the project, that include fundraising, Cedars social impact bonds and bank financing. The Cedars is working with a fundraising consultant, Steve Braverman, to guide their capital campaign which they have set a goal to raise \$10 million in donations and \$10 million in social impact bonds. With the help of an investment banker, the Cedars will be negotiating with their current lender Bangor Savings Bank to borrow any additional necessary funds, anticipated to not exceed \$10 - \$12 million. It is anticipated that the fundraising and bank lending will be in place by April 2018.

8.1 Technical Capacity

The client has obtained the services of Wright-Pierce to complete the permitting and design of the proposed improvements. Wright-Pierce is a Maine-based company with an office in Portland. Key staff for the project includes:

Jan Wiegman, P.E.: Senior project manager with over 30 years of experience in civil engineering and related fields. Mr. Wiegman has extensive experience in civil/site design and permitting, parking lot design, stormwater treatment, stormwater conveyance, traffic circulation, and client management.

Michael Guethle, P.E.: Project engineer with over 5 years of experience in civil and environmental engineering. Mr. Guethle has previously drafted plans for several development projects within the City of Portland and is familiar with the City's permitting processes and technical standards.

Matt LaPierre: Civil Technician with over 10 years of experience in civil engineering and related fields. Mr. LaPierre's experience is primarily focused on preparing civil/site development plans and completing field work.

Other Consultants:

Action Pact Design Group: Action Pact Design Group has been retained as the project architect given their extensive experience with building design for the long term care market. Alex Toye from the Kansas City, MO, office is leading the design effort for the firm.

Power Engineers, Inc.: Power Engineers, Inc. is a national firm with an office in Freeport firm with specialty services in wetland delineation and permitting. Cole Peters has delineated the wetland on the site in 2016.

Titcomb Associates: Titcomb Associated has been retained to provide survey for the project. Titcomb Associates routinely partners with Wright-Pierce to provide boundary survey and existing conditions base mapping.

Traffic Solutions: Bill Bray is a traffic engineer with substantial experience in traffic management studies and circulation design. Mr. Bray has been retained to assist in the development of a traffic assessment for the project.

MATTHEW LAPIERRE

Civil Engineering Technician

PROJECT ASSIGNMENT: Civil Engineering Technician

Education

A.A.S., Computer Aided
Drafting, Northern Maine
Technical College

Experience
15 Years

Joined Firm
2009

EXPERIENCE SUMMARY

Mr. LaPierre is a civil engineering technician at Wright-Pierce in the Civil Practice Group. He has 15 years of experience as a civil engineering technician.

RELEVANT PROJECT EXPERIENCE

Provided AutoCAD drafting and/or inspection services for the following:

Walnut Hill Road Reconstruction, Bethel, CT

This work includes a redesign for an existing roadway and intersection with updated storm drainage and sewer systems.

Bates College 55 & 65 Campus Avenue Housing, Lewiston, ME

Project includes two new student housing areas and surrounding site design for Bates College.

Water Storage Tank, Bethel, CT

Work includes the addition of a new water supply storage tank along with surrounding site improvements.

Water Storage Tank, Gardiner, ME

This project includes the addition of a new water supply storage tank along with surrounding site improvements.

Contract #11 Sewer Separation, Lebanon, NH

Project includes street renovations with new pavement and new paved walks along with new storm drainage, sewer lines and water lines.

Contract #7 Sewer Separation, Lebanon, NH

This project includes street renovations with new pavement and new paved walks along with new storm drainage, sewer lines and water lines.

Contract #4 Sewer Separation, Lebanon, NH

Project includes street renovations with new pavement and new paved walks along with new storm drainage, sewer lines and water lines.

Sewer Separation, Richmond, ME

The job includes new sewer manholes and sewer lines.

Waterfront Revitalization, Richmond, ME

This work includes renovations to the existing waterfront with new bathrooms and lift station.

Bell Marsh Drainage, Kittery, ME

Project includes new toe drain.

Summit Street Renovations, Old Orchard Beach, ME

Project includes street renovations with new pavement and new paved walks along with new storm drainage and sewer lines.

Pleasant Street Neighborhood Renovations, Westbrook, ME

Project includes street renovations with new pavement and new paved walks along with new storm drainage and sewer lines.

Eastern Maine Medical Center Infrastructure Improvements, Bangor, ME

This job includes a number of site modifications for a future building addition. Included in the modifications are relocated utilities, new retaining walls, new driveways and main entry drive.

Maine Natural Gas Service Mains, ME

Project includes the local build-out of natural gas services and mains to Freeport, Bath and Augusta, ME.

Nestle Waters North America Projects, ME

Project includes numerous upgrades and additions to existing water extraction sites in Maine.

Anaerobic Digester, Brunswick Landing, Brunswick, ME

For Village Green, project includes an entire site design for an anaerobic digester, waste to energy plant.

Southside Drainage Project, Weston, MA

Project includes new storm water infrastructure, along with a new paved roadway on Pond Brook Circle.

Northern Avenue Roadway Reconstruction and Storm Drain System Replacement, Farmingdale, ME

Project includes street renovations with new pavement and new paved walks along with new storm drainage and sewer lines.

Lebanon Sewer Interceptor, Lebanon, NH

Project includes replacement of a damaged sewer interceptor.

Wastewater Treatment Facility Upgrades, Farmington, NH

Project includes a new building addition along with new rapid infiltration basins.

Sewer Improvements, Rockland ME

Project includes sewer separation with new storm and sewer lines.

High Street Rehabilitation, Bath, ME

Project includes milling and repaving of High Street with additional sewer line improvements.

North Street Rehabilitation, Bath, ME

Project includes milling and repaving of North Street with additional sewer and drain line improvements.

Capen Road Bridge Culvert Replacement, Gardiner, ME

Project includes the replacement of a corrugated metal culvert with a concrete box culvert along with road improvements.

Megantic Fish & Game Corporation, Dam Rehabilitation Projects, Franklin County, ME

Project includes reconstruction of dams and fish pathways.

Rainbow Lake Dam Rehabilitation, Rainbow Township (T2 R11 WELS), ME

Project includes the rehabilitation and replacement of an existing dam.

Nequasset Fishway, Woolwich, ME

Project includes a replacement and reconstructed fishway.

Surry Fishpass, Surry, ME

Project includes new stone weirs with fish passes.

Fishway Rehabilitation, Barnstable, MA

Project includes replacing and rehabilitating an existing fishway.

Coastal Maine Botanical Garden, Boothbay, ME

Project includes expansion of the existing botanical garden and upgrades.

Merrymeeting Trail, Bowdoinham, ME

Project includes constructing a new bike path.

Former Naval Air Base Redevelopment, Brunswick, ME

For Midcoast Regional Redevelopment Authority, project includes demolition of existing buildings and parking areas to create new parking areas.

Red Mill Lane Culvert Rehabilitation, Rye, NH

Project includes demolition of existing culverts and being replaced with precast concrete structures.

Lubberland Creek Culvert Rehabilitation, Newmarket, NH

Project includes demolition of an existing culvert and replacing it with a precast concrete structure.

Drainage Improvements, Cranston, RI

Project includes replacing existing storm drain lines, and milling and repaving several streets.

Drainage Improvements, Fall River, MA

Project includes replacing existing storm drain lines and rehabbing drainage ways.

Greendale Avenue Drain Relief, Needham, MA

Project includes replacing storm, sewer and water lines. Milling and paving of Greendale Avenue.

Gazo Outfall, Burlington, VT

Project includes replacing a storm drain outfall and repairing embankment erosion.

Hampshire Road Culvert Replacement, Brownfield, ME

Project includes removing existing corrugated metal culvert and replacing with a steel multi-plate arch culvert, and restoring the existing stream and banking.

Londonderry Plaza 28 Pump Station, Londonderry, NH

Project includes removing the existing pump station with a new pump station.

West Side Pier Rehabilitation, Wells, ME

Project includes removing and replacing pier decking and rails.

Route 1 Shared Use Path, Kittery, ME

Project includes new construction of a bike/pedestrian path along Route 1.

Whipple Road Sidewalks, Kittery, ME

Project includes the replacing and enhancing the Whipple Road sidewalks.

Acadia Harvest Inc, Aquaculture Facility, Gouldsboro, ME

Project includes the site layout and coordination for a new aquaculture facility.

Damariscotta Mills Fish Ladder – Access Improvements and Shoreline Stabilization, Nobleboro, ME

Project includes improvements to retaining walls and stabilization the shoreline with riprap.

Egypt Road Culvert Replacement, Damariscotta, ME

Project includes removing the existing corrugated metal culvert and replacing with a large capacity culvert, and restoring the existing stream and banking

NWNA Kingfield Bottling Line Expansion, Kingfield, ME

Project includes site improvements for a small building addition.

The Cedars Longterm Care Facility, Portland, ME

The project includes site layout for a new building.

Bath, ME Waterfront

The project includes replacing existing and adding new waterfront sidewalks.

Frankfort Me Fishway/Dam study

The project studies the options for dam removal and fishway construction.

Travis Mills Foundation, Rome, ME

The project includes site layout and landscaping for the Travis Mills House.

Van Buren High Street Extension, Van Buren, ME

Project includes street renovations with new pavement along with new storm drainage and sewer lines.

JAN B. S. WIEGMAN, PE

Project Manager

PROJECT ASSIGNMENT:

Project Manager

Education

M.S., Civil Engineering Rice
University

B.S. Civil Engineering
University of New
Hampshire

Professional Registration

Maine

Experience

34 Years

Joined Firm

2011

Professional Certification

MaineDOT Local Project
Administrator

Professional Affiliations

American Society of Civil
Engineers

EXPERIENCE SUMMARY

Mr. Wiegman has over 34 years of engineering design, permitting and project management experience on a wide variety of civil, structural and transportation projects. Most recently, he has been managing several large-scale site development and transportation related projects and giving technical guidance on a wide variety of projects including the redevelopment of the Brunswick Naval Air Station for the Midcoast Regional Redevelopment Authority (MRRRA).

RELEVANT PROJECT EXPERIENCE

Site Development/Permitting

- Long Term Care Facility, The Cedars, Portland, ME
- Wayfair Parking Lot Construction, Brunswick Landing, Brunswick, ME
- Acadia Harvest Inc. Aquaculture Facility, Gouldsboro, ME
- CLC YMCA Expansion Project Site Planning, Damariscotta, ME
- Bear Self Storage, Site Plan, Auburn, ME
- Commerce Way Industrial Subdivision, Brunswick Landing, Brunswick, ME
- Coastal Maine Botanical Gardens, Expansion, Boothbay, ME
- New England Tent and Awning Drying Facility, Brunswick, ME
- Pelican Street Parking Lot Reconstruction, Brunswick Landing, Brunswick, ME
- Burbank Street Parking Lot Reconstruction, Brunswick Landing, Brunswick, ME
- Subdivision Permitting Brunswick Landing, Brunswick, ME
- Residence Halls Project, Bates College, Lewiston, ME
- Greater Androscoggin Humane Society Site Plan, Lewiston, ME
- Wetlands Permitting South Oakfield Road Improvements, Oakfield, ME
- Topsham Commerce Park Subdivision, Topsham, ME
- Wetland Permitting Centerline Brook Crossing, Oakfield, ME
- Anaerobic Digester – Brunswick Landing, Brunswick, ME
- Boathouse Land Use Study, Bates College, Greene, ME
- Brunswick Landing Subdivision, Brunswick, ME
- The Lofts at No. 4 Mill, Sanford, ME

Stormwater

- Phosphorous Treatment Plan Coastal Maine Botanical Gardens, Boothbay, ME
- Willow Street Drainage Study, Bath, ME
- Stormwater Management Plan – Cobalt Court Subdivision, Windham, ME
- Stormwater Management Plan – Lilac Lane Subdivision, Gorham, ME

- Stormwater Management Plan – Laura Lane Subdivision, Gorham, ME
- Storm Drain Improvement, Pepperell Road, Kittery, ME
- Stormwater Management Plan - CLC YMCA, Damariscotta, ME
- Water Quality Treatment Unit O&M Manual, Lebanon, NH
- Stormwater Plan – Bangor Concert Venue, Bangor, ME
- Culvert Analysis - Back Narrows Road, Boothbay, ME
- Phosphorous Treatment Plan - The Lofts at No. 4 Mill, Sanford, ME
- Stormwater Infiltration Plan - Sanford Gateway Center, Sanford, ME*
- Stormwater Treatment Plan - Scarborough Gallery, Scarborough, ME*
- Stormwater Treatment Plan - Nappi Distributors, Gorham, ME*
- Stormwater Infiltration Plan - New Balance Factory Outlet, Oxford, ME*
- Stormwater Pollution Prevention Plan (SWPPP) Soil Erosion and Water Pollution Control Plans, Various Locations, ME*

Transportation

- Tufts Pond Road Reconstruction Plan, Kingfield, ME
- Admiral Fitch Avenue Lane Reconfiguration, Brunswick, ME
- Route 1 Construction Detour, Woodland Mill, Baileyville, ME
- North Street Rehabilitation, Phase 2, Bath, ME
- North Street Drainage Improvements, Bath, ME
- North Street Rehabilitation, Phase 1, Bath, ME
- Hutchins Street Reconstruction, Berlin, NH
- South Oakfield Road Improvements and Permitting, Oakfield, ME
- Roadway Reconstruction, Fitchburg, MA
- High Street Rehabilitation, Bath, ME
- Hillside Street Reconstruction, Yarmouth, ME
- Walnut Hill Road at Hoyt Road, Intersection Improvements, Bethel, CT
- Roadway Reconstruction, Hartford, CT
- Elm Street Sidewalk, Newport, ME
- Main Street Sidewalk and Street Lighting, Biddeford, ME
- South Oakfield Road Improvements Review, Oakfield, ME
- Old Alfred Road Sidewalk, Waterboro, ME
- Route 25 and 35 Sidewalks, Standish, ME
- Route 1 Weigh Station Improvements, Kittery, ME
- US Route 1/Lewis Road Intersection Improvements, Kittery, ME

Building Improvements and Funding Approvals

- Hangar 4 Building Improvements, Brunswick Landing, Brunswick, ME
- Building Demolition Contract #2 Brunswick Landing, Brunswick, ME
- Metering and Life Safety Improvements - Brunswick Landing, Brunswick, ME
- Paint Booth Project, Kestrel Aviation, Brunswick, ME
- TechPlace Building Improvements - Brunswick Landing, Brunswick, ME
- Building Demolition Contract #1- Brunswick Landing, Brunswick, ME

Sewer

- Engineered Septic System, Coastal Maine Botanical Gardens, Boothbay, ME
- Sewer Improvement Contract #2, Brunswick Landing, Brunswick, ME
- Sewer Outfall Review, Old Town, ME
- Inflow/Infiltration Removal Contract 1- Brunswick Landing, Brunswick, ME
- Sewer System Evaluation - Brunswick Landing, Brunswick, ME

MICHAEL A. GUETHLE, PE

Project Engineer

PROJECT ASSIGNMENT: Project Engineer

Education

B.S., Environmental
Engineering and Civil
Engineering, Clarkson
University

Professional Registration
Maine

Experience
5 Years

Joined Firm
2015

Professional Affiliations
Maine Water Environment
Association (MEWEA)
New England Water
Environment Association
(NEWEA)

**Professional
Certifications**
MaineDOT Local Project
Administration (LAP/LPA)
OSHA 10-Hour Safety
ACI Concrete Field Testing
Technician – Grade 1

EXPERIENCE SUMMARY

Mr. Guethle is project engineer within the Civil and Infrastructure Engineering Practice Group at Wright-Pierce. His background is largely based in stormwater treatment design and maintenance, conveyance utilities, site development, dam design, and construction administration projects, ranging from small residential projects to the largest multi-modal transportation expansions in Maine. His diverse background creates a unique understanding of applicable design and construction knowledge, including experience with design tools such as AutoCAD, ArcGIS, HEC-RAS, and HydroCAD as well as construction tools such as a sub-centimeter GPS systems and contract management software. Below is a partial list of relevant projects throughout Maine and New York that he has been involved with throughout his career.

RELEVANT PROJECT EXPERIENCE

Site Development – Including Stormwater Treatment

Lyseth Lyman-Moore School Site Design, Portland, ME

Designing improvements to traffic circulation, parking, athletic fields layout, walking paths, and stormwater treatment at a combined elementary school and middle school campus. Project includes significant coordination with client and regulatory agencies. Project incorporates use of AutoCAD programs, HydroCAD design for stormwater BMPs, and additional design concerns from being within the watershed of an urban impaired stream.

Elm Street Sidewalk Construction, Damariscotta, ME

Designing grading, permitting, stormwater design, and parking layout for approx. 1,500 linear feet of new sidewalk within the Elm Street corridor, connecting an existing sidewalk from a residential neighborhood to the more urban downtown area.

Hagar Enterprises, Inc. Laydown Facility Expansion, Damariscotta, ME

Completing site design, stormwater treatment, and Site Law of Development Act (SLODA) permitting for the expansion of a laydown facility for Hagar Enterprises, Inc. in Damariscotta. This includes expanding a 2.6-acre facility to a 5.6-acre facility, expanding the existing stormwater treatment, evaluating stormwater treatment options, HydroCAD modeling, and coordinating with regulatory agencies as well as the contractor.

Inn Along the Way Site Development, Damariscotta, ME

Completing design and permitting for the redevelopment of an existing farm to an assisted living facility in Damariscotta. The work includes development of a MaineDEP stormwater permit, associated design of stormwater BMPs, and the design of roadways, parking facilities, and walking paths to meet permit requirements. Project also includes coordination with the contractor, client, and regulatory agencies.

Maine Wild Blueberry Expansion, Machias, ME

Development of a SLODA permit for the expansion of a blueberry processing facility to 5.7-acres of impervious area in Machias, Maine. The project includes development of the permit, associated design of stormwater BMPs, and the design of roadways and circulation to meet permit requirements while meeting unique client needs and expectations.

Whipple Road Sidewalk Design, Kittery, ME

Design of approximately 2,500 LF of sidewalk in a narrow right-of-way along Whipple Road. Project is a Locally Administered Project by the MaineDOT, and as such requires a significant amount of coordination between MaineDOT, the town, regulatory agencies, and project partners. Work for the project includes incorporation of utility pole relocations, development of sidewalk layout, environmental permitting and associated site drainage improvements.

Coastal Bluff Erosion Evaluation, Falmouth, ME

Design of multiple locations of eroding coastal bluff in developed residential neighborhoods in Falmouth. Project includes development of plans in AutoCAD and evaluation of multiple methods of slope stabilization to determine the preferred method of erosion mitigation.

Coastal Maine Botanical Gardens Expansion, Boothbay, ME

Designing grading, permitting, stormwater BMP design, and site layout design of the parking, roadway, landscaped, hardscaped, and building facilities for the multi-phase expansion of the Coastal Maine Botanical Gardens.

Munjoy Heights, Portland, ME*

Civil/site engineering design of a 6-building, 29-unit development on steep slopes of Munjoy Hill in the city. This includes, but is not limited to, the layout and design of sanitary sewers, storm drains, water mains, site driveway, retaining wall locations, building locations, and building drainage structures to be in accordance with the City of Portland technical standards.

89 Anderson Street Redevelopment, Portland, ME*

The project includes the civil/site engineering design of a single-building, 53-unit redevelopment of an existing underutilized lot in the East Bayside neighborhood in the city of Portland.

Knights Pond Improvements, Cumberland, ME*

Designing and permitting the layout, erosion control and potential impacts for the lowering of a dam with multiple subcontractors and interest groups. Project responsibilities included development of necessary permitting, development of plans and details in AutoCAD, and development of a project summary report.

Eagle Road Stormwater Improvements, Acton, ME*

The project included retrofit design of stormwater improvements for 1,200-LF of existing gravel roadway. Project responsibilities included assessing and obtaining information on existing conditions, creating a base plan with ArcGIS v.10 layers,

and development of plans in AutoCAD 2013 and Civil 3D 2013, as well as field visits.

Blue Heron Lane NRPA Permitting, Kennebunkport, ME*

Designed roadway and utility access to a residential development, while minimizing wetland impact and providing NRPA permitting for wetland impacts in municipal shoreland zoning locations. Project responsibilities included development of necessary permitting, development of plans and details in AutoCAD 2013, and development of a project summary report.

Wastewater Treatment Facility Upgrade, Monticello, NY*

Site layout, permitting, stormwater design, and erosion and sediment control design for the expansion of a wastewater facility.

Dam Engineering

Kotler Family/Indian Pond Dam Reconstruction, Greenwood, ME

Design and permitting for the reconstruction of a privately owned dam. Project responsibilities included development of NRPA permits, Army Corps of Engineers permits, dam design, and construction oversight and administration. Additional coordination with regulatory agencies and the client was required due to the additional need for permit extensions due to a delay in construction materials.

Kennebunk Light & Power District Dam Study, Kennebunk, ME

Compiled a cost analysis for multiple alternatives to manage 3 existing dams in accordance with regulations an upcoming re-licensing with FERC deadline. Project consisted of redevelopment of a report, coordination with the client, understanding concerns from special interest groups and abutters, and development of a 40-year cost analysis for each option.

Ladd Dam Fishway, Vassalboro, ME

Completion of a HydroCAD and HecRAS Analysis to design and model a Denil fish passage system around Ladd Dam in North Vassalboro. Responsibilities included hydraulic modeling, development of a design, and coordination with the client.

On-Site Construction Administration – Including Stormwater Treatment and Erosion and Sediment Control

Former FPL Parcel Reconstruction, Biddeford, ME

Site observation for the redevelopment of an underutilized lot owned by the city into a public park. Observation tasks included construction of gravel subgrade, granite block steps, fencing and railing, concrete, pavement, and landscaping.

International Marine Terminal, Portland, ME*

Class III chief inspector for the \$8.6 million IMT rail corridor and existing laydown yard expansion. Work includes 5,000 ft. of new track, 18-acre container storage area, 2,600 CY of concrete loading slab, 1,650 ft. of Commercial Street roadway improvements and replacement of the fender system. Class III chief inspector services included the inspection, measurement, and documentation of all work

performed by the contractor and their subcontracts to document compliance with the project plans & specifications as well as Maine DOT standard details and specifications, and other appurtenant standards.

Rangeley Branch Rail Restoration, Auburn & Poland, ME*

Construction inspector for the \$2.2 million restoration of 9,000 linear feet of railroad and track construction. Work includes earthwork activities, site layout, stream relocation and restoration, planting, and track construction. Class II inspector services included the inspection, measurement, and documentation of all work performed by the contractor and their subcontracts to document compliance with the project plans and specifications as well as Maine DOT standard details and specifications, and MaineDOT Rail Maintenance Standards Handbook and AREMA.

Eldredge Lumber and Hardware Intermodal Site Redevelopment, Portland, ME*

The project included construction oversight of \$800,000 redevelopment of approximately 7.5 acres of existing lumberyard. Work includes significant stormwater infrastructure retrofits and intermodal improvements to facilitate the future transfer of building products from rail for statewide distribution.

Cottage Brook Subdivision, Cape Elizabeth, ME*

2,500-LF of new roadway for a development in Cape Elizabeth. Work included project oversight for civil aspects of project, including but not limited to paving, drainage infrastructure, sewer, road and retaining wall construction, as well as erosion and sediment control inspection.

Stormwater Management and Treatment

Library Park Study, Bath, ME

HydroCAD analysis and report of 2-acre parcel surrounding public monuments and artwork.

MDOT Stormwater Operation and Maintenance Plan, Statewide, ME*

Reviewed the inspection of MaineDOT's stormwater BMPs throughout the state, determining the precise location, as well as the functioning condition and maintenance needs of each BMP. The final deliverables include ArcGIS v.10-generated site specific site plans, an inspection log to record functional information for each BMP at each location, and the operation and maintenance matrix that will offer user-friendly maintenance guidance for each type of BMP.

MDOT Stormwater BMP Specification Development, Statewide, ME*

Development of new bioretention cell and underdrained trench details and specifications for the MaineDOT, as the MaineDOT does not currently have specifications for these BMPs.

Cushing Island Stormwater Improvements, Portland, ME*

The project included design of two stormwater culverts, culvert inlet and outlet protection, and an appurtenant swale based upon considerations observed from previously collected field data. Project responsibilities included development of a

HydroCAD analysis, development of plans and details in AutoCAD 2013, and development of a project summary report.

Sewer Separation and Sanitary Sewer Design

FEMA-Sewer Repair, Bethlehem, NY*

Surveyed approximately 115 sections of trunk sewer and appurtenant manhole structures in order to find sources of inflow and infiltration from hurricane damage. Permitted and designed immediate repairs that were found, and provided a report to our client indicating potential locations of future I/I from hurricane damage.

DASNY Sewer Expansion, Bethlehem, NY*

Development of permitting, plans and specification to reroute approx. 3,000 LF of sewer forcemain and approx. 10,000 LF of gravity sewer to relieve an existing pump station of anticipated future flows from a proposed development district.

MICHAEL A. GUETHLE, PE

Project Engineer

PROJECT ASSIGNMENT: Project Engineer

Education

B.S., Environmental
Engineering and Civil
Engineering, Clarkson
University

Professional Registration

Maine

Experience

5 Years

Joined Firm

2015

Professional Affiliations

Maine Water Environment
Association (MEWEA)

New England Water
Environment Association
(NEWEA)

Professional Certifications

MaineDOT Local Project
Administration (LAP/LPA)

OSHA 10-Hour Safety

ACI Concrete Field Testing
Technician – Grade 1

EXPERIENCE SUMMARY

Mr. Guethle is project engineer within the Civil and Infrastructure Engineering Practice Group at Wright-Pierce. His background is largely based in stormwater treatment design and maintenance, conveyance utilities, site development, dam design, and construction administration projects, ranging from small residential projects to the largest multi-modal transportation expansions in Maine. His diverse background creates a unique understanding of applicable design and construction knowledge, including experience with design tools such as AutoCAD, ArcGIS, HEC-RAS, and HydroCAD as well as construction tools such as a sub-centimeter GPS systems and contract management software. Below is a partial list of relevant projects throughout Maine and New York that he has been involved with throughout his career.

RELEVANT PROJECT EXPERIENCE

Site Development – Including Stormwater Treatment

Lyseth Lyman-Moore School Site Design, Portland, ME

Designing improvements to traffic circulation, parking, athletic fields layout, walking paths, and stormwater treatment at a combined elementary school and middle school campus. Project includes significant coordination with client and regulatory agencies. Project incorporates use of AutoCAD programs, HydroCAD design for stormwater BMPs, and additional design concerns from being within the watershed of an urban impaired stream.

Elm Street Sidewalk Construction, Damariscotta, ME

Designing grading, permitting, stormwater design, and parking layout for approx. 1,500 linear feet of new sidewalk within the Elm Street corridor, connecting an existing sidewalk from a residential neighborhood to the more urban downtown area.

Hagar Enterprises, Inc. Laydown Facility Expansion, Damariscotta, ME

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Section 9: Construction Management Plan

9.0 Construction Management Plan

A Construction Management Plan is attached to this section. The Construction Management Plan has been provided by the Contractor, PM Construction, and incorporates the following items:

1. Construction Management Plan Summary
2. Construction Schedule
3. Construction Management Site Plan

**Construction Management Plan
The Cedars
Long Term and Assisted Living Memory Care Facility**

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City's goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

The Construction Management Plan will be submitted as part of the Site Plan Review and it shall address the construction logistics for a project. The Construction Management Plan shall include the following submissions: 1) a construction management site plan, 2) a construction schedule (time frame); and 3) a written narrative addressing the categories below.

A. Construction Management Principles

The following narrative provides an overview of the construction management principles that the The Cedars and PM Construction has identified to minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

B. Development Review of Construction Management Plan

The Cedars and PM Construction have attached a construction management plan that provides a comprehensive logistics and safety program for the construction project, which will be reviewed and approved as part of the site plan review process. The plan minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process. The attached details define the intended approach to the successful management of the project construction and the construction management plan will address the general conditions contained below.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Prior to scheduling a preconstruction meeting and the issuance of any city required permits, The Cedars and PM Construction 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.

D. Construction Administration and Communication

The Cedars and PM Construction 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 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 includes the following:

- Contact Person and contact information for The Cedars and PM Construction (George Laplume, VP of Operations (207) 229-8097) who is available 24 hours
- Construction Signage posted on the site with Contact Information for Contractor
- Describe any additional communication strategies:
 - Directional and Safety signage as required
 - Daily on-site safety/coordination meetings
- All construction site signage is temporary and shall be removed at project completion.

E. Construction Schedule

1. The contractor shall submit a schedule or time line for the construction project, including any Phasing. Schedule attached; no phasing currently planned.
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: Material deliveries will occur at the construction entrances as indicated on the preliminary construction plan.

F. Security & Public Safety

1. The Construction Management Plan will depict 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.

G. 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 that will occur along arterial and or collector streets 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 extreme situations, flaggers may be required.
- Police detail is 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.

- 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 shall be maintained.

Use of public parking spaces or 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

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 site 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

I. Erosion Control and Preservation of Trees

1. PM Construction 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. PM Construction 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.

J. 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 areas 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.

K. 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.

L. Special Measures as Necessary

For construction work that will take place over a long period (e.g. 12 months or more), involve major demolition/ deep excavation/ piling and/or special construction techniques, or are located near sensitive uses (e.g. medical care facilities, schools), the Construction Management Plan should provide details and demonstrate that all appropriate special measures have been taken to avoid, minimize, or possibly compensate for potential impacts. This may include taking

baseline measurements before construction, such as arranging to photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.

ID	Task Name	February 1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	4/1	4/8	4/15	4/22	4/29	May	5/6	5/13	5/20	5/27	June	6/3	6/10	6/17	6/24	July	7/1	7/8	7/15	7/22	7/29	August	8/5	8/12	8/19	8/26	September	9/2	9/9	9/16	9/23	9/30	October	10/7	10/14	10/21	10/28	November	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/23	12/30	1/6	1/13	1/20	1/27	2/3
1	Preconstruction																																																													
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11	Foundations																																																													
12	Superstructure																																																													
13	Site Utilities & Drainage																																																													
14	Site Finishes																																																													
15	Exterior Finishes																																																													
16	Building Watertight																																																													
17	Interior Framing																																																													
18	MEP Rough-ins																																																													
19	Interior Finishes																																																													
20	Furniture, Fixtures & equipment																																																													
21	Project Commissioning																																																													
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- Rainbow Mall Road

1st iron phase

Rainbow Mall Road

-OFFICE/Dumpster Location

--- WASH OUT STATION

11

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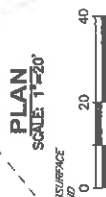
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THE CEDARS
LONG-TERM AND MEMORY CARE FACILITY
PORTLAND, ME

DRAWING
C-6

5.34
EUM

Section 10: Traffic

10.0 Traffic

The proposed development will increase the capacity of the campus facility by 20 beds in a new assisted living, memory care facility. In conjunction with the additional beds, the facility will need to increase the staffing by approximately 8 employees during the peak shift.

Based on review of the City of Portland Technical Manual, it is apparent that this project does not require a Traffic Management Plan because it does not generate more than 25 passenger car equivalents (PCE). However, through correspondences with the City of Portland's Traffic Consultant, it is apparent that a formal traffic assessment will be required. The result of this study will provide the following items:

1. Determination and assignment of peak hour trips.
2. Review of vehicle sight distance(s).
3. Analysis of roadway safety conditions in the immediate area of the project.

Wright-Pierce has retained Traffic Solutions as a subconsultant to carry out the above-mentioned study. This study is included as an attachment to this section.



Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

December 8, 2017

Traffic Assessment

For Proposed

The Cedars Long-Term Care Facility Expansion Project

Portland, Maine

INTRODUCTION

The Cedars long-term care facility located at 620 Ocean Avenue in the City of Portland are proposing a modest expansion of the existing retirement facility. The planned project constructs a three-story building, a long-term care facility covering two floors and an assisted living memory care facility on the remaining floor. The long-term care portion of the project will provide private rooms for existing residents in the existing Hoffman Center, resulting in no “net” increase in long-term care residents. The proposed memory care floor provides an increase of 20 rooms and represents an expansion of both staff and residents.

Access to The Cedars retirement facility will continue through the existing driveway entrance on Ocean Avenue.

This document determines daily and peak hour trip generation of the proposed project for both peak weekday commuter time periods and for a typical Saturday peak hour and examines current roadway safety trends on Ocean Avenue in the general proximity of The Cedars facility.

EXISTING CONDITIONS

Existing Traffic: Manual traffic turning movement counts were gathered at the driveway entrance to The Cedars retirement facility and Ocean Avenue on Wednesday, November 29 and Saturday, December 2, 2017. All vehicular traffic entering the driveway intersection was recorded in 15-minute intervals between 7:00 to 9:00 AM and, again, between 3:00 and 6:00 PM on Wednesday and between 11:00 and 3:00 PM on Saturday. From a summary of the data, a peak hour of traffic was determined for each of the three study time periods. The morning peak hour falls between 7:30 and 8:30 AM; the weekday afternoon peak hour occurs between 4:30 and 5:30 PM and the Saturday peak hour is recorded for 11:30 AM to 12:30 PM. Copies of the peak hour traffic “stick” drawings are attached for reference. Table 1, as follows, presents the peak hour traffic volumes for The Cedars facility for each of the three peak time periods:

Table 1
Existing Peak Hour Traffic Flows
The Cedars Retirement Facility

<u>Peak Hour Time Period</u>	<u>Entering Trips</u>	<u>Exiting Trips</u>	<u>Total Trips</u>
Wednesday, 11/29 7:30 to 8:30 AM	26 trips	11 trips	37 trips
Wednesday, 11/29 4:30 to 5:30 PM	14 trips	44 trips	58 trips
Saturday 12/2 11:30 AM to 12:30 PM	31 trips	18 trips	49 trips

As presented in Table 1 above, The Cedars facility presently generates a total of 37 trips in the weekday morning peak hour, a total of 58 trips in the weekday evening peak hour and a total of 49 trips in the Saturday peak hour.

SITE TRAFFIC

Site Trip Generation: Daily and peak hour trip generation was determined for the proposed 20 bed memory care portion of the project based upon trip tables presented in the ninth edition of the Institute of Transportation Engineers (ITE) “**TRIP GENERATION**” handbook. The ITE publication provides numerous land use categories and the average volume of trips generated by each category.

The following trip rate was used to calculate trip generation for the proposed project:

Land Use #620 – Nursing Home

AM Peak Hour	= 0.17 trips per bed
PM Peak Hour	= 0.22 trips per bed
Saturday Peak Hour	= 0.38 trips per bed

Accordingly, the proposed 20 new memory care beds can be expected to generate a total of 3 new trips in the morning peak hour, 4 trips in the afternoon peak hour and an increase of 8 trips on Saturday.

Site Trip Distribution: The Institute of Transportation Engineers handbook also provides the following directional distribution rates for a nursing home land-use:

AM Peak Hour	= 70% enter site and 30% exit site
PM Peak Hour	= 24% enter site and 76% exit site
Saturday Peak Hour	= 63% enter site and 37% exit site

Based upon the noted directional distribution patterns, 2 trips during the morning peak hour, 1 trip in the evening peak hour and 5 trips on Saturday will enter the site and the remaining trips (1 AM trip, 3 PM trips and 3 trips Saturday) will exit the site.

EXISTING SAFETY CONDITIONS

The Maine Department of Transportation’s (MaineDOT) Accident Records Section provided the latest three-year (2014 through 2016) crash data for the section of Ocean Avenue between Rainbow Mall Road and Morse Street, a distance of approximately 0.12 miles. Their report is presented as follows:

2014 -2016 Traffic Accident Summary

<u>Location</u>	<u>Total Crashes</u>	<u>Critical Rate Factor</u>
1. Ocean Avenue @ Providence Street	1	0.39
2. Ocean Avenue @ Rainbow Mall Road	3	1.40

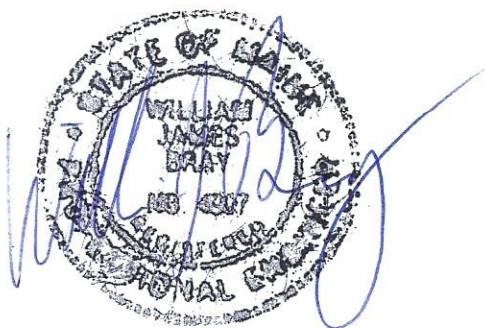
The MaineDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the table shows, the incidence of traffic crashes is extremely low, well below MaineDOT's threshold criteria for identification of a high crash location.

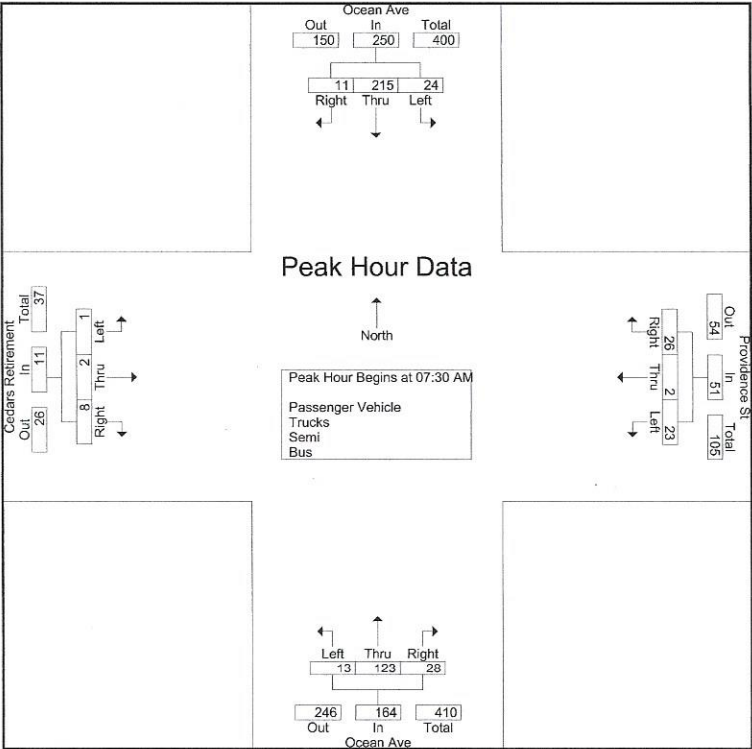
CONCLUSIONS

- The Cedars retirement facility presently generates very modest volumes of traffic during each of the critical weekly peak hour time periods. The existing facility generates a total of 37 trips during the morning peak hour, 58 trips in the afternoon peak hour and a total of 49 trips on Saturday.
- The proposed building expansion project, which adds a total of 20 memory care beds to the overall facility, can be expected to generate less than 10 new vehicle trips in each of the "key" peak hour time periods (3 trips in the weekday AM peak hour; 4 trips in the evening peak hour and 8 trips on Saturday).
- The Maine Department of Transportation's most recent three-year (2014 to 2016) accident safety audit for the section of Ocean Avenue between Rainbow Mall Road and Morse Street would suggest that travel conditions within the noted road section are generally very safe. MaineDOT's report shows a total of 4 vehicle crashes were reported during the three-year study period.



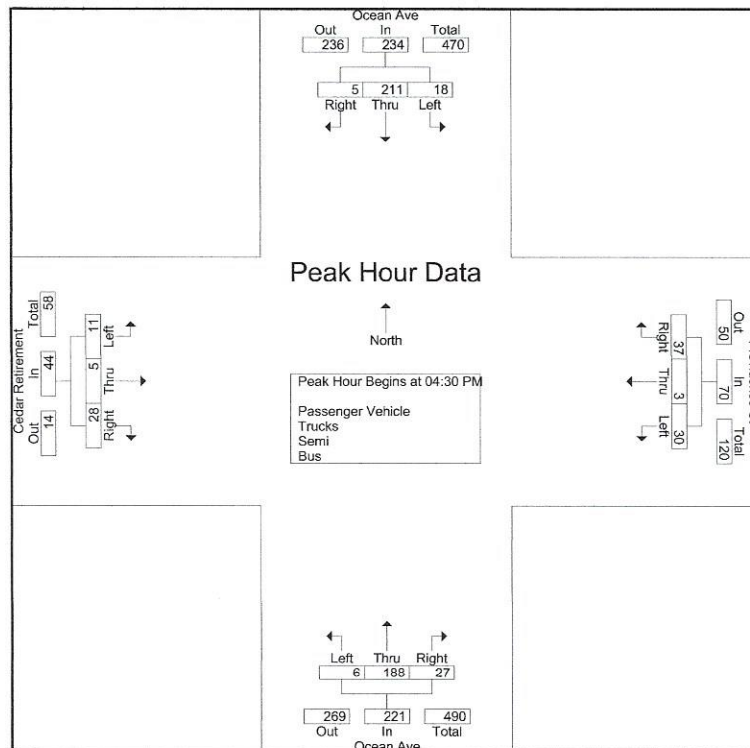
Portland: 620 Ocean Ave
 Wednesday November 29, 2017
 Cloudy With Sprinkles
 Count By:Dawn-Marie Fahey

File Name : Portland 620 Ocean Ave AM 112917
 Site Code : 01118171
 Start Date : 11/29/2017
 Page No : 6



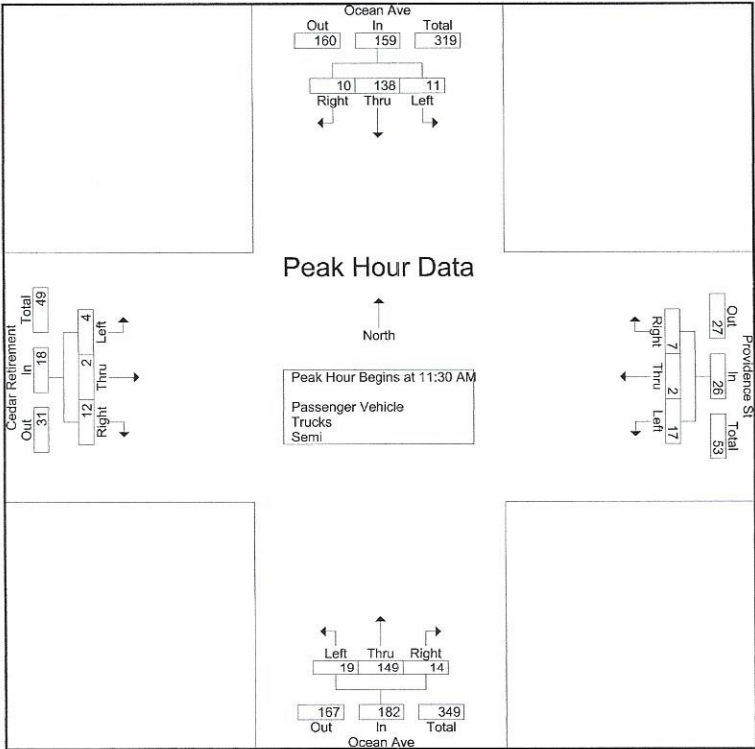
Portland: 620 Ocean Ave
 Wednesday November 29, 2017
 Cloudy with Sprinkles The Clear
 Count By: Dawn-Marie Fahey

File Name : Portland 620 Ocean Ave PM 112917
 Site Code : 01128172
 Start Date : 11/29/2017
 Page No : 6

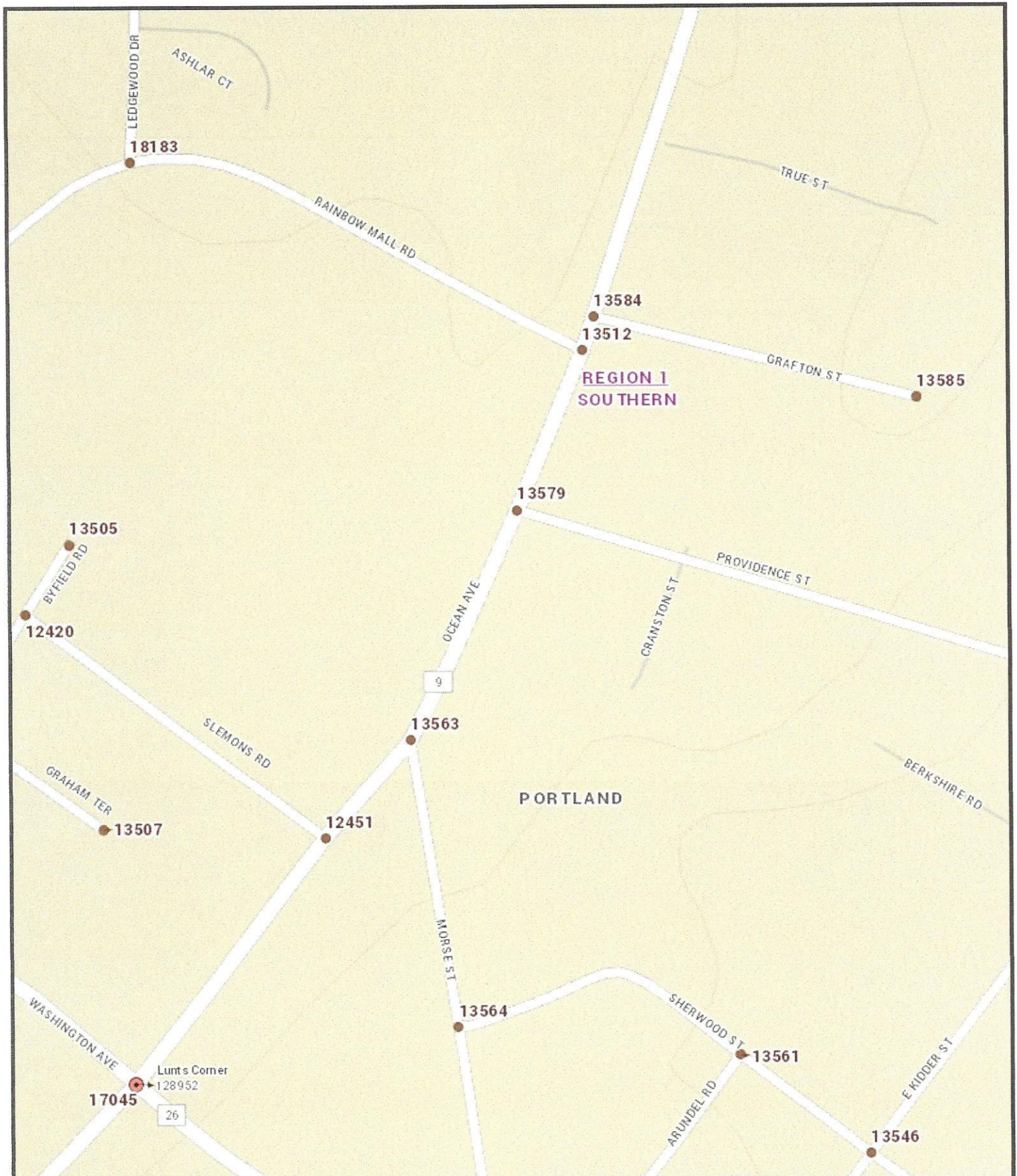


Portland: 620 Ocean Ave
Saturday December 2, 2017
Clear
Count By: Dawn-Marie Fahey

File Name : Portland 620 Ocean Ave 120217
Site Code : 01202171
Start Date : 12/2/2017
Page No : 1



DEFAULT TITLE FROM MAP DOCUMENT



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.045
Miles
1 inch = 0.05 miles

Date: 12/4/2017
Time: 7:15:08 AM

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☒ Crash Summary I ☐ Section Detail ☒ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Ocean Ave in Portland

REPORT PARAMETERS

Year 2014, Start Month 1 through Year 2016 End Month: 12

Route: 0009X

Start Node: 13563

End Node: 13512

Start Offset: 0

End Offset: 0

☐ Exclude First Node

☐ Exclude Last Node

Crash Summary I

Nodes														
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury Crashes			PD	Injury	Percent Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
13563	0009X - 64.54	Int of MORSE ST OCEAN AV	2	0	0	0	0	0	0	0.0	1.836	0.00	0.46	0.00
											Statewide Crash Rate:	0.14		
13579	0009X - 64.61	Int of OCEAN AV PROVIDENCE ST	2	1	0	0	0	0	1	0.0	1.822	0.18	0.46	0.00
											Statewide Crash Rate:	0.14		
P13512	0009X - 64.66	Int of OCEAN AV, RAINBOW MALL RD	2	3	0	0	0	3	0	100.0	1.475	0.68	0.49	1.40
											Statewide Crash Rate:	0.14		
Study Years: 3.00			NODE TOTALS:											
				4	0	0	0	3	1	75.0	5.133	0.26	0.35	0.74

Crash Summary I

Sections																
Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	Injury Crashes			PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
13563	13579	3131561 Int of MORSE ST OCEAN AV	0 - 0.07	0009X - 64.54 ST RTE 9	0.07	2	0	0	0	0	0	0.0	0.00127	0.00	585.99 Statewide Crash Rate: 171.37	0.00
13512	13579	3122200 Int of OCEAN AV, RAINBOW MALL RD	0 - 0.05	0009X - 64.61 ST RTE 9	0.05	2	0	0	0	0	0	0.0	0.00086	0.00	642.07 Statewide Crash Rate: 171.37	0.00
Study Years:		3.00	Section Totals:				0.12	0	0	0	0	0.0	0.00213	0.00	514.95	0.00
Grand Totals:			0.12	4	0	0	0	3	1	75.0	0.00213	625.84	738.33	0.85		

Section 11 – Significant Natural Features

11.1 Coordination with Regulatory

This project is not proposing to impact any wetlands or other significant natural features. Included as an attachment to this section is a correspondence with the MDEP regarding the required permitting for this project.

11.2 Natural Features Study

A Natural Features Study is included as an attachment to this section, and the delineation is provided on the Plans. No impacts to wetlands are proposed as part of the project improvements.

11.3 Soils

Information regarding existing soils is included as an attachment to this section and is further reported in Section 12: Stormwater Treatment.

Kathleen O. Sculley

From: Cherry, David <David.Cherry@maine.gov>
Sent: Tuesday, September 26, 2017 9:14 AM
To: Michael A. Guethle
Cc: Sirois, Alison
Subject: The Cedars Long-Term Care Facility - Portland

Follow Up Flag: Follow up
Flag Status: Completed

Hi Michael,

I've looked over the pre-application materials you provided for The Cedars and have determined that the Department does not have jurisdiction over the project. In cities with delegated authority, the threshold for the Department taking over the project is 7 acres of structure area, which this project still under, approximately 5 acres currently. Any wetland alterations will need a permit from the Department under the Natural Resources Protection Act.

Please let me know if you have any questions.

Thanks,

David Cherry
Environmental Specialist
Maine Department of Environmental Protection
Bureau of Land Resources
312 Canco Road
Portland, ME 04103
david.cherry@maine.gov
207-523-9807



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FREEPORT, ME 04032 USA

PHONE 207-869-1200
FAX 207-869-1299

September 26, 2016

DRAFT

Jan Wiegman
Wright-Pierce
99 Maine Street
Topsham, ME 04086

Subject: Wetland Delineation – The Cedars, Ocean Avenue, Portland

Dear Jan:

In response to your request, on August 25, 2016 wetland boundaries were delineated at The Cedars Senior Living Community (the “Site”) located at 630 Ocean Avenue, Portland. The position of the wetland boundary was subsequently surveyed by Titcomb Associates and is depicted on plans of the Site.

Wetland Delineation

The boundary of the wetland at the Site was delineated with sequentially numbered, pink flagging so that the location and extent of wetland can be taken into consideration for future site design and permitting plans. Evidence indicative of wetland from three parameters – vegetation, soils and hydrology – was used to identify and delineate the wetland in accordance with the 1987 *US Army Corps of Engineers Wetland Delineation Manual* and the subsequent *Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (January 2012). With the exception of unusual or atypical situations, evidence of wetland must be exhibited by all three parameters for an area or position to be designated as wetland.

The freshwater wetland community on the Site is dominated by trees and shrubs that include: red maple (*Acer rubrum*), American elm (*Ulmus americana*), speckled alder (*Alnus incana*), highbush blueberry (*Vaccinium corymbosum*), meadowsweet (*Spiraea latifolia*), jewelweed (*Impatiens capensis*), wool grass (*Scripus cyperinus*), cattail (*Typha* spp.), sensitive fern (*Onoclea sensibilis*), and purple loosestrife (*Lythrum salicaria*). All of these plants are identified as “Obligate” (**OBL**), “Facultative Wetland” (**FACW**) or “Facultative” (**FAC**) indicators of wetland by the 2016, *State of Maine National Wetland Plant List* prepared by the US Army Corps of Engineers and are therefore hydrophytes. By the National Wetland Inventory System, the wetland would be classified as palustrine deciduous scrub shrub (PSS1) wetland (Photographs 1 and 2).

The US Natural Resources Conservation Service (NRCS) identifies soils beneath wetland areas at the Site as being represented by the Scantic Series (Sn). These very deep, nearly level, poorly drained silt loams are classified as a hydric soil. Soils were also examined directly with a hand auger. Below an upper 8 inch thick dark gray (5Y4/1) silt loam horizon, a saturated olive gray (5Y5/2) silt loam was present containing 5-10% dark yellowish brown (2.5Y4/4) redox concentrations. Characteristics observed in the sample are representative of hydric soil indicator criteria F3: Depleted Matrix.

Hydrology is considered to be the “driving force” of wetlands (Mitch and Gosselink, 1986) and inherently is responsible for the adaptation of certain vegetation (hydrophytes) and the

September 26, 2016

Page 2

development of specific soil characteristics (hydric) indicative of wetlands. At the time of the survey, evidence of wetland hydrology observed at the Site included: soils saturated within 12-inches of the surface, small localized areas of surface water, sediment deposits, water-stained leaves and drainage patterns indicative of wetlands.

Regulatory Jurisdiction

Activities in and adjacent to wetlands at the Site are regulated by the Maine Department of Environmental Protection (MDEP) under the provisions of the Natural Resources Protection Act (NRPA) and associated Wetland and Waterbodies Protection Rules (Chapter 310). Certain characteristics are relevant to whether a wetland regulated as a “freshwater wetland of special significance” (Ch 310 §4A 1-8)

The wetland at the Site:

- does not contain a “critically imperiled (S1)” (Ch 310 §3F) or “imperiled (S2)” (Ch 310 §3L) community as defined by the Natural Areas Program;
- would not be identified as “significant wildlife habitat” (38 MRSA §480-B(10)) by the Maine Department of Inland Fisheries and Wildlife;
- is not located within 250 feet of a “coastal wetland” (38 MRSA §480-B(2));
- is not located within 250 feet of a “great pond” (38 MRSA §465-A);
- does not contain more than 20,000 square feet of open water or aquatic or emergent marsh vegetation;
- does not occur in a 100-year floodplain mapped by the Federal Emergency Management Agency (FEMA);
- is not a “peatland” (Ch 310 §3P) and
- does not contain or occur within 25 feet of a “river stream or brook” (Ch 310 §4A (8)).

Therefore, there are no freshwater wetlands of special significance at the Site.

Typically, activities requiring alteration of wetland covering less than 15,000 square feet are eligible for Tier 1 permitting and in excess of this and up to an acre (43,560 square feet) a Tier 2 permit would be necessary under the NRPA. Excluding specific activities authorized by Permit by Rule (PBR - Chapter 305) provisions of the NRPA, activities in excess of one acre would require a Tier 3 permit. However, cumulative wetland impacts are taken into consideration relative to the required Tier of permitting and due to previous wetland impacts at the Site (authorized by MDEP permit L-22483TG-B-M) future wetland impacts would most likely require a Tier 3 permit.

Wetlands at the Site are also regulated by the Corps as “*waters of the United States*” under the provisions of Section 404 of the Clean Water Act. To authorize minimal-impact activities in wetlands, including placement of fill, the Corps makes use of a General Permit (GP) for the State of Maine. Such impacts to wetlands are broken down into two permit categories under the GP based on the following area thresholds: Category 1 – less than 15,000 square feet and Category 2 – 15,000 square feet to three acres. Activities eligible for Category 1 activities can be authorized without an application but a Notification Form submitted must be submitted to the Corps. Category 2 activities however are reviewed as applicable in conjunction with the US Fish and Wildlife Service, the US Environmental Protection Agency and the National Marine Fisheries Services, and require an application and written approval from the Corps. Previous wetland impacts at the Site approved by Corps permit NAE-2005-2407 would also be taken into account for determining eligibility and requirements for Category 2 permitting.

Wetland Functional Assessment

Approval of wetland impacts exceeding 15,000 sq ft typically require that a wetland functional assessment be conducted. Although the future development footprint and potential impacts to wetlands are not yet finalized, a functional assessment was submitted with the July 2005 permit applications approved by the MDEP and the Corps. The functional assessment method used at that time remains unchanged and little change in conditions are evident in and adjacent to wetlands at the Site that would influence the associated functions and values. Evaluation of the future footprint and design impacts is recommended when development plans are finalized; however it appears the earlier functional assessment would continue to be valid and relevant.

Do not hesitate to contact me at your earliest convenience at cole.peters@powereng.com or 207.869.1432 with questions or comments regarding the information presented above.

Sincerely,

DRAFT

Cole Peters
Professional Wetland Scientist



Photograph 1 Westward overview of the PSS1 wetland located on the south side of the parking area adjacent to the Rehabilitation and Skilled Care entrance to The Cedars (at right).



Photograph 2 Southeastward view along the west side of the Rehabilitation and Skilled Care building where a small portion of the PSS1 wetland is dominated by red maple trees.

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine



October 11, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



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 12, Sep 15, 2016

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
BuC2	Buxton silt loam, 8 to 15 percent slopes	0.2	1.4%
HrB	Hollis fine sandy loam, 3 to 8 percent slopes	7.6	44.5%
HrC	Hollis fine sandy loam, 8 to 15 percent slopes	8.3	48.6%
Sn	Scantic silt loam, 0 to 3 percent slopes	0.9	5.5%
Totals for Area of Interest		17.0	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

BuC2—Buxton silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2x1by
Elevation: 10 to 490 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Buxton and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Buxton

Setting

Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Fine glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: silt loam
Bw1 - 7 to 18 inches: silt loam
Bw2 - 18 to 23 inches: silty clay loam
BC - 23 to 35 inches: silty clay loam
C - 35 to 65 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 17 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Hydric soil rating: No

HrB—Hollis fine sandy loam, 3 to 8 percent slopes

Map Unit Composition

Hollis and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Hills

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluvium, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Coarse-loamy supraglacial meltout till derived from mica schist

Typical profile

H1 - 0 to 6 inches: fine sandy loam

H2 - 6 to 18 inches: fine sandy loam

R - 18 to 22 inches: bedrock

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Hydric soil rating: No

HrC—Hollis fine sandy loam, 8 to 15 percent slopes

Map Unit Composition

Hollis and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Hills

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Nose slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Coarse-loamy supraglacial meltout till derived from mica schist

Typical profile

H1 - 0 to 6 inches: fine sandy loam

H2 - 6 to 18 inches: fine sandy loam

R - 18 to 22 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Hydric soil rating: No

Sn—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2slv3

Elevation: 10 to 900 feet

Mean annual precipitation: 33 to 60 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 90 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Scantic and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scantic

Setting

Landform: Marine terraces, river valleys

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Glaciomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam

Bg1 - 9 to 16 inches: silty clay loam

Bg2 - 16 to 29 inches: silty clay

Cg - 29 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: D

Hydric soil rating: Yes

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Section 12: Stormwater Management Plan

12.0 Stormwater Management Plan

Stormwater management plan for the proposed project is attached within this section.

12.1 Coordination with Regulatory

Coordination efforts with regulatory agencies for the proposed project is included within Section 11 of this permit.

12.2 Basic Standard, General Standard, Flooding Standard, Discharge to Wetlands Standard

Per State of Maine and City of Portland statute, the Basic Standard, General Standard, Discharge to Wetlands Standard, and Flooding Standard will apply for the proposed project. This information is incorporated within the attached Stormwater Management Plan.

12.3 Maintenance and Insepction

A sample maintenance plan is attached. The applicant currently maintains a landscaping service for the property. The applicant anticipates entering a maintenance agreement for stormwater treatment with their current landscaping service as a condition of approval for the proposed development.

STORMWATER MANAGEMENT PLAN
THE CEDARS LONG TERM AND A.L. MEMORYCARE FACILITY
PORTLAND, MAINE

INTRODUCTION

The proposed project will redevelop the existing site to accommodate a Long-Term and Assisted Living (AL) memory Care Facility at The Cedars. Parking lots, utility improvements, and stormwater treatment will be constructed to accommodate the proposed three-story building.

In general, the proposed project consists of the following construction items:

- Clearing
- Erosion and sedimentation control
- Utility construction
- Building construction
- Parking lot improvements
- Stormwater treatment facilities
- Site landscaping

EXISTING DRAINAGE CONDITIONS

The existing site includes buildings, parking and roadway infrastructure, plantings/trees within parking islands, several detention areas, and wetlands. The site is located along a ridge, and generally slopes from higher areas in the northern portions of the site towards the south, with a portion of the property conveying surface flows towards the west. The majority of surface runoff flows from the northern edge of the property, is conveyed through a series of drainage pipes into several detention and retention facilities, and then into the wetland complex at the southern portion of the site. From this wetland, surface flows then discharge into Ocean Avenue. These surface flows then ultimately discharge into the Atlantic Ocean at Back Cove in Portland.

The far western portion of the site discharges to Fall Brook. This portion of the site will not be disturbed or redeveloped as part of the proposed work.

Soils mapping and characteristics were obtained from the Medium Intensity Soil Survey for Cumberland County. As indicted on the soils map provided in Section 11, the primary hydrological soils group

covering the site is Type D, or poorly draining soils. This information is supported by the site being predominately ledge and wetlands, both of which are Type D soils.

PROPOSED DRAINAGE CONDITIONS

The proposed conditions will not substantially alter the existing drainage patterns. The proposed improvements include incorporating two new stormwater treatment measures, and modification to the Outlet Control Structure of one of the existing detention basins. Several structures will have frame/cover elevations modified as part of the improvements to accommodate minor grading changes for the roadway work. No improvements are proposed within the Fall Brook watershed.

REGULATORY REQUIREMENTS

City of Portland, Maine

The proposed project will require adherence to the Stormwater Runoff policies within the City of Portland Technical Manual. According to the Section 5, “PORTLAND STORMWATER MANAGEMENT STANDARDS AND MAINE DEP CHAPTER 500 STORMWATER MANAGEMENT”, “*Stormwater Management Plans for New Development: Except as provided in below, the following development proposals shall submit a stormwater management plan pursuant to the regulations of Maine DEP Chapter 500 Stormwater Management Rules, including General and Flooding standards: Level I: Site Alteration, which will result in the creation of more than 1,000 square-feet of new impervious area or 10,000 square-feet of new non-impervious developed area, as defined under Developed Area and listed under Definitions of Chapter 500*”.

The proposed project will also require adherence to the MDEP Chapters 500 and 502, which describe stormwater management requirements for new and re-development projects. These rules describe performance standards divided into six major categories: Basic Standards, General Standards, Phosphorous Standards, Urban Impaired Stream Standards, Flooding Standards, and Discharge to Wetlands Standard. The following sections describe how this project will address these stormwater management performance standards.

Basic Standards: A project must meet basic standards if it disturbs an area greater than one (1) acre. The proposed project will disturb greater than one acre of land, and therefore state and local regulations require adherence to this standard. These standards include erosion and sedimentation controls, inspection and maintenance procedures, and general housekeeping requirements. These

performance standards have been addressed in two separate reports entitled “Erosion and Sedimentation Control Plan” and “Inspection, Maintenance, and Housekeeping Plan”, both included as attachments to this report.

General Standards: A project is subject to the general standards if it results in the creation of one (1) or more acres of impervious area or developed areas greater than five (5) acres. The project has an existing site law permit for the existing buildings that was issued in 2005, and the project will be redeveloping a portion of the site. The proposed parcel contains more than one acre of impervious area and more than 5 acres of developed area. As such, this project has been designed to meet the general standards. These standards require that a minimum of 95% of all impervious areas and at least 80% of all developed areas are designed to be tributary to stormwater BMPs. Standard BMPs have been defined by the MDEP and are described thoroughly in their publication Stormwater Management for Maine: Best Management Practices manual, as most recently revised. The General Standards section of this Stormwater Management Plan describes the BMPs proposed for this project and specific design information for each BMP.

Development on the existing parcel was permitted or constructed prior to January 1, 2006, and this work was subject to either the Site Law Ordinance of Development Act, and has several detention and retention facilities installed as part of a Stormwater Law Permit associated with much of this development. Therefore, the existing portions of the parcel are not anticipated to be subject to the General Standards, and adherence to the General Standards is only proposed for the new development.

Phosphorus Standards: A project is subject to the phosphorous standards when it is in the watershed of a lake most at risk as identified in Chapter 502. This project is not located in the watershed of a lake that is identified as being Most at Risk in Chapter 502 and therefore the project is not subject to the Phosphorous Standards.

Urban Impaired Stream Standards: A project is subject to the Urban Impaired Stream Standards when the proposed project incorporates additional development within the watershed of a body of water identified as an “Urban Impaired Stream” as defined by MDEP Chapter 502. No work is proposed within urban impaired stream watersheds and, therefore, the project is not subject to the urban impaired stream standards.

Flooding Standards: The MDEP requires that projects creating impervious areas greater than three (3) acres, or developed areas greater than twenty (20) acres, address various flooding standards. The site totals more than 3 acres of impervious area, and as such is subject to the Flooding Standards. The site has been designed to meet the Flooding Standards by analyzing post-development flows for the 2-, 10-, and 25-year interval storms and comparing those interval storms to the pre-development conditions.

Discharge to Wetlands Standard: The MDEP requires that any project that discharges to a wetland must indicate that the water level within the wetland is not increased by more than 2" for a 24-hour period following a 2-year rain event.

WATER QUALITY TREATMENT

The proposed development will create 16,339 square feet of new impervious surfaces in the form of additional parking and building footprint. The new building will be located over a portion of an existing parking lot and other existing impervious surfaces. The existing site has greater than 1 acre of total impervious surfaces, and as such the proposed improvements are subject to water quality standards.

Two Grassed Underdrained Soil Filters (USFs) were designed to accommodate this volume and are identified as USF A and USF B. USF A is located in a parking lot area, where curb cuts and drainage infrastructure have been designed to convey surface flows to the proposed basin. Surface flows and rain drains will convey flows to the USF B, which has been located adjacent to the proposed building.

For USF A, a top-of-basin elevation of 76.00' was chosen, with 77.50' serving as the overflow and 77.00' as the storm drain inlet elevation. These elevations were chosen to accommodate existing site grading. Curb cut inlets were designed to convey flows from the parking lot area through a riprap channel and into the basin. These riprap channels serve to mitigate sand from 10 storms per year, at 500 lbs/acre for each storm, with a sand density of 90 pcf. Given the 0.13 acres of sanded surfaces (impervious surfaces), this yields 7.22 cf of sand annually. Using a porosity of 0.4 for riprap, 18 CF of riprap is required. Riprap will be placed at 18" depth, and therefore 12 SF of riprap is required. A total of 40 SF of riprap has been provided at the outlet locations, and therefore the provided riprap incorporates the required amount of sand mitigation.

For USF B, a top-of-basin elevation of 70.25' was chosen, with 72.25' serving as the overflow and 72.00' as the storm drain inlet elevation. While this basin is 21" from the loam layer to the storm drain overflow,

only 18” of ponding has been allocated for water quality treatment, with the basin being over-sized to accommodate the flooding standard. These elevations were chosen to incorporate roof drain elevations and blend into the existing roadway corridor.

Both basins were designed using a filter media draining at 2.41 in/hr. Given the ledge and anticipated high water table, an impermeable liner has been incorporated as part of the proposed design. Additional information requiring the design of the USF has been incorporated within the project plans, particularly noting the layers of the proposed filter. The treatment volume calculations for each USF are indicated in the below tables:

<u>Underdrained Soil Filter A</u>					
<u>Subcatchment Review</u>					
Total Impervious Surfaces		5794	sf	0.13	acres
Total Developed Surfaces		2748	sf	0.06	acres
	Total Drainage Area	8542	sf	0.20	acres
<u>Basin Design</u>					
	<u>Treatment V</u>	<u>Total acres</u>	<u>Multiplier</u>	<u>Volume</u>	
	Impervious Area	0.133	1.0	483	
	Developed Area	0.063	0.4	92	
	Treatment Volume Required			574	cf
	Treatment Volume Provided			580	cf
Surface Area at Filter Elevation		580	s.f.		
Water Quaility Vol. (12-inch Ponding)		580	cf		
	<u>Surface Area Check</u>				
	Impervious A	5794	5%	290	
Non-Impervious Developed Area		2748	2%	55	
	Total Surface Area Required, min.			345	sf

<u>Underdrained Soil Filter B</u>					
	<u>Subcatchment Review</u>				
Total Impervious Surfaces		11919	sf	0.27	acres
Total Developed Surfaces		2199	sf	0.05	acres
	Total Drainage Area	14118	sf	0.32	acres
	<u>Basin Design</u>				
		<u>Treatment Volume</u>	<u>Total acres</u>	<u>Multiplier</u>	<u>Volume</u>
		Impervious Area	0.274	1.0	993
		Developed Area	0.050	0.4	73
		Treatment Volume Required		1,067	cf
		Treatment Volume Provided		1,073	cf
Surface Area at Filter Elevation		715	s.f.		
Water Quality Vol. (18-inch Ponding)		1072.5	cf		
		<u>Surface Area Check</u>			
		Impervious Area	11919	5%	596
Non-Impervious Developed Area		2199	2%	44	
	Total Surface Area Required, min.			640	sf

The general standards require that 95% of the new impervious surface area and 80% of the total developed surface area be treated. The proposed project is generating a net gain of 16,339 square feet of impervious area, and a net gain of 2,066 square feet of developed lawn area. The proposed treatment facilities are sized to treat 17,713 square feet of impervious area and 4,947 square feet of developed area. Therefore, greater than 100% of increased impervious and developed surfaces are being treated as part of the proposed project, and the water quality standard is met.

FLOODING STANDARD (WATER QUANTITY TREATMENT)

The site has been analyzed for pre-development and post-development runoff corresponding to the 2, 10 and 25 year storms. The Soil Conservation Service (SCS) TR-20 methodology was selected to determine the flow rates for this hydrologic analysis and HydroCAD (release 10.00) computer modeling software was utilized to perform the computations. This method relies heavily upon detailed watershed characteristics and historical rainfall data to model estimated peak discharges at selected recurrence intervals. The HydroCAD reports for these events is attached to this report.

In recent years, many organizations in the environmental science community have noticed an upward trend in total rainfall for the northeastern United States. In response, the National Resource Conservation Service (formerly SCS) has partnered with Cornell University and the Northeast Regional Climate Center (NRCC) to prepare updated statistical rainfall information (see www.precip.net). The NRCC has published a new statistical analysis of rainfall information in the northeast. The NRCC 24-hour duration rainfall data specific to Portland for various recurrence intervals have been used in these calculations.

Site specific watershed (subcatchment) details, including drainage area, land use cover, and time of concentration have been calculated. Retention and detention ponds, as well as low-lying areas and stormwater treatment cells, were designed as ponds with specific storage and outlet information. Four appurtenant Study Points were evaluated in order to determine where stormwater exits the property in the pre- and post-development condition. Study Points were designed at both outlets to the large on-site wetland, to Ocean Avenue, and to the western property boundary. The results for runoff existing the site at these Study Points are summarized in the table below:

STUDY POINT ANALYSIS (PEAK FLOW RATES: CFS)						
<i>Study Point</i>	<i>Pre 2-yr</i>	<i>Post 2-yr</i>	<i>Pre 10-yr</i>	<i>Post 10-yr</i>	<i>Pre 25-yr</i>	<i>Post 25-yr</i>
1SP	1.13	0.99	4.87	4.87	5.27	5.27
2SP	0.00	0.00	1.03	1.02	5.04	5.00
3SP	0.96	0.10	1.68	0.18	4.94	4.60
4SP	1.63	1.63	2.73	2.73	3.60	3.60

As indicated in the above table, the discharge rate in the proposed condition is either equal to or less than the existing condition for the 2-year, 10-year and 25-year rain events. Therefore, the proposed development meets the flooding standard. Flooding controls for the site were largely completed within the two USF cells (noted in HydroCAD as PA, and PB), but also with modifications to the Detention Pond 4 (4P) outlets.

DISCHARGE TO WETLANDS

Whereas the proposed project will be discharging to certain wetlands, each wetland discharged to will have an associated analysis that indicates that the post-development wetland water level does not exceed 2" of ponding when compared to the pre-development wetland water level.

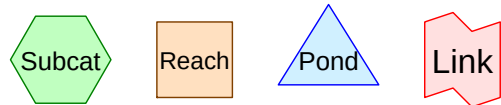
Wetland A is the only wetland on-site for which the post-development flows will be modified from the

pre-development condition. For Wetland A, pre-development flows to the existing wetland were compared to the post-development conditions. Wetland A is modeled as pond with a broad-crested weir in its southern outlet, and with a catch basin at its eastern outlet. The wetland is modeled with standing water at elevation 63.50', the approximate elevation of several of the wetland delineation flags.

Pre-development flows conveyed from a 2-year storm ponded this wetland to an elevation of 65.34'. Post-development flows conveyed from a 2-year storm ponded this wetland to an elevation of 65.32'. The difference between pre-development and post-development flows is therefore -0.02', and well below the 2" (or 0.17') maximum identified in the Discharge to Wetlands standard. Calculations for the 2-year storm are indicated in the HydroCAD report, attached to this report.

CONCLUSION

By incorporating various treatment methods and measures, surface runoff from the proposed development will receive treatment that meets the Basic, General, Flooding, and Discharge to Wetlands Standards.



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.979	98	(1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S)
5.587	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S)
10.566	88	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
5.587	HSG D	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
4.979	Other	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
10.566		TOTAL AREA

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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	0.000	0.000	4.979	4.979		1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	0.000	0.000	5.587	0.000	5.587	>75% Grass cover, Good	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	0.000	0.000	5.587	4.979	10.566	TOTAL AREA	

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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	62.86	58.69	48.0	0.0869	0.013	12.0	0.0	0.0
2	3P	69.10	68.75	70.0	0.0050	0.013	15.0	0.0	0.0
3	4P	67.66	67.65	5.0	0.0020	0.013	3.5	0.0	0.0
4	5P	67.48	66.86	81.0	0.0077	0.013	12.0	0.0	0.0
5	6P	71.00	69.20	220.0	0.0082	0.013	0.1	0.0	0.0
6	7P	71.83	69.20	375.0	0.0070	0.013	12.0	0.0	0.0
7	8P	66.60	66.60	10.0	0.0000	0.013	12.0	0.0	0.0
8	8P	65.70	65.50	40.0	0.0050	0.013	24.0	0.0	0.0
9	9P	65.70	65.60	10.0	0.0100	0.013	4.0	0.0	0.0
10	9P	67.00	66.90	10.0	0.0100	0.013	4.0	0.0	0.0
11	10P	66.60	66.55	5.0	0.0100	0.013	4.0	0.0	0.0
12	10P	67.00	66.55	50.0	0.0090	0.013	12.0	0.0	0.0

Pre-Development Cedars Model 17-10-11

Type II 24-hr 2-yr Rainfall=3.17"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1 Runoff Area=87,665 sf 15.27% Impervious Runoff Depth=1.58"
 Flow Length=177' Slope=0.0100 '/' Tc=29.9 min CN=83 Runoff=2.75 cfs 0.266 af

Subcatchment2S: Subcatchment2 Runoff Area=90,682 sf 66.45% Impervious Runoff Depth=2.32"
 Flow Length=178' Slope=0.0075 '/' Tc=33.7 min CN=92 Runoff=3.84 cfs 0.403 af

Subcatchment3S: Subcatchment3 Runoff Area=40,444 sf 47.45% Impervious Runoff Depth=2.05"
 Flow Length=185' Slope=0.0200 '/' Tc=30.6 min CN=89 Runoff=1.63 cfs 0.159 af

Subcatchment4S: Subcatchment4 Runoff Area=26,132 sf 52.50% Impervious Runoff Depth=2.05"
 Tc=7.0 min CN=89 Runoff=2.03 cfs 0.103 af

Subcatchment5S: Subcatchment5 Runoff Area=114,414 sf 56.89% Impervious Runoff Depth=2.14"
 Tc=7.0 min CN=90 Runoff=9.20 cfs 0.469 af

Subcatchment6S: Subcatchment6 Runoff Area=39,891 sf 54.44% Impervious Runoff Depth=2.14"
 Tc=7.0 min CN=90 Runoff=3.21 cfs 0.163 af

Subcatchment7S: Subcatchment7 Runoff Area=46,652 sf 42.35% Impervious Runoff Depth=1.97"
 Tc=7.0 min CN=88 Runoff=3.50 cfs 0.176 af

Subcatchment8S: Subcatchment8 Runoff Area=14,355 sf 26.13% Impervious Runoff Depth=1.73"
 Tc=7.0 min CN=85 Runoff=0.96 cfs 0.048 af

Reach 1SP: Study Point 1 Inflow=1.13 cfs 0.659 af
 Outflow=1.13 cfs 0.659 af

Reach 2SP: Study Point 2 Inflow=0.00 cfs 0.000 af
 Outflow=0.00 cfs 0.000 af

Reach 3SP: Study Point 3 Inflow=0.96 cfs 0.048 af
 Outflow=0.96 cfs 0.048 af

Reach 4SP: Study Point 4 Inflow=1.63 cfs 0.159 af
 Outflow=1.63 cfs 0.159 af

Pond 1P: Wetland A Peak Elev=65.34' Storage=51,716 cf Inflow=9.15 cfs 1.315 af
 Primary=0.00 cfs 0.000 af Secondary=1.13 cfs 0.659 af Outflow=1.13 cfs 0.659 af

Pond 2P: Wetland B Peak Elev=69.11' Storage=9,275 cf Inflow=3.84 cfs 0.403 af
 Outflow=1.59 cfs 0.208 af

Pond 3P: Surface Detention Peak Elev=71.44' Storage=7,457 cf Inflow=13.88 cfs 0.676 af
 Primary=6.11 cfs 0.674 af Secondary=0.00 cfs 0.000 af Outflow=6.11 cfs 0.674 af

Pond 4P: Surface Detention Peak Elev=69.90' Storage=3,402 cf Inflow=3.50 cfs 0.176 af
 Primary=0.37 cfs 0.155 af Secondary=0.00 cfs 0.000 af Tertiary=0.37 cfs 0.013 af Outflow=0.74 cfs 0.167 af

Pre-Development Cedars Model 17-10-11*Type II 24-hr 2-yr Rainfall=3.17"*

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Pond 5P: OCS-4P

Peak Elev=67.98' Inflow=0.74 cfs 0.167 af
12.0" Round Culvert n=0.013 L=81.0' S=0.0077 ' /' Outflow=0.74 cfs 0.167 af

Pond 6P: Atrium Surface Detention

Peak Elev=73.88' Storage=3,640 cf Inflow=9.20 cfs 0.469 af
Outflow=8.80 cfs 0.412 af

Pond 7P: Riprap Surface Detention

Peak Elev=72.74' Storage=285 cf Inflow=2.03 cfs 0.103 af
12.0" Round Culvert n=0.013 L=375.0' S=0.0070 ' /' Outflow=1.93 cfs 0.101 af

Pond 8P: OCS-DMH7

Peak Elev=67.01' Inflow=6.11 cfs 0.674 af
Primary=0.34 cfs 0.011 af Secondary=5.77 cfs 0.664 af Outflow=6.11 cfs 0.674 af

Pond 9P: UG Detention

Peak Elev=65.90' Storage=286 cf Inflow=0.22 cfs 0.008 af
Outflow=0.06 cfs 0.008 af

Pond 10P: Isolator Row x5

Peak Elev=67.19' Storage=0.001 af Inflow=0.34 cfs 0.011 af
Primary=0.22 cfs 0.008 af Secondary=0.12 cfs 0.002 af Outflow=0.34 cfs 0.011 af

Total Runoff Area = 10.566 ac Runoff Volume = 1.786 af Average Runoff Depth = 2.03"
52.88% Pervious = 5.587 ac 47.12% Impervious = 4.979 ac

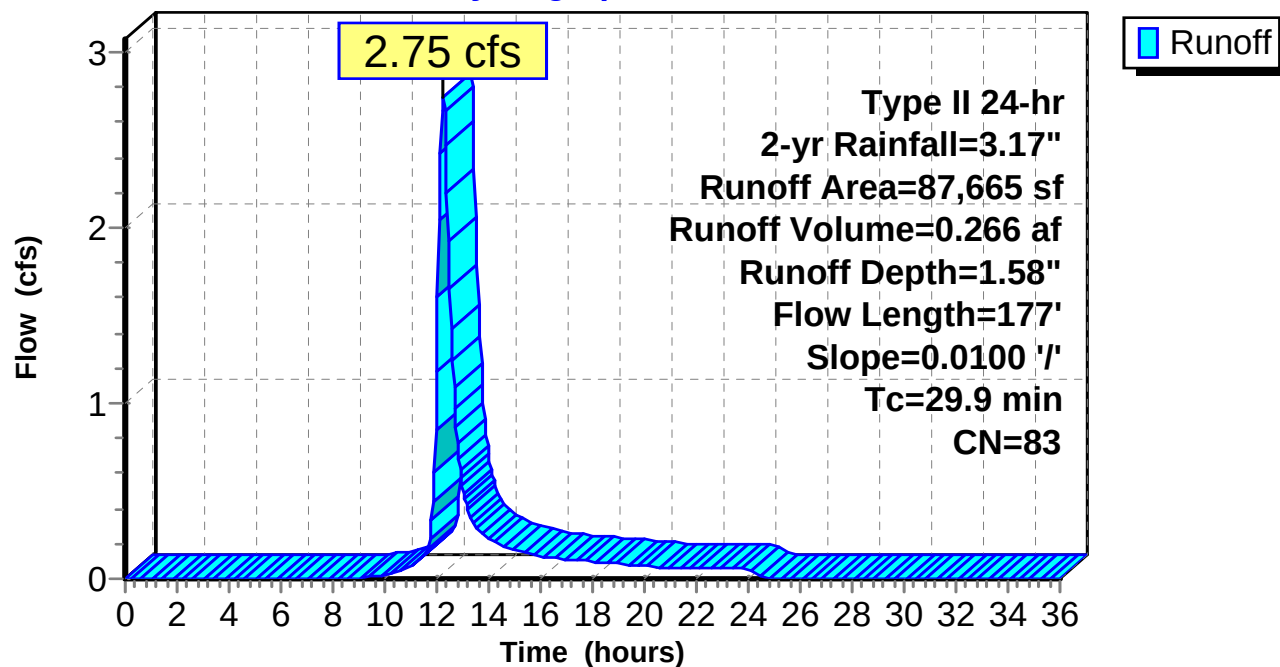
Summary for Subcatchment 1S: Subcatchment 1

Runoff = 2.75 cfs @ 12.25 hrs, Volume= 0.266 af, Depth= 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	13,390	98	
	74,275	80	>75% Grass cover, Good, HSG D
	87,665	83	Weighted Average
	74,275		84.73% Pervious Area
	13,390		15.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	177	0.0100	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 1S: Subcatchment 1**Hydrograph**

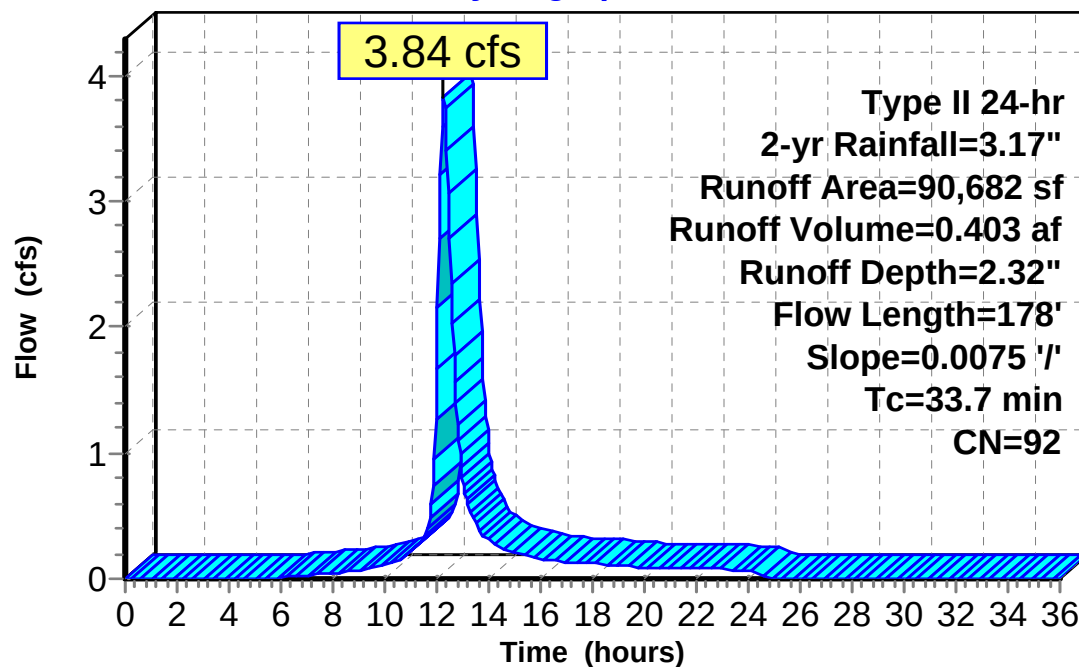
Summary for Subcatchment 2S: Subcatchment 2

Runoff = 3.84 cfs @ 12.28 hrs, Volume= 0.403 af, Depth= 2.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	60,255	98	
	30,427	80	>75% Grass cover, Good, HSG D
	90,682	92	Weighted Average
	30,427		33.55% Pervious Area
	60,255		66.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.7	178	0.0075	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 2S: Subcatchment 2**Hydrograph**

Runoff

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Type II 24-hr 2-yr Rainfall=3.17"

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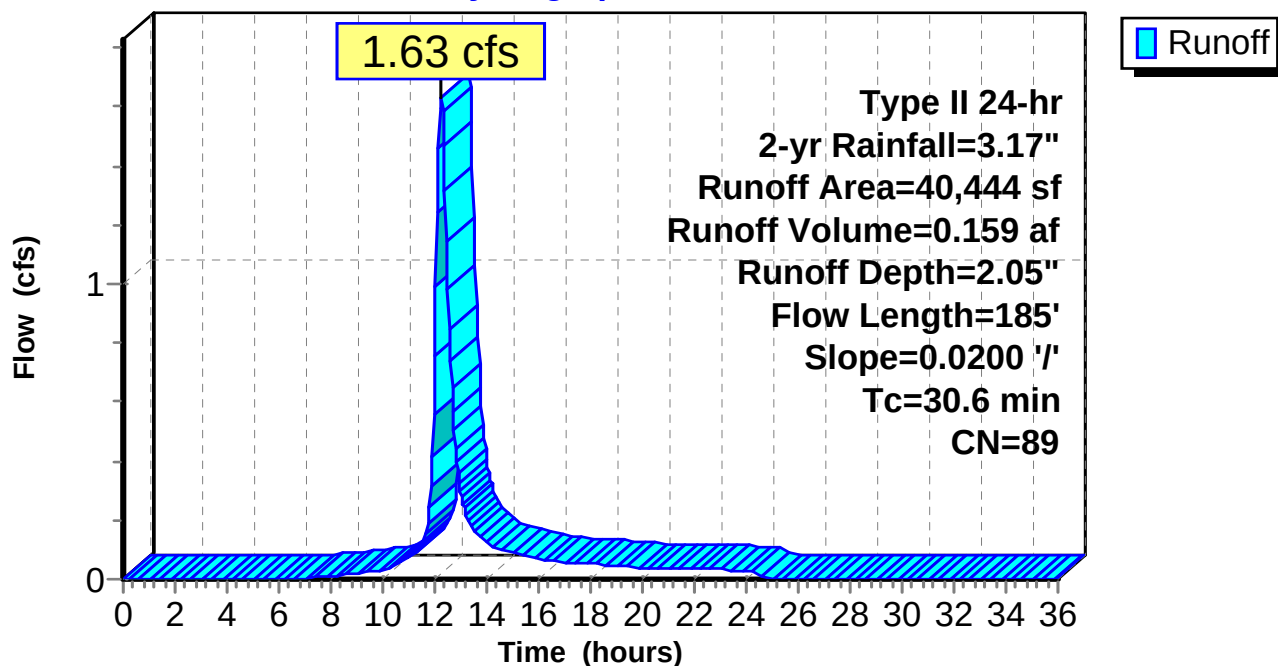
Summary for Subcatchment 3S: Subcatchment 3

Runoff = 1.63 cfs @ 12.25 hrs, Volume= 0.159 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

Area (sf)	CN	Description
21,255	80	>75% Grass cover, Good, HSG D
* 19,189	98	
40,444	89	Weighted Average
21,255		52.55% Pervious Area
19,189		47.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	150	0.0200	0.08		Sheet Flow, Sheet
					Woods: Light underbrush n= 0.400 P2= 3.17"
0.8	35	0.0200	0.71		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
30.6	185	Total			

Subcatchment 3S: Subcatchment 3**Hydrograph**

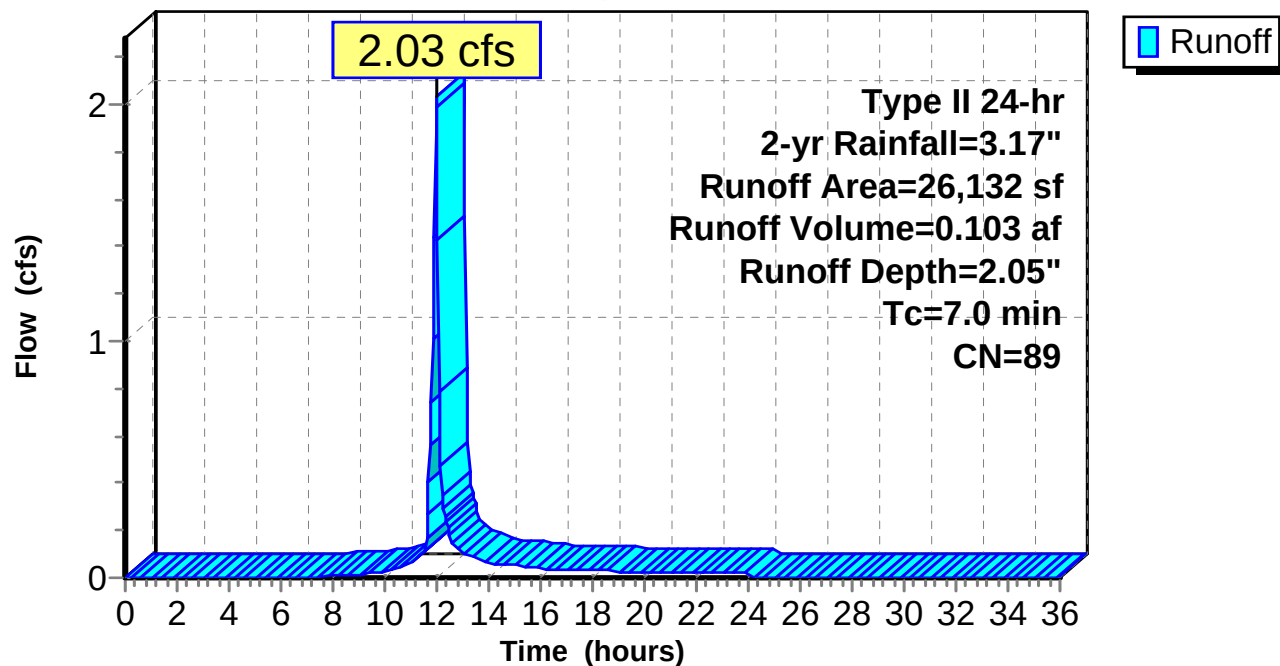
Summary for Subcatchment 4S: Subcatchment 4

Runoff = 2.03 cfs @ 11.98 hrs, Volume= 0.103 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	13,720	98	
	12,412	80	>75% Grass cover, Good, HSG D
	26,132	89	Weighted Average
	12,412		47.50% Pervious Area
	13,720		52.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 4S: Subcatchment 4**Hydrograph**

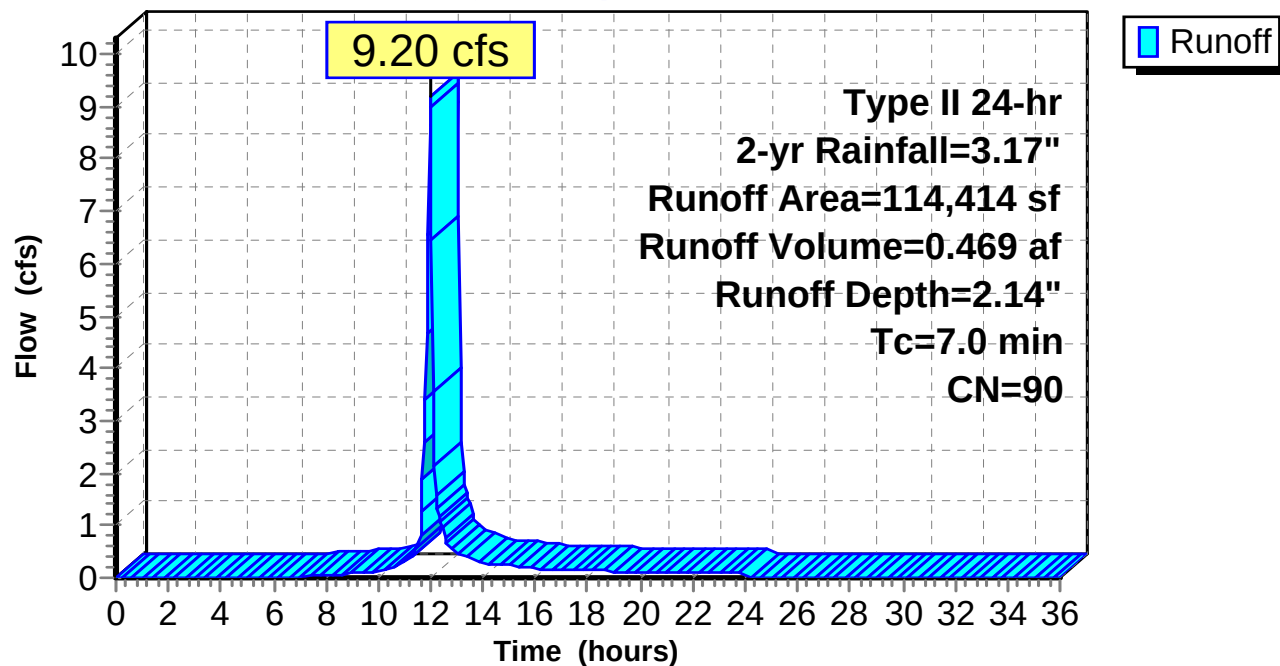
Summary for Subcatchment 5S: Subcatchment 5

Runoff = 9.20 cfs @ 11.98 hrs, Volume= 0.469 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	65,087	98	
	49,327	80	>75% Grass cover, Good, HSG D
	114,414	90	Weighted Average
	49,327		43.11% Pervious Area
	65,087		56.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 5S: Subcatchment 5**Hydrograph**

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Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Subcatchment 6S: Subcatchment 6

Runoff = 3.21 cfs @ 11.98 hrs, Volume= 0.163 af, Depth= 2.14"

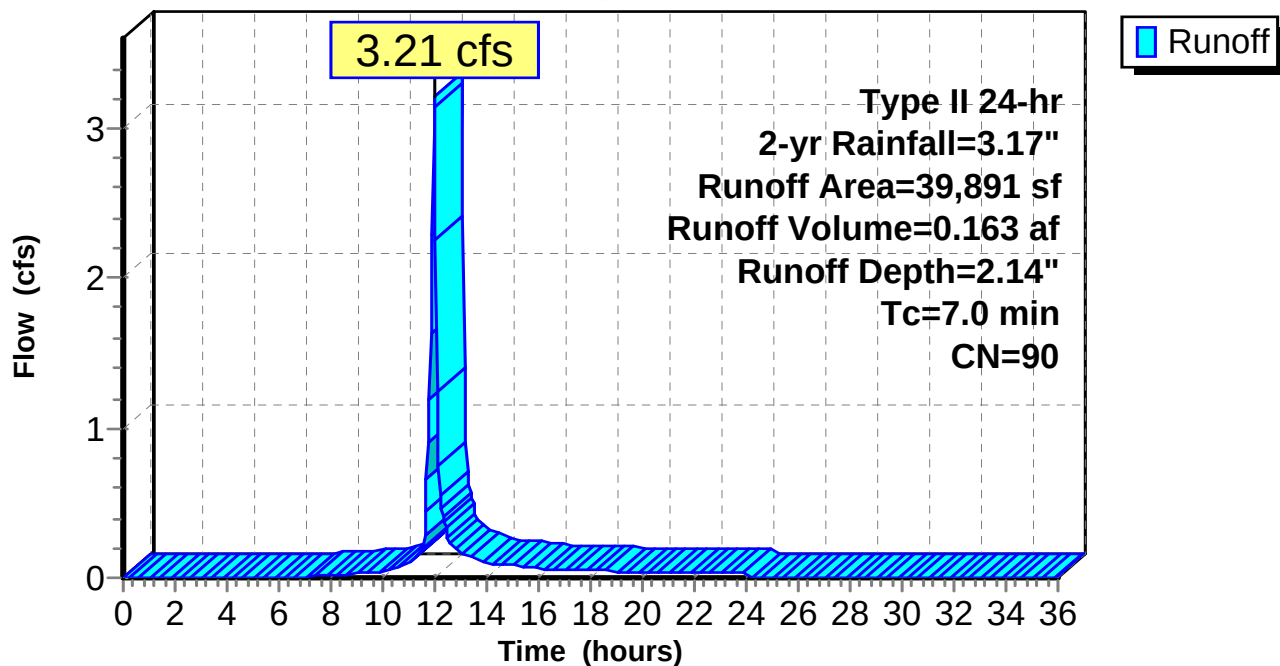
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	21,718	98	
	18,173	80	>75% Grass cover, Good, HSG D
	39,891	90	Weighted Average
	18,173		45.56% Pervious Area
	21,718		54.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 6S: Subcatchment 6

Hydrograph



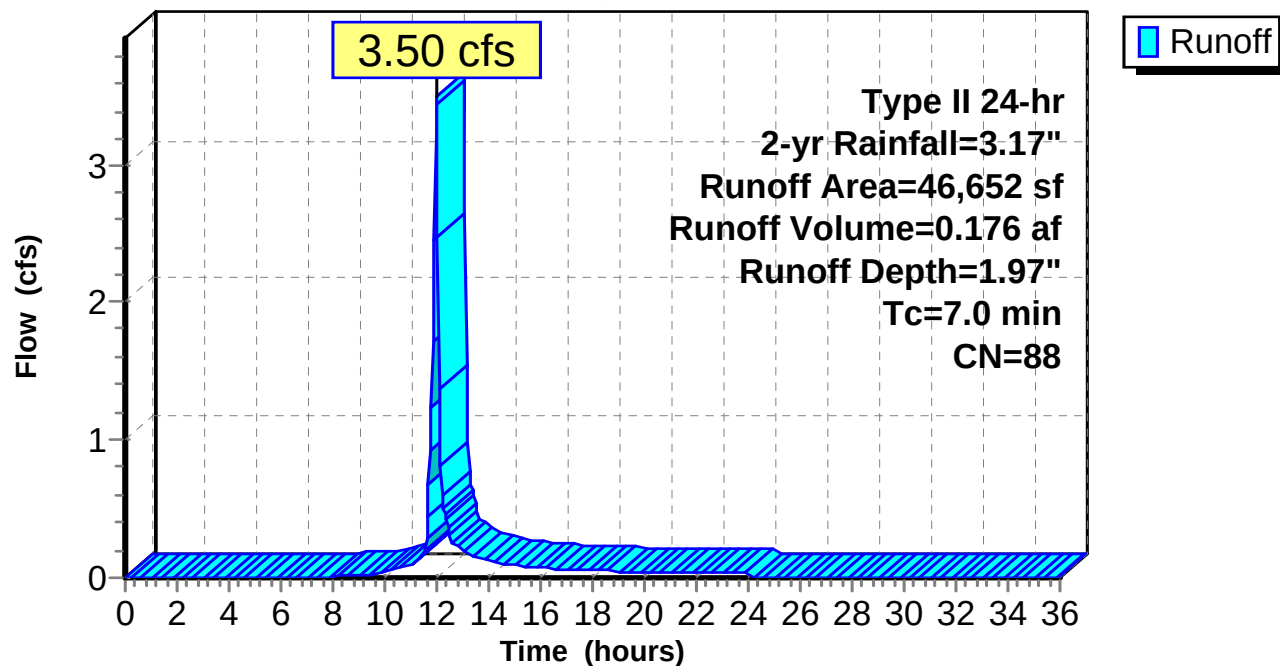
Summary for Subcatchment 7S: Subcatchment 7

Runoff = 3.50 cfs @ 11.98 hrs, Volume= 0.176 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	19,759	98	
	26,893	80	>75% Grass cover, Good, HSG D
	46,652	88	Weighted Average
	26,893		57.65% Pervious Area
	19,759		42.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 7S: Subcatchment 7**Hydrograph**

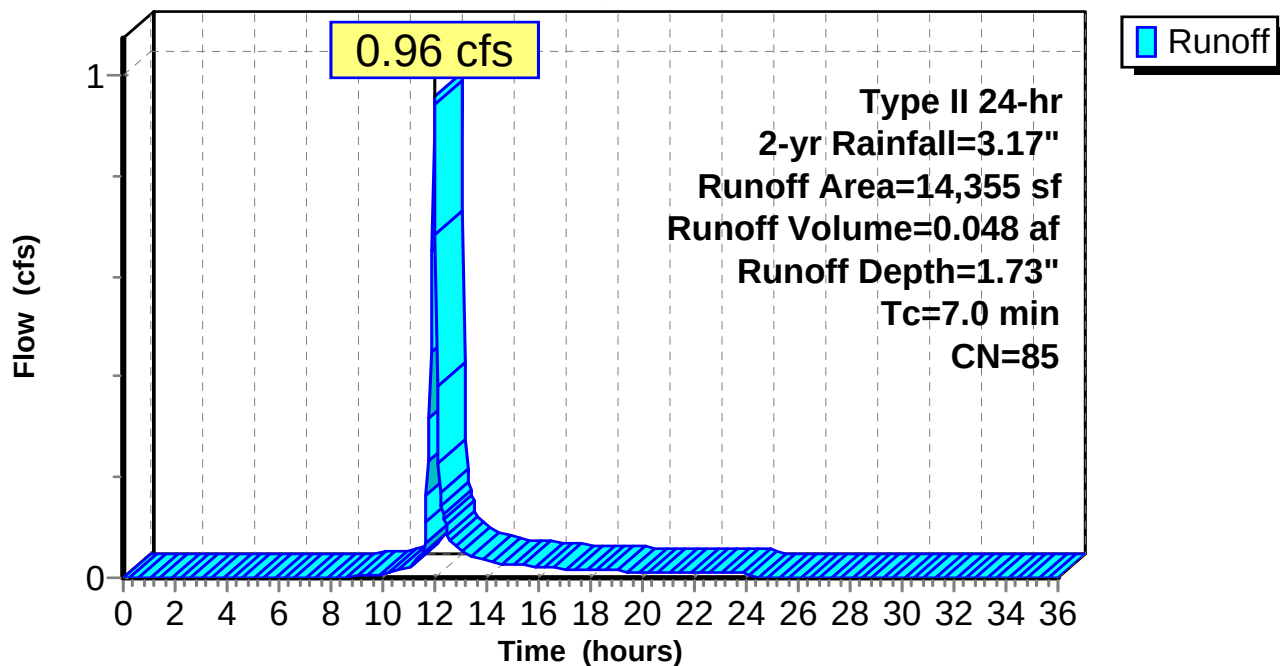
Summary for Subcatchment 8S: Subcatchment 8

Runoff = 0.96 cfs @ 11.98 hrs, Volume= 0.048 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

Area (sf)	CN	Description
10,604	80	>75% Grass cover, Good, HSG D
* 3,751	98	
14,355	85	Weighted Average
10,604		73.87% Pervious Area
3,751		26.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

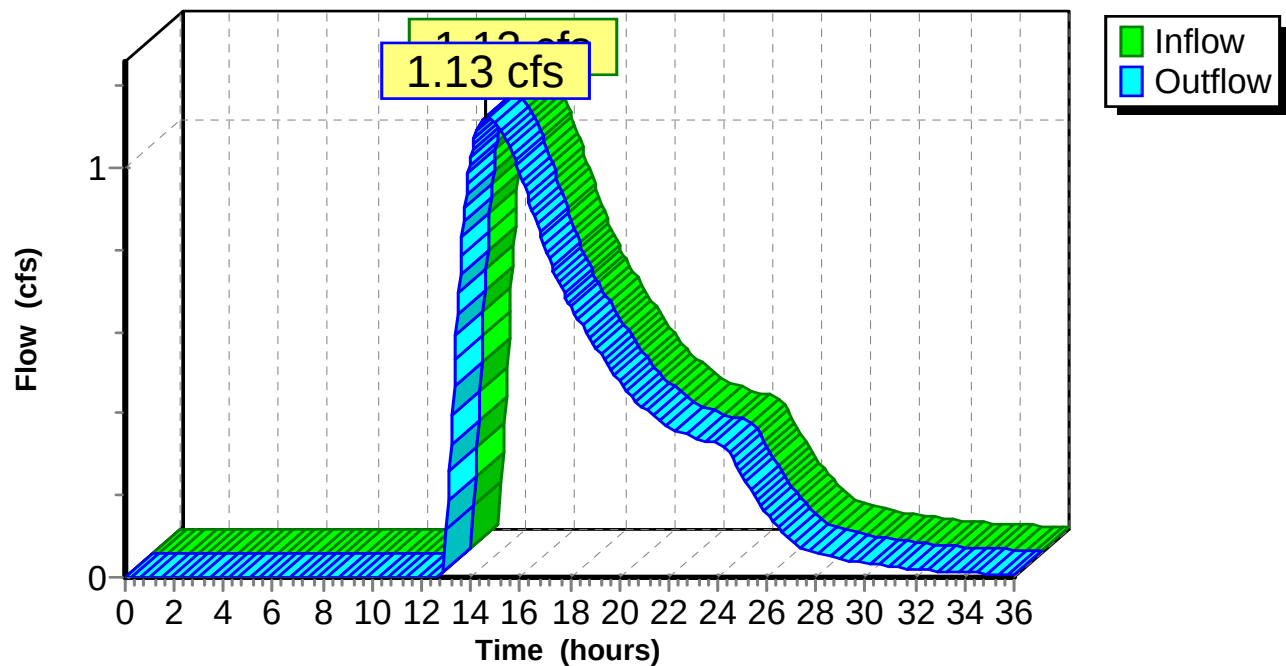
Subcatchment 8S: Subcatchment 8**Hydrograph**

Summary for Reach 1SP: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow	=	1.13 cfs @ 14.66 hrs,	Volume=	0.659 af
Outflow	=	1.13 cfs @ 14.66 hrs,	Volume=	0.659 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

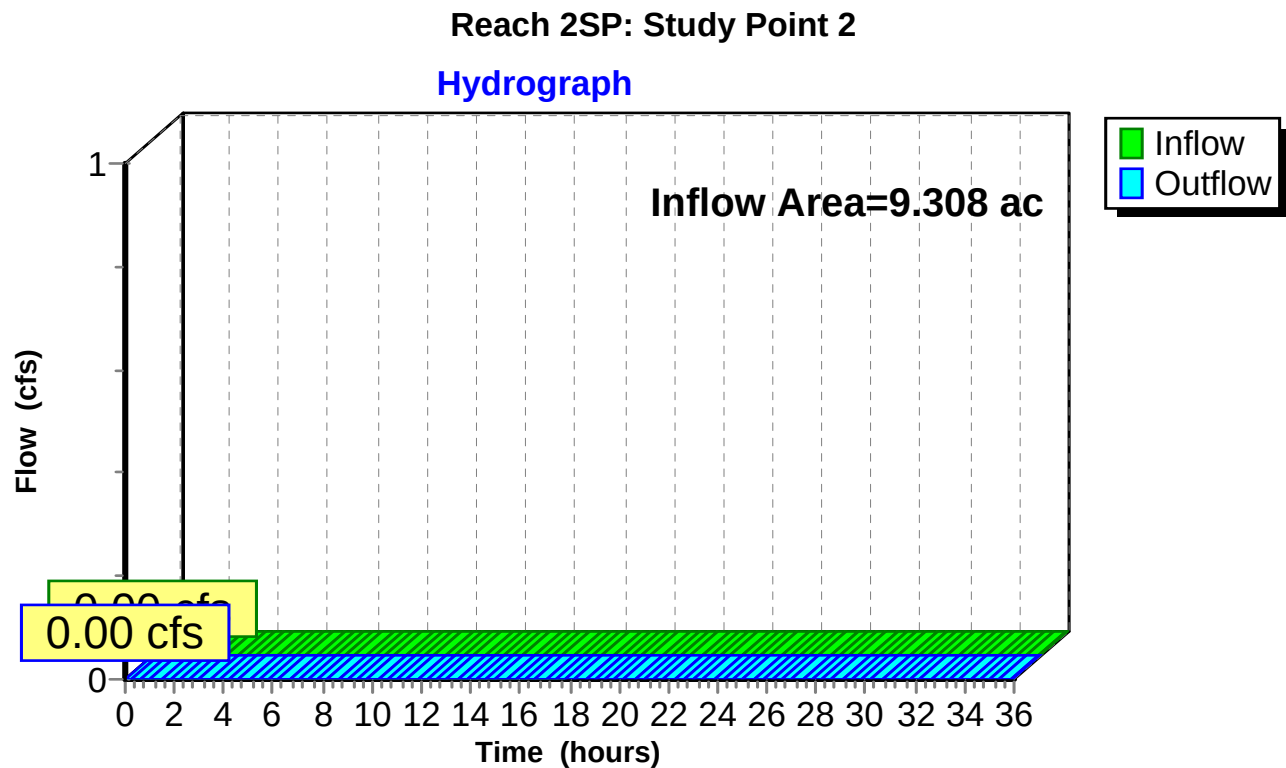
Reach 1SP: Study Point 1**Hydrograph**

Summary for Reach 2SP: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.308 ac, 47.83% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs



Summary for Reach 3SP: Study Point 3

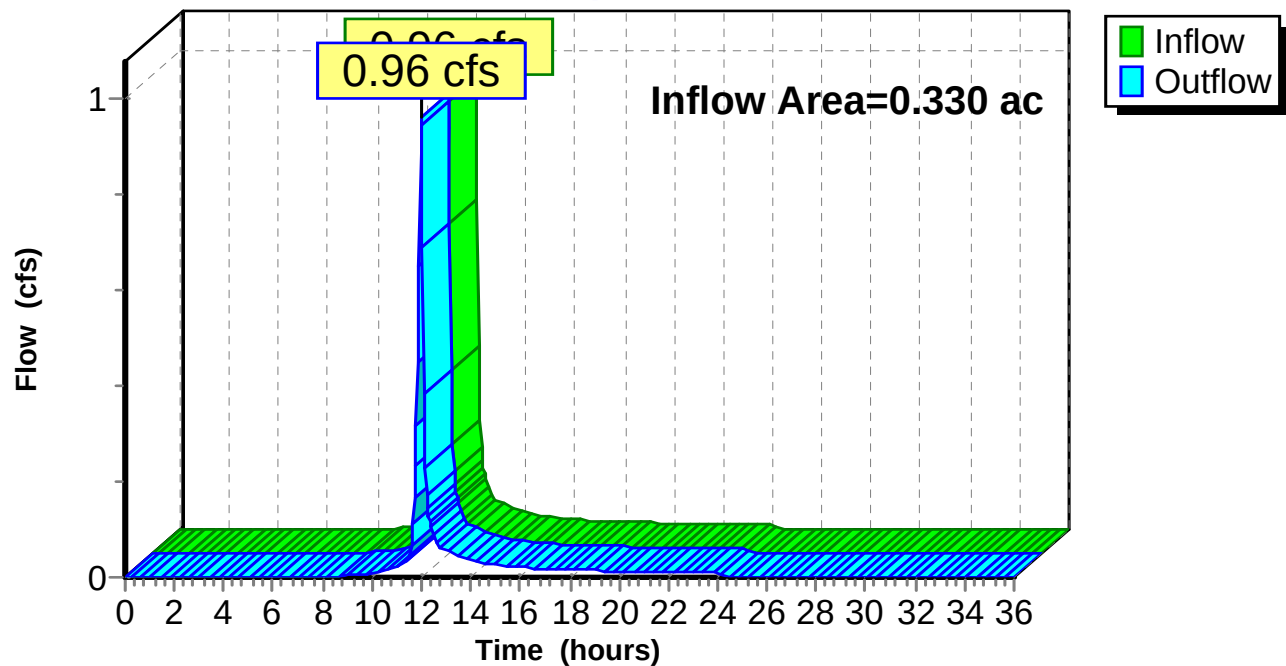
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.330 ac, 26.13% Impervious, Inflow Depth = 1.73" for 2-yr event
Inflow = 0.96 cfs @ 11.98 hrs, Volume= 0.048 af
Outflow = 0.96 cfs @ 11.98 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 3SP: Study Point 3

Hydrograph



Summary for Reach 4SP: Study Point 4

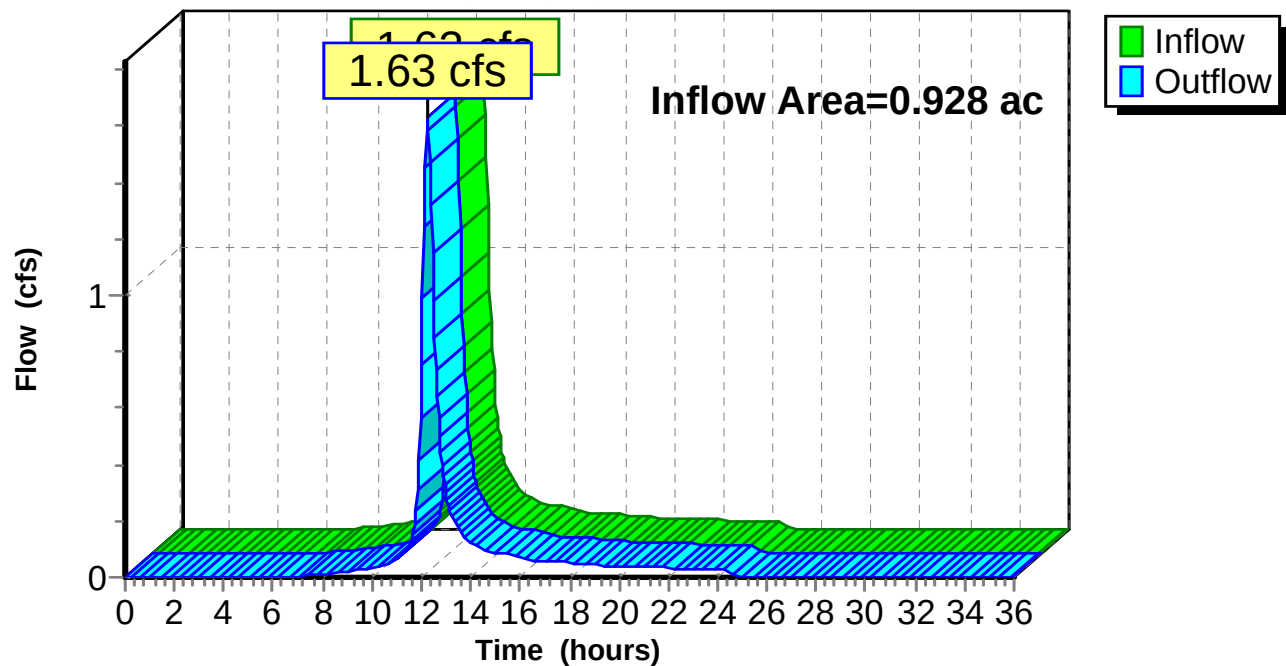
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.928 ac, 47.45% Impervious, Inflow Depth = 2.05" for 2-yr event
Inflow = 1.63 cfs @ 12.25 hrs, Volume= 0.159 af
Outflow = 1.63 cfs @ 12.25 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 4SP: Study Point 4

Hydrograph



Summary for Pond 1P: Wetland A

Inflow Area = 9.308 ac, 47.83% Impervious, Inflow Depth = 1.70" for 2-yr event
 Inflow = 9.15 cfs @ 12.20 hrs, Volume= 1.315 af
 Outflow = 1.13 cfs @ 14.66 hrs, Volume= 0.659 af, Atten= 88%, Lag= 147.5 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 1.13 cfs @ 14.66 hrs, Volume= 0.659 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Starting Elev= 63.50' Surf.Area= 14,739 sf Storage= 17,429 cf

Peak Elev= 65.34' @ 14.66 hrs Surf.Area= 22,633 sf Storage= 51,716 cf (34,287 cf above start)

Plug-Flow detention time= 644.1 min calculated for 0.259 af (20% of inflow)

Center-of-Mass det. time= 236.4 min (1,106.2 - 869.8)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	209,276 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	8,500	0	0
65.00	20,977	44,216	44,216
70.00	45,047	165,060	209,276

Device	Routing	Invert	Outlet Devices
#1	Primary	65.75'	3.0' 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
#2	Secondary	62.86'	12.0" Round Culvert L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 62.86' / 58.69' S= 0.0869 ' / Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	65.08'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=63.50' (Free Discharge)

↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

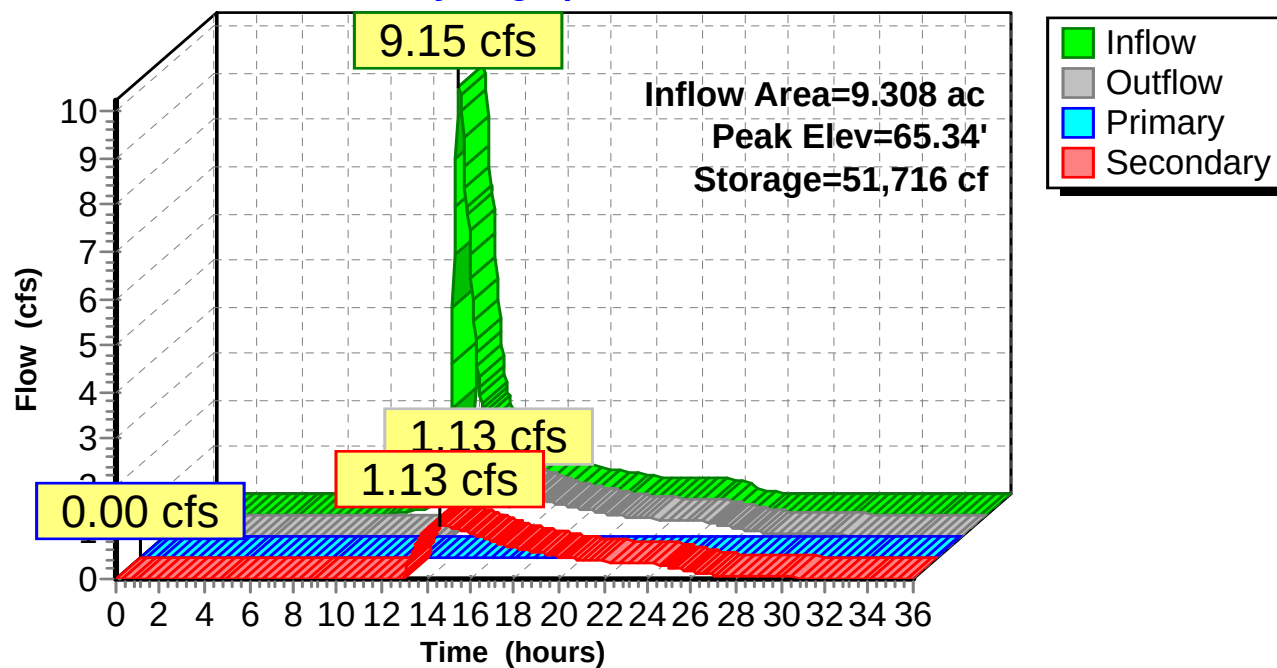
Secondary OutFlow Max=1.12 cfs @ 14.66 hrs HW=65.34' (Free Discharge)

↑ **2=Culvert** (Passes 1.12 cfs of 4.21 cfs potential flow)

↑ **3=Sharp-Crested Rectangular Weir** (Weir Controls 1.12 cfs @ 1.73 fps)

Pond 1P: Wetland A

Hydrograph



Summary for Pond 2P: Wetland B

Inflow Area = 2.082 ac, 66.45% Impervious, Inflow Depth = 2.32" for 2-yr event
 Inflow = 3.84 cfs @ 12.28 hrs, Volume= 0.403 af
 Outflow = 1.59 cfs @ 12.70 hrs, Volume= 0.208 af, Atten= 58%, Lag= 25.5 min
 Primary = 1.59 cfs @ 12.70 hrs, Volume= 0.208 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.11' @ 12.70 hrs Surf.Area= 7,808 sf Storage= 9,275 cf

Plug-Flow detention time= 236.6 min calculated for 0.208 af (52% of inflow)
 Center-of-Mass det. time= 123.2 min (943.8 - 820.6)

Volume	Invert	Avail.Storage	Storage Description
#1	67.00'	21,636 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

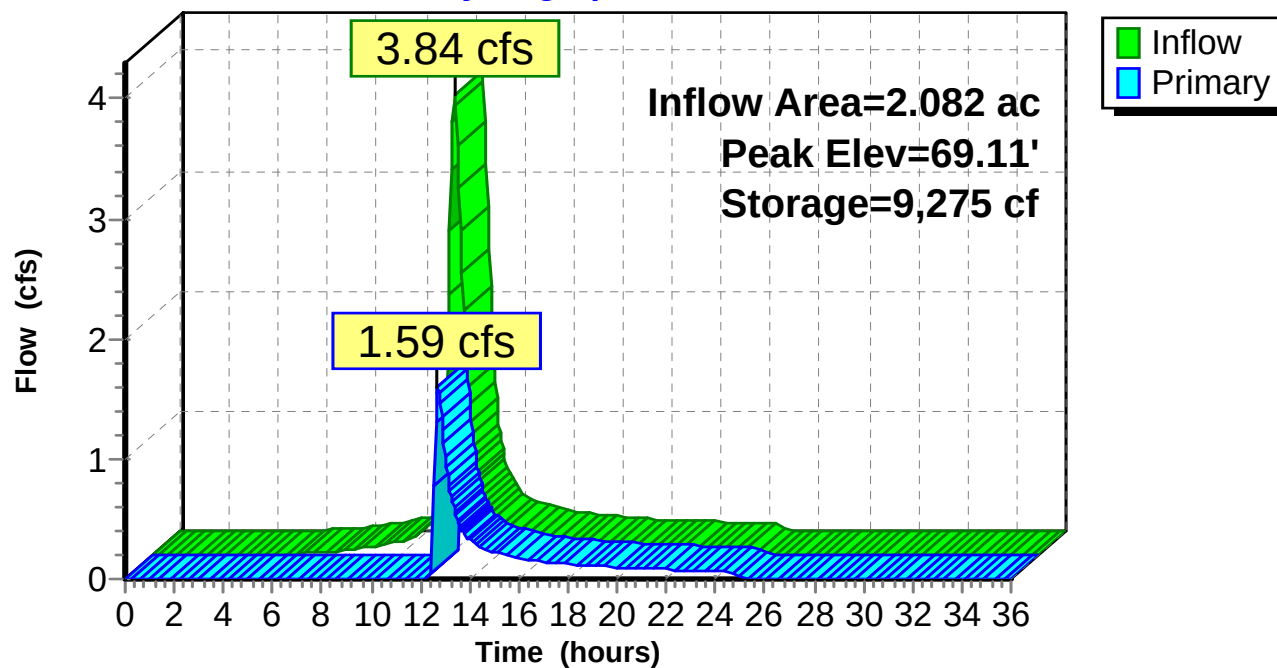
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.00	2,200	0	0
68.00	4,250	3,225	3,225
69.00	6,286	5,268	8,493
70.00	20,000	13,143	21,636

Device	Routing	Invert	Outlet Devices
#1	Primary	69.00'	18.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.58 cfs @ 12.70 hrs HW=69.11' (Free Discharge)
 1=Broad-Crested Rectangular Weir (Weir Controls 1.58 cfs @ 0.79 fps)

Pond 2P: Wetland B

Hydrograph



Summary for Pond 3P: Surface Detention

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 0.42'

[79] Warning: Submerged Pond 7P Primary device # 1 OUTLET by 2.22'

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 1.96" for 2-yr event
 Inflow = 13.88 cfs @ 12.00 hrs, Volume= 0.676 af
 Outflow = 6.11 cfs @ 12.12 hrs, Volume= 0.674 af, Atten= 56%, Lag= 7.6 min
 Primary = 6.11 cfs @ 12.12 hrs, Volume= 0.674 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 71.44' @ 12.12 hrs Surf.Area= 5,020 sf Storage= 7,457 cf

Plug-Flow detention time= 18.6 min calculated for 0.674 af (100% of inflow)
 Center-of-Mass det. time= 17.8 min (843.4 - 825.7)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	21,926 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

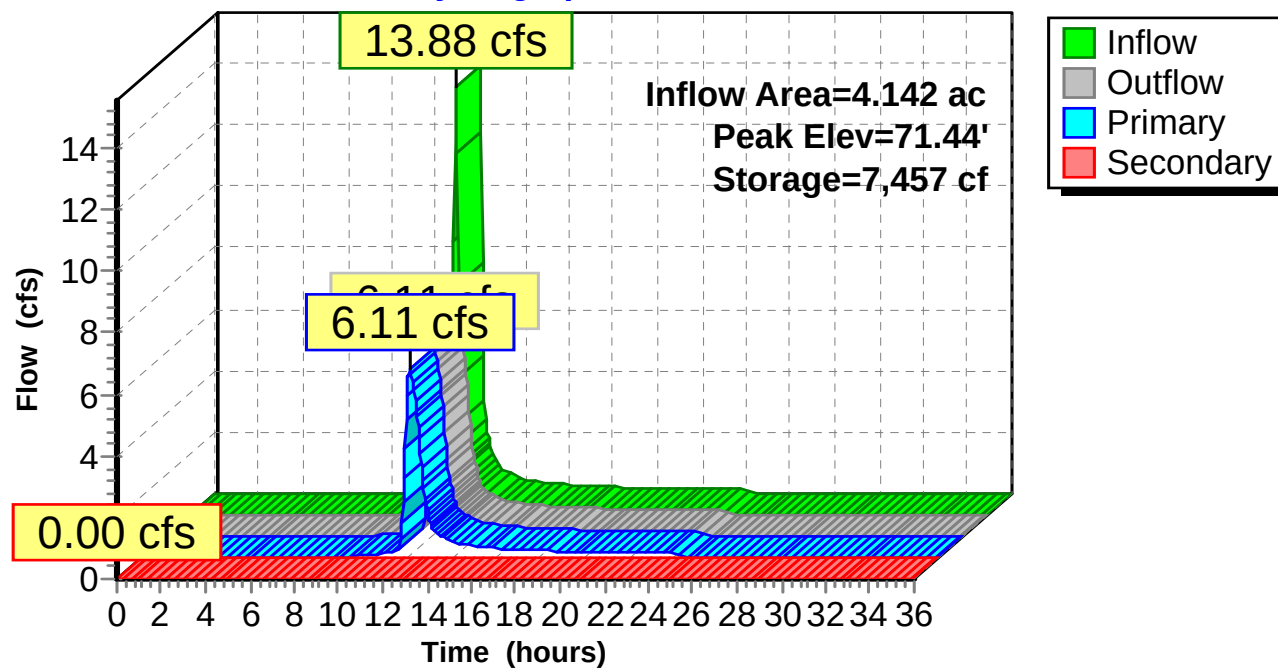
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	400	0	0
70.00	2,991	1,696	1,696
72.00	5,812	8,803	10,499
73.50	9,425	11,428	21,926

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	15.0" Round Culvert L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.10' / 68.75' S= 0.0050 ' /' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	72.50'	35.0' 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=6.08 cfs @ 12.12 hrs HW=71.42' (Free Discharge)↑ **1=Culvert** (Inlet Controls 6.08 cfs @ 4.95 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Surface Detention

Hydrograph



Summary for Pond 4P: Surface Detention

Inflow Area = 1.071 ac, 42.35% Impervious, Inflow Depth = 1.97" for 2-yr event
 Inflow = 3.50 cfs @ 11.98 hrs, Volume= 0.176 af
 Outflow = 0.74 cfs @ 12.17 hrs, Volume= 0.167 af, Atten= 79%, Lag= 11.4 min
 Primary = 0.37 cfs @ 12.17 hrs, Volume= 0.155 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.37 cfs @ 12.17 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.90' @ 12.17 hrs Surf.Area= 2,247 sf Storage= 3,402 cf

Plug-Flow detention time= 117.9 min calculated for 0.167 af (95% of inflow)
 Center-of-Mass det. time= 91.2 min (904.5 - 813.3)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	10,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.00	13	0	0
67.00	71	126	126
68.00	928	500	626
69.00	1,378	1,153	1,779
70.00	2,348	1,863	3,642
72.00	5,000	7,348	10,990

Device	Routing	Invert	Outlet Devices
#1	Primary	67.66'	3.5" Round Culvert L= 5.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.66' / 67.65' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 0.07 sf
#2	Tertiary	69.66'	1.2' 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	Secondary	70.50'	45.0' long x 15.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.37 cfs @ 12.17 hrs HW=69.89' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.37 cfs @ 5.49 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=64.00' (Free Discharge)

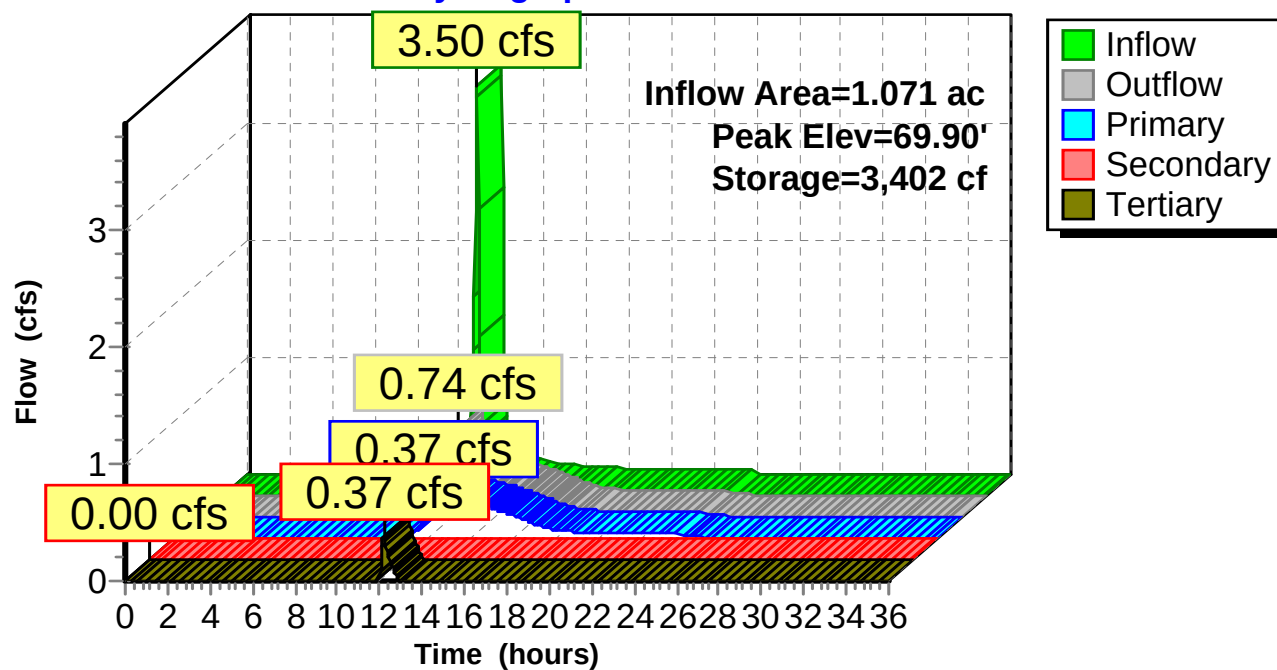
↑**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.36 cfs @ 12.17 hrs HW=69.89' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.36 cfs @ 1.30 fps)

Pond 4P: Surface Detention

Hydrograph



Summary for Pond 5P: OCS-4P

[57] Hint: Peaked at 67.98' (Flood elevation advised)

[79] Warning: Submerged Pond 4P Primary device # 1 INLET by 0.31'

Inflow Area = 1.071 ac, 42.35% Impervious, Inflow Depth > 1.88" for 2-yr event
 Inflow = 0.74 cfs @ 12.17 hrs, Volume= 0.167 af
 Outflow = 0.74 cfs @ 12.17 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.74 cfs @ 12.17 hrs, Volume= 0.167 af

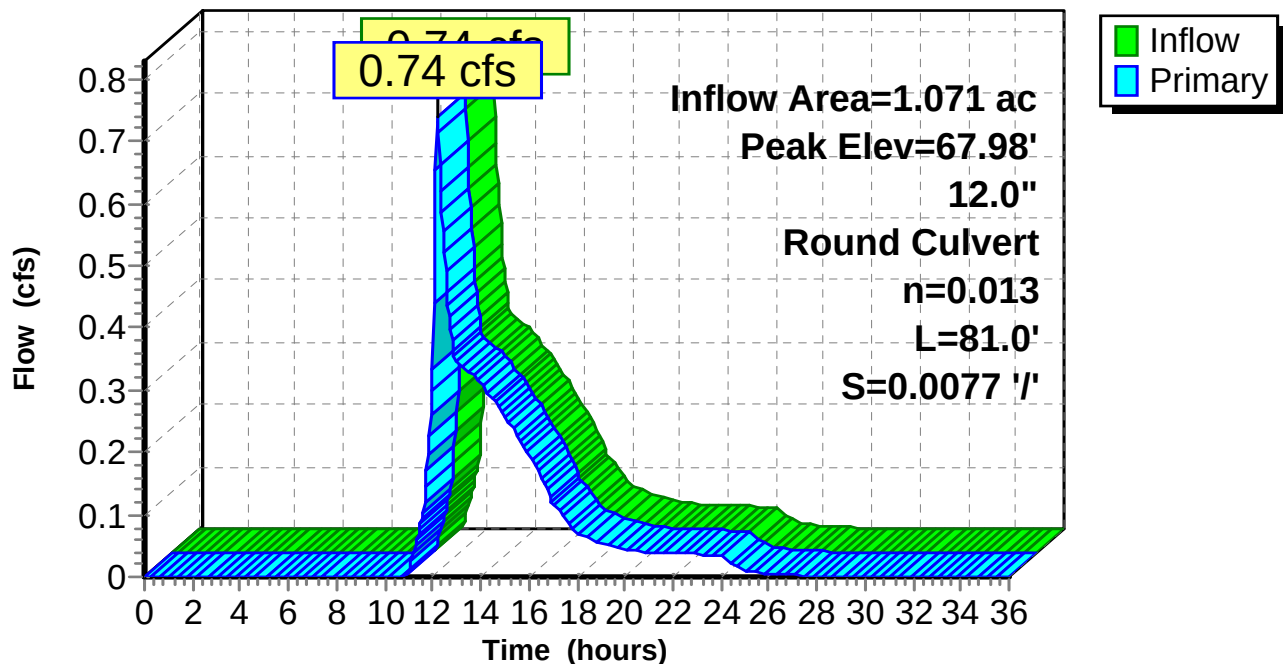
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Peak Elev= 67.98' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.48'	12.0" Round Culvert L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.48' / 66.86' S= 0.0077 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.73 cfs @ 12.17 hrs HW=67.97' (Free Discharge)

↑1=Culvert (Inlet Controls 0.73 cfs @ 1.89 fps)

Pond 5P: OCS-4P**Hydrograph**

Summary for Pond 6P: Atrium Surface Detention

Inflow Area = 2.627 ac, 56.89% Impervious, Inflow Depth = 2.14" for 2-yr event
 Inflow = 9.20 cfs @ 11.98 hrs, Volume= 0.469 af
 Outflow = 8.80 cfs @ 12.00 hrs, Volume= 0.412 af, Atten= 4%, Lag= 1.3 min
 Primary = 8.80 cfs @ 12.00 hrs, Volume= 0.412 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 73.88' @ 12.00 hrs Surf.Area= 3,405 sf Storage= 3,640 cf

Plug-Flow detention time= 89.4 min calculated for 0.412 af (88% of inflow)
 Center-of-Mass det. time= 30.1 min (835.2 - 805.1)

Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	5,026 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
70.00	55	0	0
72.00	327	382	382
73.00	1,694	1,011	1,393
74.25	4,120	3,634	5,026

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	0.1" Round Culvert L= 220.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.00' / 69.20' S= 0.0082 ' / Cc= 0.900 n= 0.013, Flow Area= 0.00 sf
#2	Primary	73.50'	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

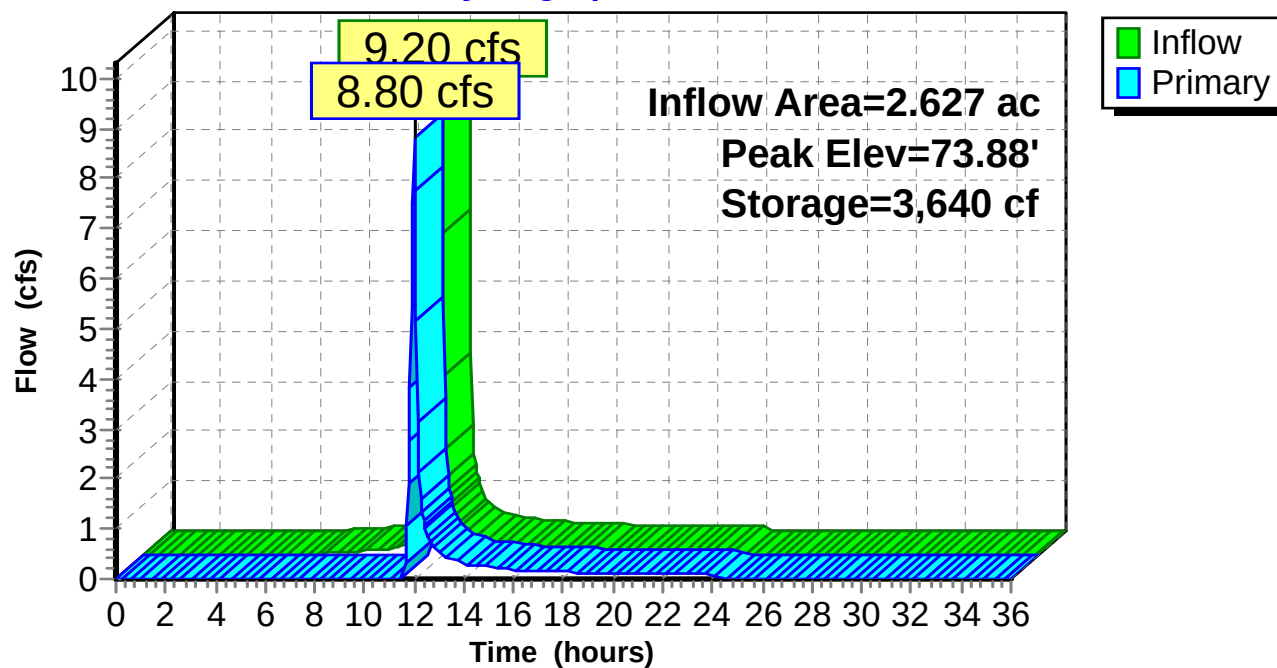
Primary OutFlow Max=8.73 cfs @ 12.00 hrs HW=73.88' (Free Discharge)

1=Culvert (Barrel Controls 0.00 cfs @ 0.27 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 8.73 cfs @ 1.53 fps)

Pond 6P: Atrium Surface Detention

Hydrograph



Summary for Pond 7P: Riprap Surface Detention

Inflow Area = 0.600 ac, 52.50% Impervious, Inflow Depth = 2.05" for 2-yr event
 Inflow = 2.03 cfs @ 11.98 hrs, Volume= 0.103 af
 Outflow = 1.93 cfs @ 12.00 hrs, Volume= 0.101 af, Atten= 5%, Lag= 1.2 min
 Primary = 1.93 cfs @ 12.00 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.74' @ 12.00 hrs Surf.Area= 277 sf Storage= 285 cf

Plug-Flow detention time= 22.6 min calculated for 0.101 af (98% of inflow)
 Center-of-Mass det. time= 10.5 min (819.8 - 809.3)

Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	2,180 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	50	0	0
73.00	310	360	360
74.00	846	578	938
75.00	1,637	1,242	2,180

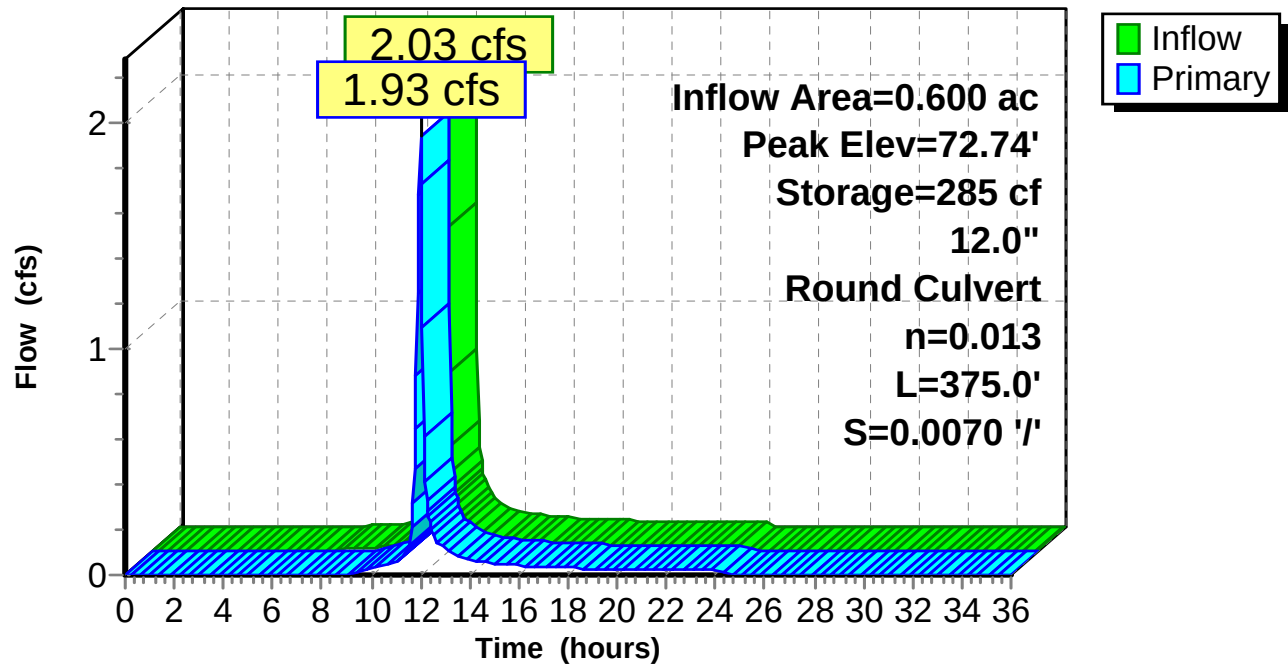
Device	Routing	Invert	Outlet Devices
#1	Primary	71.83'	12.0" Round Culvert L= 375.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.83' / 69.20' S= 0.0070 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.92 cfs @ 12.00 hrs HW=72.74' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 1.92 cfs @ 2.56 fps)

Pond 7P: Riprap Surface Detention

Hydrograph



Summary for Pond 8P: OCS-DMH7

[57] Hint: Peaked at 67.01' (Flood elevation advised)

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 1.95" for 2-yr event
 Inflow = 6.11 cfs @ 12.12 hrs, Volume= 0.674 af
 Outflow = 6.11 cfs @ 12.12 hrs, Volume= 0.674 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.34 cfs @ 12.12 hrs, Volume= 0.011 af
 Secondary = 5.77 cfs @ 12.12 hrs, Volume= 0.664 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Peak Elev= 67.01' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	12.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.60' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	65.70'	24.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.33 cfs @ 12.12 hrs HW=67.01' (Free Discharge)

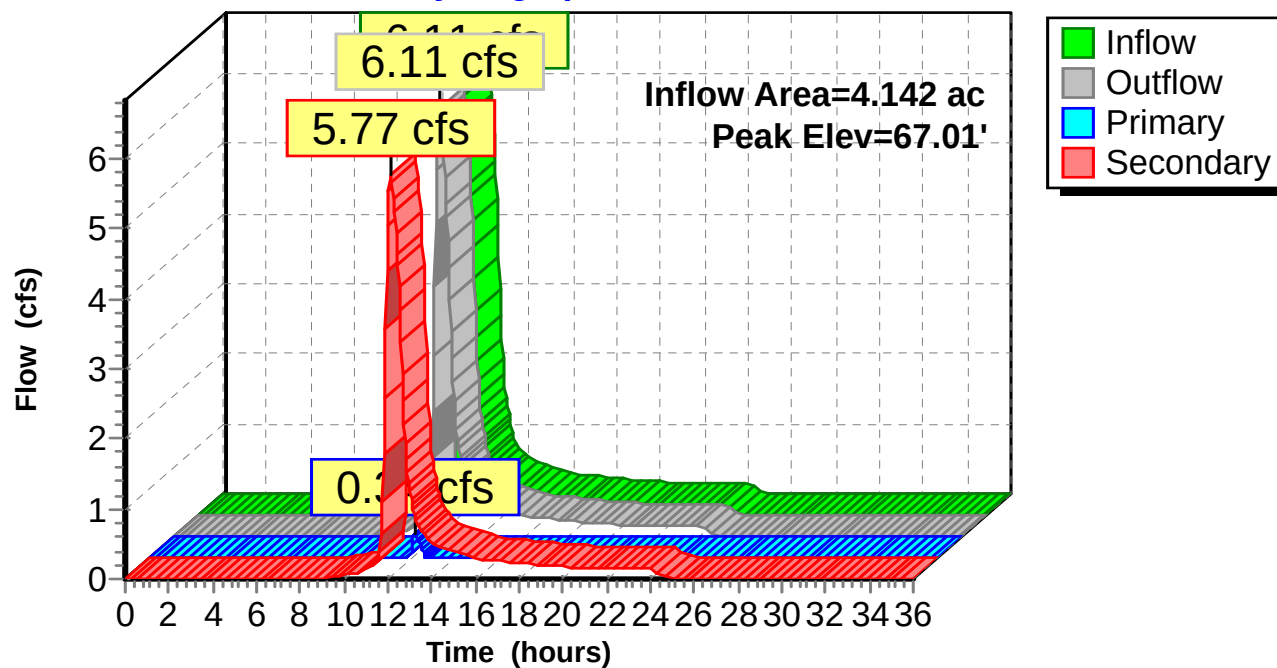
↑**1=Culvert** (Barrel Controls 0.33 cfs @ 1.65 fps)

Secondary OutFlow Max=5.74 cfs @ 12.12 hrs HW=67.01' (Free Discharge)

↑**2=Culvert** (Barrel Controls 5.74 cfs @ 3.75 fps)

Pond 8P: OCS-DMH7

Hydrograph



Summary for Pond 9P: UG Detention

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 0.02" for 2-yr event
 Inflow = 0.22 cfs @ 12.13 hrs, Volume= 0.008 af
 Outflow = 0.06 cfs @ 12.55 hrs, Volume= 0.008 af, Atten= 71%, Lag= 25.1 min
 Primary = 0.06 cfs @ 12.55 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 65.90' @ 12.55 hrs Surf.Area= 1,536 sf Storage= 286 cf

Plug-Flow detention time= 141.6 min calculated for 0.008 af (97% of inflow)
 Center-of-Mass det. time= 142.1 min (878.1 - 736.0)

Volume	Invert	Avail.Storage	Storage Description
#1	65.70'	2,488 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,619 cf Overall x 95.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.70	1,536	0	0
67.40	1,536	2,611	2,611
67.41	5	8	2,619

Device	Routing	Invert	Outlet Devices
#1	Primary	65.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Primary	67.00'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

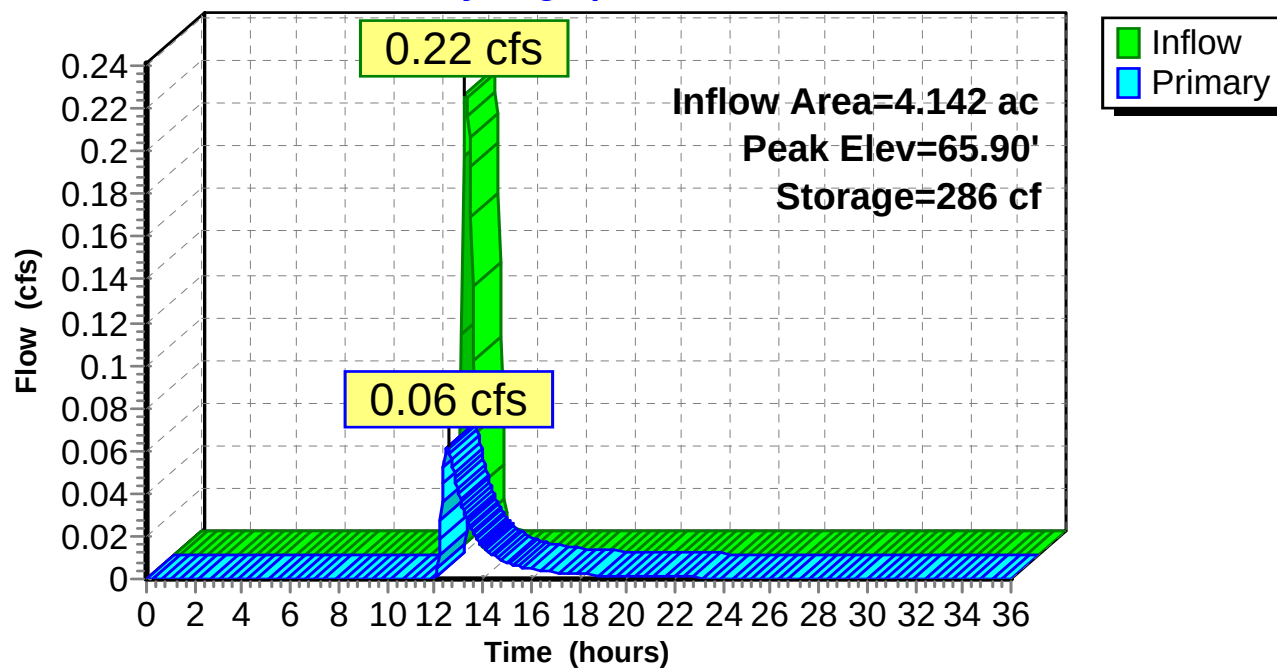
Primary OutFlow Max=0.06 cfs @ 12.55 hrs HW=65.90' (Free Discharge)

1=Culvert (Barrel Controls 0.06 cfs @ 1.67 fps)

2=Culvert (Controls 0.00 cfs)

Pond 9P: UG Detention

Hydrograph



Summary for Pond 10P: Isolator Row x5

[81] Warning: Exceeded Pond 8P by 0.90' @ 35.95 hrs

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 0.03" for 2-yr event
 Inflow = 0.34 cfs @ 12.12 hrs, Volume= 0.011 af
 Outflow = 0.34 cfs @ 12.13 hrs, Volume= 0.011 af, Atten= 1%, Lag= 0.2 min
 Primary = 0.22 cfs @ 12.13 hrs, Volume= 0.008 af
 Secondary = 0.12 cfs @ 12.13 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.19' @ 12.13 hrs Surf.Area= 0.002 ac Storage= 0.001 af

Plug-Flow detention time= 3.2 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 3.4 min (735.0 - 731.6)

Volume	Invert	Avail.Storage	Storage Description
#1	66.60'	0.002 af	ADS StormTech RC-310 x 5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 2.07 sf x 1 rows

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	4.0" Round Culvert L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.55' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Secondary	67.00'	12.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.55' S= 0.0090 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.22 cfs @ 12.13 hrs HW=67.19' (Free Discharge)

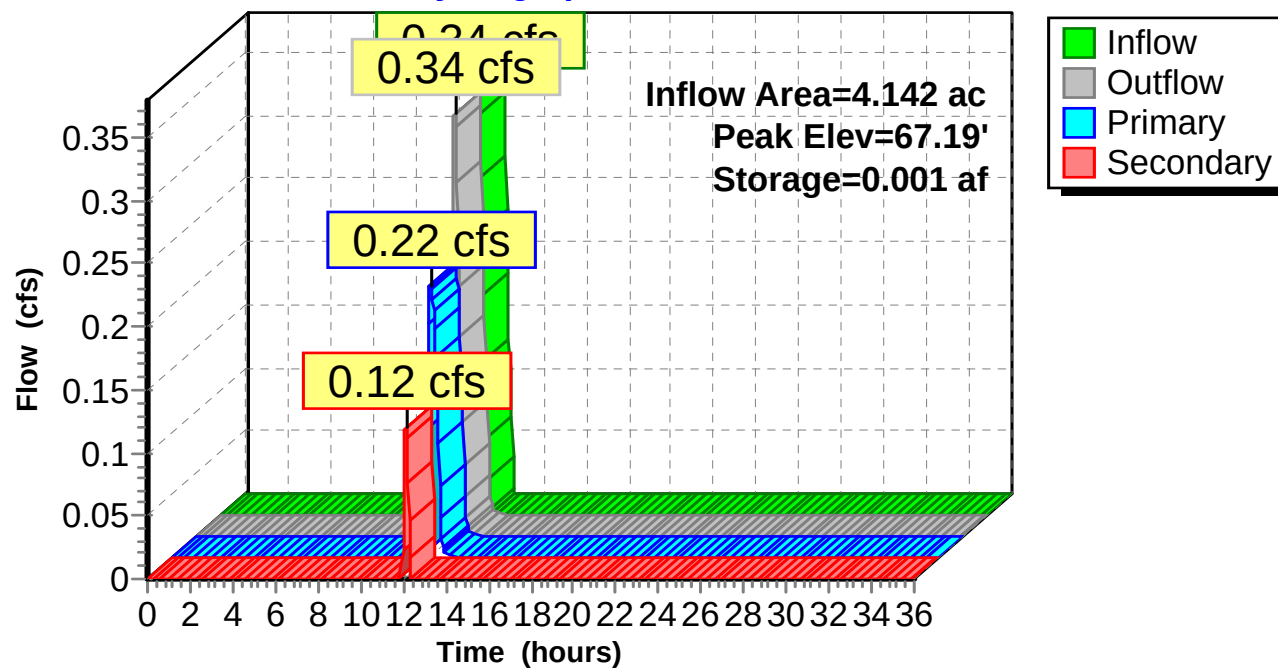
↑ **1=Culvert** (Inlet Controls 0.22 cfs @ 2.46 fps)

Secondary OutFlow Max=0.12 cfs @ 12.13 hrs HW=67.19' (Free Discharge)

↑ **2=Culvert** (Inlet Controls 0.12 cfs @ 1.16 fps)

Pond 10P: Isolator Row x5

Hydrograph



Pre-Development Cedars Model 17-10-11*Type II 24-hr 10-yr Rainfall=4.71"*

Prepared by Microsoft

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1 Runoff Area=87,665 sf 15.27% Impervious Runoff Depth=2.91"
 Flow Length=177' Slope=0.0100 '/' Tc=29.9 min CN=83 Runoff=5.08 cfs 0.489 af

Subcatchment2S: Subcatchment2 Runoff Area=90,682 sf 66.45% Impervious Runoff Depth=3.81"
 Flow Length=178' Slope=0.0075 '/' Tc=33.7 min CN=92 Runoff=6.18 cfs 0.660 af

Subcatchment3S: Subcatchment3 Runoff Area=40,444 sf 47.45% Impervious Runoff Depth=3.49"
 Flow Length=185' Slope=0.0200 '/' Tc=30.6 min CN=89 Runoff=2.73 cfs 0.270 af

Subcatchment4S: Subcatchment4 Runoff Area=26,132 sf 52.50% Impervious Runoff Depth=3.49"
 Tc=7.0 min CN=89 Runoff=3.36 cfs 0.175 af

Subcatchment5S: Subcatchment5 Runoff Area=114,414 sf 56.89% Impervious Runoff Depth=3.60"
 Tc=7.0 min CN=90 Runoff=15.01 cfs 0.787 af

Subcatchment6S: Subcatchment6 Runoff Area=39,891 sf 54.44% Impervious Runoff Depth=3.60"
 Tc=7.0 min CN=90 Runoff=5.23 cfs 0.275 af

Subcatchment7S: Subcatchment7 Runoff Area=46,652 sf 42.35% Impervious Runoff Depth=3.39"
 Tc=7.0 min CN=88 Runoff=5.87 cfs 0.303 af

Subcatchment8S: Subcatchment8 Runoff Area=14,355 sf 26.13% Impervious Runoff Depth=3.10"
 Tc=7.0 min CN=85 Runoff=1.68 cfs 0.085 af

Reach 1SP: Study Point 1 Inflow=4.87 cfs 1.704 af
 Outflow=4.87 cfs 1.704 af

Reach 2SP: Study Point 2 Inflow=1.03 cfs 0.064 af
 Outflow=1.03 cfs 0.064 af

Reach 3SP: Study Point 3 Inflow=1.68 cfs 0.085 af
 Outflow=1.68 cfs 0.085 af

Reach 4SP: Study Point 4 Inflow=2.73 cfs 0.270 af
 Outflow=2.73 cfs 0.270 af

Pond 1P: Wetland A Peak Elev=66.02' Storage=68,176 cf Inflow=18.10 cfs 2.425 af
 Primary=1.03 cfs 0.064 af Secondary=4.87 cfs 1.704 af Outflow=5.90 cfs 1.768 af

Pond 2P: Wetland B Peak Elev=69.25' Storage=10,461 cf Inflow=6.18 cfs 0.660 af
 Outflow=5.34 cfs 0.465 af

Pond 3P: Surface Detention Peak Elev=72.56' Storage=14,137 cf Inflow=22.59 cfs 1.178 af
 Primary=7.86 cfs 1.169 af Secondary=1.19 cfs 0.008 af Outflow=9.05 cfs 1.176 af

Pond 4P: Surface Detention Peak Elev=70.46' Storage=4,860 cf Inflow=5.87 cfs 0.303 af
 Primary=0.41 cfs 0.212 af Secondary=0.00 cfs 0.000 af Tertiary=2.45 cfs 0.083 af Outflow=2.86 cfs 0.295 af

Pre-Development Cedars Model 17-10-11*Type II 24-hr 10-yr Rainfall=4.71"*

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Pond 5P: OCS-4P

Peak Elev=68.90' Inflow=2.86 cfs 0.295 af
12.0" Round Culvert n=0.013 L=81.0' S=0.0077 ' /' Outflow=2.86 cfs 0.295 af

Pond 6P: Atrium Surface Detention

Peak Elev=74.02' Storage=4,114 cf Inflow=15.01 cfs 0.787 af
Outflow=14.54 cfs 0.730 af

Pond 7P: Riprap Surface Detention

Peak Elev=73.30' Storage=479 cf Inflow=3.36 cfs 0.175 af
12.0" Round Culvert n=0.013 L=375.0' S=0.0070 ' /' Outflow=2.95 cfs 0.173 af

Pond 8P: OCS-DMH7

Peak Elev=67.19' Inflow=7.86 cfs 1.169 af
Primary=0.69 cfs 0.037 af Secondary=7.16 cfs 1.132 af Outflow=7.86 cfs 1.169 af

Pond 9P: UG Detention

Peak Elev=66.04' Storage=502 cf Inflow=0.26 cfs 0.019 af
Outflow=0.14 cfs 0.019 af

Pond 10P: Isolator Row x5

Peak Elev=67.37' Storage=0.001 af Inflow=0.69 cfs 0.037 af
Primary=0.26 cfs 0.019 af Secondary=0.44 cfs 0.018 af Outflow=0.69 cfs 0.037 af

Total Runoff Area = 10.566 ac Runoff Volume = 3.044 af Average Runoff Depth = 3.46"
52.88% Pervious = 5.587 ac 47.12% Impervious = 4.979 ac

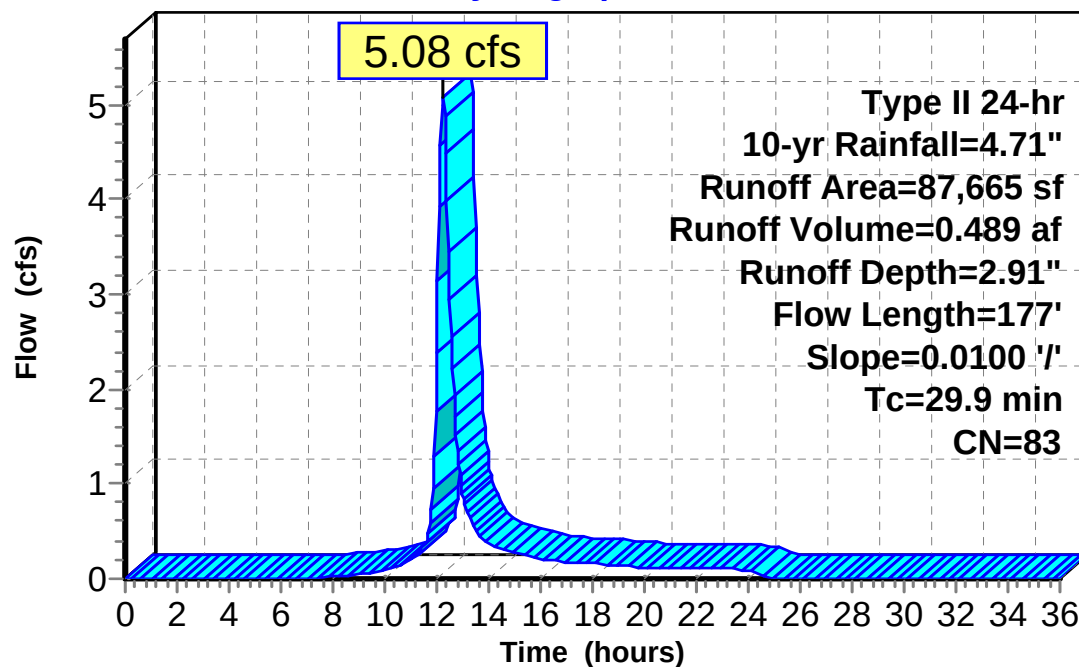
Summary for Subcatchment 1S: Subcatchment 1

Runoff = 5.08 cfs @ 12.24 hrs, Volume= 0.489 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	13,390	98	
	74,275	80	>75% Grass cover, Good, HSG D
	87,665	83	Weighted Average
	74,275		84.73% Pervious Area
	13,390		15.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	177	0.0100	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 1S: Subcatchment 1**Hydrograph**

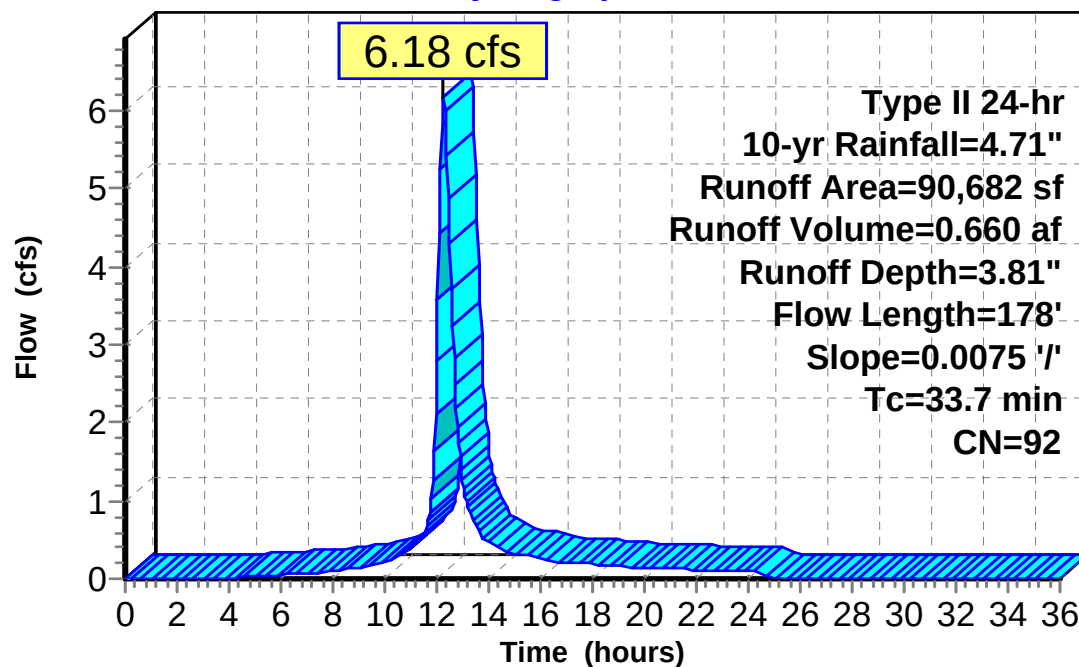
Summary for Subcatchment 2S: Subcatchment 2

Runoff = 6.18 cfs @ 12.27 hrs, Volume= 0.660 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	60,255	98	
	30,427	80	>75% Grass cover, Good, HSG D
	90,682	92	Weighted Average
	30,427		33.55% Pervious Area
	60,255		66.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.7	178	0.0075	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 2S: Subcatchment 2**Hydrograph**

Runoff

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Type II 24-hr 10-yr Rainfall=4.71"

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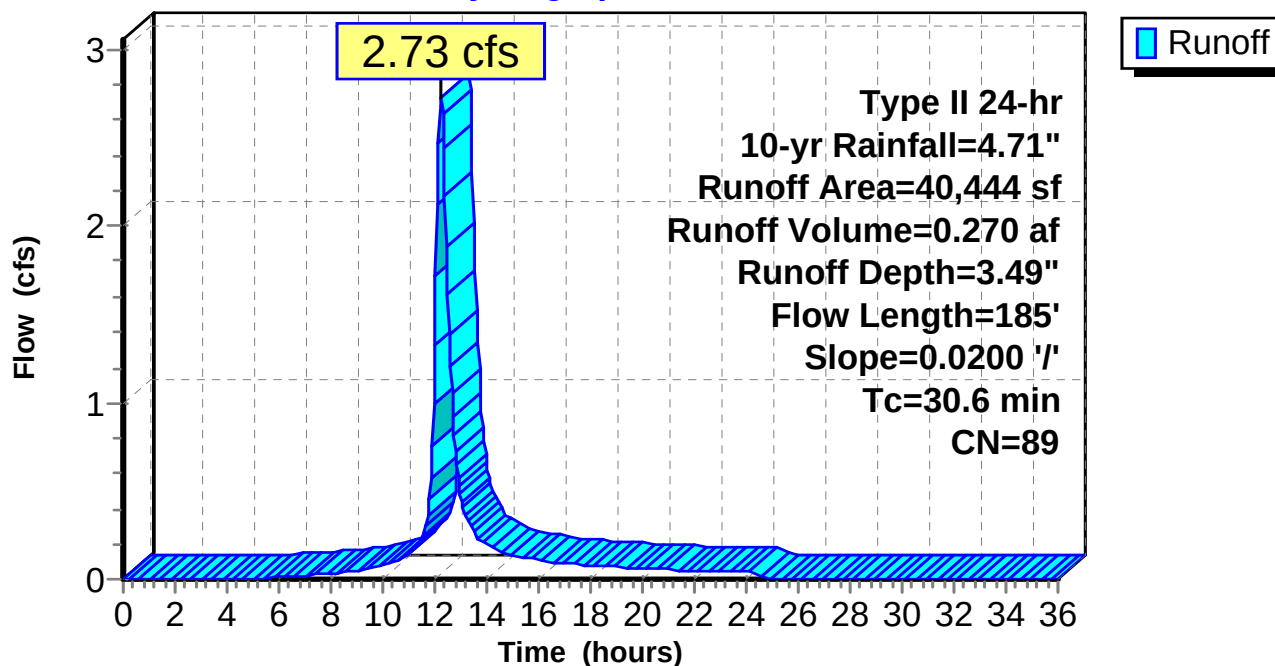
Summary for Subcatchment 3S: Subcatchment 3

Runoff = 2.73 cfs @ 12.24 hrs, Volume= 0.270 af, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

Area (sf)	CN	Description
21,255	80	>75% Grass cover, Good, HSG D
* 19,189	98	
40,444	89	Weighted Average
21,255		52.55% Pervious Area
19,189		47.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	150	0.0200	0.08		Sheet Flow, Sheet
					Woods: Light underbrush n= 0.400 P2= 3.17"
0.8	35	0.0200	0.71		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
30.6	185	Total			

Subcatchment 3S: Subcatchment 3**Hydrograph**

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Type II 24-hr 10-yr Rainfall=4.71"

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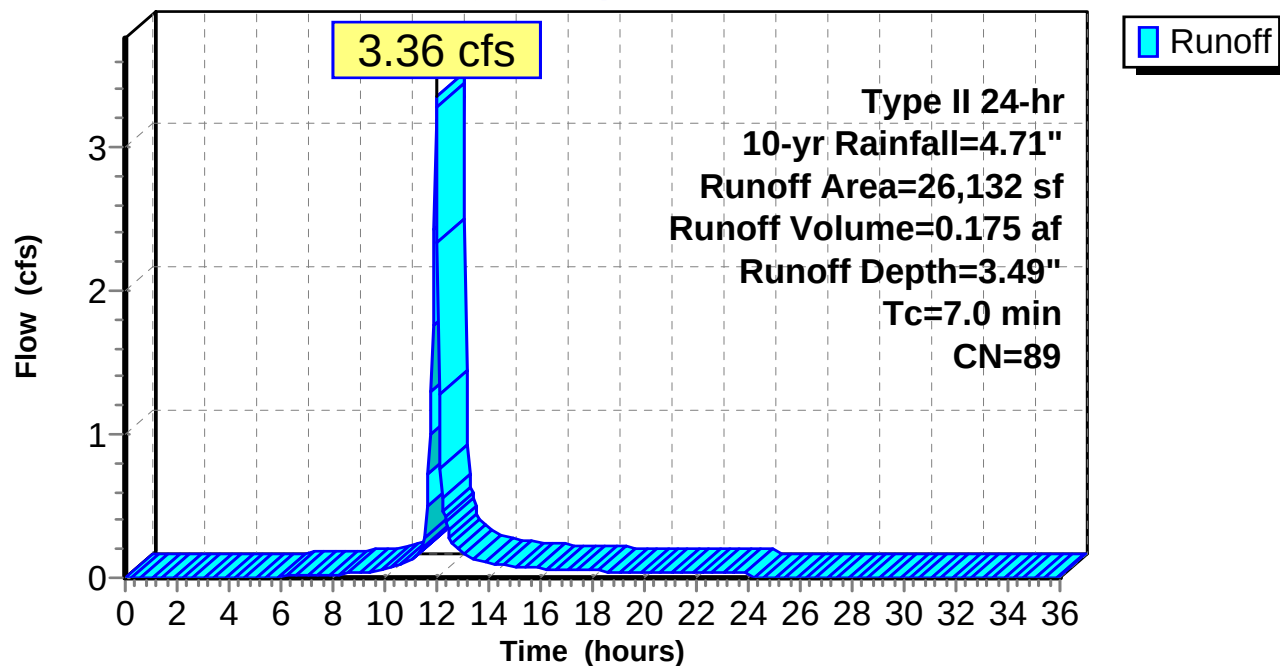
Summary for Subcatchment 4S: Subcatchment 4

Runoff = 3.36 cfs @ 11.98 hrs, Volume= 0.175 af, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	13,720	98	
	12,412	80	>75% Grass cover, Good, HSG D
	26,132	89	Weighted Average
	12,412		47.50% Pervious Area
	13,720		52.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 4S: Subcatchment 4**Hydrograph**

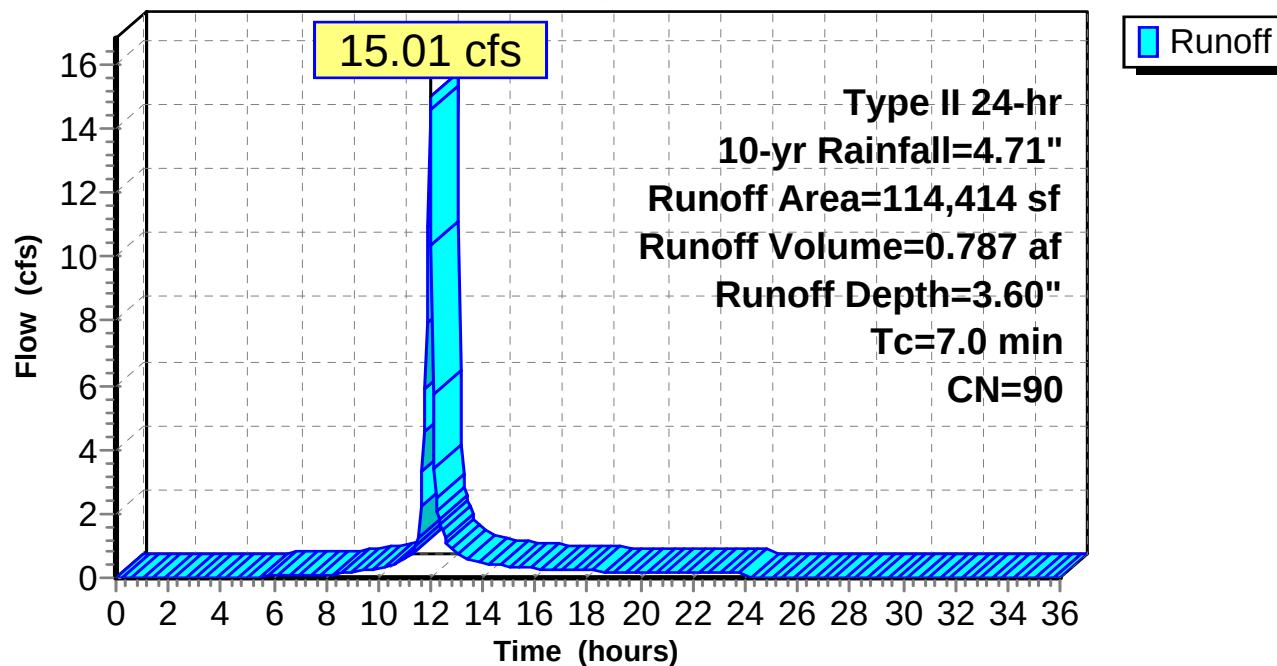
Summary for Subcatchment 5S: Subcatchment 5

Runoff = 15.01 cfs @ 11.98 hrs, Volume= 0.787 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	65,087	98	
	49,327	80	>75% Grass cover, Good, HSG D
	114,414	90	Weighted Average
	49,327		43.11% Pervious Area
	65,087		56.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 5S: Subcatchment 5**Hydrograph**

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Type II 24-hr 10-yr Rainfall=4.71"

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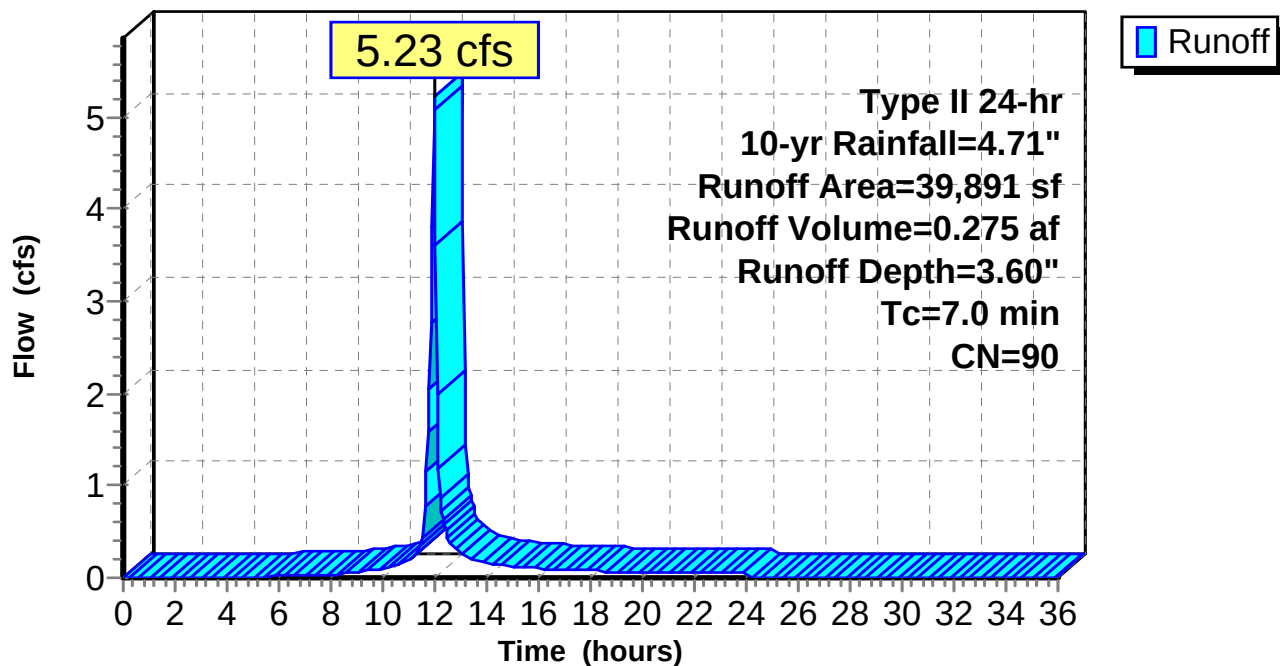
Summary for Subcatchment 6S: Subcatchment 6

Runoff = 5.23 cfs @ 11.98 hrs, Volume= 0.275 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	21,718	98	
	18,173	80	>75% Grass cover, Good, HSG D
	39,891	90	Weighted Average
	18,173		45.56% Pervious Area
	21,718		54.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 6S: Subcatchment 6**Hydrograph**

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Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Subcatchment 7S: Subcatchment 7

Runoff = 5.87 cfs @ 11.98 hrs, Volume= 0.303 af, Depth= 3.39"

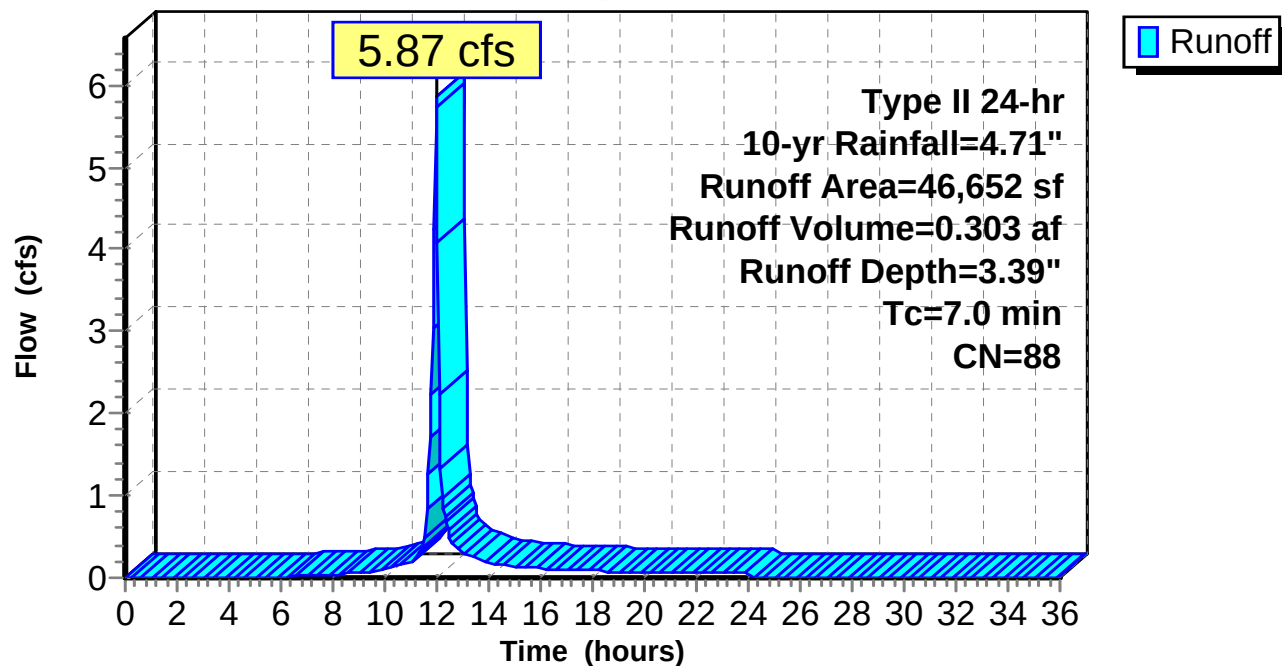
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	19,759	98	
	26,893	80	>75% Grass cover, Good, HSG D
	46,652	88	Weighted Average
	26,893		57.65% Pervious Area
	19,759		42.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 7S: Subcatchment 7

Hydrograph



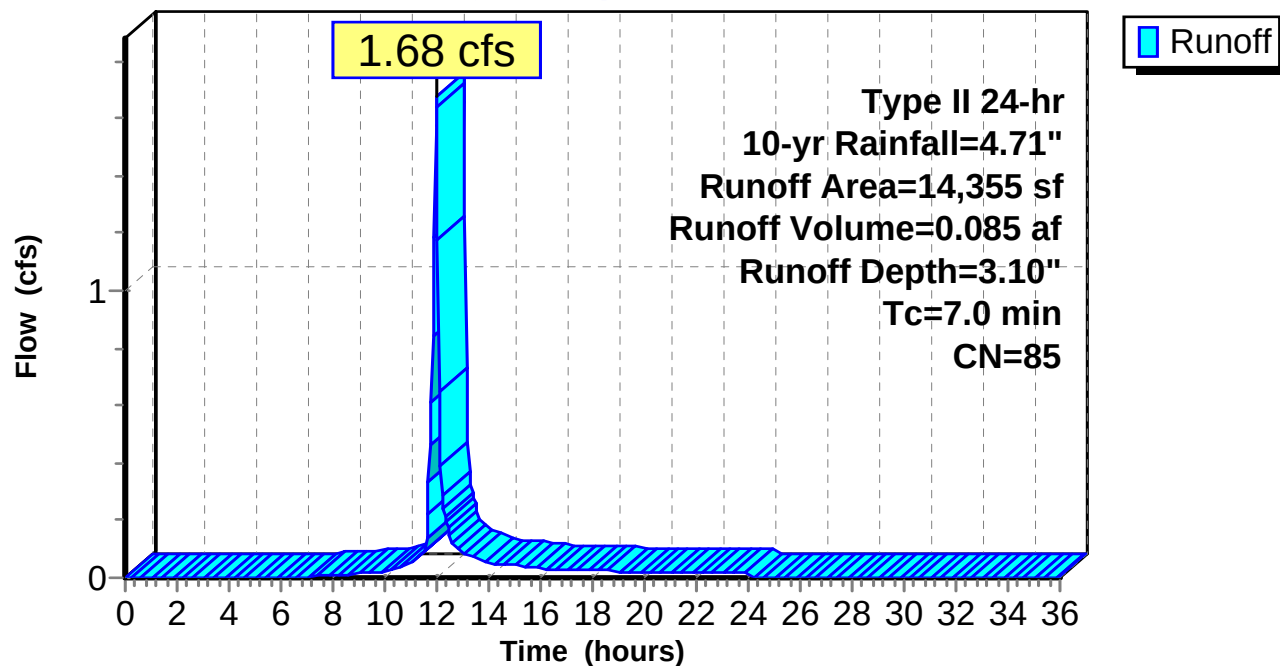
Summary for Subcatchment 8S: Subcatchment 8

Runoff = 1.68 cfs @ 11.98 hrs, Volume= 0.085 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

Area (sf)	CN	Description
10,604	80	>75% Grass cover, Good, HSG D
* 3,751	98	
14,355	85	Weighted Average
10,604		73.87% Pervious Area
3,751		26.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

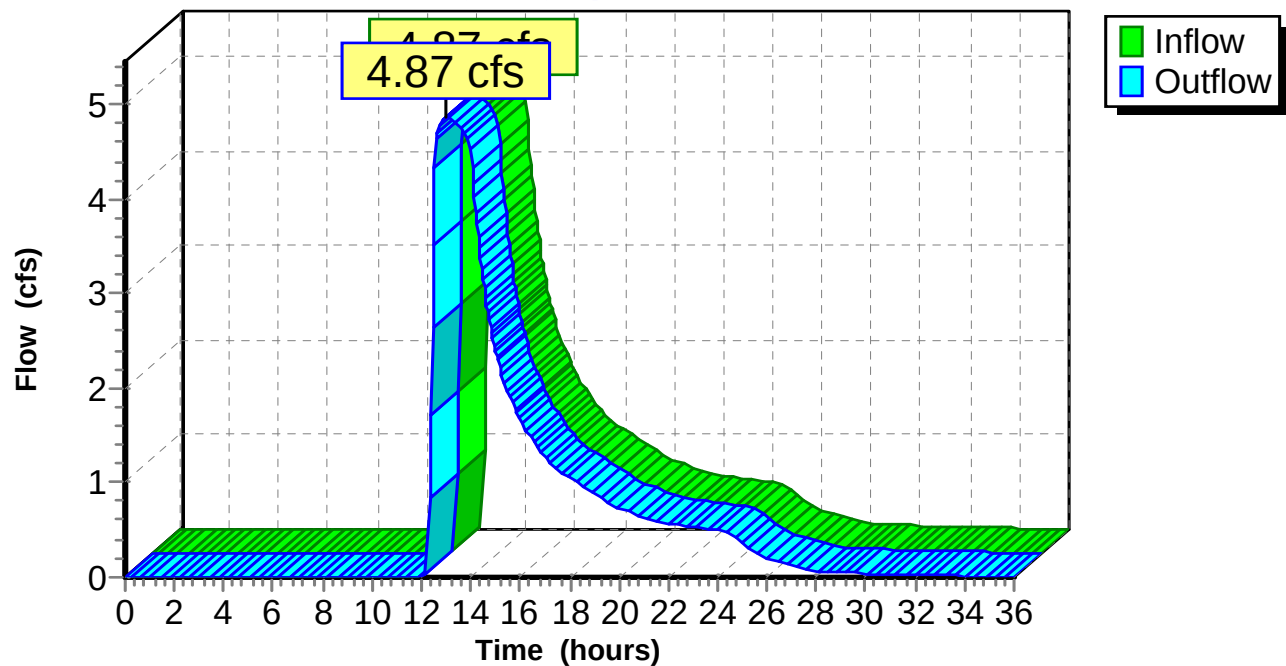
Subcatchment 8S: Subcatchment 8**Hydrograph**

Summary for Reach 1SP: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow	=	4.87 cfs @ 13.05 hrs,	Volume=	1.704 af
Outflow	=	4.87 cfs @ 13.05 hrs,	Volume=	1.704 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 1SP: Study Point 1**Hydrograph**

Summary for Reach 2SP: Study Point 2

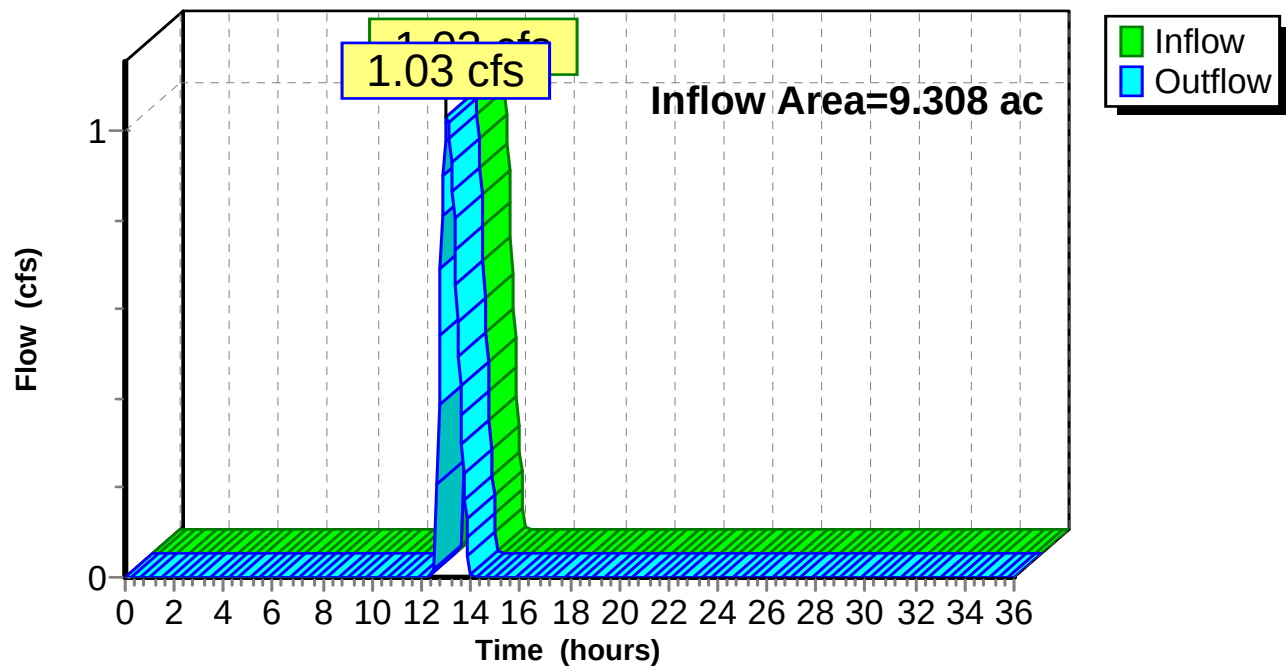
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.308 ac, 47.83% Impervious, Inflow Depth = 0.08" for 10-yr event
Inflow = 1.03 cfs @ 13.05 hrs, Volume= 0.064 af
Outflow = 1.03 cfs @ 13.05 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 2SP: Study Point 2

Hydrograph



Summary for Reach 3SP: Study Point 3

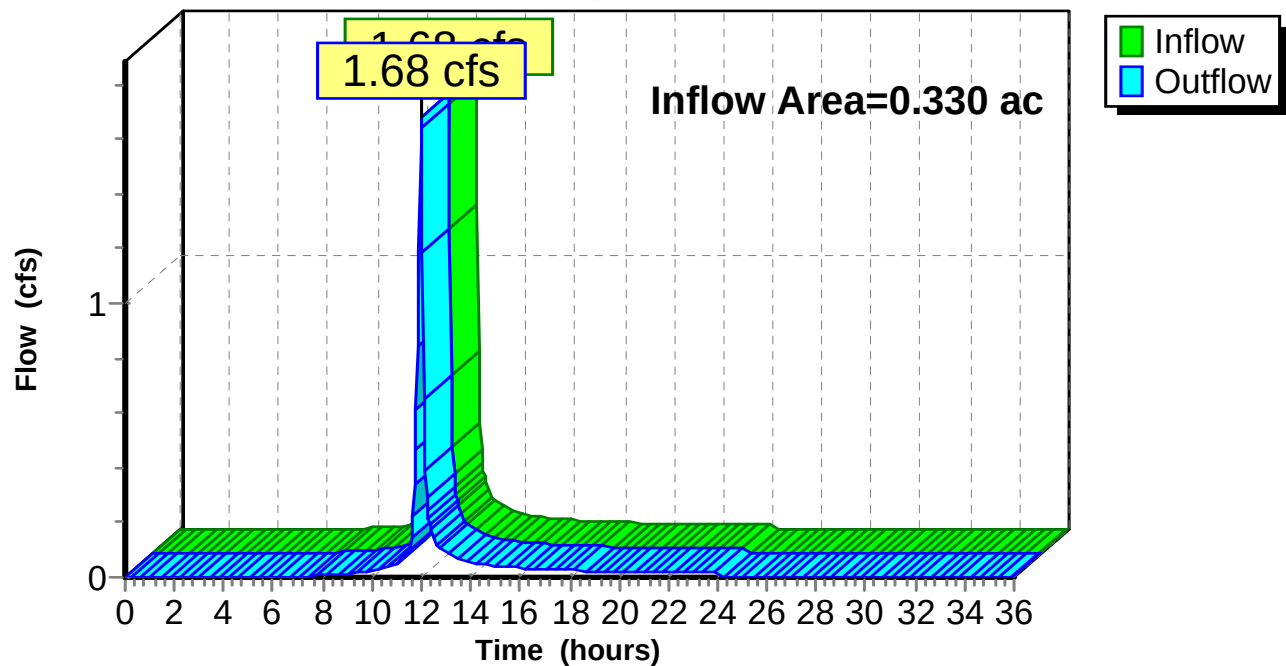
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.330 ac, 26.13% Impervious, Inflow Depth = 3.10" for 10-yr event
Inflow = 1.68 cfs @ 11.98 hrs, Volume= 0.085 af
Outflow = 1.68 cfs @ 11.98 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 3SP: Study Point 3

Hydrograph



Summary for Reach 4SP: Study Point 4

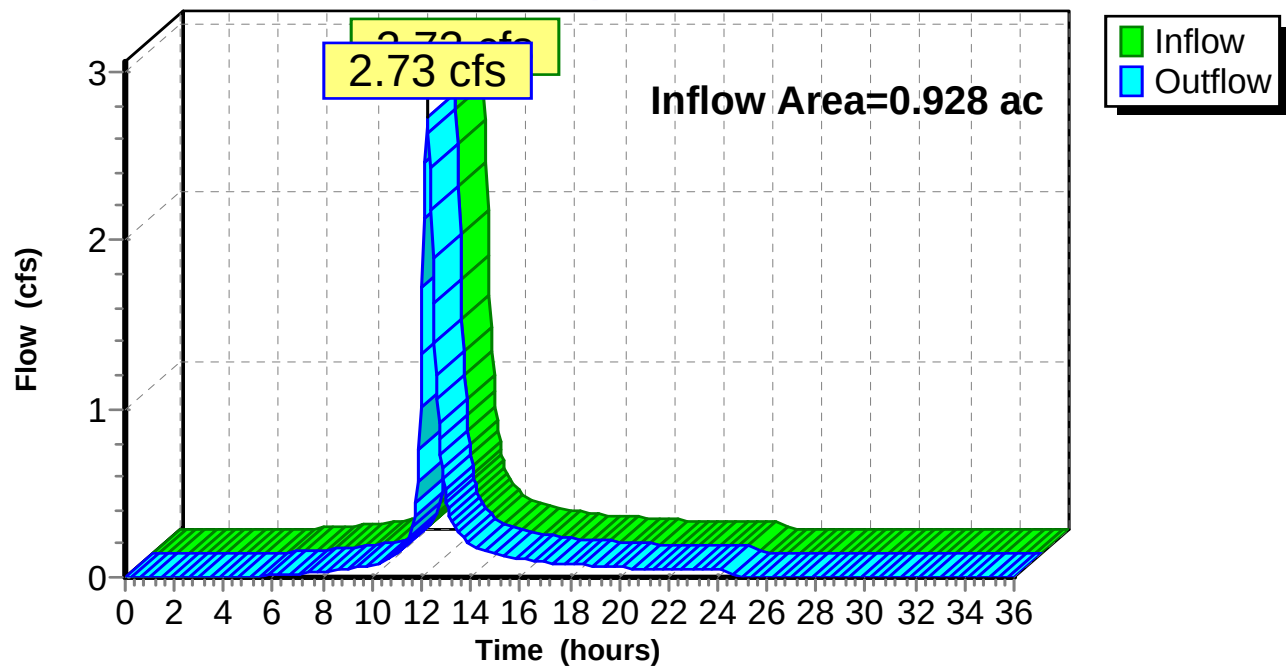
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.928 ac, 47.45% Impervious, Inflow Depth = 3.49" for 10-yr event
Inflow = 2.73 cfs @ 12.24 hrs, Volume= 0.270 af
Outflow = 2.73 cfs @ 12.24 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 4SP: Study Point 4

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 1P: Wetland A

[79] Warning: Submerged Pond 8P Secondary device # 2 INLET by 0.32'

[81] Warning: Exceeded Pond 9P by 0.04' @ 13.25 hrs

Inflow Area = 9.308 ac, 47.83% Impervious, Inflow Depth = 3.13" for 10-yr event
 Inflow = 18.10 cfs @ 12.33 hrs, Volume= 2.425 af
 Outflow = 5.90 cfs @ 13.05 hrs, Volume= 1.768 af, Atten= 67%, Lag= 42.9 min
 Primary = 1.03 cfs @ 13.05 hrs, Volume= 0.064 af
 Secondary = 4.87 cfs @ 13.05 hrs, Volume= 1.704 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Starting Elev= 63.50' Surf.Area= 14,739 sf Storage= 17,429 cf

Peak Elev= 66.02' @ 13.05 hrs Surf.Area= 25,898 sf Storage= 68,176 cf (50,748 cf above start)

Plug-Flow detention time= 302.4 min calculated for 1.368 af (56% of inflow)

Center-of-Mass det. time= 127.8 min (973.2 - 845.4)

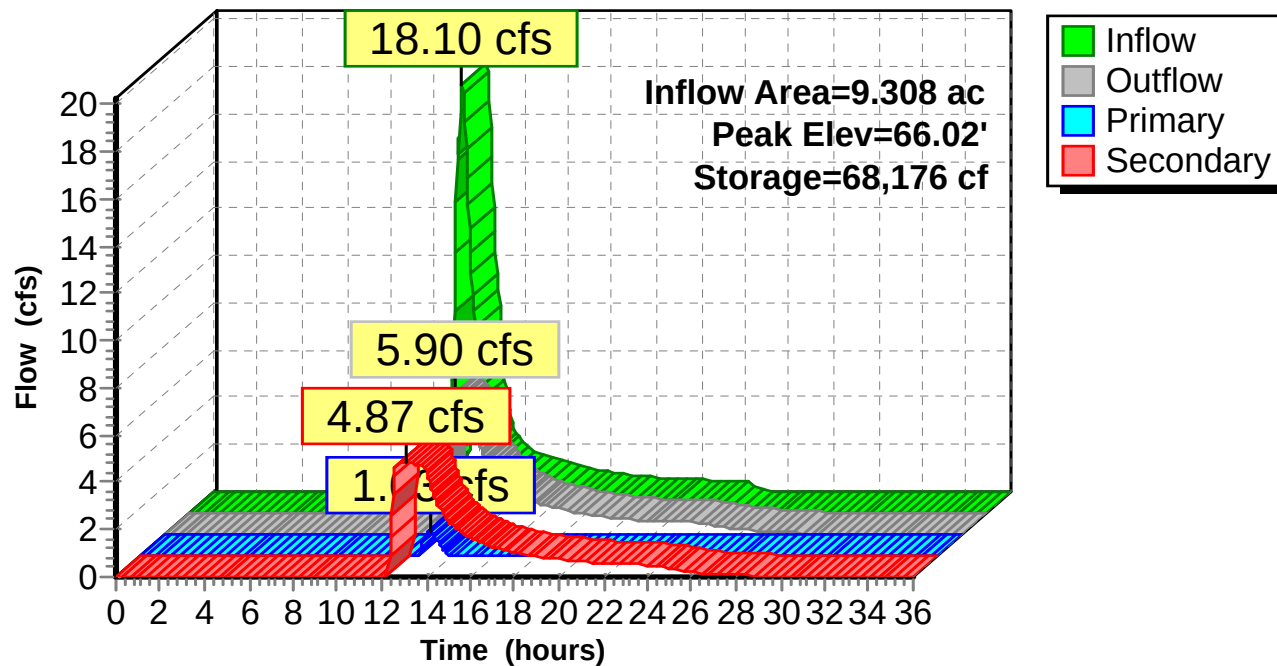
Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	209,276 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	8,500	0	0
65.00	20,977	44,216	44,216
70.00	45,047	165,060	209,276

Device	Routing	Invert	Outlet Devices
#1	Primary	65.75'	3.0' 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
#2	Secondary	62.86'	12.0" Round Culvert L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 62.86' / 58.69' S= 0.0869 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	65.08'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=1.02 cfs @ 13.05 hrs HW=66.02' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.02 cfs @ 1.25 fps)**Secondary OutFlow** Max=4.87 cfs @ 13.05 hrs HW=66.02' (Free Discharge)↑ **2=Culvert** (Inlet Controls 4.87 cfs @ 6.20 fps)↑ **3=Sharp-Crested Rectangular Weir** (Passes 4.87 cfs of 7.71 cfs potential flow)

Pond 1P: Wetland A

Hydrograph



Summary for Pond 2P: Wetland B

Inflow Area = 2.082 ac, 66.45% Impervious, Inflow Depth = 3.81" for 10-yr event
 Inflow = 6.18 cfs @ 12.27 hrs, Volume= 0.660 af
 Outflow = 5.34 cfs @ 12.41 hrs, Volume= 0.465 af, Atten= 14%, Lag= 8.5 min
 Primary = 5.34 cfs @ 12.41 hrs, Volume= 0.465 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.25' @ 12.41 hrs Surf.Area= 9,670 sf Storage= 10,461 cf

Plug-Flow detention time= 168.7 min calculated for 0.465 af (70% of inflow)
 Center-of-Mass det. time= 73.4 min (880.4 - 807.0)

Volume	Invert	Avail.Storage	Storage Description
#1	67.00'	21,636 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

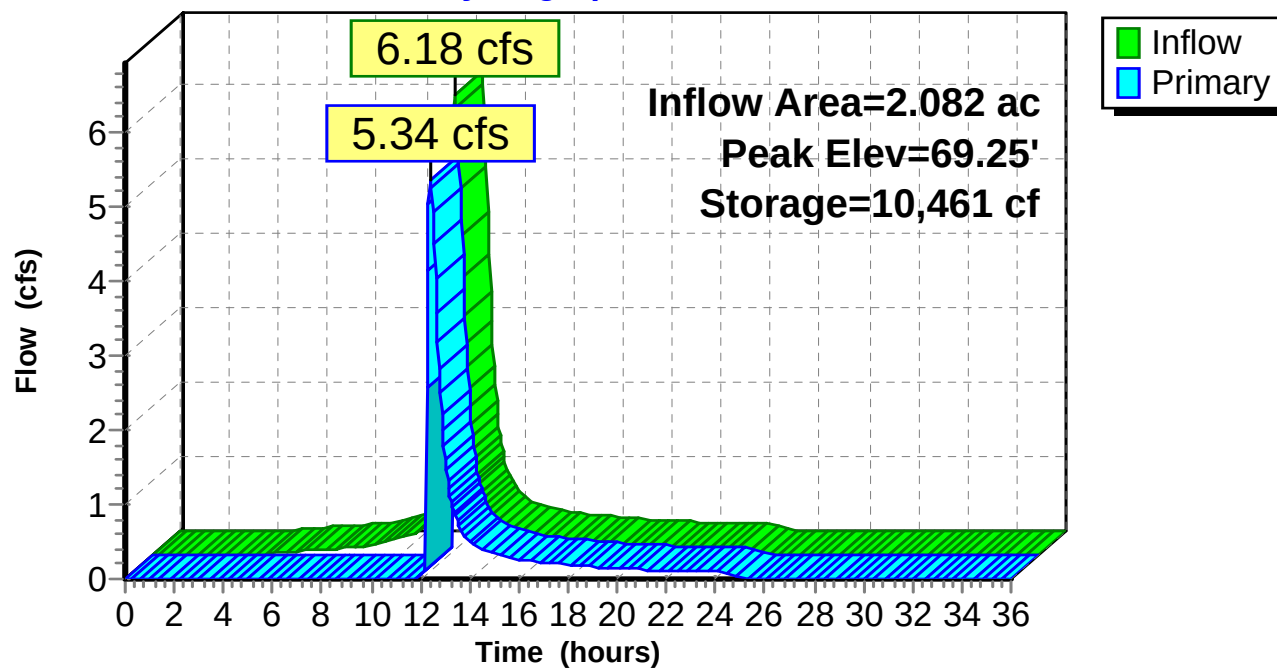
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.00	2,200	0	0
68.00	4,250	3,225	3,225
69.00	6,286	5,268	8,493
70.00	20,000	13,143	21,636

Device	Routing	Invert	Outlet Devices
#1	Primary	69.00'	18.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=5.29 cfs @ 12.41 hrs HW=69.25' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 5.29 cfs @ 1.20 fps)

Pond 2P: Wetland B

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 3P: Surface Detention

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 1.56'

[81] Warning: Exceeded Pond 7P by 0.20' @ 12.20 hrs

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 3.41" for 10-yr event
 Inflow = 22.59 cfs @ 11.99 hrs, Volume= 1.178 af
 Outflow = 9.05 cfs @ 12.14 hrs, Volume= 1.176 af, Atten= 60%, Lag= 8.7 min
 Primary = 7.86 cfs @ 12.14 hrs, Volume= 1.169 af
 Secondary = 1.19 cfs @ 12.14 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.56' @ 12.14 hrs Surf.Area= 7,163 sf Storage= 14,137 cf

Plug-Flow detention time= 20.1 min calculated for 1.175 af (100% of inflow)
 Center-of-Mass det. time= 19.7 min (827.6 - 808.0)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	21,926 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

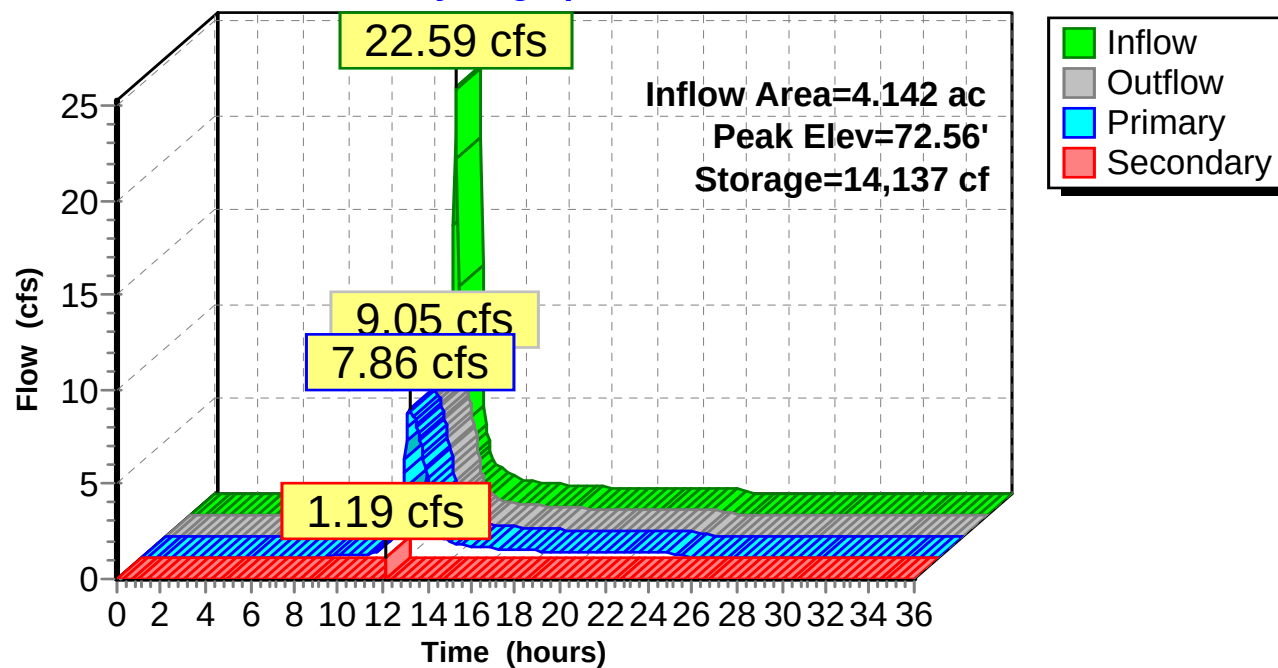
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	400	0	0
70.00	2,991	1,696	1,696
72.00	5,812	8,803	10,499
73.50	9,425	11,428	21,926

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	15.0" Round Culvert L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.10' / 68.75' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	72.50'	35.0' 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=7.84 cfs @ 12.14 hrs HW=72.55' (Free Discharge)↑**1=Culvert** (Inlet Controls 7.84 cfs @ 6.39 fps)**Secondary OutFlow** Max=1.02 cfs @ 12.14 hrs HW=72.55' (Free Discharge)↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.02 cfs @ 0.54 fps)

Pond 3P: Surface Detention

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 4P: Surface Detention

Inflow Area = 1.071 ac, 42.35% Impervious, Inflow Depth = 3.39" for 10-yr event
 Inflow = 5.87 cfs @ 11.98 hrs, Volume= 0.303 af
 Outflow = 2.86 cfs @ 12.09 hrs, Volume= 0.295 af, Atten= 51%, Lag= 6.6 min
 Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.212 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 2.45 cfs @ 12.09 hrs, Volume= 0.083 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 70.46' @ 12.09 hrs Surf.Area= 2,957 sf Storage= 4,860 cf

Plug-Flow detention time= 90.8 min calculated for 0.295 af (97% of inflow)
 Center-of-Mass det. time= 73.8 min (871.7 - 797.9)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	10,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.00	13	0	0
67.00	71	126	126
68.00	928	500	626
69.00	1,378	1,153	1,779
70.00	2,348	1,863	3,642
72.00	5,000	7,348	10,990

Device	Routing	Invert	Outlet Devices
#1	Primary	67.66'	3.5" Round Culvert L= 5.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.66' / 67.65' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 0.07 sf
#2	Tertiary	69.66'	1.2' 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	Secondary	70.50'	45.0' long x 15.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.41 cfs @ 12.09 hrs HW=70.45' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.41 cfs @ 6.18 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=64.00' (Free Discharge)

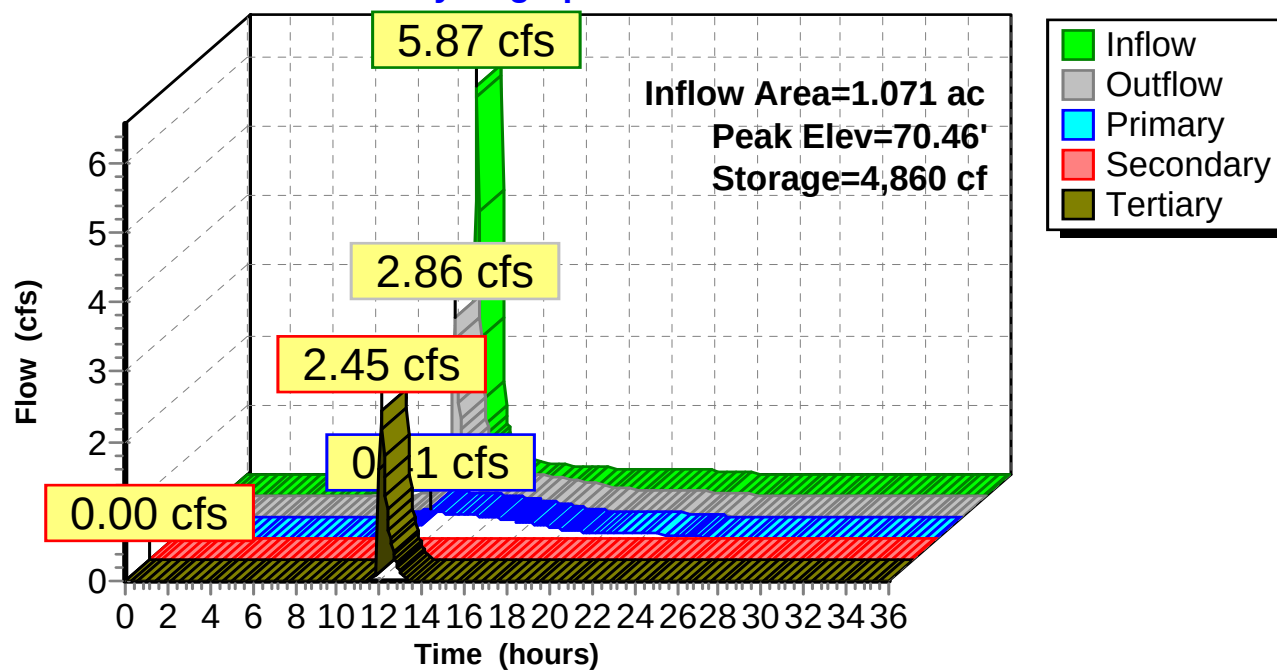
↑**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=2.41 cfs @ 12.09 hrs HW=70.45' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 2.41 cfs @ 2.53 fps)

Pond 4P: Surface Detention

Hydrograph



Summary for Pond 5P: OCS-4P

[57] Hint: Peaked at 68.90' (Flood elevation advised)

[79] Warning: Submerged Pond 4P Primary device # 1 INLET by 1.23'

Inflow Area = 1.071 ac, 42.35% Impervious, Inflow Depth = 3.30" for 10-yr event
 Inflow = 2.86 cfs @ 12.09 hrs, Volume= 0.295 af
 Outflow = 2.86 cfs @ 12.09 hrs, Volume= 0.295 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.86 cfs @ 12.09 hrs, Volume= 0.295 af

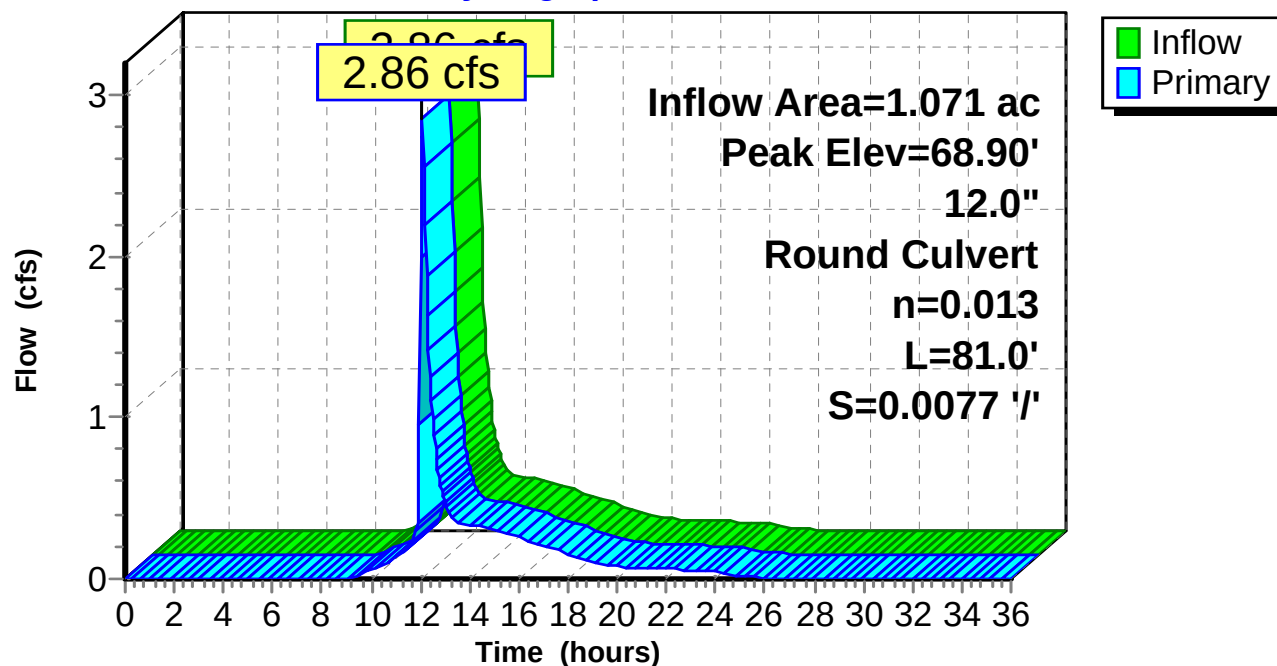
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Peak Elev= 68.90' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.48'	12.0" Round Culvert L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.48' / 66.86' S= 0.0077 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.83 cfs @ 12.09 hrs HW=68.88' (Free Discharge)

↑1=Culvert (Inlet Controls 2.83 cfs @ 3.60 fps)

Pond 5P: OCS-4P**Hydrograph**

Summary for Pond 6P: Atrium Surface Detention

Inflow Area = 2.627 ac, 56.89% Impervious, Inflow Depth = 3.60" for 10-yr event
 Inflow = 15.01 cfs @ 11.98 hrs, Volume= 0.787 af
 Outflow = 14.54 cfs @ 12.00 hrs, Volume= 0.730 af, Atten= 3%, Lag= 1.1 min
 Primary = 14.54 cfs @ 12.00 hrs, Volume= 0.730 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 74.02' @ 12.00 hrs Surf.Area= 3,665 sf Storage= 4,114 cf

Plug-Flow detention time= 64.5 min calculated for 0.729 af (93% of inflow)
 Center-of-Mass det. time= 25.3 min (815.8 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	5,026 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
70.00	55	0	0
72.00	327	382	382
73.00	1,694	1,011	1,393
74.25	4,120	3,634	5,026

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	0.1" Round Culvert L= 220.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.00' / 69.20' S= 0.0082 ' / Cc= 0.900 n= 0.013, Flow Area= 0.00 sf
#2	Primary	73.50'	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

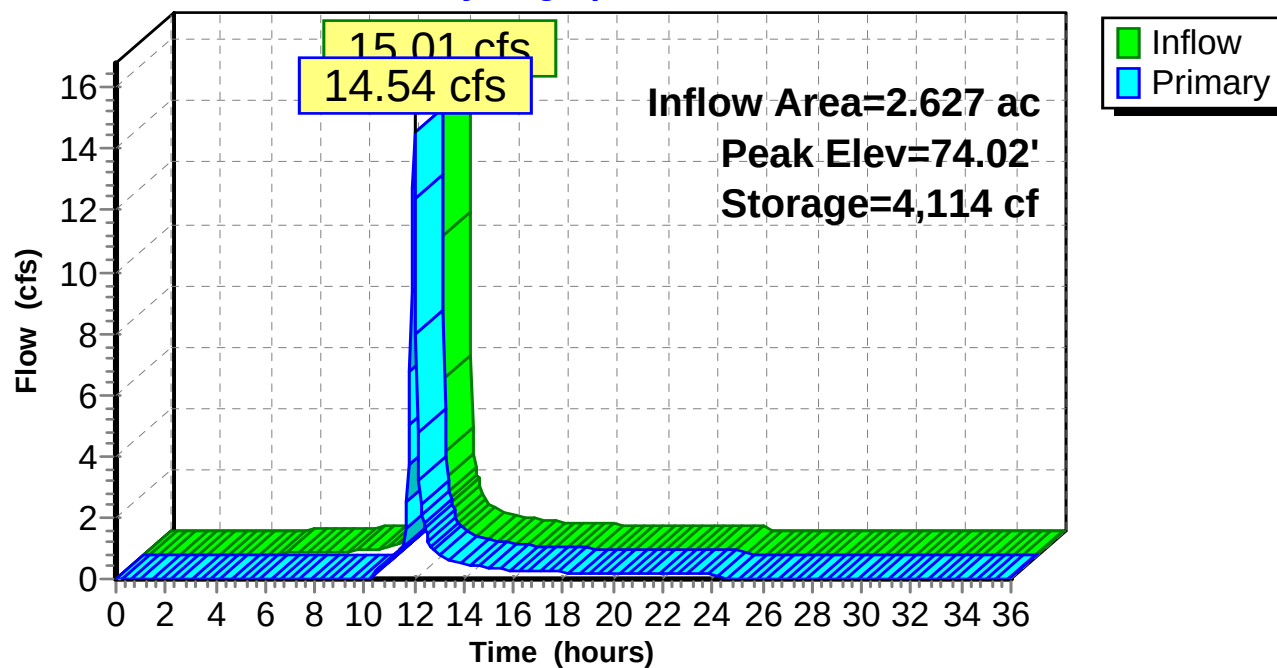
Primary OutFlow Max=14.44 cfs @ 12.00 hrs HW=74.01' (Free Discharge)

1=Culvert (Barrel Controls 0.00 cfs @ 0.28 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 14.44 cfs @ 1.87 fps)

Pond 6P: Atrium Surface Detention

Hydrograph



Summary for Pond 7P: Riprap Surface Detention

Inflow Area = 0.600 ac, 52.50% Impervious, Inflow Depth = 3.49" for 10-yr event
 Inflow = 3.36 cfs @ 11.98 hrs, Volume= 0.175 af
 Outflow = 2.95 cfs @ 12.02 hrs, Volume= 0.173 af, Atten= 12%, Lag= 2.3 min
 Primary = 2.95 cfs @ 12.02 hrs, Volume= 0.173 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 73.30' @ 12.02 hrs Surf.Area= 472 sf Storage= 479 cf

Plug-Flow detention time= 15.5 min calculated for 0.172 af (99% of inflow)
 Center-of-Mass det. time= 8.5 min (802.8 - 794.3)

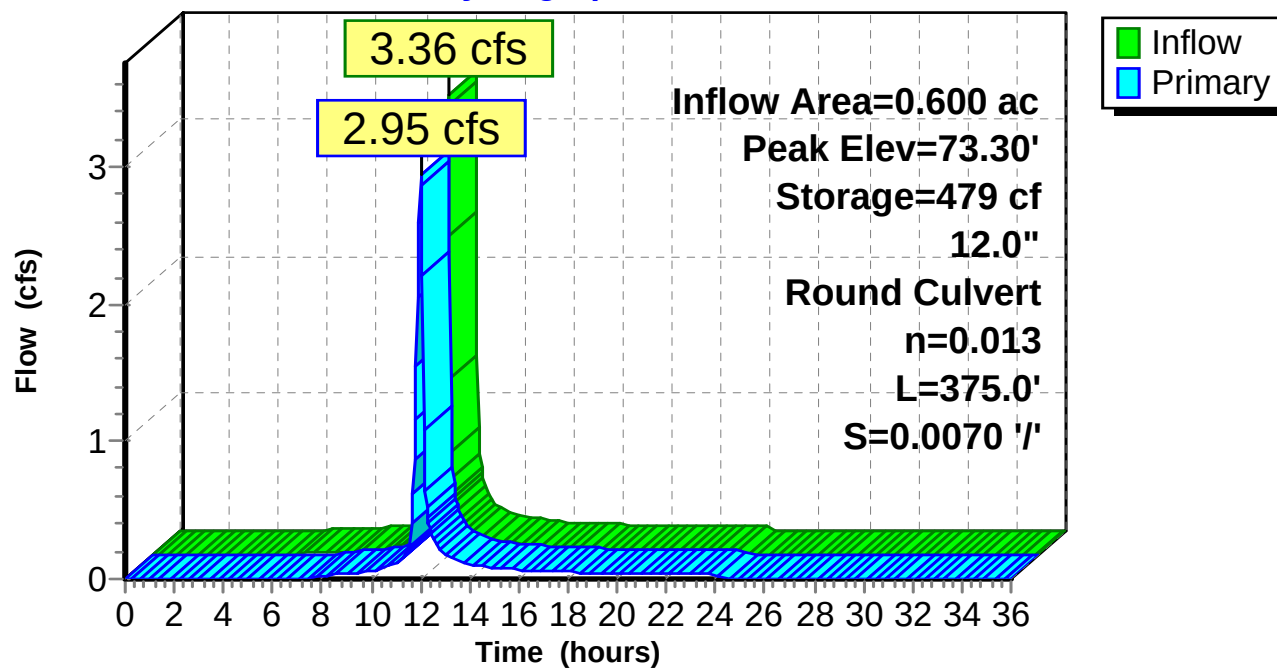
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	2,180 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	50	0	0
73.00	310	360	360
74.00	846	578	938
75.00	1,637	1,242	2,180

Device	Routing	Invert	Outlet Devices
#1	Primary	71.83'	12.0" Round Culvert L= 375.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.83' / 69.20' S= 0.0070 ' / ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.90 cfs @ 12.02 hrs HW=73.28' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 2.90 cfs @ 3.70 fps)

Pond 7P: Riprap Surface Detention

Hydrograph



Summary for Pond 8P: OCS-DMH7

[57] Hint: Peaked at 67.19' (Flood elevation advised)

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 3.39" for 10-yr event
 Inflow = 7.86 cfs @ 12.14 hrs, Volume= 1.169 af
 Outflow = 7.86 cfs @ 12.14 hrs, Volume= 1.169 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.69 cfs @ 12.14 hrs, Volume= 0.037 af
 Secondary = 7.16 cfs @ 12.14 hrs, Volume= 1.132 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Peak Elev= 67.19' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	12.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.60' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	65.70'	24.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.69 cfs @ 12.14 hrs HW=67.19' (Free Discharge)

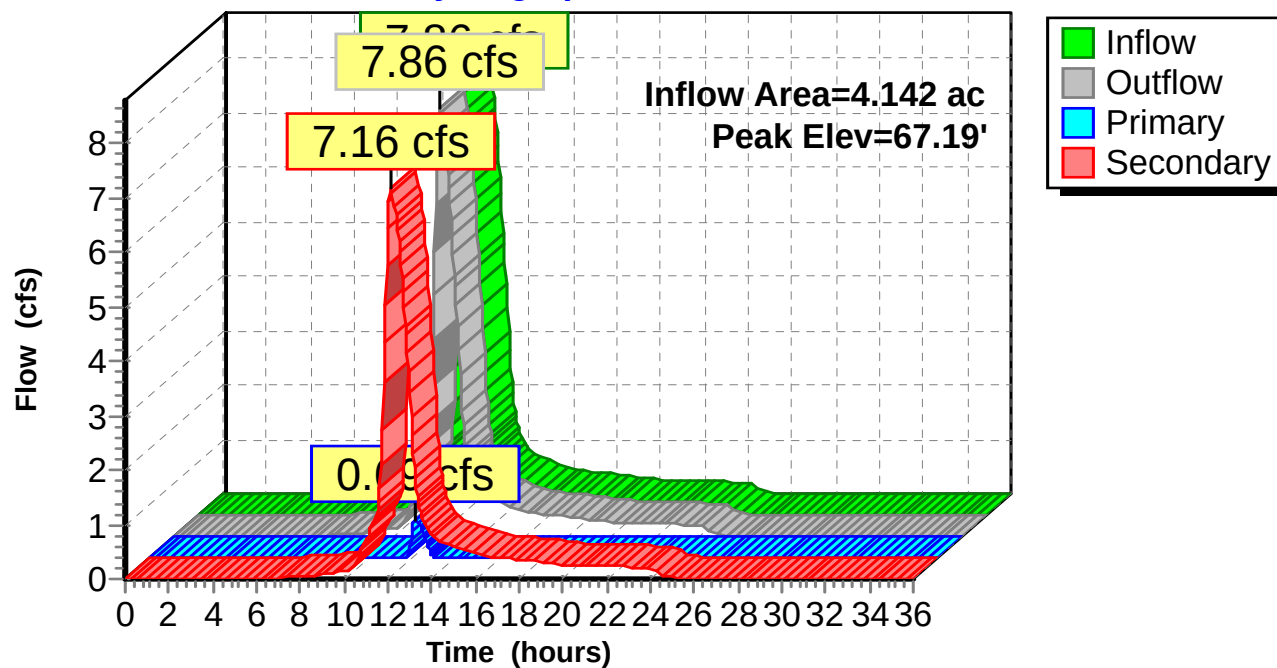
↑**1=Culvert** (Barrel Controls 0.69 cfs @ 2.06 fps)

Secondary OutFlow Max=7.15 cfs @ 12.14 hrs HW=67.19' (Free Discharge)

↑**2=Culvert** (Barrel Controls 7.15 cfs @ 3.96 fps)

Pond 8P: OCS-DMH7

Hydrograph



Pre-Development Cedars Model 17-10-11

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 9P: UG Detention

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 0.06" for 10-yr event
 Inflow = 0.26 cfs @ 12.14 hrs, Volume= 0.019 af
 Outflow = 0.14 cfs @ 12.84 hrs, Volume= 0.019 af, Atten= 46%, Lag= 41.8 min
 Primary = 0.14 cfs @ 12.84 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 66.04' @ 12.84 hrs Surf.Area= 1,536 sf Storage= 502 cf

Plug-Flow detention time= 95.4 min calculated for 0.019 af (99% of inflow)
 Center-of-Mass det. time= 94.6 min (838.2 - 743.6)

Volume	Invert	Avail.Storage	Storage Description
#1	65.70'	2,488 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,619 cf Overall x 95.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.70	1,536	0	0
67.40	1,536	2,611	2,611
67.41	5	8	2,619

Device	Routing	Invert	Outlet Devices
#1	Primary	65.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Primary	67.00'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

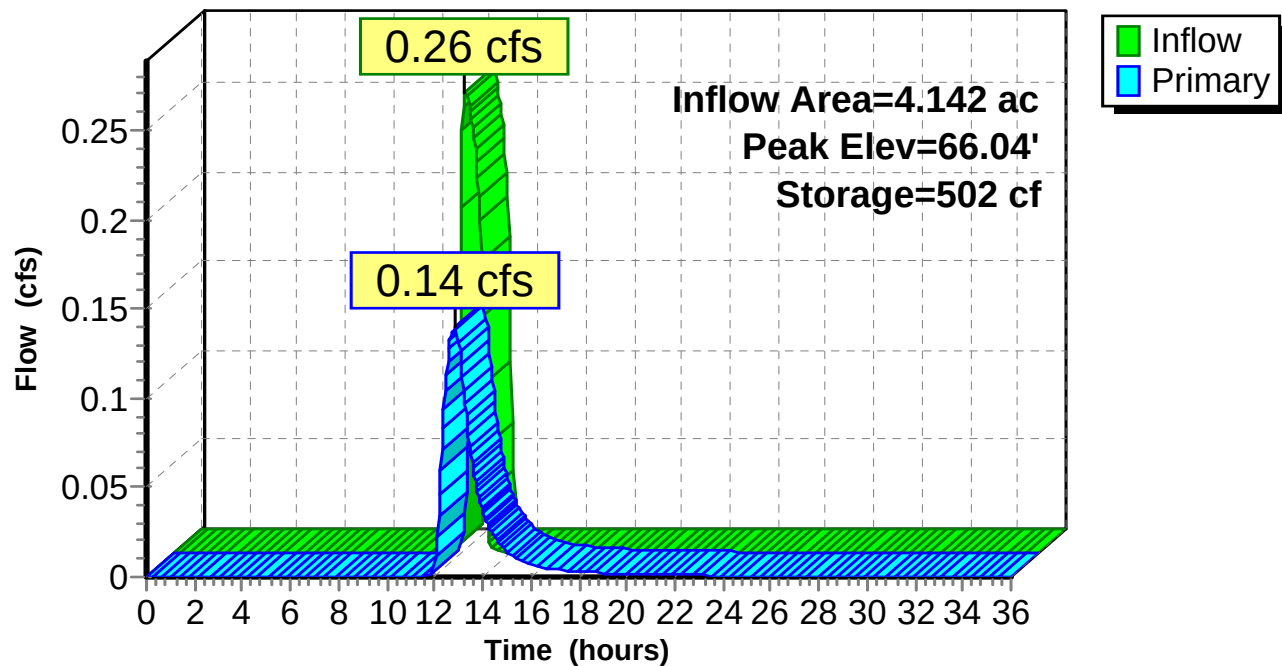
Primary OutFlow Max=0.14 cfs @ 12.84 hrs HW=66.04' (Free Discharge)

1=Culvert (Inlet Controls 0.14 cfs @ 1.60 fps)

2=Culvert (Controls 0.00 cfs)

Pond 9P: UG Detention

Hydrograph



Summary for Pond 10P: Isolator Row x5

[81] Warning: Exceeded Pond 8P by 0.90' @ 35.95 hrs

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 0.11" for 10-yr event
 Inflow = 0.69 cfs @ 12.14 hrs, Volume= 0.037 af
 Outflow = 0.69 cfs @ 12.14 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.2 min
 Primary = 0.26 cfs @ 12.14 hrs, Volume= 0.019 af
 Secondary = 0.44 cfs @ 12.14 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.37' @ 12.14 hrs Surf.Area= 0.001 ac Storage= 0.001 af

Plug-Flow detention time= 1.9 min calculated for 0.037 af (100% of inflow)
 Center-of-Mass det. time= 2.0 min (740.2 - 738.1)

Volume	Invert	Avail.Storage	Storage Description
#1	66.60'	0.002 af	ADS StormTech RC-310 x 5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 2.07 sf x 1 rows

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	4.0" Round Culvert L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.55' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Secondary	67.00'	12.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.55' S= 0.0090 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.14 hrs HW=67.37' (Free Discharge)

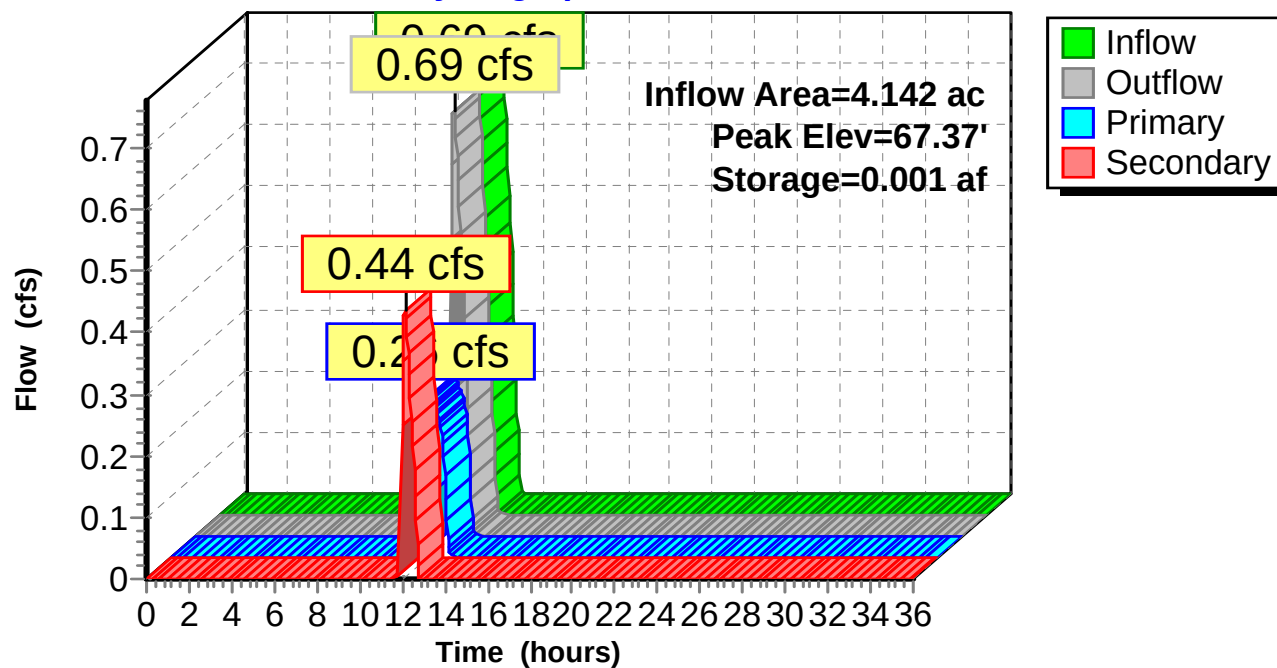
↑ **1=Culvert** (Inlet Controls 0.26 cfs @ 2.95 fps)

Secondary OutFlow Max=0.43 cfs @ 12.14 hrs HW=67.37' (Free Discharge)

↑ **2=Culvert** (Inlet Controls 0.43 cfs @ 1.64 fps)

Pond 10P: Isolator Row x5

Hydrograph



Pre-Development Cedars Model 17-10-11*Type II 24-hr 25-yr Rainfall=5.92"*

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1 Runoff Area=87,665 sf 15.27% Impervious Runoff Depth=4.02"
 Flow Length=177' Slope=0.0100 '/' Tc=29.9 min CN=83 Runoff=6.98 cfs 0.674 af

Subcatchment2S: Subcatchment2 Runoff Area=90,682 sf 66.45% Impervious Runoff Depth=4.99"
 Flow Length=178' Slope=0.0075 '/' Tc=33.7 min CN=92 Runoff=8.00 cfs 0.866 af

Subcatchment3S: Subcatchment3 Runoff Area=40,444 sf 47.45% Impervious Runoff Depth=4.66"
 Flow Length=185' Slope=0.0200 '/' Tc=30.6 min CN=89 Runoff=3.60 cfs 0.360 af

Subcatchment4S: Subcatchment4 Runoff Area=26,132 sf 52.50% Impervious Runoff Depth=4.66"
 Tc=7.0 min CN=89 Runoff=4.40 cfs 0.233 af

Subcatchment5S: Subcatchment5 Runoff Area=114,414 sf 56.89% Impervious Runoff Depth=4.77"
 Tc=7.0 min CN=90 Runoff=19.53 cfs 1.044 af

Subcatchment6S: Subcatchment6 Runoff Area=39,891 sf 54.44% Impervious Runoff Depth=4.77"
 Tc=7.0 min CN=90 Runoff=6.81 cfs 0.364 af

Subcatchment7S: Subcatchment7 Runoff Area=46,652 sf 42.35% Impervious Runoff Depth=4.55"
 Tc=7.0 min CN=88 Runoff=7.72 cfs 0.406 af

Subcatchment8S: Subcatchment8 Runoff Area=14,355 sf 26.13% Impervious Runoff Depth=4.23"
 Tc=7.0 min CN=85 Runoff=2.25 cfs 0.116 af

Reach 1SP: Study Point 1 Inflow=5.27 cfs 2.178 af
 Outflow=5.27 cfs 2.178 af

Reach 2SP: Study Point 2 Inflow=5.04 cfs 0.462 af
 Outflow=5.04 cfs 0.462 af

Reach 3SP: Study Point 3 Inflow=4.94 cfs 0.141 af
 Outflow=4.94 cfs 0.141 af

Reach 4SP: Study Point 4 Inflow=3.60 cfs 0.360 af
 Outflow=3.60 cfs 0.360 af

Pond 1P: Wetland A Peak Elev=66.48' Storage=80,578 cf Inflow=31.15 cfs 3.297 af
 Primary=5.04 cfs 0.462 af Secondary=5.27 cfs 2.178 af Outflow=10.32 cfs 2.640 af

Pond 2P: Wetland B Peak Elev=69.31' Storage=11,061 cf Inflow=8.00 cfs 0.866 af
 Outflow=7.52 cfs 0.671 af

Pond 3P: Surface Detention Peak Elev=72.83' Storage=16,129 cf Inflow=28.88 cfs 1.581 af
 Primary=8.22 cfs 1.435 af Secondary=15.32 cfs 0.145 af Outflow=23.53 cfs 1.580 af

Pond 4P: Surface Detention Peak Elev=70.59' Storage=5,247 cf Inflow=7.72 cfs 0.406 af
 Primary=0.42 cfs 0.253 af Secondary=3.17 cfs 0.025 af Tertiary=3.14 cfs 0.119 af Outflow=6.74 cfs 0.398 af

Pre-Development Cedars Model 17-10-11*Type II 24-hr 25-yr Rainfall=5.92"*

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Pond 5P: OCS-4P

Peak Elev=69.40' Inflow=3.56 cfs 0.372 af
12.0" Round Culvert n=0.013 L=81.0' S=0.0077 ' /' Outflow=3.56 cfs 0.372 af

Pond 6P: Atrium Surface Detention

Peak Elev=74.10' Storage=4,447 cf Inflow=19.53 cfs 1.044 af
Outflow=18.97 cfs 0.987 af

Pond 7P: Riprap Surface Detention

Peak Elev=73.85' Storage=818 cf Inflow=4.40 cfs 0.233 af
12.0" Round Culvert n=0.013 L=375.0' S=0.0070 ' /' Outflow=3.26 cfs 0.231 af

Pond 8P: OCS-DMH7

Peak Elev=67.23' Inflow=8.22 cfs 1.435 af
Primary=0.78 cfs 0.045 af Secondary=7.44 cfs 1.390 af Outflow=8.22 cfs 1.435 af

Pond 9P: UG Detention

Peak Elev=66.08' Storage=549 cf Inflow=0.27 cfs 0.022 af
Outflow=0.15 cfs 0.022 af

Pond 10P: Isolator Row x5

Peak Elev=67.41' Storage=0.001 af Inflow=0.78 cfs 0.045 af
Primary=0.27 cfs 0.022 af Secondary=0.51 cfs 0.023 af Outflow=0.78 cfs 0.045 af

Total Runoff Area = 10.566 ac Runoff Volume = 4.062 af Average Runoff Depth = 4.61"
52.88% Pervious = 5.587 ac 47.12% Impervious = 4.979 ac

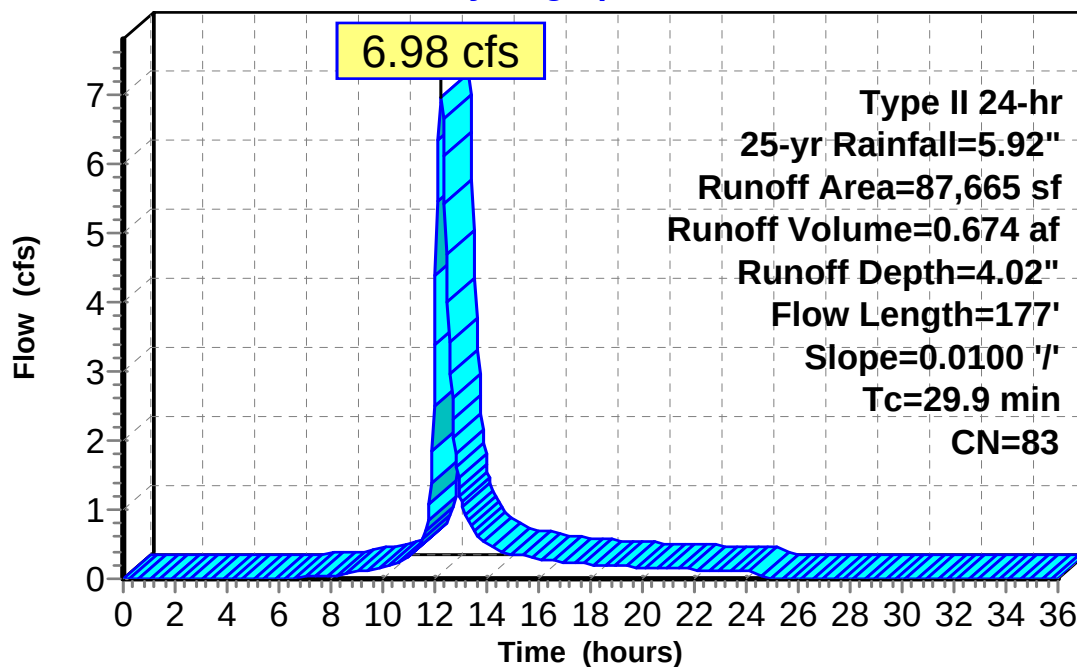
Summary for Subcatchment 1S: Subcatchment 1

Runoff = 6.98 cfs @ 12.24 hrs, Volume= 0.674 af, Depth= 4.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	13,390	98	
	74,275	80	>75% Grass cover, Good, HSG D
	87,665	83	Weighted Average
	74,275		84.73% Pervious Area
	13,390		15.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	177	0.0100	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 1S: Subcatchment 1**Hydrograph**

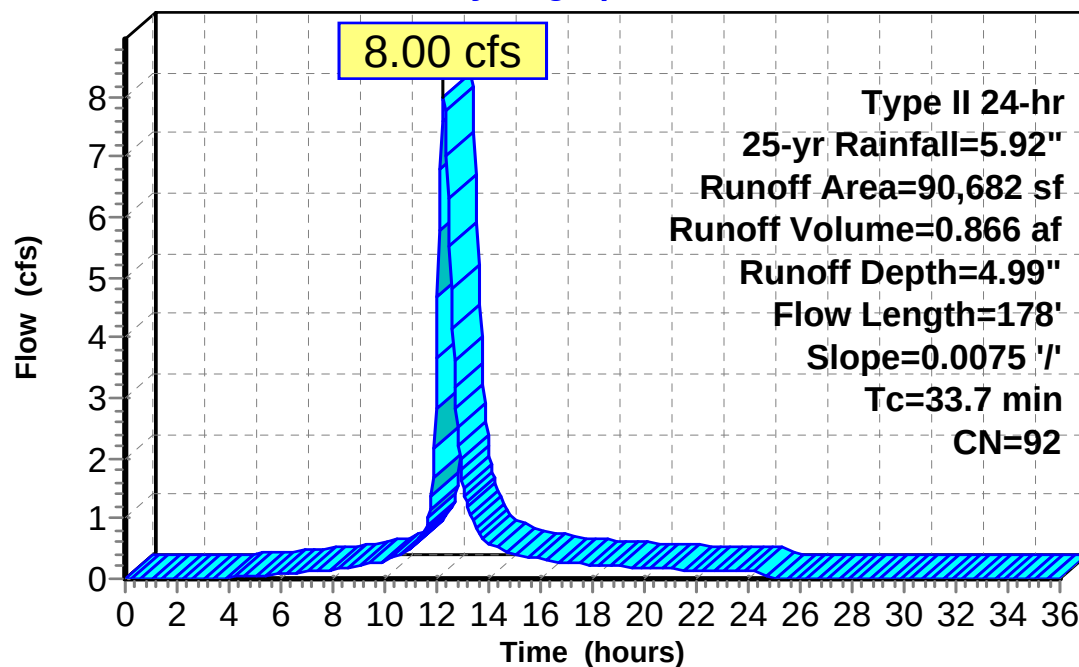
Summary for Subcatchment 2S: Subcatchment 2

Runoff = 8.00 cfs @ 12.27 hrs, Volume= 0.866 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	60,255	98	
	30,427	80	>75% Grass cover, Good, HSG D
	90,682	92	Weighted Average
	30,427		33.55% Pervious Area
	60,255		66.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.7	178	0.0075	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 2S: Subcatchment 2**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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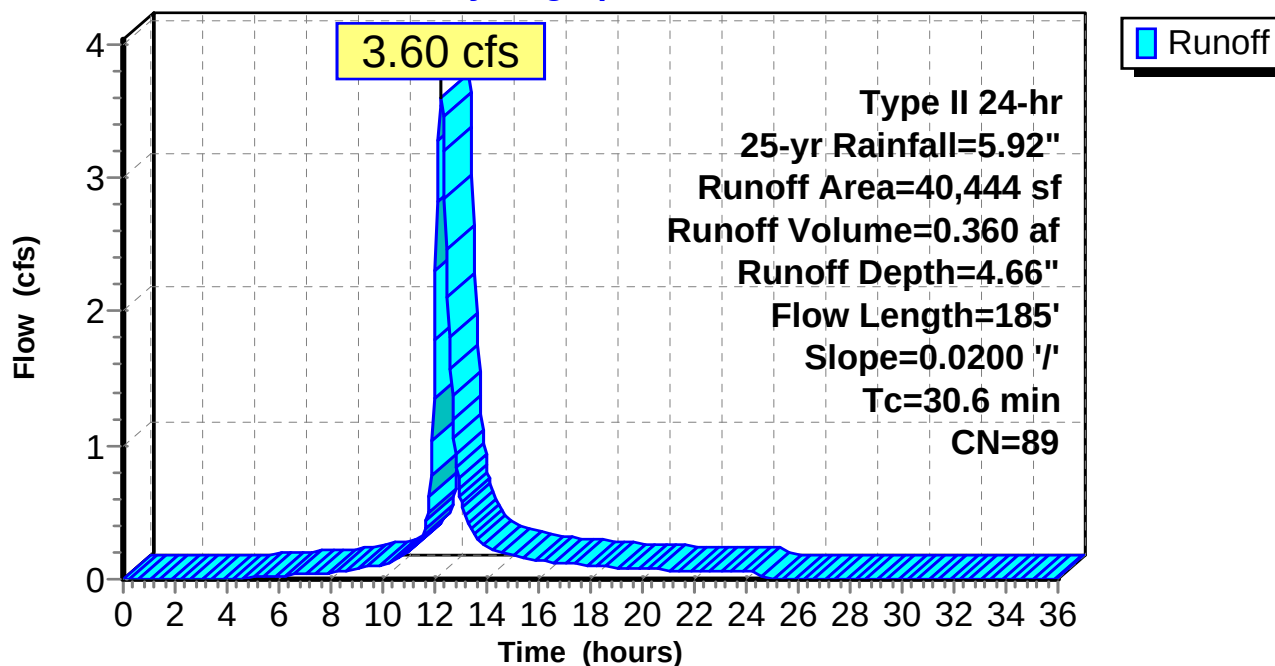
Summary for Subcatchment 3S: Subcatchment 3

Runoff = 3.60 cfs @ 12.24 hrs, Volume= 0.360 af, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

Area (sf)	CN	Description
21,255	80	>75% Grass cover, Good, HSG D
* 19,189	98	
40,444	89	Weighted Average
21,255		52.55% Pervious Area
19,189		47.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	150	0.0200	0.08		Sheet Flow, Sheet
					Woods: Light underbrush n= 0.400 P2= 3.17"
0.8	35	0.0200	0.71		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
30.6	185	Total			

Subcatchment 3S: Subcatchment 3**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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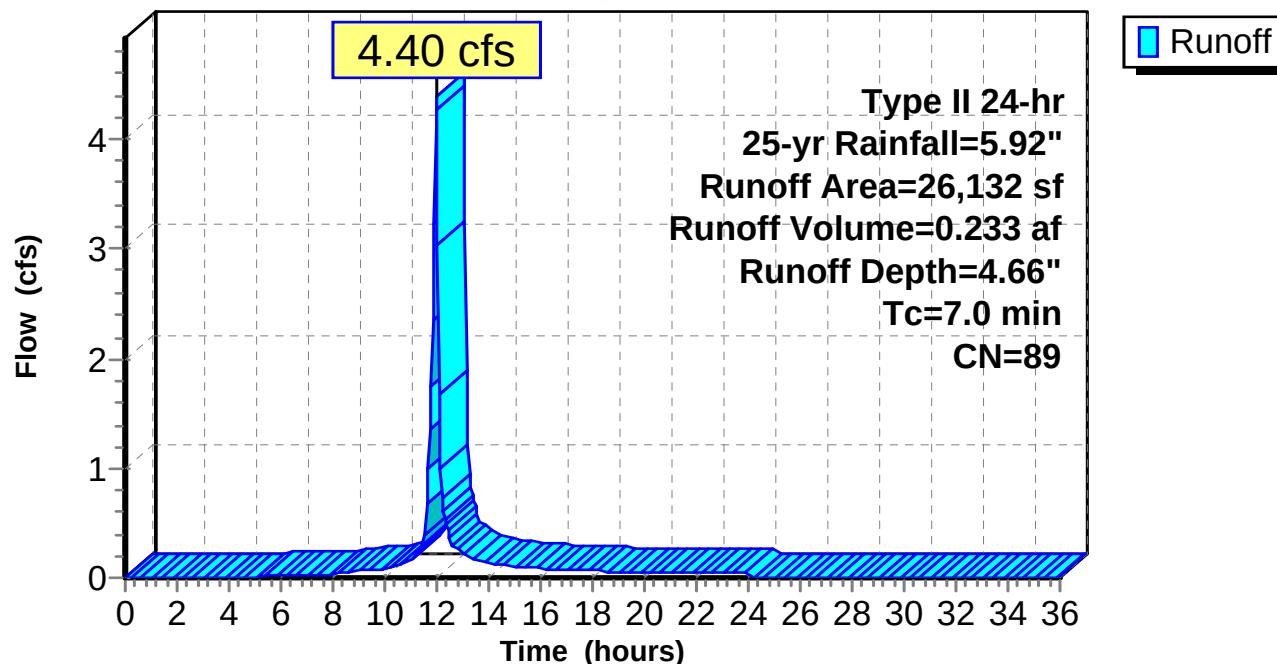
Summary for Subcatchment 4S: Subcatchment 4

Runoff = 4.40 cfs @ 11.98 hrs, Volume= 0.233 af, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	13,720	98	
	12,412	80	>75% Grass cover, Good, HSG D
	26,132	89	Weighted Average
	12,412		47.50% Pervious Area
	13,720		52.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 4S: Subcatchment 4**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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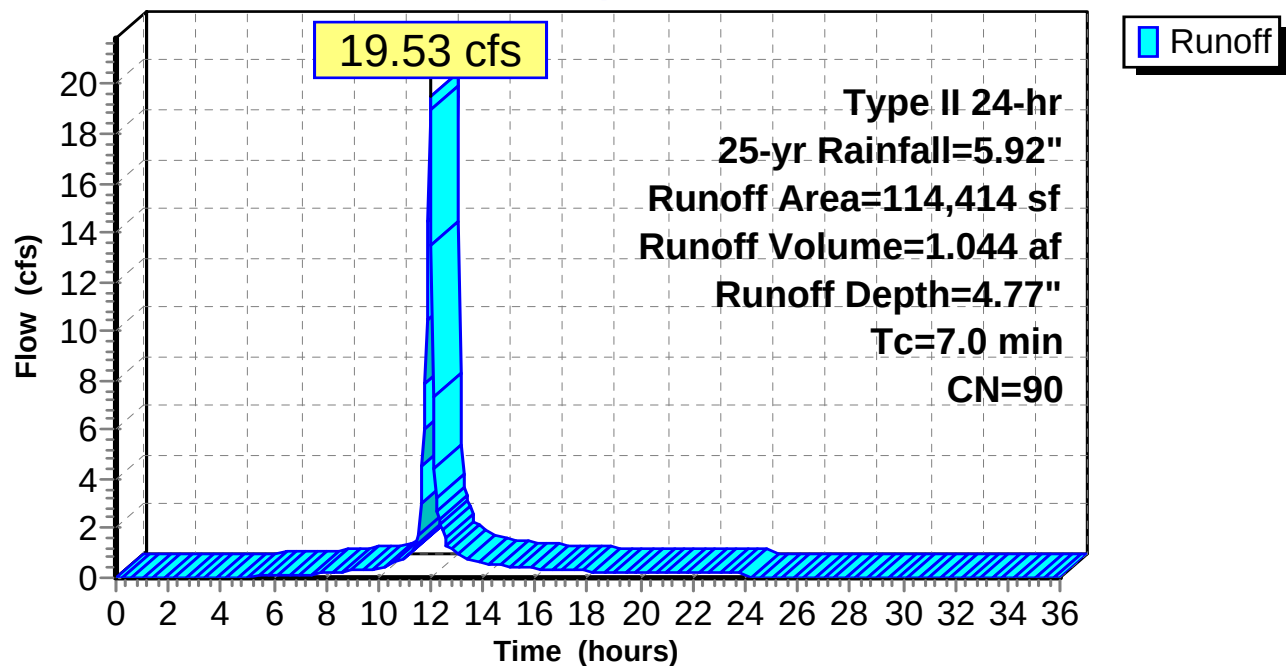
Summary for Subcatchment 5S: Subcatchment 5

Runoff = 19.53 cfs @ 11.98 hrs, Volume= 1.044 af, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	65,087	98	
	49,327	80	>75% Grass cover, Good, HSG D
	114,414	90	Weighted Average
	49,327		43.11% Pervious Area
	65,087		56.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 5S: Subcatchment 5**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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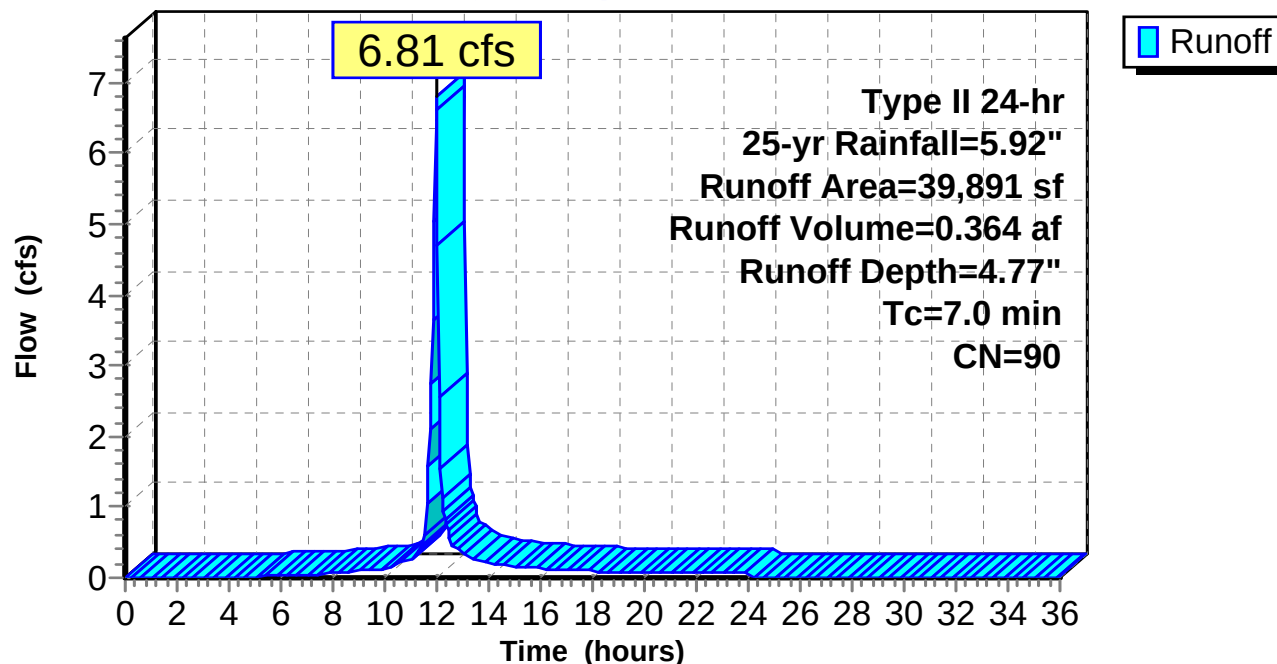
Summary for Subcatchment 6S: Subcatchment 6

Runoff = 6.81 cfs @ 11.98 hrs, Volume= 0.364 af, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	21,718	98	
	18,173	80	>75% Grass cover, Good, HSG D
	39,891	90	Weighted Average
	18,173		45.56% Pervious Area
	21,718		54.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 6S: Subcatchment 6**Hydrograph**

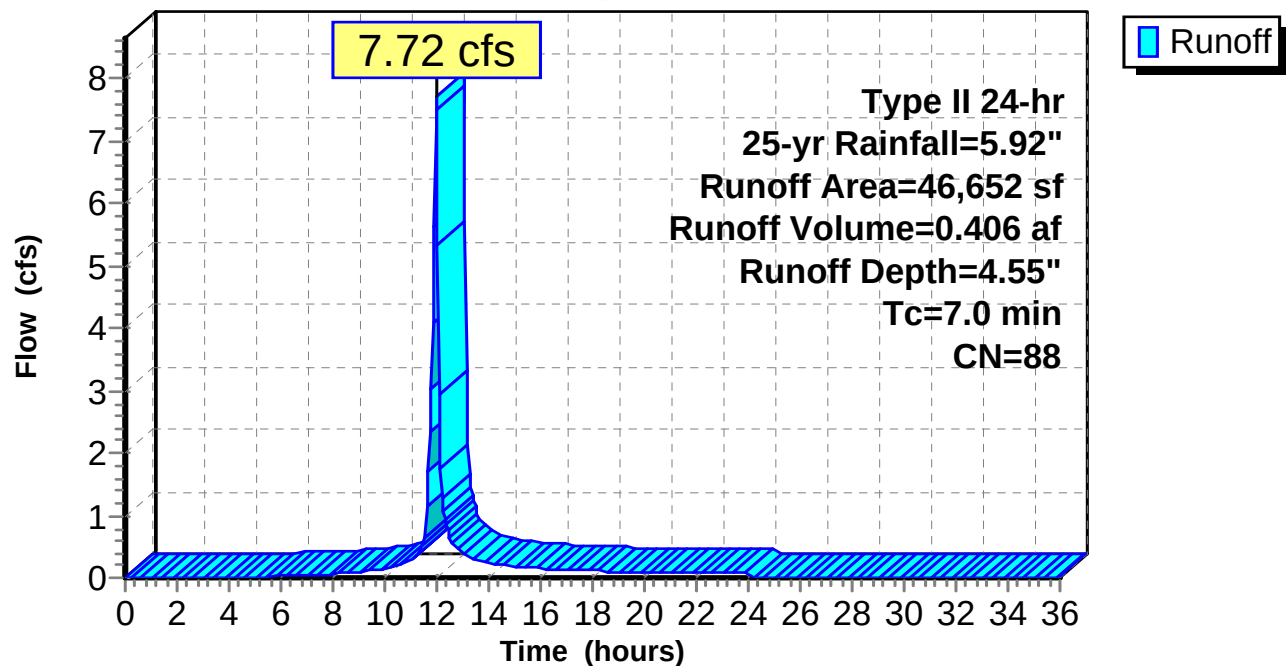
Summary for Subcatchment 7S: Subcatchment 7

Runoff = 7.72 cfs @ 11.98 hrs, Volume= 0.406 af, Depth= 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	19,759	98	
	26,893	80	>75% Grass cover, Good, HSG D
	46,652	88	Weighted Average
	26,893		57.65% Pervious Area
	19,759		42.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 7S: Subcatchment 7**Hydrograph**

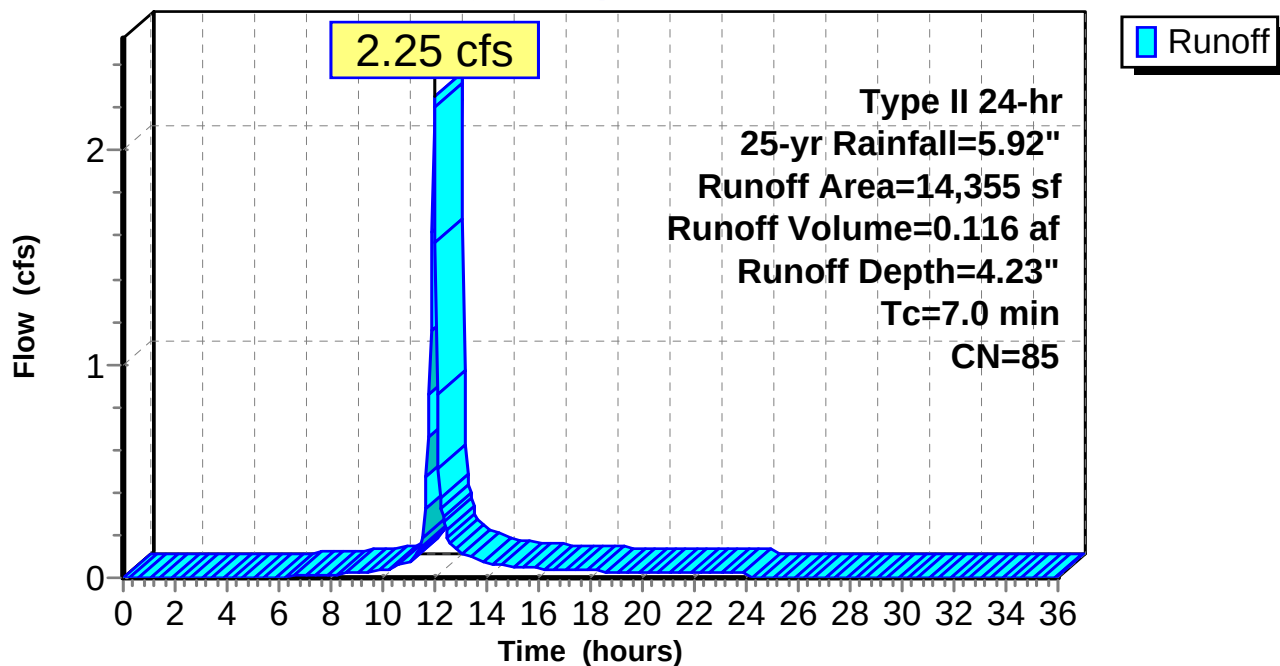
Summary for Subcatchment 8S: Subcatchment 8

Runoff = 2.25 cfs @ 11.98 hrs, Volume= 0.116 af, Depth= 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

Area (sf)	CN	Description
10,604	80	>75% Grass cover, Good, HSG D
* 3,751	98	
14,355	85	Weighted Average
10,604		73.87% Pervious Area
3,751		26.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

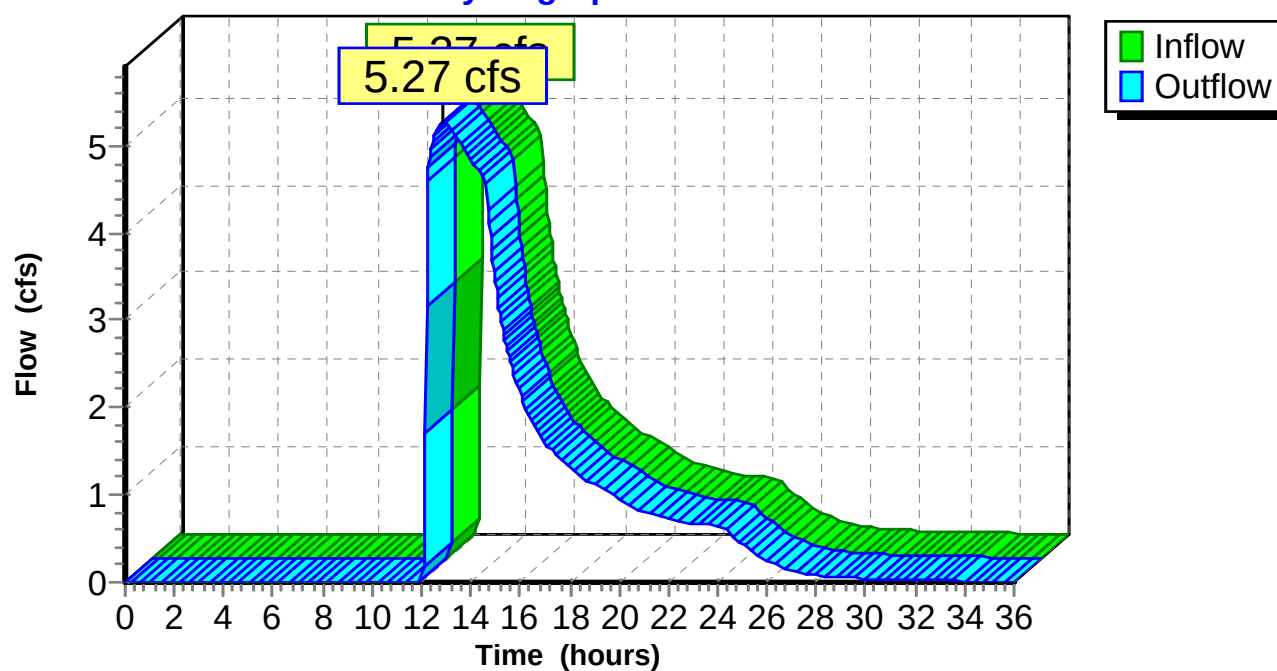
Subcatchment 8S: Subcatchment 8**Hydrograph**

Summary for Reach 1SP: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow	=	5.27 cfs @ 12.85 hrs,	Volume=	2.178 af
Outflow	=	5.27 cfs @ 12.85 hrs,	Volume=	2.178 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 1SP: Study Point 1**Hydrograph**

Summary for Reach 2SP: Study Point 2

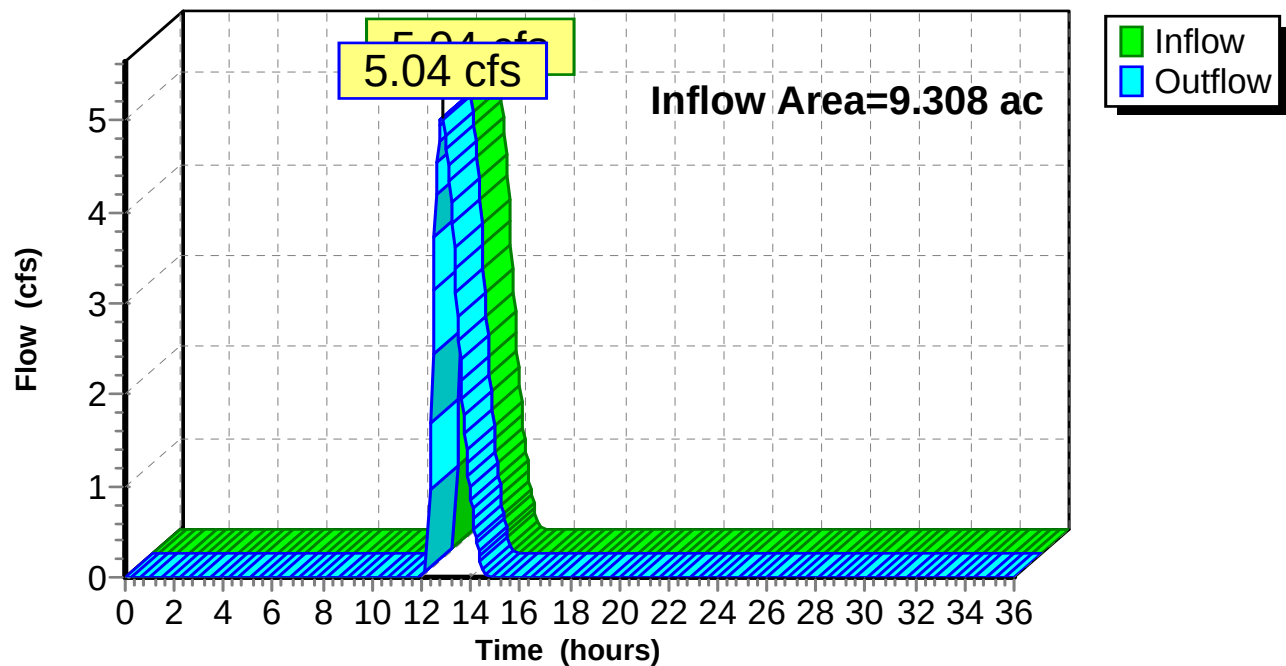
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.308 ac, 47.83% Impervious, Inflow Depth = 0.60" for 25-yr event
Inflow = 5.04 cfs @ 12.85 hrs, Volume= 0.462 af
Outflow = 5.04 cfs @ 12.85 hrs, Volume= 0.462 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 2SP: Study Point 2

Hydrograph



Summary for Reach 3SP: Study Point 3

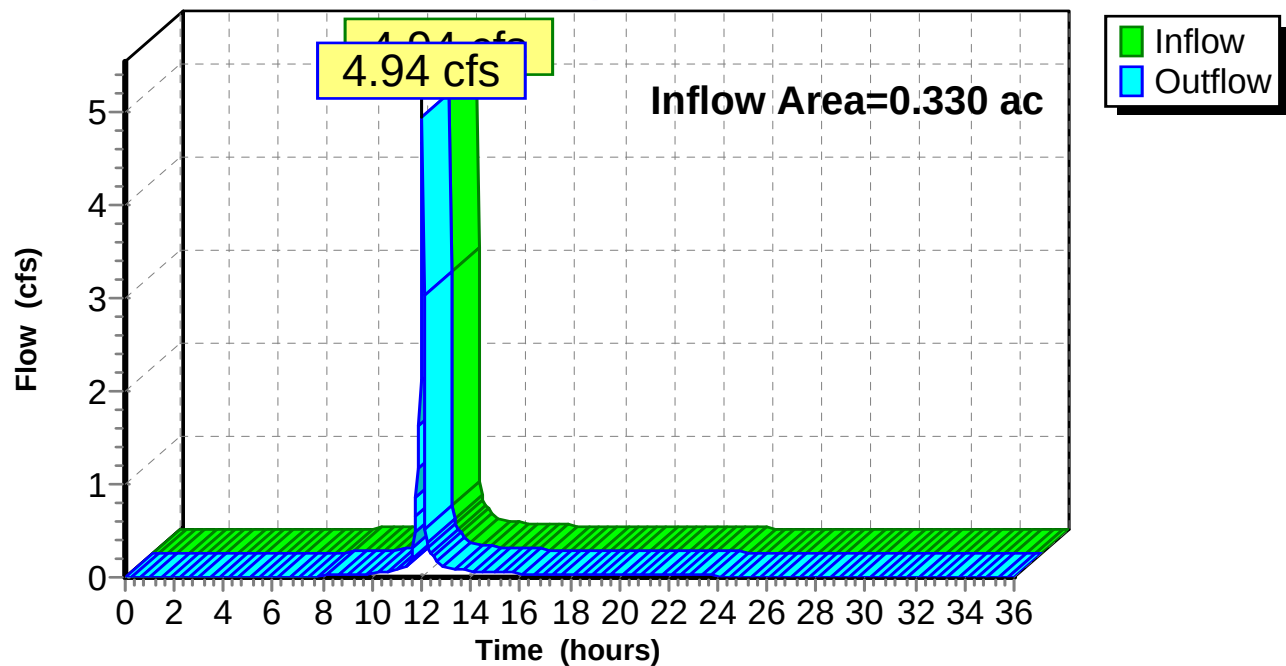
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.330 ac, 26.13% Impervious, Inflow Depth = 5.14" for 25-yr event
Inflow = 4.94 cfs @ 12.02 hrs, Volume= 0.141 af
Outflow = 4.94 cfs @ 12.02 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 3SP: Study Point 3

Hydrograph



Summary for Reach 4SP: Study Point 4

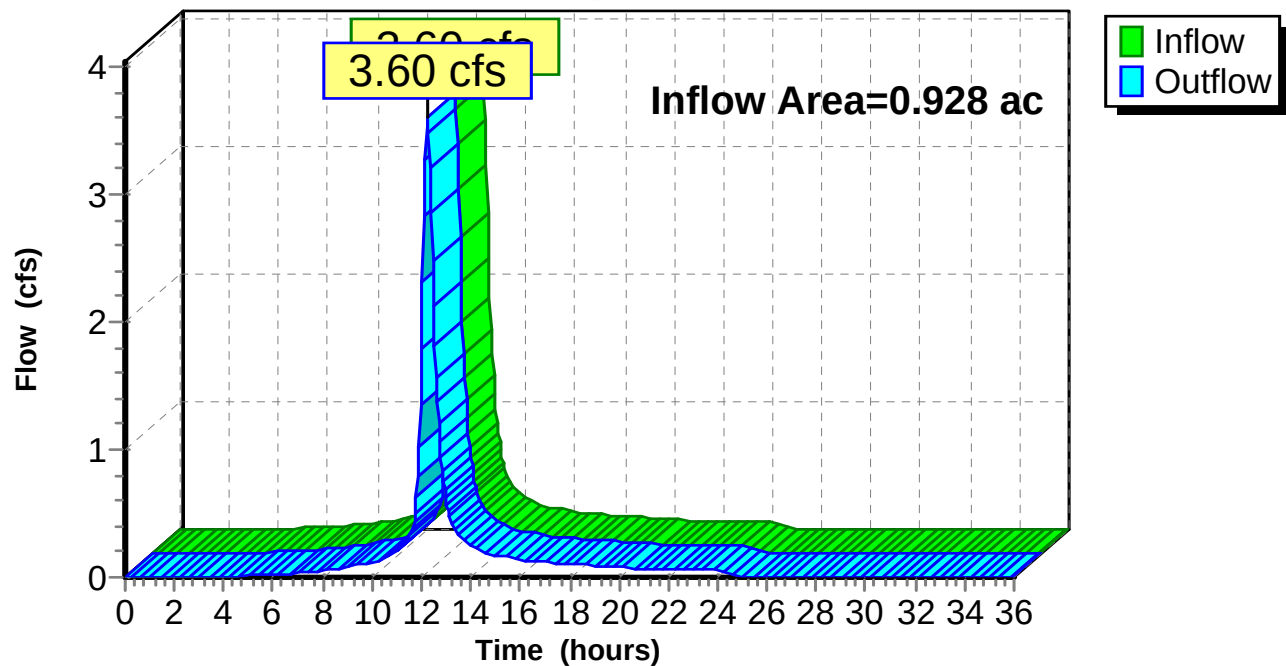
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.928 ac, 47.45% Impervious, Inflow Depth = 4.66" for 25-yr event
Inflow = 3.60 cfs @ 12.24 hrs, Volume= 0.360 af
Outflow = 3.60 cfs @ 12.24 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 4SP: Study Point 4

Hydrograph



Pre-Development Cedars Model 17-10-11

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 1P: Wetland A

[79] Warning: Submerged Pond 8P Secondary device # 2 INLET by 0.78'

[81] Warning: Exceeded Pond 9P by 0.41' @ 12.80 hrs

Inflow Area = 9.308 ac, 47.83% Impervious, Inflow Depth = 4.25" for 25-yr event
 Inflow = 31.15 cfs @ 12.08 hrs, Volume= 3.297 af
 Outflow = 10.32 cfs @ 12.85 hrs, Volume= 2.640 af, Atten= 67%, Lag= 46.2 min
 Primary = 5.04 cfs @ 12.85 hrs, Volume= 0.462 af
 Secondary = 5.27 cfs @ 12.85 hrs, Volume= 2.178 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Starting Elev= 63.50' Surf.Area= 14,739 sf Storage= 17,429 cf

Peak Elev= 66.48' @ 12.85 hrs Surf.Area= 28,109 sf Storage= 80,578 cf (63,149 cf above start)

Plug-Flow detention time= 243.2 min calculated for 2.237 af (68% of inflow)

Center-of-Mass det. time= 107.9 min (941.8 - 833.9)

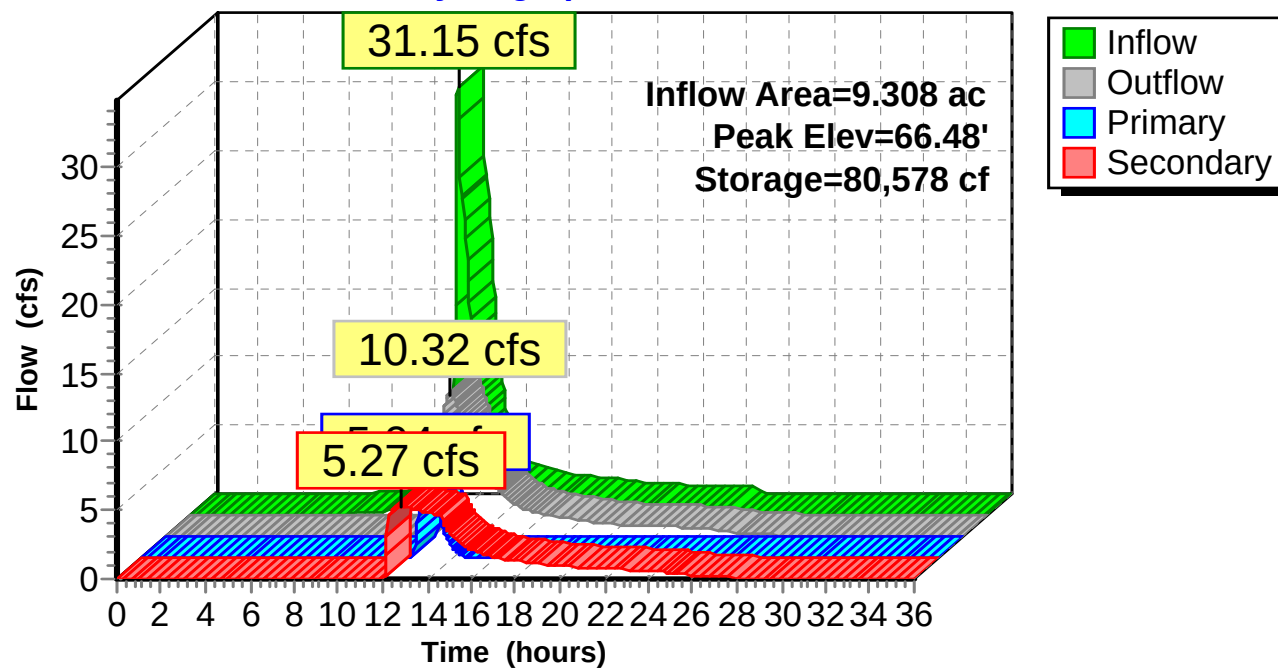
Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	209,276 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	8,500	0	0
65.00	20,977	44,216	44,216
70.00	45,047	165,060	209,276

Device	Routing	Invert	Outlet Devices
#1	Primary	65.75'	3.0' 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
#2	Secondary	62.86'	12.0" Round Culvert L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 62.86' / 58.69' S= 0.0869 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	65.08'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=5.04 cfs @ 12.85 hrs HW=66.48' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 5.04 cfs @ 2.30 fps)**Secondary OutFlow** Max=5.27 cfs @ 12.85 hrs HW=66.48' (Free Discharge)↑ **2=Culvert** (Inlet Controls 5.27 cfs @ 6.72 fps)↑ **3=Sharp-Crested Rectangular Weir** (Passes 5.27 cfs of 14.10 cfs potential flow)

Pond 1P: Wetland A

Hydrograph



Pre-Development Cedars Model 17-10-11

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 2P: Wetland B

Inflow Area = 2.082 ac, 66.45% Impervious, Inflow Depth = 4.99" for 25-yr event
 Inflow = 8.00 cfs @ 12.27 hrs, Volume= 0.866 af
 Outflow = 7.52 cfs @ 12.36 hrs, Volume= 0.671 af, Atten= 6%, Lag= 5.2 min
 Primary = 7.52 cfs @ 12.36 hrs, Volume= 0.671 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.31' @ 12.36 hrs Surf.Area= 10,486 sf Storage= 11,061 cf

Plug-Flow detention time= 146.3 min calculated for 0.670 af (77% of inflow)
 Center-of-Mass det. time= 62.7 min (862.5 - 799.8)

Volume	Invert	Avail.Storage	Storage Description
#1	67.00'	21,636 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

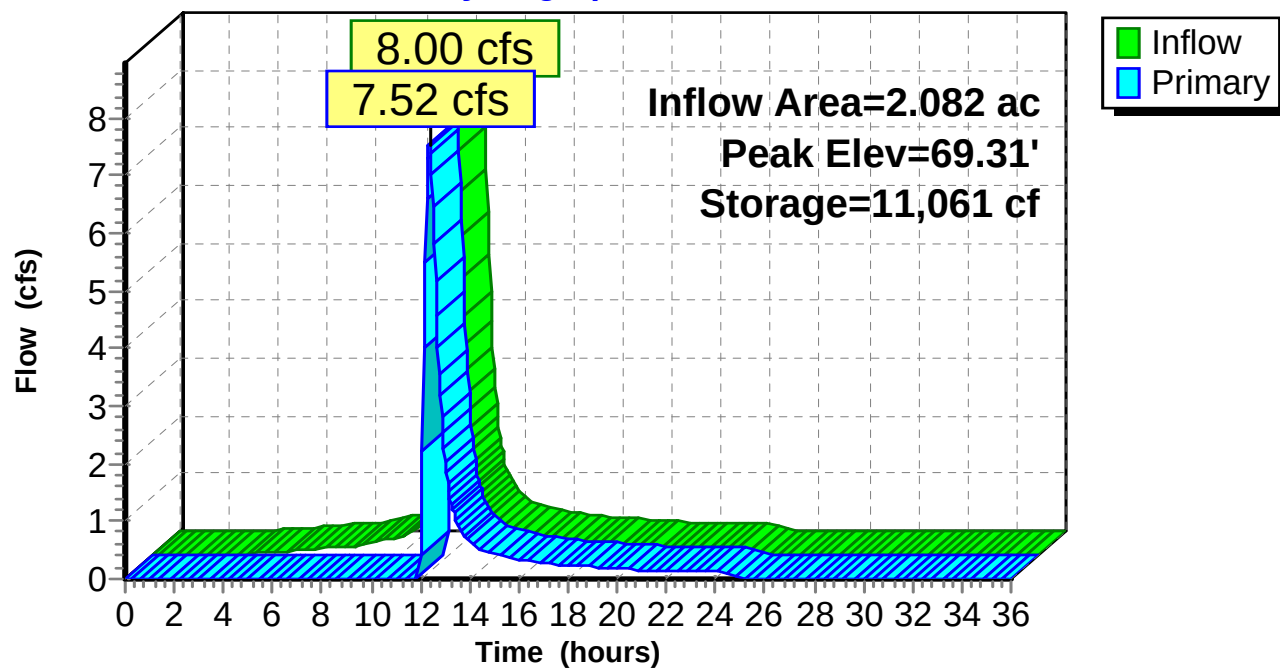
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.00	2,200	0	0
68.00	4,250	3,225	3,225
69.00	6,286	5,268	8,493
70.00	20,000	13,143	21,636

Device	Routing	Invert	Outlet Devices
#1	Primary	69.00'	18.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=7.49 cfs @ 12.36 hrs HW=69.31' (Free Discharge)
 1=Broad-Crested Rectangular Weir (Weir Controls 7.49 cfs @ 1.36 fps)

Pond 2P: Wetland B

Hydrograph



Summary for Pond 3P: Surface Detention

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 1.81'

[81] Warning: Exceeded Pond 7P by 0.20' @ 12.25 hrs

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 4.58" for 25-yr event
 Inflow = 28.88 cfs @ 11.99 hrs, Volume= 1.581 af
 Outflow = 23.53 cfs @ 12.07 hrs, Volume= 1.580 af, Atten= 19%, Lag= 4.5 min
 Primary = 8.22 cfs @ 12.07 hrs, Volume= 1.435 af
 Secondary = 15.32 cfs @ 12.07 hrs, Volume= 0.145 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.83' @ 12.07 hrs Surf.Area= 7,804 sf Storage= 16,129 cf

Plug-Flow detention time= 18.2 min calculated for 1.578 af (100% of inflow)
 Center-of-Mass det. time= 17.9 min (816.6 - 798.7)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	21,926 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

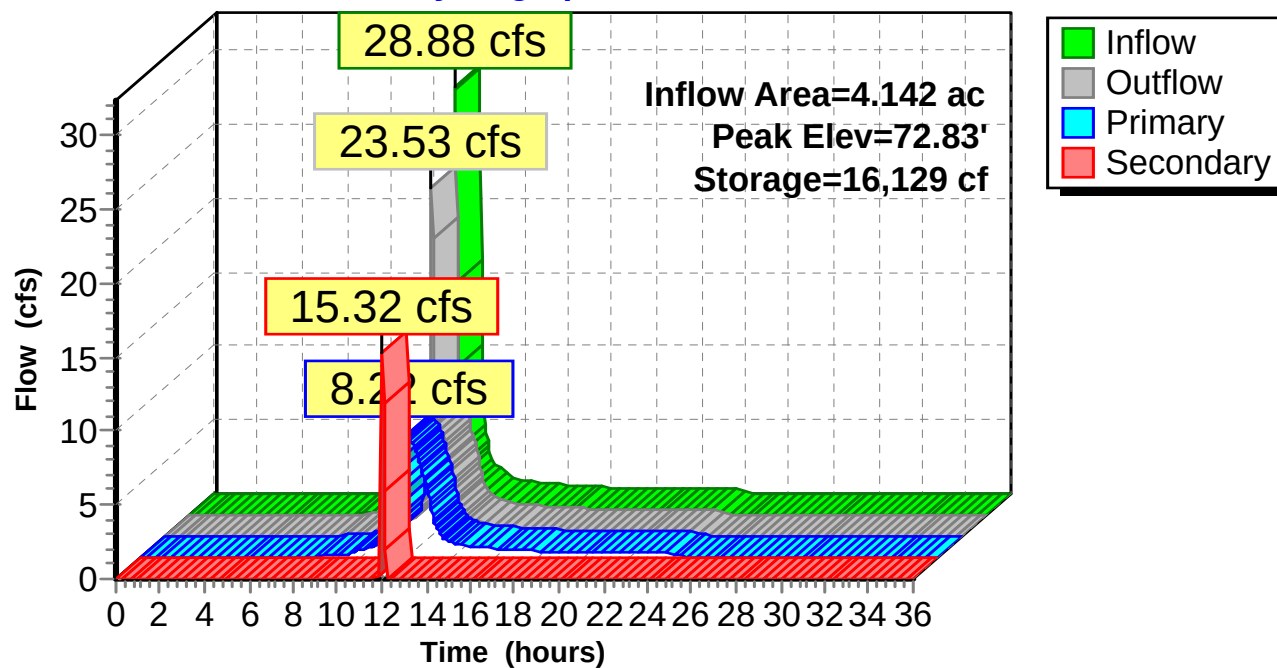
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	400	0	0
70.00	2,991	1,696	1,696
72.00	5,812	8,803	10,499
73.50	9,425	11,428	21,926

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	15.0" Round Culvert L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.10' / 68.75' S= 0.0050 ' /' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	72.50'	35.0' 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=8.17 cfs @ 12.07 hrs HW=72.79' (Free Discharge)↑ **1=Culvert** (Inlet Controls 8.17 cfs @ 6.66 fps)**Secondary OutFlow** Max=13.45 cfs @ 12.07 hrs HW=72.79' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 13.45 cfs @ 1.31 fps)

Pond 3P: Surface Detention

Hydrograph



Pre-Development Cedars Model 17-10-11

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 4P: Surface Detention

Inflow Area = 1.071 ac, 42.35% Impervious, Inflow Depth = 4.55" for 25-yr event
 Inflow = 7.72 cfs @ 11.98 hrs, Volume= 0.406 af
 Outflow = 6.74 cfs @ 12.03 hrs, Volume= 0.398 af, Atten= 13%, Lag= 3.3 min
 Primary = 0.42 cfs @ 12.03 hrs, Volume= 0.253 af
 Secondary = 3.17 cfs @ 12.03 hrs, Volume= 0.025 af
 Tertiary = 3.14 cfs @ 12.03 hrs, Volume= 0.119 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 70.59' @ 12.03 hrs Surf.Area= 3,126 sf Storage= 5,247 cf

Plug-Flow detention time= 79.1 min calculated for 0.398 af (98% of inflow)
 Center-of-Mass det. time= 66.0 min (855.7 - 789.7)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	10,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.00	13	0	0
67.00	71	126	126
68.00	928	500	626
69.00	1,378	1,153	1,779
70.00	2,348	1,863	3,642
72.00	5,000	7,348	10,990

Device	Routing	Invert	Outlet Devices
#1	Primary	67.66'	3.5" Round Culvert L= 5.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.66' / 67.65' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 0.07 sf
#2	Tertiary	69.66'	1.2' 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	Secondary	70.50'	45.0' long x 15.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.42 cfs @ 12.03 hrs HW=70.58' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.42 cfs @ 6.33 fps)

Secondary OutFlow Max=2.68 cfs @ 12.03 hrs HW=70.58' (Free Discharge)

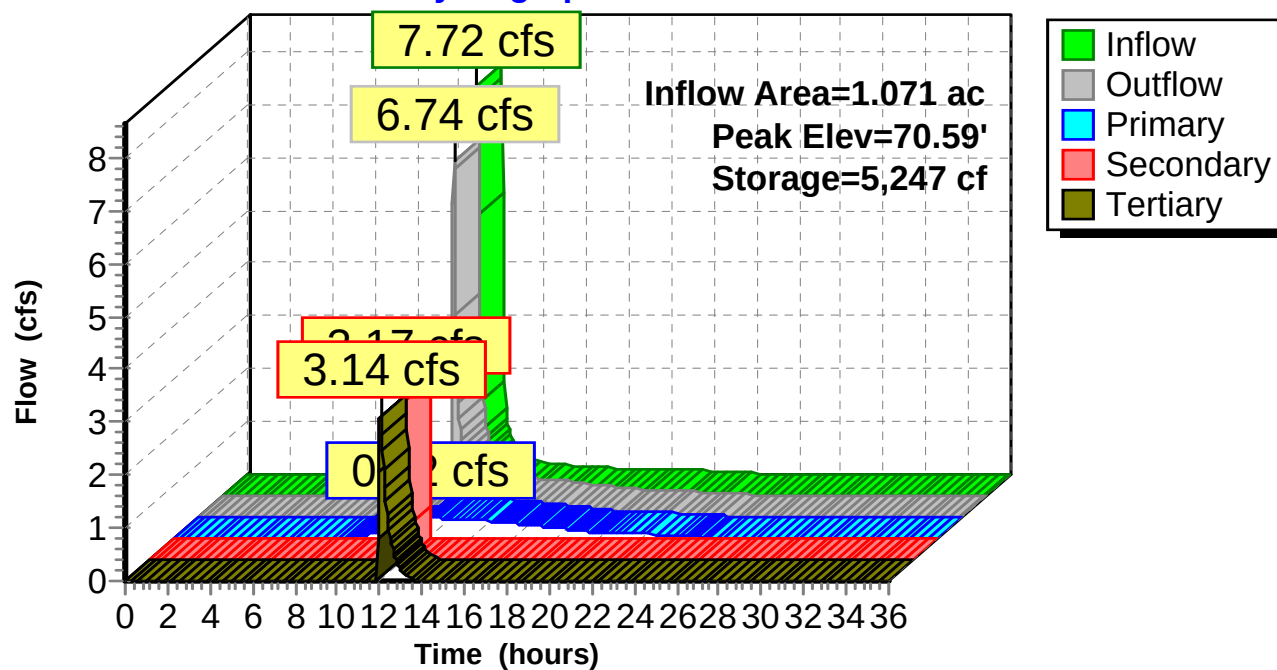
↑**3=Broad-Crested Rectangular Weir** (Weir Controls 2.68 cfs @ 0.75 fps)

Tertiary OutFlow Max=3.09 cfs @ 12.03 hrs HW=70.58' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 3.09 cfs @ 2.81 fps)

Pond 4P: Surface Detention

Hydrograph



Summary for Pond 5P: OCS-4P

[57] Hint: Peaked at 69.40' (Flood elevation advised)

[79] Warning: Submerged Pond 4P Primary device # 1 INLET by 1.73'

Inflow Area = 1.071 ac, 42.35% Impervious, Inflow Depth = 4.17" for 25-yr event
 Inflow = 3.56 cfs @ 12.03 hrs, Volume= 0.372 af
 Outflow = 3.56 cfs @ 12.03 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.56 cfs @ 12.03 hrs, Volume= 0.372 af

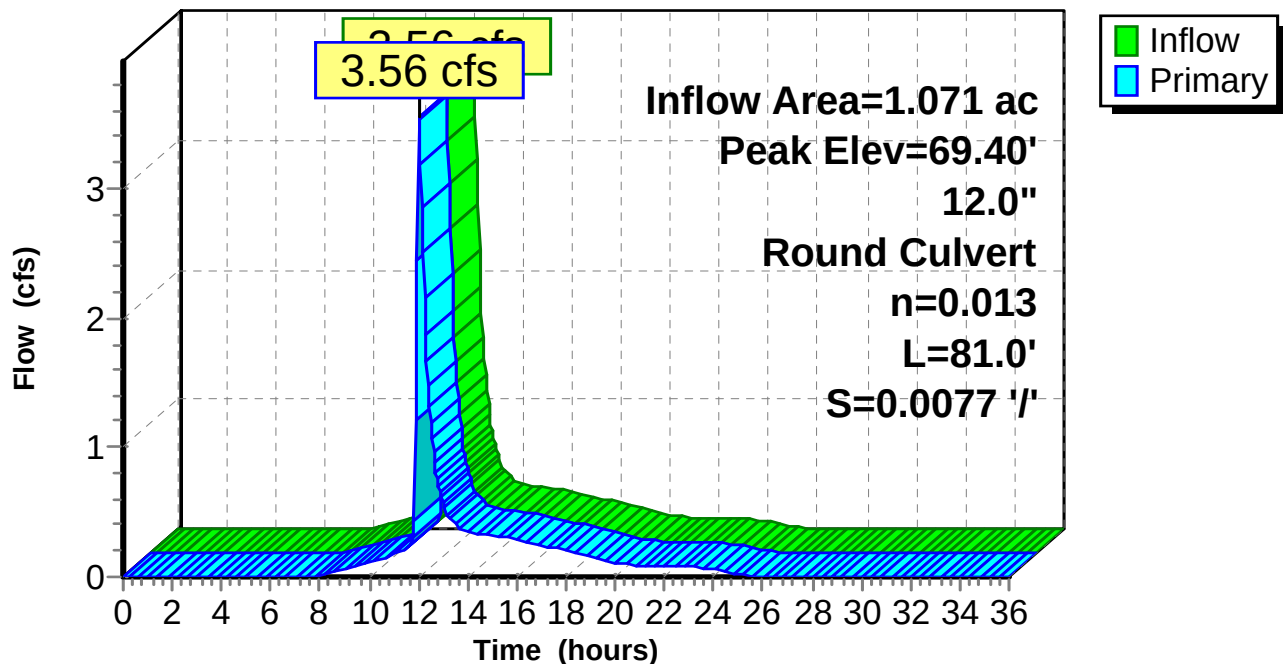
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Peak Elev= 69.40' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.48'	12.0" Round Culvert L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.48' / 66.86' S= 0.0077 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.52 cfs @ 12.03 hrs HW=69.37' (Free Discharge)

↑1=Culvert (Inlet Controls 3.52 cfs @ 4.48 fps)

Pond 5P: OCS-4P**Hydrograph**

Summary for Pond 6P: Atrium Surface Detention

Inflow Area = 2.627 ac, 56.89% Impervious, Inflow Depth = 4.77" for 25-yr event
 Inflow = 19.53 cfs @ 11.98 hrs, Volume= 1.044 af
 Outflow = 18.97 cfs @ 12.00 hrs, Volume= 0.987 af, Atten= 3%, Lag= 1.1 min
 Primary = 18.97 cfs @ 12.00 hrs, Volume= 0.987 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 74.10' @ 12.00 hrs Surf.Area= 3,837 sf Storage= 4,447 cf

Plug-Flow detention time= 54.7 min calculated for 0.987 af (95% of inflow)
 Center-of-Mass det. time= 22.9 min (805.6 - 782.8)

Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	5,026 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
70.00	55	0	0
72.00	327	382	382
73.00	1,694	1,011	1,393
74.25	4,120	3,634	5,026

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	0.1" Round Culvert L= 220.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.00' / 69.20' S= 0.0082 '/' Cc= 0.900 n= 0.013, Flow Area= 0.00 sf
#2	Primary	73.50'	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

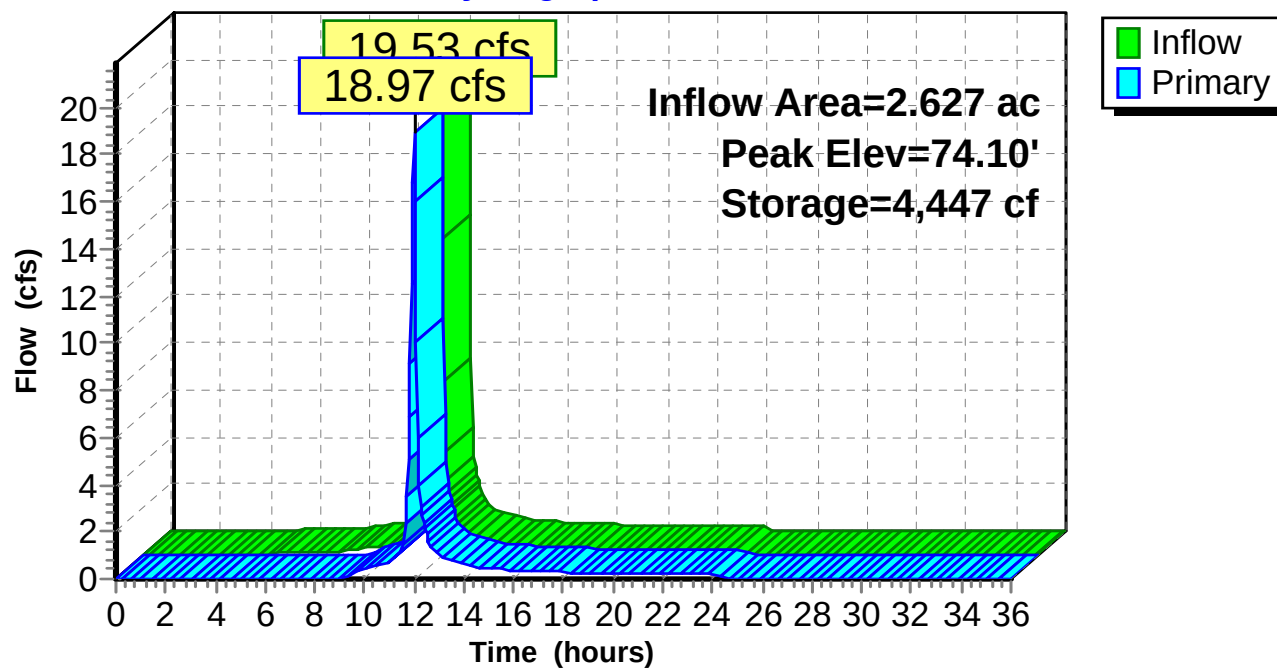
Primary OutFlow Max=18.85 cfs @ 12.00 hrs HW=74.10' (Free Discharge)

1=Culvert (Barrel Controls 0.00 cfs @ 0.28 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 18.85 cfs @ 2.09 fps)

Pond 6P: Atrium Surface Detention

Hydrograph



Summary for Pond 7P: Riprap Surface Detention

Inflow Area = 0.600 ac, 52.50% Impervious, Inflow Depth = 4.66" for 25-yr event
 Inflow = 4.40 cfs @ 11.98 hrs, Volume= 0.233 af
 Outflow = 3.26 cfs @ 12.04 hrs, Volume= 0.231 af, Atten= 26%, Lag= 3.7 min
 Primary = 3.26 cfs @ 12.04 hrs, Volume= 0.231 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 73.85' @ 12.04 hrs Surf.Area= 766 sf Storage= 818 cf

Plug-Flow detention time= 13.6 min calculated for 0.231 af (99% of inflow)
 Center-of-Mass det. time= 7.8 min (794.1 - 786.3)

Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	2,180 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	50	0	0
73.00	310	360	360
74.00	846	578	938
75.00	1,637	1,242	2,180

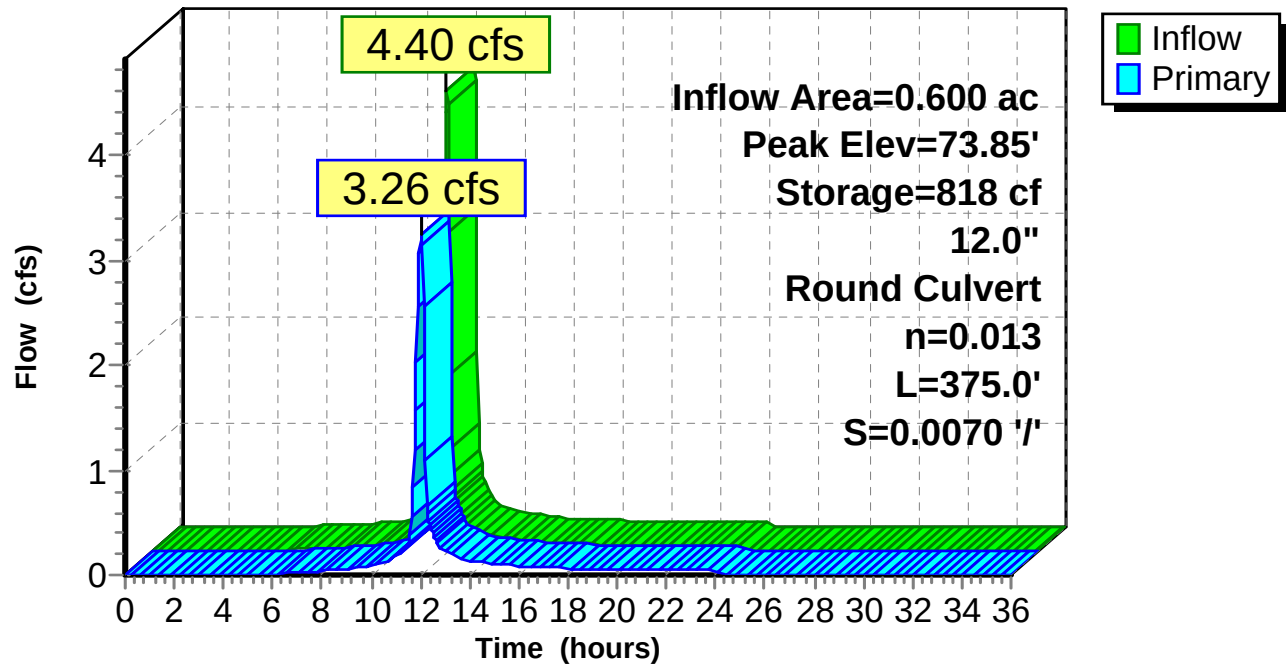
Device	Routing	Invert	Outlet Devices
#1	Primary	71.83'	12.0" Round Culvert L= 375.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.83' / 69.20' S= 0.0070 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.25 cfs @ 12.04 hrs HW=73.83' (Free Discharge)

↑**1=Culvert** (Barrel Controls 3.25 cfs @ 4.13 fps)

Pond 7P: Riprap Surface Detention

Hydrograph



Summary for Pond 8P: OCS-DMH7

[57] Hint: Peaked at 67.23' (Flood elevation advised)

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 4.16" for 25-yr event
 Inflow = 8.22 cfs @ 12.07 hrs, Volume= 1.435 af
 Outflow = 8.22 cfs @ 12.07 hrs, Volume= 1.435 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.78 cfs @ 12.07 hrs, Volume= 0.045 af
 Secondary = 7.44 cfs @ 12.07 hrs, Volume= 1.390 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

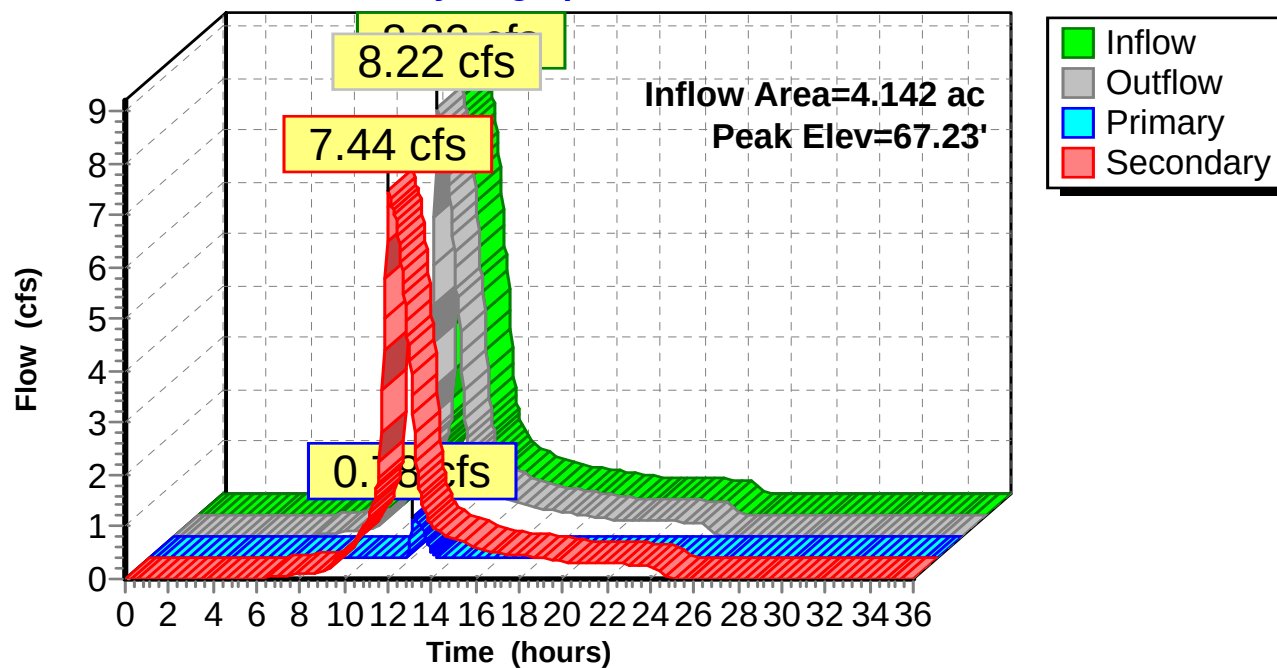
Peak Elev= 67.23' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	12.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.60' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	65.70'	24.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.76 cfs @ 12.07 hrs HW=67.22' (Free Discharge)↑**1=Culvert** (Barrel Controls 0.76 cfs @ 2.12 fps)**Secondary OutFlow** Max=7.41 cfs @ 12.07 hrs HW=67.22' (Free Discharge)↑**2=Culvert** (Barrel Controls 7.41 cfs @ 3.99 fps)

Pond 8P: OCS-DMH7

Hydrograph



Pre-Development Cedars Model 17-10-11

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 9P: UG Detention

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 0.06" for 25-yr event
 Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.022 af
 Outflow = 0.15 cfs @ 12.91 hrs, Volume= 0.022 af, Atten= 43%, Lag= 50.5 min
 Primary = 0.15 cfs @ 12.91 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 66.08' @ 12.91 hrs Surf.Area= 1,536 sf Storage= 549 cf

Plug-Flow detention time= 88.2 min calculated for 0.022 af (99% of inflow)
 Center-of-Mass det. time= 89.2 min (834.0 - 744.8)

Volume	Invert	Avail.Storage	Storage Description
#1	65.70'	2,488 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,619 cf Overall x 95.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.70	1,536	0	0
67.40	1,536	2,611	2,611
67.41	5	8	2,619

Device	Routing	Invert	Outlet Devices
#1	Primary	65.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Primary	67.00'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

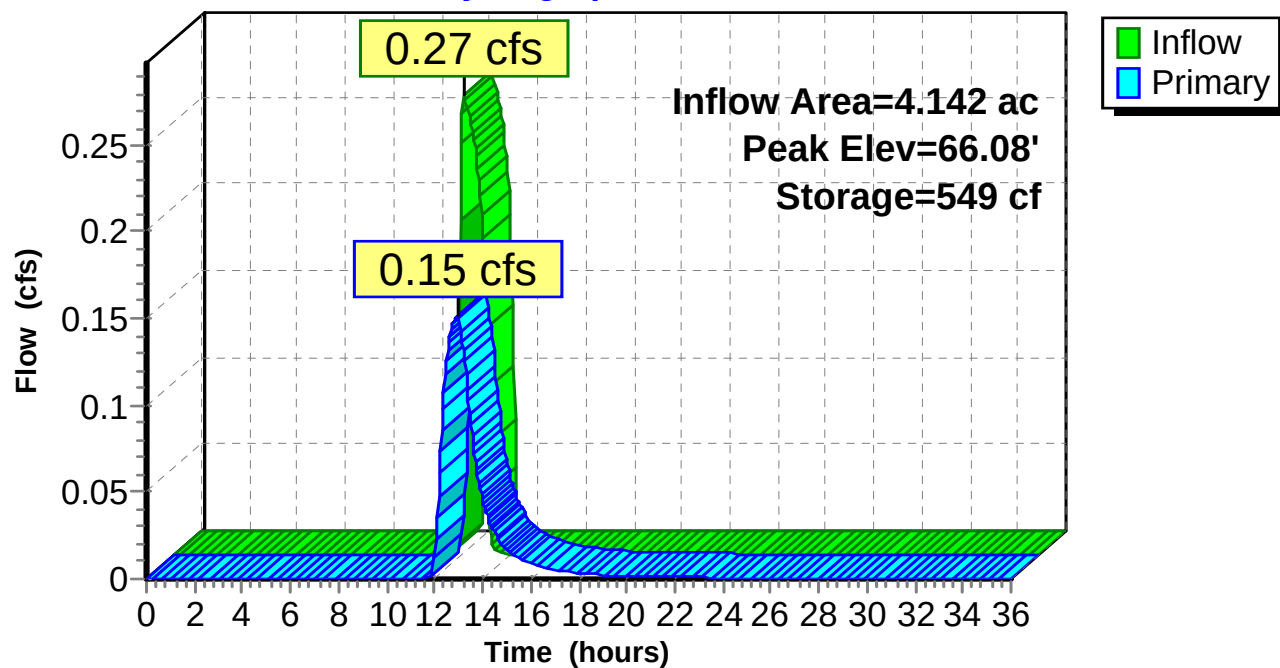
Primary OutFlow Max=0.15 cfs @ 12.91 hrs HW=66.08' (Free Discharge)

1=Culvert (Inlet Controls 0.15 cfs @ 1.74 fps)

2=Culvert (Controls 0.00 cfs)

Pond 9P: UG Detention

Hydrograph



Summary for Pond 10P: Isolator Row x5

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

[81] Warning: Exceeded Pond 8P by 0.90' @ 35.95 hrs

Inflow Area = 4.142 ac, 55.71% Impervious, Inflow Depth = 0.13" for 25-yr event
 Inflow = 0.78 cfs @ 12.07 hrs, Volume= 0.045 af
 Outflow = 0.78 cfs @ 12.07 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.1 min
 Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.022 af
 Secondary = 0.51 cfs @ 12.07 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.41' @ 12.07 hrs Surf.Area= 0.001 ac Storage= 0.001 af

Plug-Flow detention time= 1.8 min calculated for 0.045 af (100% of inflow)
 Center-of-Mass det. time= 1.9 min (740.6 - 738.6)

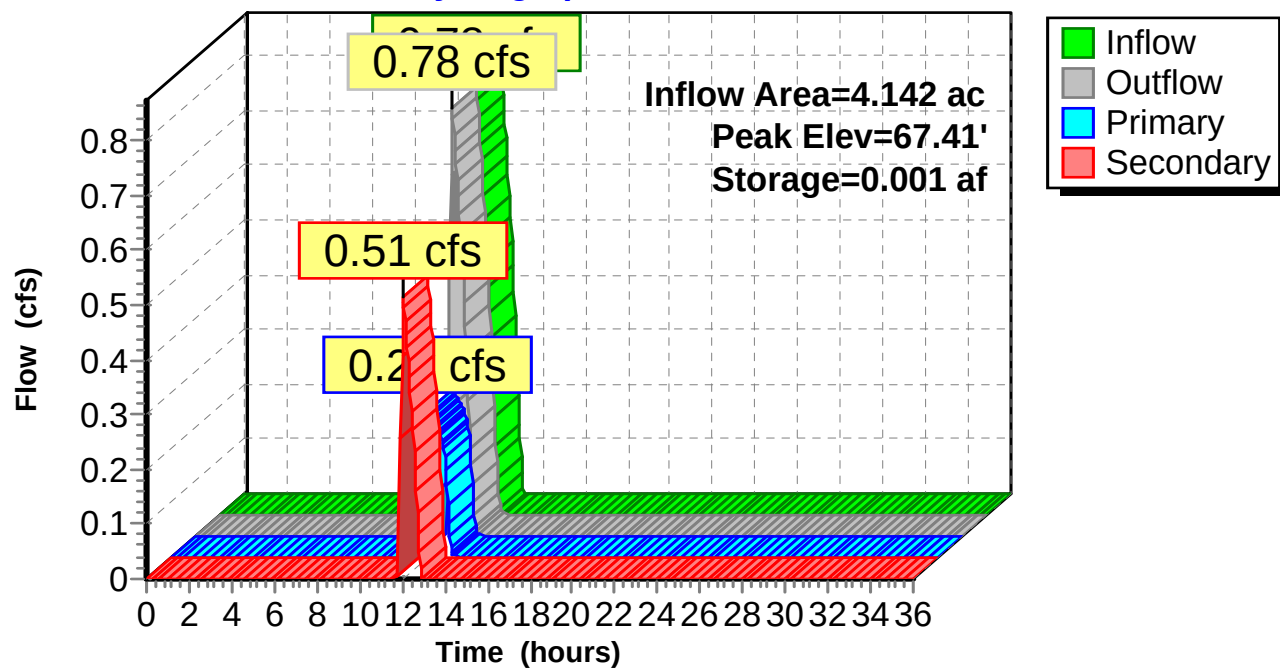
Volume	Invert	Avail.Storage	Storage Description
#1	66.60'	0.002 af	ADS_StormTech RC-310 x 5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 2.07 sf x 1 rows

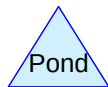
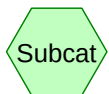
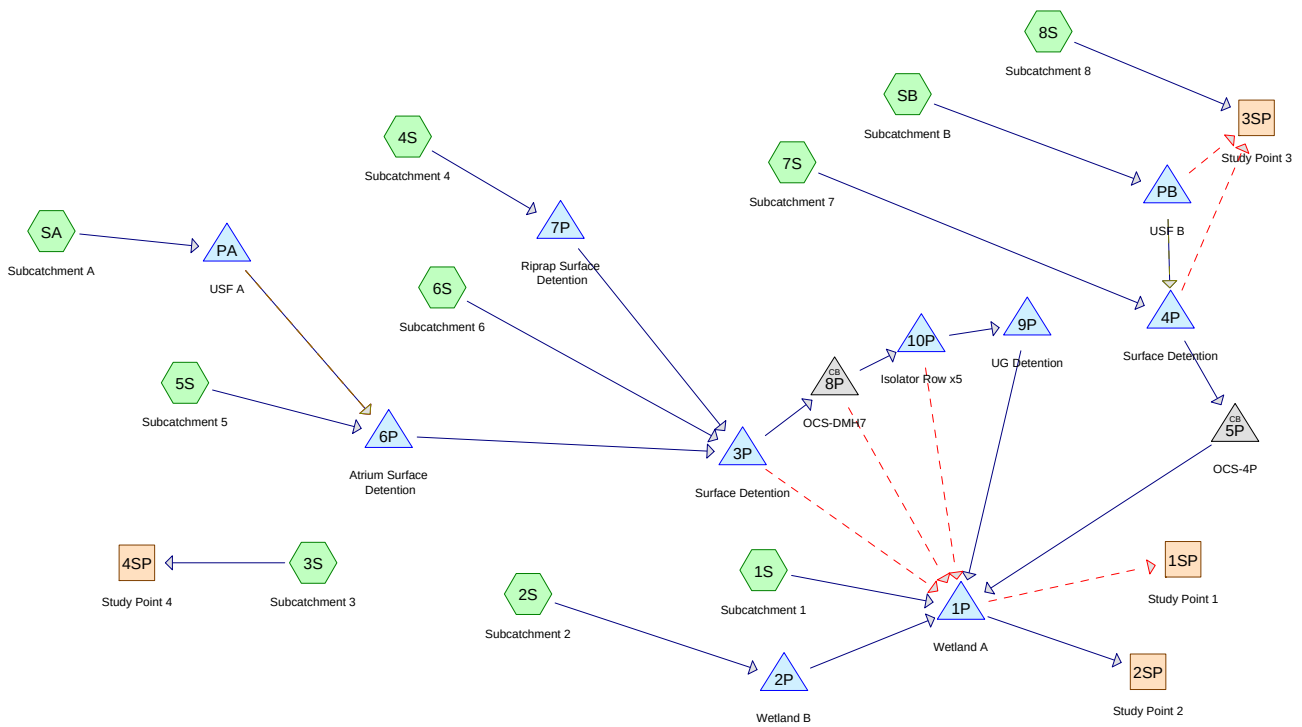
Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	4.0" Round Culvert L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.55' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Secondary	67.00'	12.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.55' S= 0.0090 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.07 hrs HW=67.40' (Free Discharge)↑ **1=Culvert** (Inlet Controls 0.26 cfs @ 3.03 fps)**Secondary OutFlow** Max=0.50 cfs @ 12.07 hrs HW=67.40' (Free Discharge)↑ **2=Culvert** (Inlet Controls 0.50 cfs @ 1.70 fps)

Pond 10P: Isolator Row x5

Hydrograph





Routing Diagram for Post-Development Cedars Model 17-10-16
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Post-Development Cedars Model 17-10-16

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.370	98	(1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, SA, SB)
5.196	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, SA, SB)
10.566	89	TOTAL AREA

Post-Development Cedars Model 17-10-16

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
5.196	HSG D	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, SA, SB
5.370	Other	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, SA, SB
10.566		TOTAL AREA

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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	0.000	0.000	5.370	5.370		1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, SA, SB
0.000	0.000	0.000	5.196	0.000	5.196	>75% Grass cover, Good	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, SA, SB
0.000	0.000	0.000	5.196	5.370	10.566	TOTAL AREA	

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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	62.86	58.69	48.0	0.0869	0.013	12.0	0.0	0.0
2	3P	69.10	68.75	70.0	0.0050	0.013	15.0	0.0	0.0
3	4P	67.66	67.65	5.0	0.0020	0.013	1.0	0.0	0.0
4	4P	70.25	70.25	1.0	0.0000	0.013	6.0	0.0	0.0
5	5P	67.48	66.86	81.0	0.0077	0.013	12.0	0.0	0.0
6	6P	71.00	69.20	220.0	0.0082	0.013	0.1	0.0	0.0
7	7P	71.83	69.20	375.0	0.0070	0.013	12.0	0.0	0.0
8	8P	66.60	66.60	10.0	0.0000	0.013	12.0	0.0	0.0
9	8P	65.70	65.50	40.0	0.0050	0.013	24.0	0.0	0.0
10	9P	65.70	65.60	10.0	0.0100	0.013	4.0	0.0	0.0
11	9P	67.00	66.90	10.0	0.0100	0.013	4.0	0.0	0.0
12	10P	66.60	66.55	5.0	0.0100	0.013	4.0	0.0	0.0
13	10P	67.00	66.55	50.0	0.0090	0.013	12.0	0.0	0.0
14	PA	73.00	72.20	60.0	0.0133	0.013	12.0	0.0	0.0
15	PB	67.50	67.40	20.0	0.0050	0.013	15.0	0.0	0.0

Post-Development Cedars Model 17-10-16

Type II 24-hr 2-yr Rainfall=3.17"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1 Runoff Area=87,665 sf 15.27% Impervious Runoff Depth=1.58"
 Flow Length=177' Slope=0.0100 '/' Tc=29.9 min CN=83 Runoff=2.75 cfs 0.266 af

Subcatchment2S: Subcatchment2 Runoff Area=90,682 sf 66.45% Impervious Runoff Depth=2.32"
 Flow Length=178' Slope=0.0075 '/' Tc=33.7 min CN=92 Runoff=3.84 cfs 0.403 af

Subcatchment3S: Subcatchment3 Runoff Area=40,444 sf 47.45% Impervious Runoff Depth=2.05"
 Flow Length=185' Slope=0.0200 '/' Tc=30.6 min CN=89 Runoff=1.63 cfs 0.159 af

Subcatchment4S: Subcatchment4 Runoff Area=26,132 sf 52.50% Impervious Runoff Depth=2.05"
 Tc=7.0 min CN=89 Runoff=2.03 cfs 0.103 af

Subcatchment5S: Subcatchment5 Runoff Area=109,598 sf 64.38% Impervious Runoff Depth=2.32"
 Tc=7.0 min CN=92 Runoff=9.39 cfs 0.487 af

Subcatchment6S: Subcatchment6 Runoff Area=39,891 sf 54.44% Impervious Runoff Depth=2.14"
 Tc=7.0 min CN=90 Runoff=3.21 cfs 0.163 af

Subcatchment7S: Subcatchment7 Runoff Area=41,419 sf 41.76% Impervious Runoff Depth=1.97"
 Tc=7.0 min CN=88 Runoff=3.11 cfs 0.156 af

Subcatchment8S: Subcatchment8 Runoff Area=1,744 sf 3.61% Impervious Runoff Depth=1.45"
 Tc=7.0 min CN=81 Runoff=0.10 cfs 0.005 af

SubcatchmentSA: SubcatchmentA Runoff Area=8,542 sf 67.83% Impervious Runoff Depth=2.32"
 Flow Length=65' Slope=0.0300 '/' Tc=7.0 min CN=92 Runoff=0.73 cfs 0.038 af

SubcatchmentSB: SubcatchmentB Runoff Area=14,118 sf 84.42% Impervious Runoff Depth=2.62"
 Tc=7.0 min CN=95 Runoff=1.31 cfs 0.071 af

Reach 1SP: Study Point 1 Inflow=0.99 cfs 0.664 af
 Outflow=0.99 cfs 0.664 af

Reach 2SP: Study Point 2 Inflow=0.00 cfs 0.000 af
 Outflow=0.00 cfs 0.000 af

Reach 3SP: Study Point 3 Inflow=0.10 cfs 0.005 af
 Outflow=0.10 cfs 0.005 af

Reach 4SP: Study Point 4 Inflow=1.63 cfs 0.159 af
 Outflow=1.63 cfs 0.159 af

Pond 1P: Wetland A Peak Elev=65.32' Storage=51,207 cf Inflow=8.55 cfs 1.329 af
 Primary=0.00 cfs 0.000 af Secondary=0.99 cfs 0.664 af Outflow=0.99 cfs 0.664 af

Pond 2P: Wetland B Peak Elev=69.11' Storage=9,275 cf Inflow=3.84 cfs 0.403 af
 Outflow=1.59 cfs 0.208 af

Post-Development Cedars Model 17-10-16*Type II 24-hr 2-yr Rainfall=3.17"*

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Pond 3P: Surface DetentionPeak Elev=71.49' Storage=7,720 cf Inflow=14.09 cfs 0.718 af
Primary=6.20 cfs 0.717 af Secondary=0.00 cfs 0.000 af Outflow=6.20 cfs 0.717 af**Pond 4P: Surface Detention**Peak Elev=70.47' Storage=4,082 cf Inflow=3.14 cfs 0.212 af
Primary=0.26 cfs 0.139 af Secondary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.139 af**Pond 5P: OCS-4P**Peak Elev=67.76' Inflow=0.26 cfs 0.139 af
12.0" Round Culvert n=0.013 L=81.0' S=0.0077 ' /' Outflow=0.26 cfs 0.139 af**Pond 6P: Atrium Surface Detention**Peak Elev=73.89' Storage=3,658 cf Inflow=9.40 cfs 0.511 af
Outflow=9.01 cfs 0.454 af**Pond 7P: Riprap Surface Detention**Peak Elev=72.74' Storage=285 cf Inflow=2.03 cfs 0.103 af
12.0" Round Culvert n=0.013 L=375.0' S=0.0070 ' /' Outflow=1.93 cfs 0.101 af**Pond 8P: OCS-DMH7**Peak Elev=67.02' Inflow=6.20 cfs 0.717 af
Primary=0.36 cfs 0.011 af Secondary=5.84 cfs 0.705 af Outflow=6.20 cfs 0.717 af**Pond 9P: UG Detention**Peak Elev=65.91' Storage=300 cf Inflow=0.22 cfs 0.009 af
Outflow=0.07 cfs 0.009 af**Pond 10P: Isolator Row x5**Peak Elev=67.21' Storage=0.001 af Inflow=0.36 cfs 0.011 af
Primary=0.22 cfs 0.009 af Secondary=0.14 cfs 0.002 af Outflow=0.37 cfs 0.011 af**Pond PA: USF A**Peak Elev=76.78' Storage=1,128 cf Inflow=0.73 cfs 0.038 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Tertiary=0.02 cfs 0.024 af Outflow=0.02 cfs 0.024 af**Pond PB: USF B**Peak Elev=71.59' Storage=2,056 cf Inflow=1.31 cfs 0.071 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Tertiary=0.05 cfs 0.056 af Outflow=0.05 cfs 0.056 af**Total Runoff Area = 10.566 ac Runoff Volume = 1.850 af Average Runoff Depth = 2.10"**
49.18% Pervious = 5.196 ac 50.82% Impervious = 5.370 ac

Summary for Subcatchment 1S: Subcatchment 1

Runoff = 2.75 cfs @ 12.25 hrs, Volume= 0.266 af, Depth= 1.58"

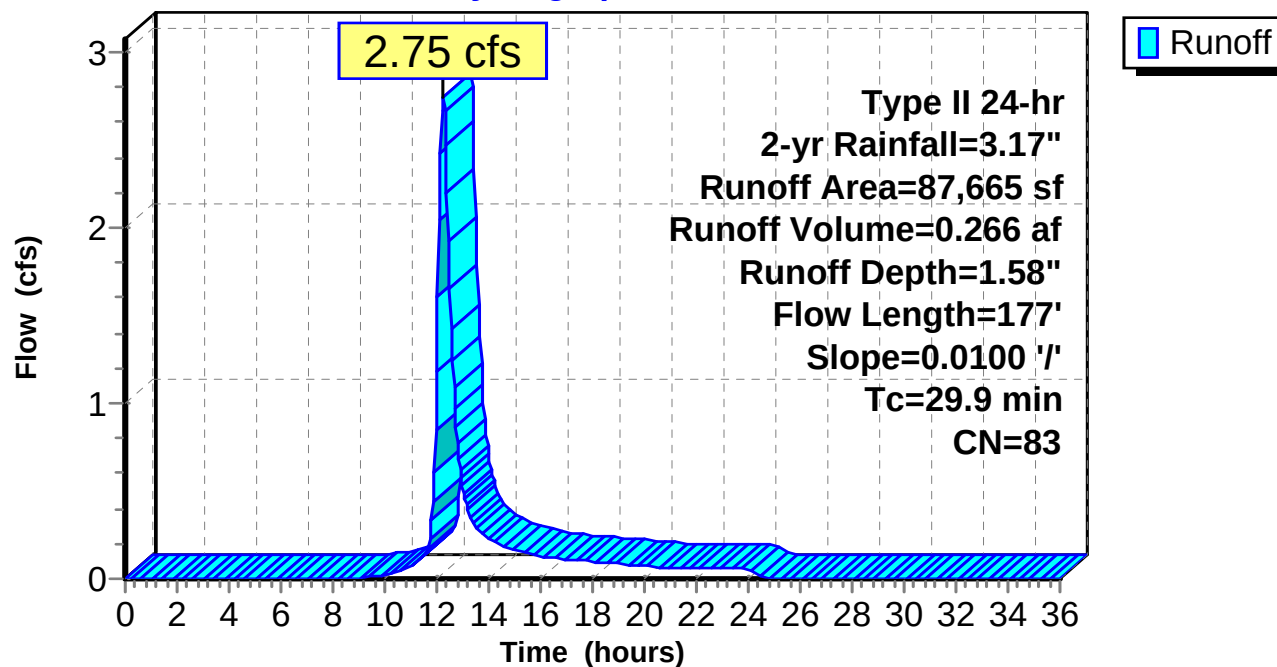
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	13,390	98	
	74,275	80	>75% Grass cover, Good, HSG D
	87,665	83	Weighted Average
	74,275		84.73% Pervious Area
	13,390		15.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	177	0.0100	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 1S: Subcatchment 1

Hydrograph



Summary for Subcatchment 2S: Subcatchment 2

Runoff = 3.84 cfs @ 12.28 hrs, Volume= 0.403 af, Depth= 2.32"

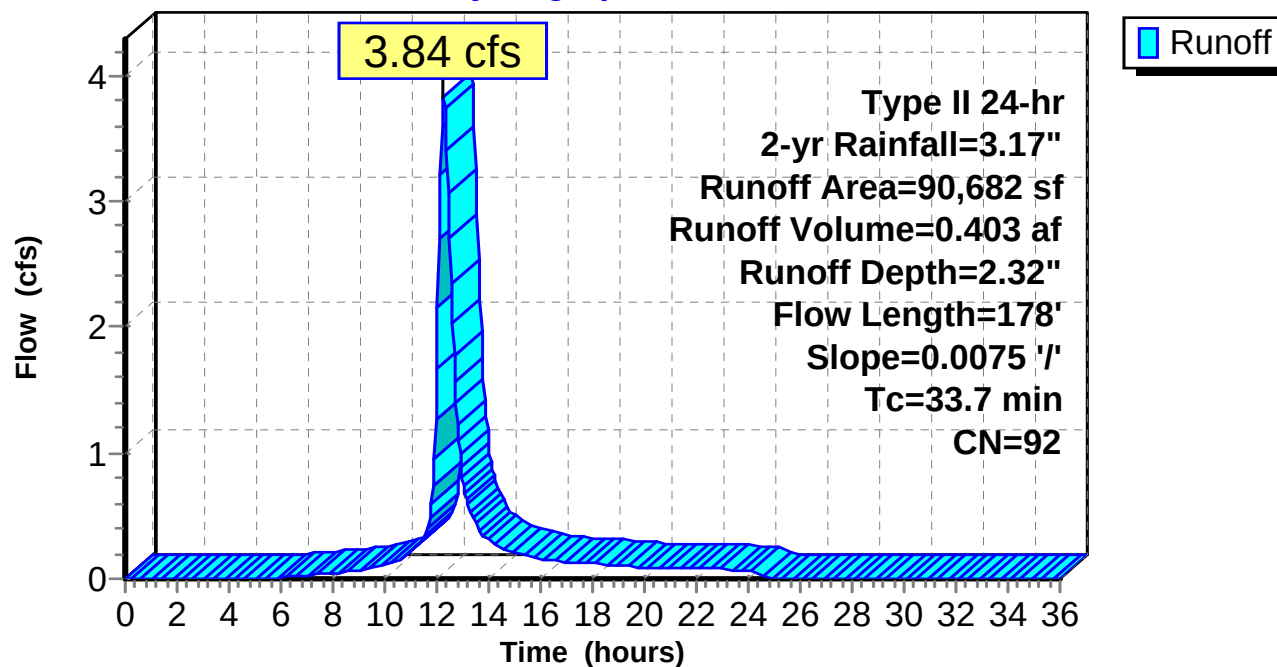
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	60,255	98	
	30,427	80	>75% Grass cover, Good, HSG D
	90,682	92	Weighted Average
	30,427		33.55% Pervious Area
	60,255		66.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.7	178	0.0075	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 2S: Subcatchment 2

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.17"

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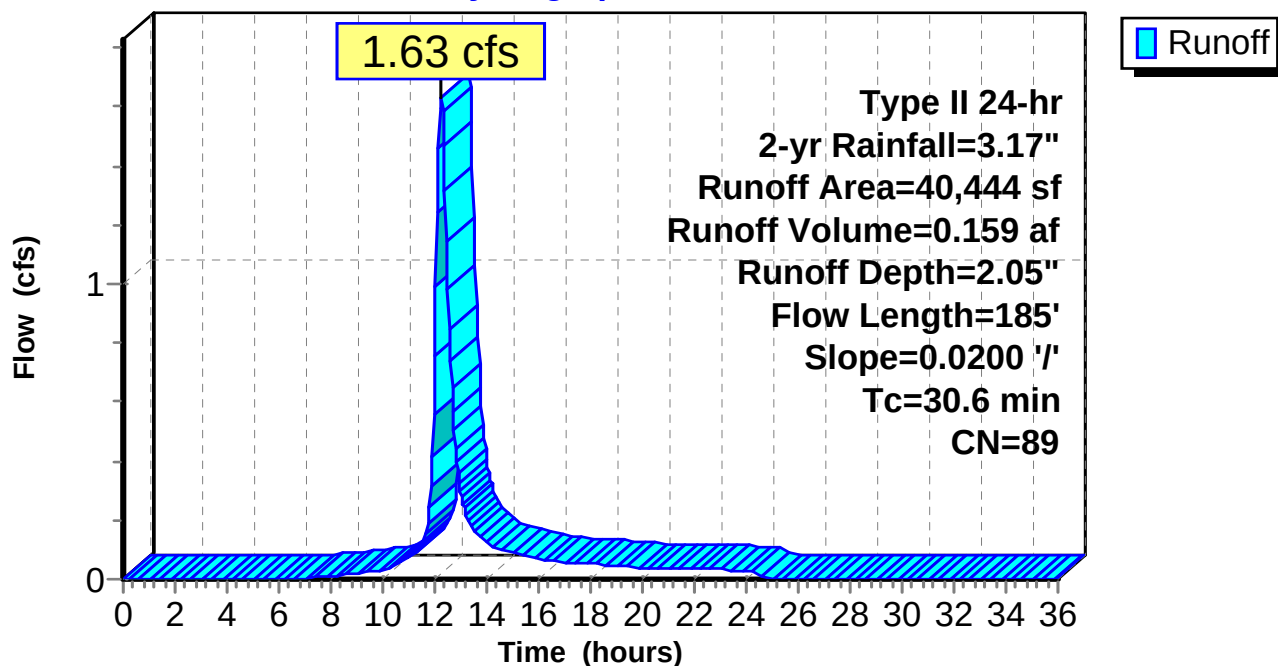
Summary for Subcatchment 3S: Subcatchment 3

Runoff = 1.63 cfs @ 12.25 hrs, Volume= 0.159 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

Area (sf)	CN	Description
21,255	80	>75% Grass cover, Good, HSG D
* 19,189	98	
40,444	89	Weighted Average
21,255		52.55% Pervious Area
19,189		47.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	150	0.0200	0.08		Sheet Flow, Sheet
					Woods: Light underbrush n= 0.400 P2= 3.17"
0.8	35	0.0200	0.71		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
30.6	185	Total			

Subcatchment 3S: Subcatchment 3**Hydrograph**

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Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Subcatchment 4S: Subcatchment 4

Runoff = 2.03 cfs @ 11.98 hrs, Volume= 0.103 af, Depth= 2.05"

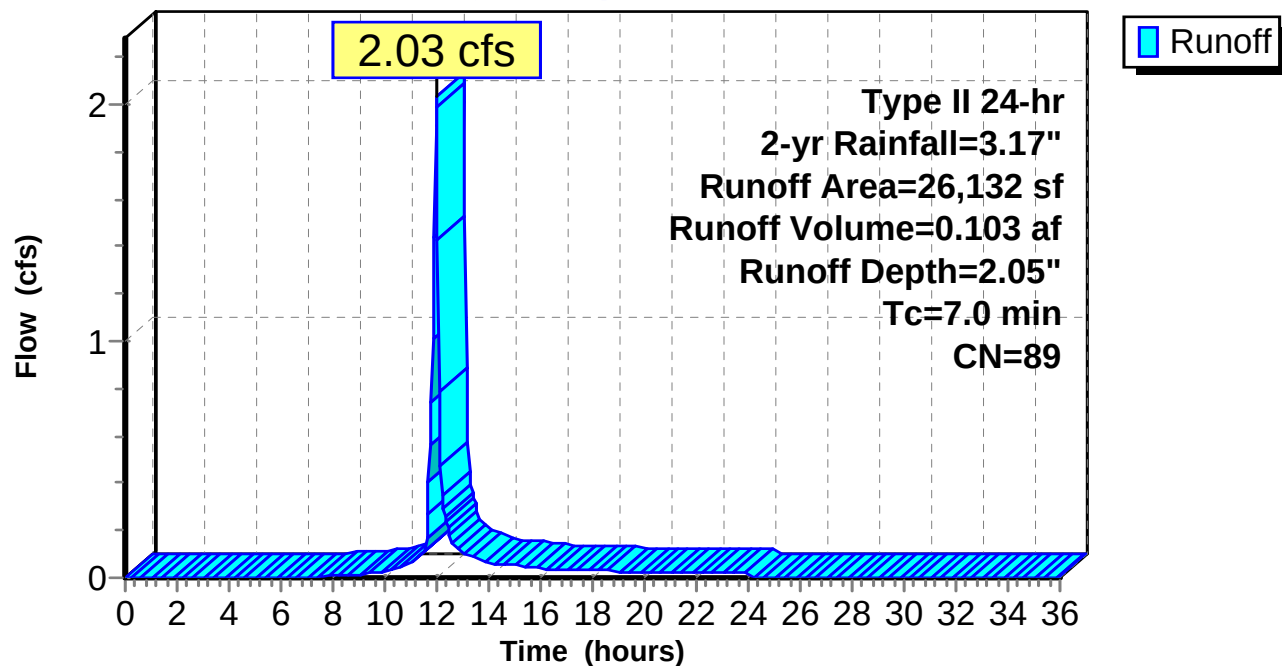
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	13,720	98	
	12,412	80	>75% Grass cover, Good, HSG D
	26,132	89	Weighted Average
	12,412		47.50% Pervious Area
	13,720		52.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 4S: Subcatchment 4

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Subcatchment 5S: Subcatchment 5

Runoff = 9.39 cfs @ 11.98 hrs, Volume= 0.487 af, Depth= 2.32"

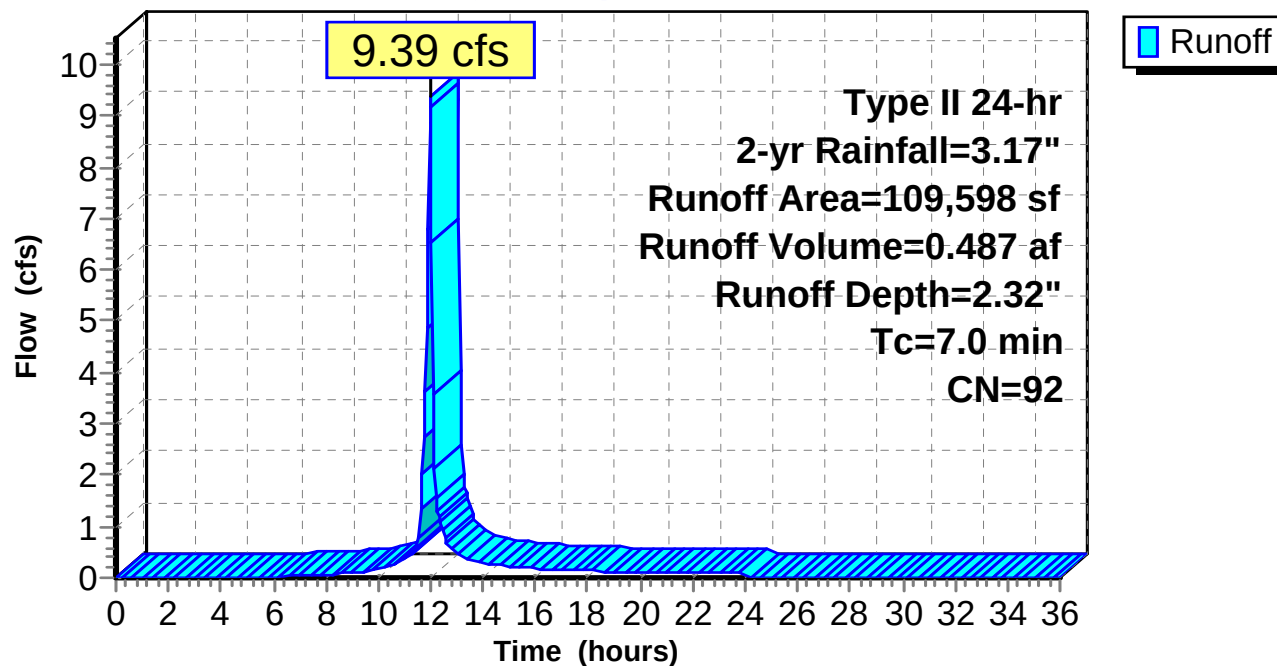
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	70,563	98	
	39,035	80	>75% Grass cover, Good, HSG D
	109,598	92	Weighted Average
	39,035		35.62% Pervious Area
	70,563		64.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 5S: Subcatchment 5

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.17"

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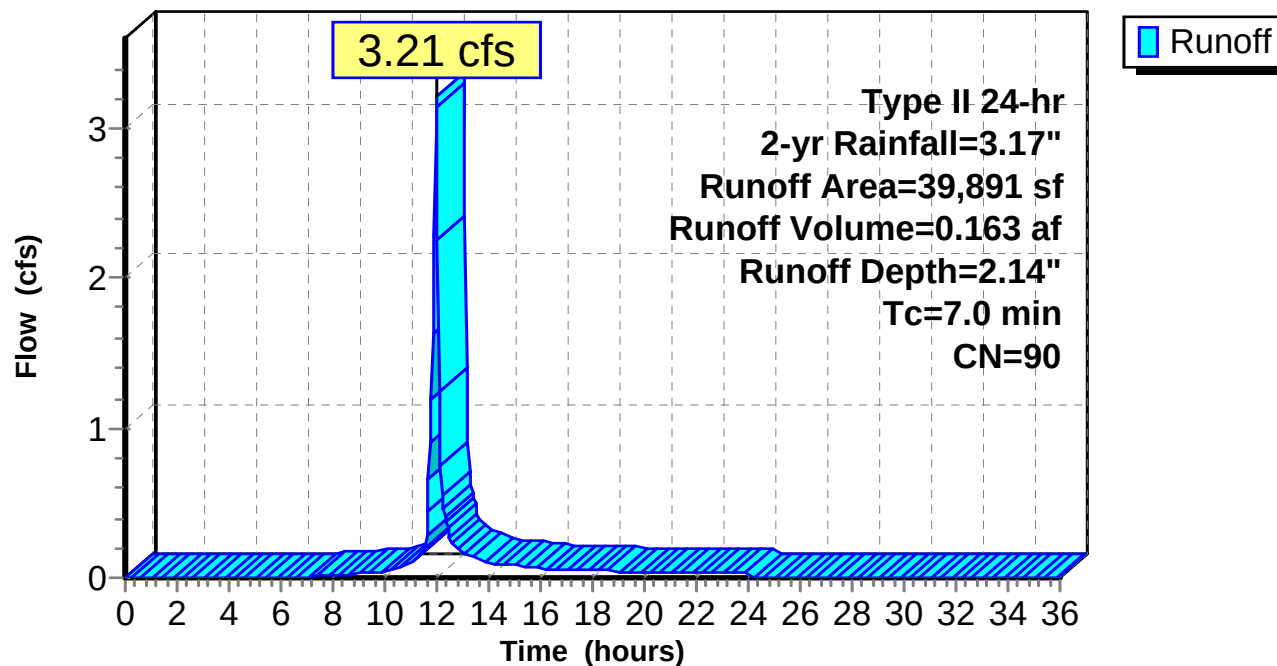
Summary for Subcatchment 6S: Subcatchment 6

Runoff = 3.21 cfs @ 11.98 hrs, Volume= 0.163 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	21,718	98	
	18,173	80	>75% Grass cover, Good, HSG D
	39,891	90	Weighted Average
	18,173		45.56% Pervious Area
	21,718		54.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 6S: Subcatchment 6**Hydrograph**

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Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Subcatchment 7S: Subcatchment 7

Runoff = 3.11 cfs @ 11.98 hrs, Volume= 0.156 af, Depth= 1.97"

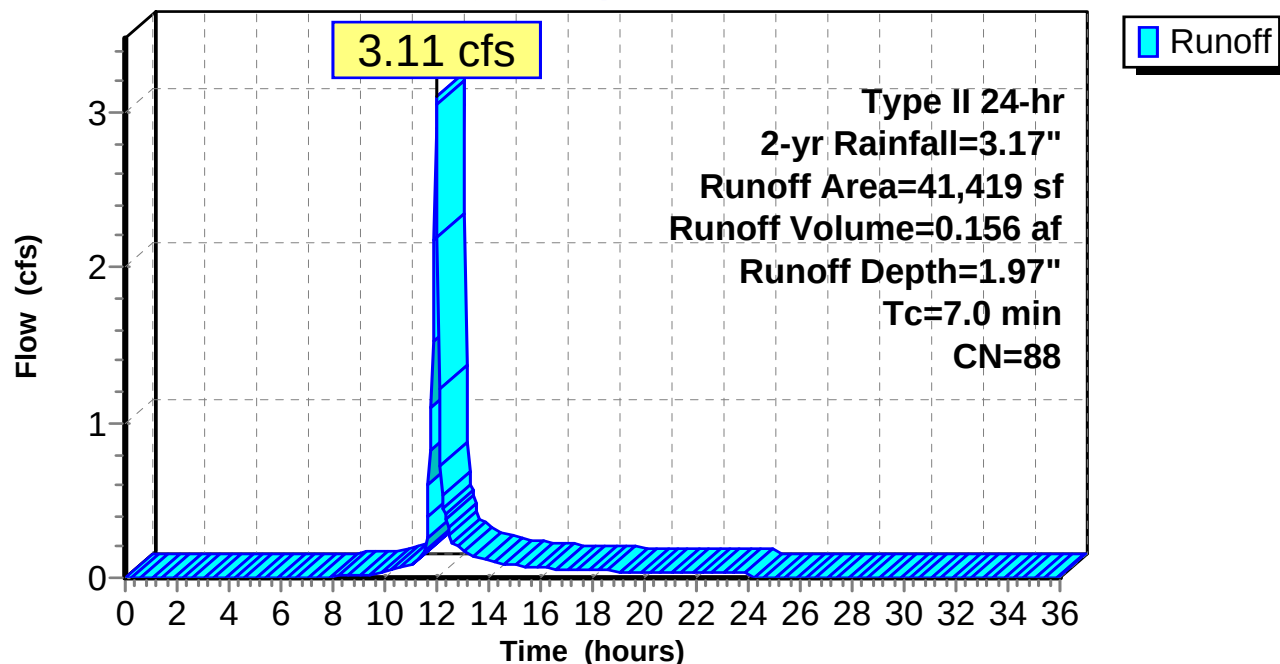
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	17,297	98	
	24,122	80	>75% Grass cover, Good, HSG D
	41,419	88	Weighted Average
	24,122		58.24% Pervious Area
	17,297		41.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 7S: Subcatchment 7

Hydrograph



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Type II 24-hr 2-yr Rainfall=3.17"

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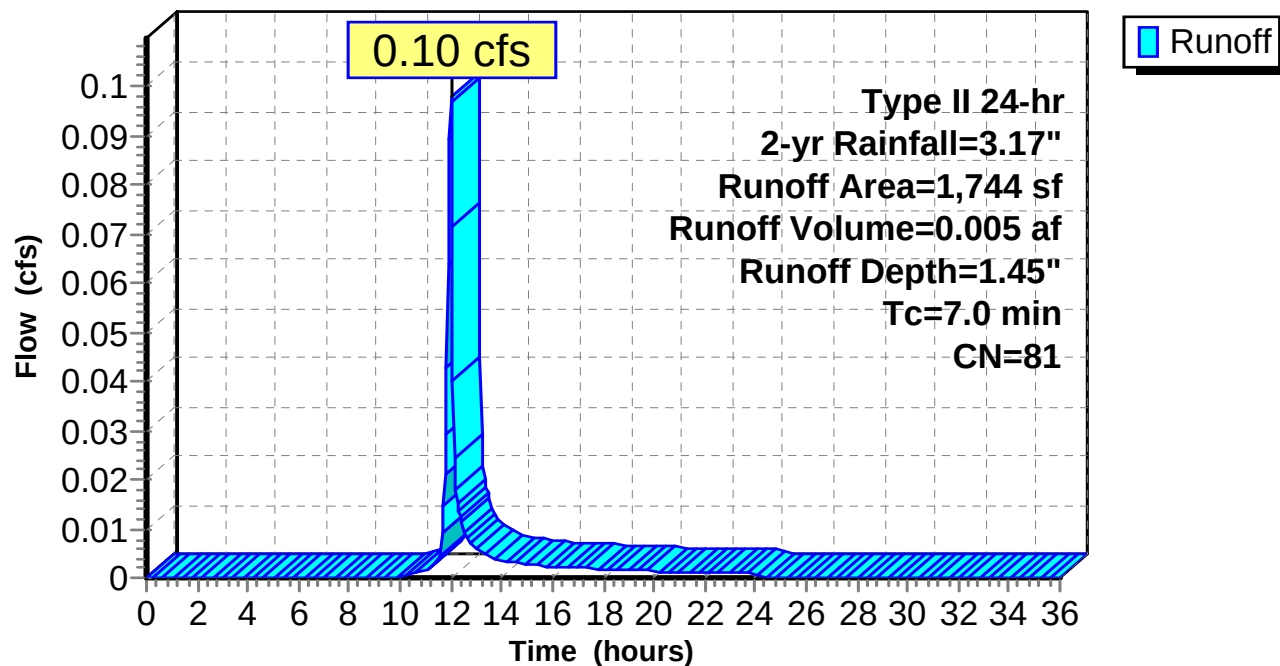
Summary for Subcatchment 8S: Subcatchment 8

Runoff = 0.10 cfs @ 11.99 hrs, Volume= 0.005 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

Area (sf)	CN	Description
1,681	80	>75% Grass cover, Good, HSG D
* 63	98	
1,744	81	Weighted Average
1,681		96.39% Pervious Area
63		3.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 8S: Subcatchment 8**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 2-yr Rainfall=3.17"

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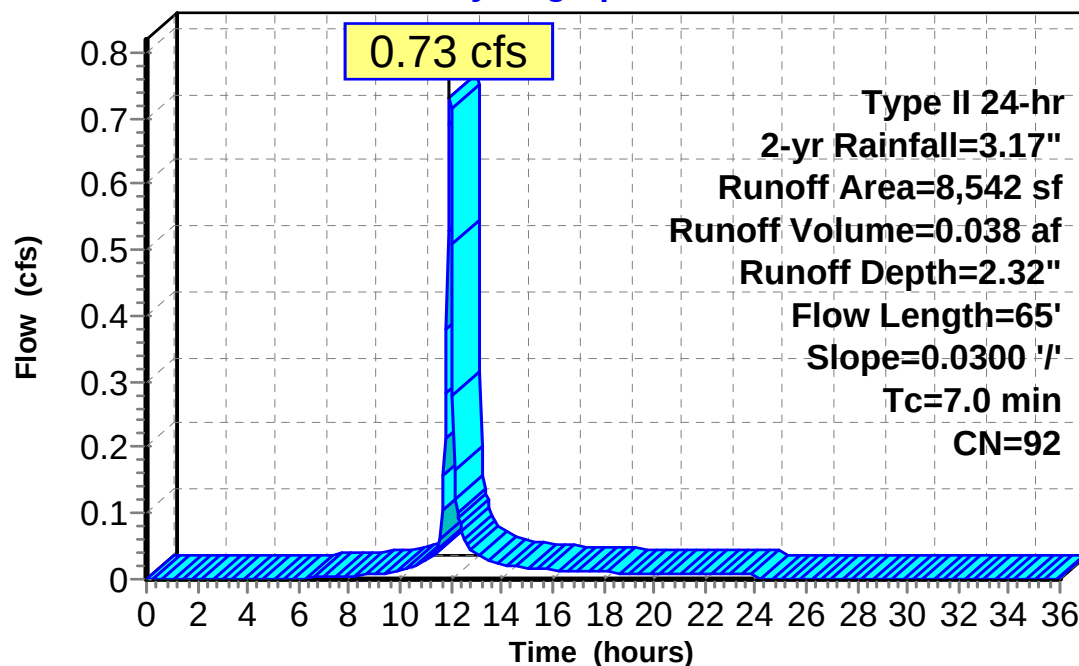
Summary for Subcatchment SA: Subcatchment A

Runoff = 0.73 cfs @ 11.98 hrs, Volume= 0.038 af, Depth= 2.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	5,794	98	
	2,748	80	>75% Grass cover, Good, HSG D
	8,542	92	Weighted Average
	2,748		32.17% Pervious Area
	5,794		67.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	65	0.0300	1.48		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.17"
6.3					Direct Entry, min
7.0	65	Total			

Subcatchment SA: Subcatchment A**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 2-yr Rainfall=3.17"

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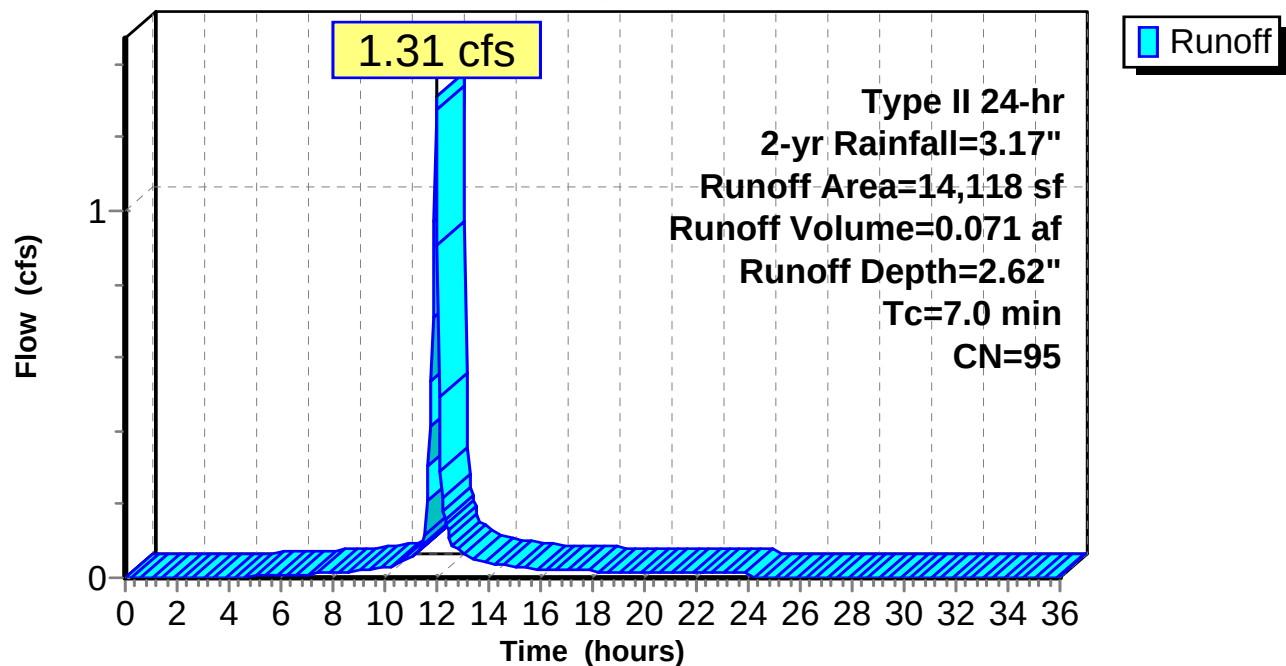
Summary for Subcatchment SB: Subcatchment B

Runoff = 1.31 cfs @ 11.98 hrs, Volume= 0.071 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	11,919	98	
	2,199	80	>75% Grass cover, Good, HSG D
	14,118	95	Weighted Average
	2,199		15.58% Pervious Area
	11,919		84.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment SB: Subcatchment B**Hydrograph**

Summary for Reach 1SP: Study Point 1

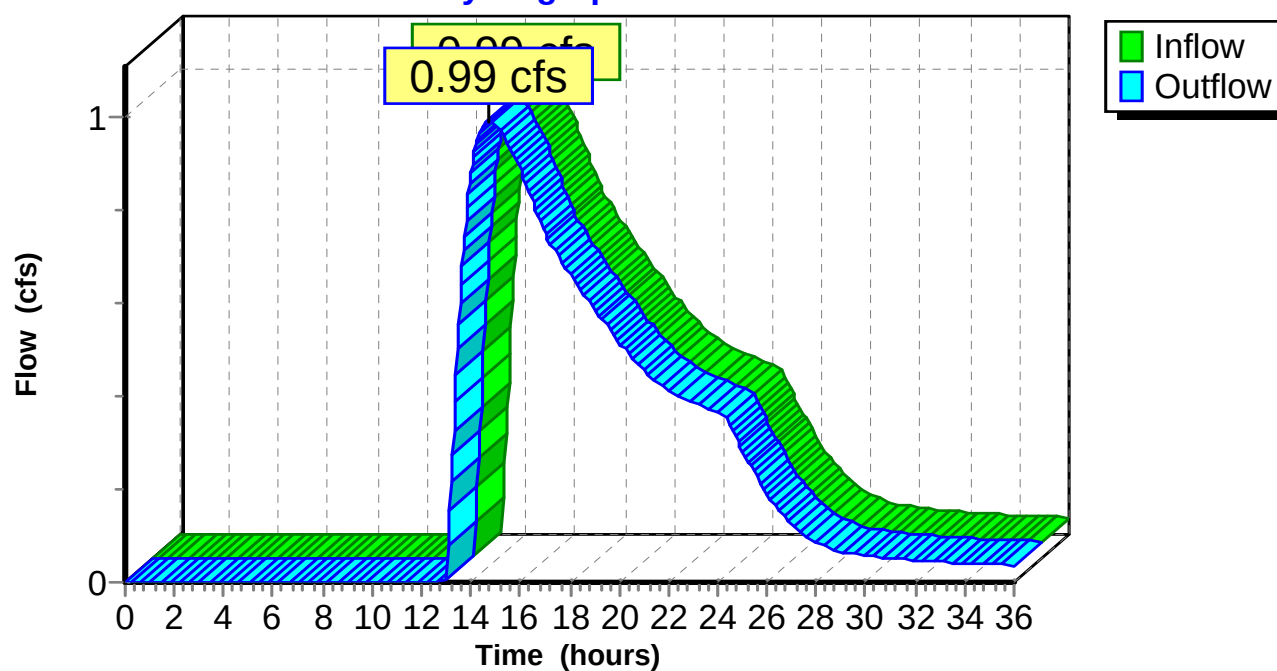
[40] Hint: Not Described (Outflow=Inflow)

Inflow = 0.99 cfs @ 14.74 hrs, Volume= 0.664 af
 Outflow = 0.99 cfs @ 14.74 hrs, Volume= 0.664 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 1SP: Study Point 1

Hydrograph



Summary for Reach 2SP: Study Point 2

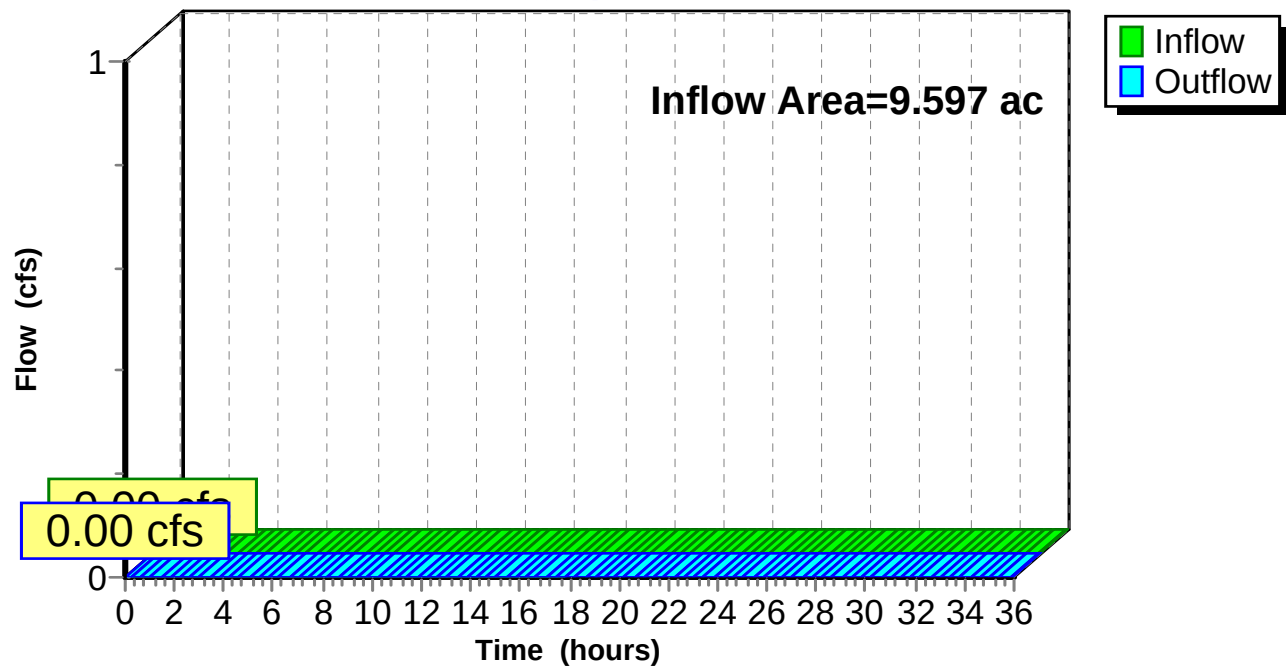
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.597 ac, 51.35% Impervious, Inflow Depth = 0.00" for 2-yr event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 2SP: Study Point 2

Hydrograph

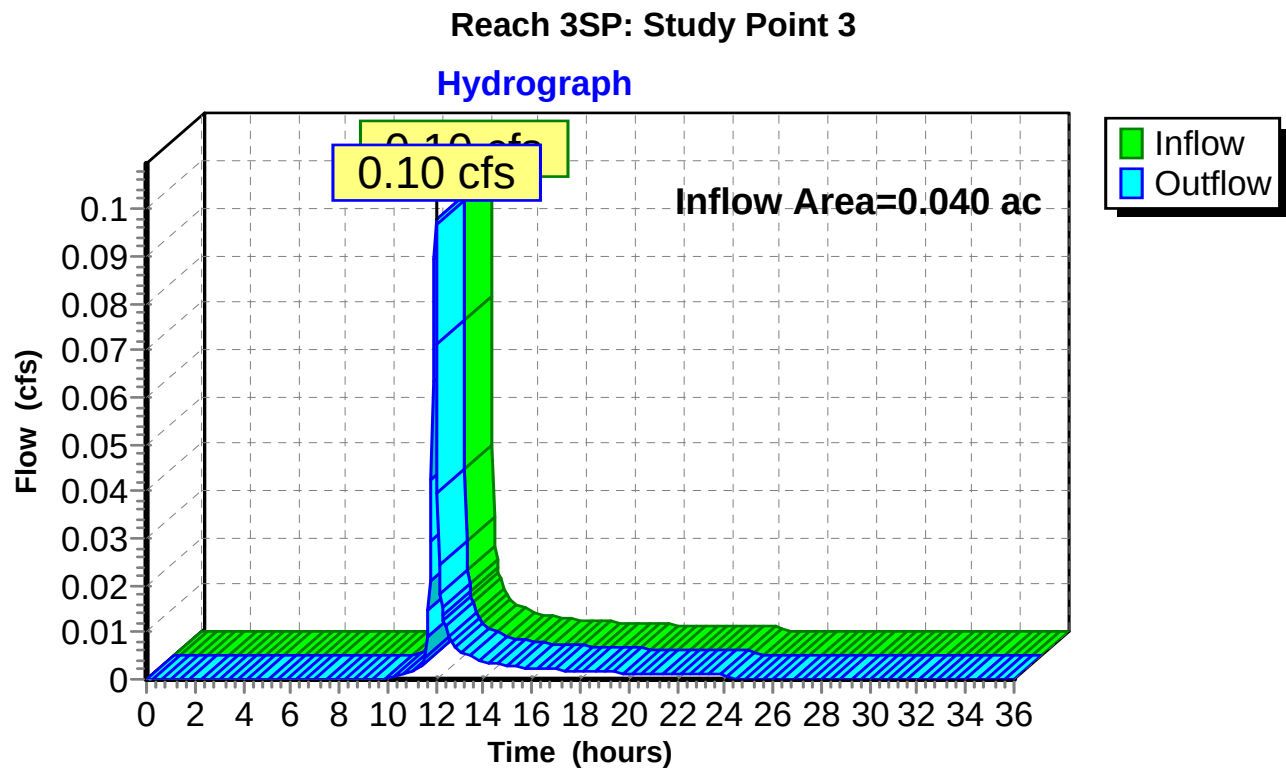


Summary for Reach 3SP: Study Point 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.040 ac, 3.61% Impervious, Inflow Depth = 1.45" for 2-yr event
Inflow = 0.10 cfs @ 11.99 hrs, Volume= 0.005 af
Outflow = 0.10 cfs @ 11.99 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs



Summary for Reach 4SP: Study Point 4

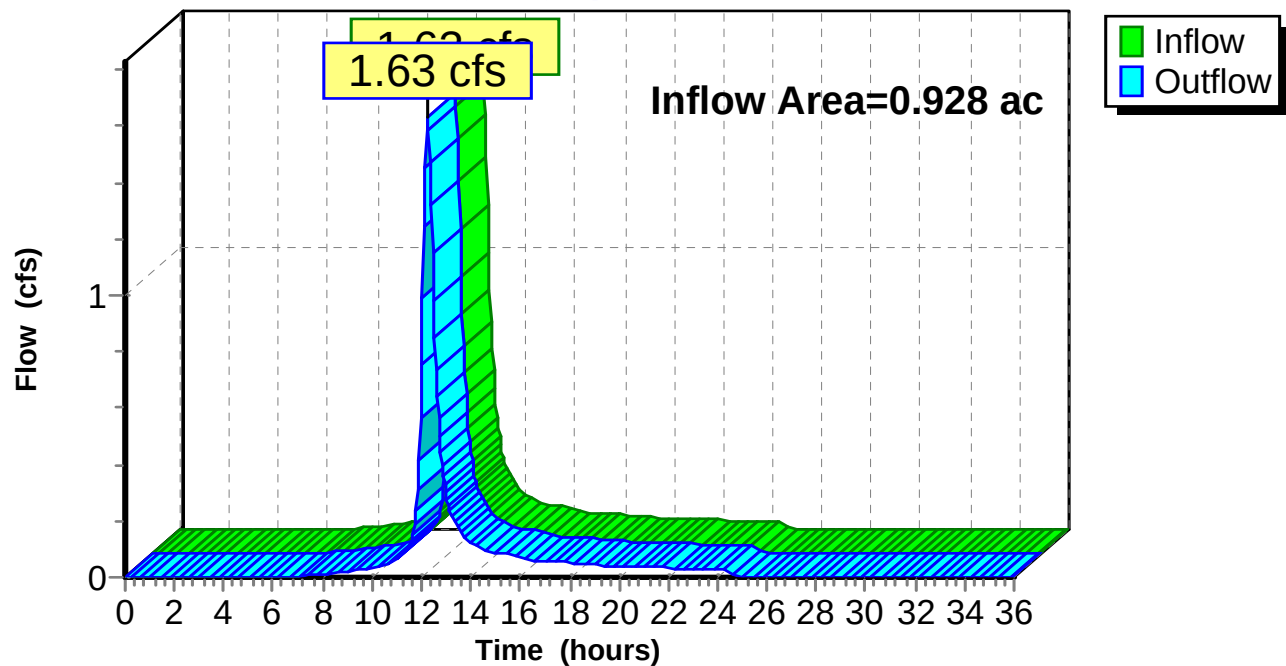
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.928 ac, 47.45% Impervious, Inflow Depth = 2.05" for 2-yr event
Inflow = 1.63 cfs @ 12.25 hrs, Volume= 0.159 af
Outflow = 1.63 cfs @ 12.25 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 4SP: Study Point 4

Hydrograph



Summary for Pond 1P: Wetland A

Inflow Area = 9.597 ac, 51.35% Impervious, Inflow Depth > 1.66" for 2-yr event
 Inflow = 8.55 cfs @ 12.20 hrs, Volume= 1.329 af
 Outflow = 0.99 cfs @ 14.74 hrs, Volume= 0.664 af, Atten= 88%, Lag= 152.1 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.99 cfs @ 14.74 hrs, Volume= 0.664 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Starting Elev= 63.50' Surf.Area= 14,739 sf Storage= 17,429 cf
 Peak Elev= 65.32' @ 14.74 hrs Surf.Area= 22,524 sf Storage= 51,207 cf (33,778 cf above start)

Plug-Flow detention time= 720.2 min calculated for 0.264 af (20% of inflow)
 Center-of-Mass det. time= 253.0 min (1,153.6 - 900.7)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	209,276 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	8,500	0	0
65.00	20,977	44,216	44,216
70.00	45,047	165,060	209,276

Device	Routing	Invert	Outlet Devices
#1	Primary	65.75'	3.0' 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
#2	Secondary	62.86'	12.0" Round Culvert L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 62.86' / 58.69' S= 0.0869 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	65.08'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=63.50' (Free Discharge)

↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

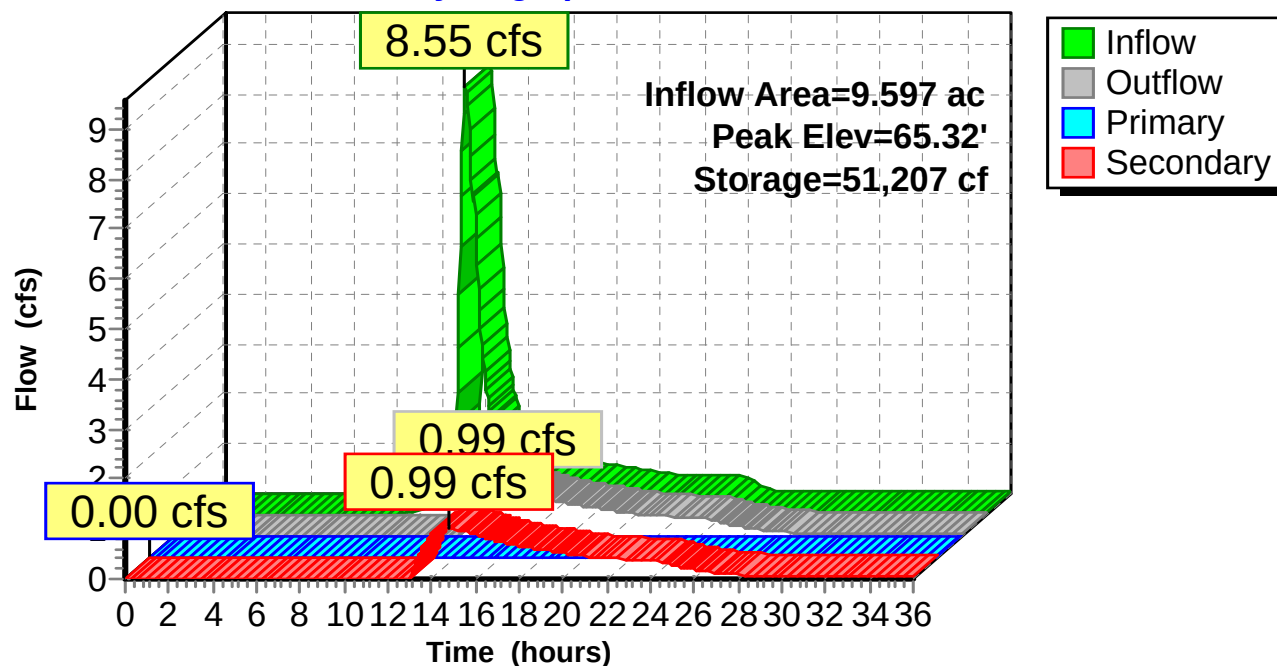
Secondary OutFlow Max=0.98 cfs @ 14.74 hrs HW=65.32' (Free Discharge)

↑ **2=Culvert** (Passes 0.98 cfs of 4.18 cfs potential flow)

↑ **3=Sharp-Crested Rectangular Weir** (Weir Controls 0.98 cfs @ 1.65 fps)

Pond 1P: Wetland A

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Pond 2P: Wetland B

Inflow Area = 2.082 ac, 66.45% Impervious, Inflow Depth = 2.32" for 2-yr event
 Inflow = 3.84 cfs @ 12.28 hrs, Volume= 0.403 af
 Outflow = 1.59 cfs @ 12.70 hrs, Volume= 0.208 af, Atten= 58%, Lag= 25.5 min
 Primary = 1.59 cfs @ 12.70 hrs, Volume= 0.208 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.11' @ 12.70 hrs Surf.Area= 7,808 sf Storage= 9,275 cf

Plug-Flow detention time= 236.6 min calculated for 0.208 af (52% of inflow)
 Center-of-Mass det. time= 123.2 min (943.8 - 820.6)

Volume	Invert	Avail.Storage	Storage Description
#1	67.00'	21,636 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

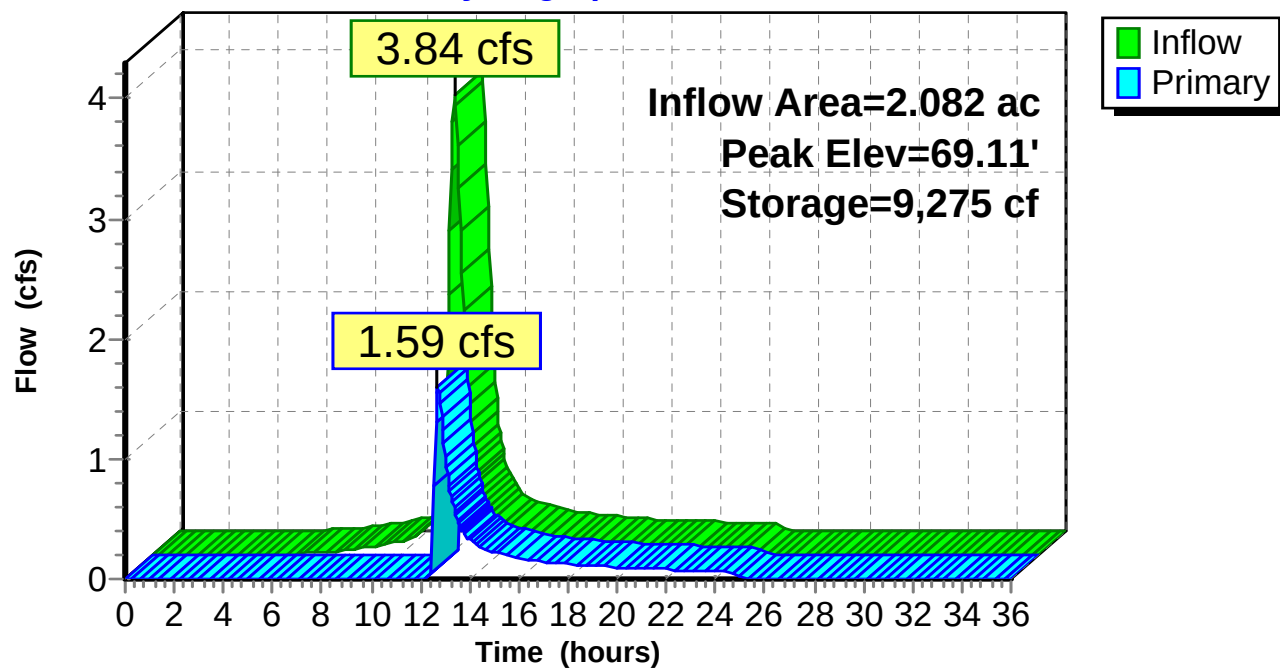
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.00	2,200	0	0
68.00	4,250	3,225	3,225
69.00	6,286	5,268	8,493
70.00	20,000	13,143	21,636

Device	Routing	Invert	Outlet Devices
#1	Primary	69.00'	18.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.58 cfs @ 12.70 hrs HW=69.11' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.58 cfs @ 0.79 fps)

Pond 2P: Wetland B

Hydrograph



Summary for Pond 3P: Surface Detention

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 0.48'

[79] Warning: Submerged Pond 7P Primary device # 1 OUTLET by 2.28'

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth > 2.04" for 2-yr event
 Inflow = 14.09 cfs @ 12.00 hrs, Volume= 0.718 af
 Outflow = 6.20 cfs @ 12.12 hrs, Volume= 0.717 af, Atten= 56%, Lag= 7.6 min
 Primary = 6.20 cfs @ 12.12 hrs, Volume= 0.717 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 71.49' @ 12.12 hrs Surf.Area= 5,093 sf Storage= 7,720 cf

Plug-Flow detention time= 19.9 min calculated for 0.717 af (100% of inflow)
 Center-of-Mass det. time= 17.1 min (852.9 - 835.8)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	21,926 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	400	0	0
70.00	2,991	1,696	1,696
72.00	5,812	8,803	10,499
73.50	9,425	11,428	21,926

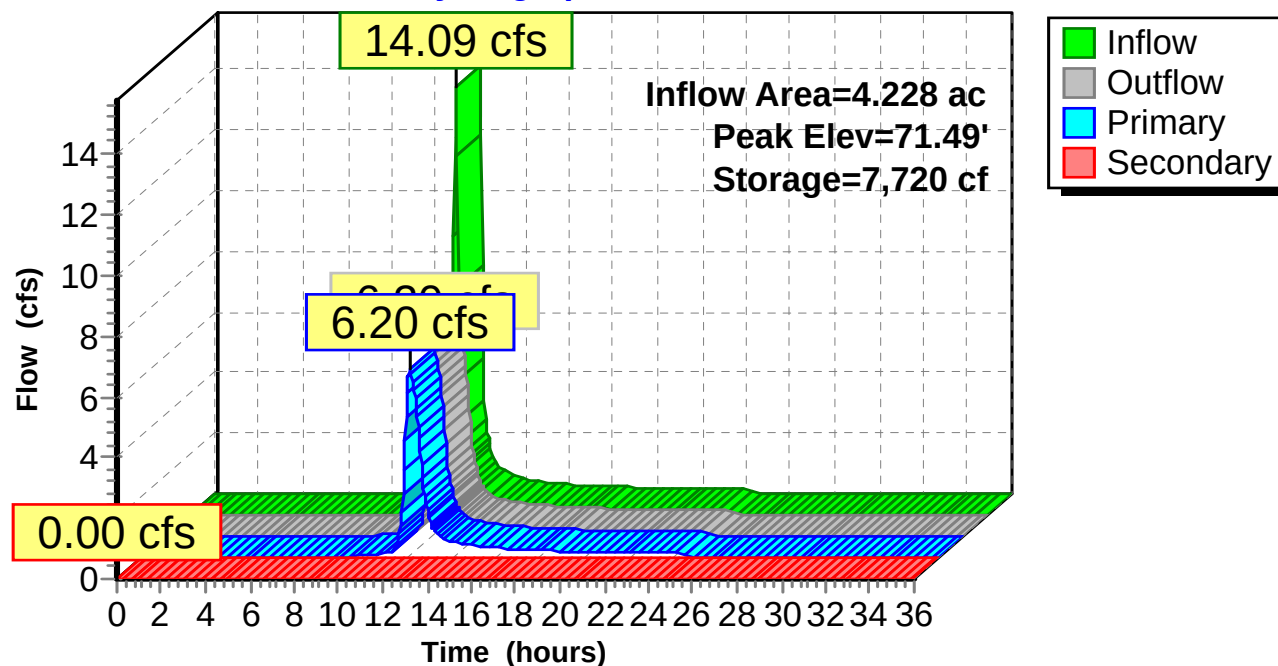
Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	15.0" Round Culvert L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.10' / 68.75' S= 0.0050 ' /' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	72.50'	35.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 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=6.17 cfs @ 12.12 hrs HW=71.47' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 6.17 cfs @ 5.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
 ↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Surface Detention

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Pond 4P: Surface Detention

[79] Warning: Submerged Pond PB Primary device # 1 INLET by 2.97'

[78] Warning: Submerged Pond PB Tertiary device # 2 by 2.38'

Inflow Area = 1.275 ac, 52.61% Impervious, Inflow Depth > 2.00" for 2-yr event
 Inflow = 3.14 cfs @ 11.98 hrs, Volume= 0.212 af
 Outflow = 0.26 cfs @ 12.71 hrs, Volume= 0.139 af, Atten= 92%, Lag= 43.5 min
 Primary = 0.26 cfs @ 12.71 hrs, Volume= 0.139 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 70.47' @ 12.71 hrs Surf.Area= 1,840 sf Storage= 4,082 cf

Plug-Flow detention time= 424.7 min calculated for 0.139 af (65% of inflow)
 Center-of-Mass det. time= 244.0 min (1,165.9 - 922.0)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	8,676 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.00	13	0	0
67.00	71	126	126
68.00	928	500	626
69.00	1,378	1,153	1,779
70.00	1,604	1,491	3,270
71.00	2,104	1,854	5,124
72.00	5,000	3,552	8,676

Device	Routing	Invert	Outlet Devices
#1	Primary	67.66'	1.0" Round Culvert L= 5.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.66' / 67.65' S= 0.0020 '/ Cc= 0.900 n= 0.013, Flow Area= 0.01 sf
#2	Secondary	71.25'	45.0' long x 15.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Primary	70.25'	6.0" Round Culvert X 3.00 L= 1.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 70.25' / 70.25' S= 0.0000 '/ Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=0.26 cfs @ 12.71 hrs HW=70.47' (Free Discharge)

1=Culvert (Barrel Controls 0.03 cfs @ 5.33 fps)

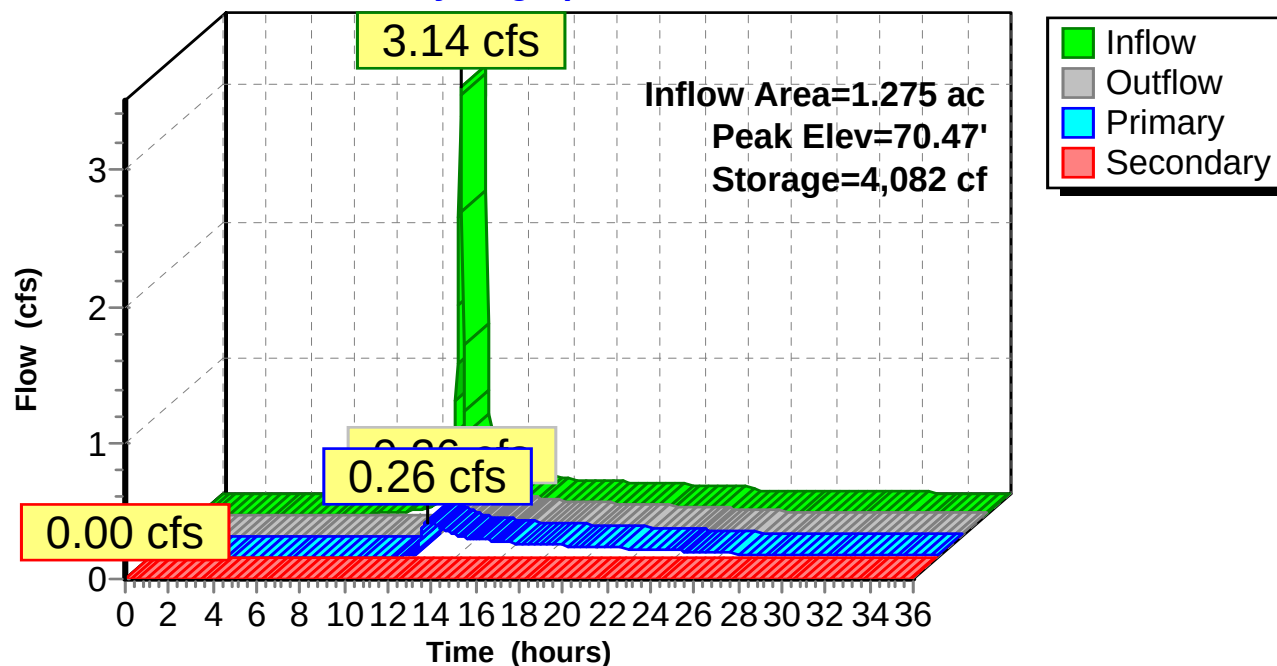
3=Culvert (Barrel Controls 0.23 cfs @ 1.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=64.00' (Free Discharge)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: Surface Detention

Hydrograph



Summary for Pond 5P: OCS-4P

[57] Hint: Peaked at 67.76' (Flood elevation advised)

[79] Warning: Submerged Pond 4P Primary device # 1 INLET by 0.10'

Inflow Area = 1.275 ac, 52.61% Impervious, Inflow Depth > 1.31" for 2-yr event
 Inflow = 0.26 cfs @ 12.71 hrs, Volume= 0.139 af
 Outflow = 0.26 cfs @ 12.71 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.26 cfs @ 12.71 hrs, Volume= 0.139 af

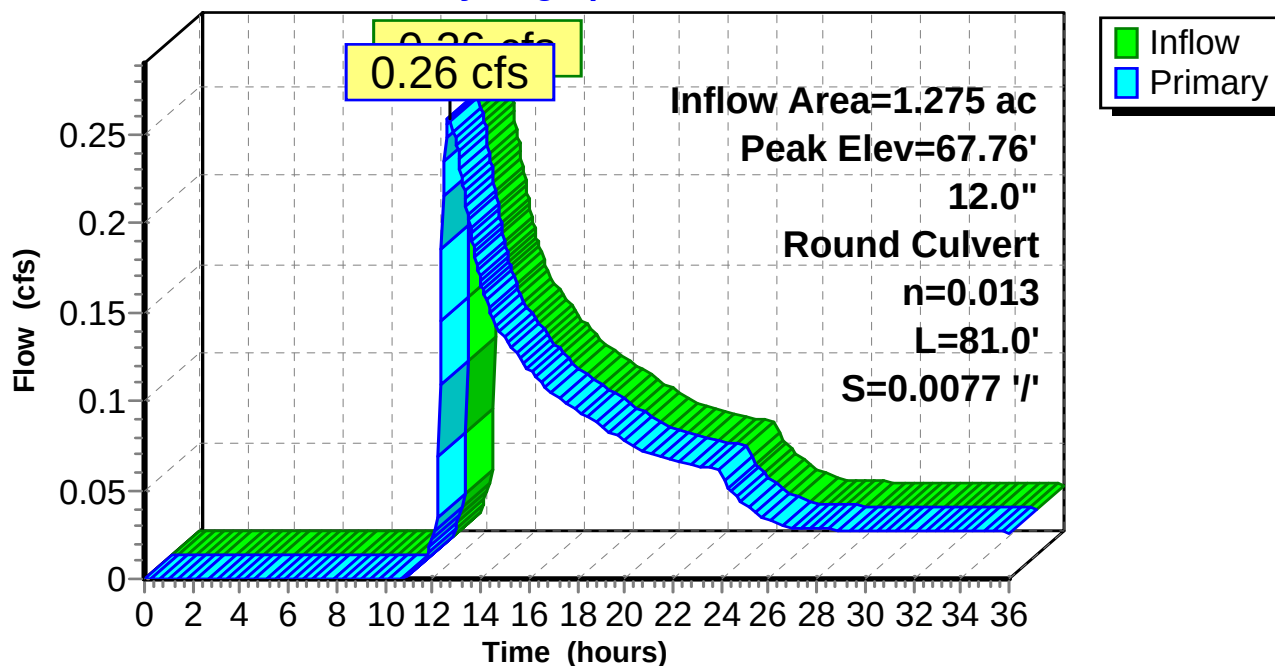
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.76' @ 12.71 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.48'	12.0" Round Culvert L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.48' / 66.86' S= 0.0077 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.71 hrs HW=67.76' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.26 cfs @ 1.43 fps)

Pond 5P: OCS-4P

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Pond 6P: Atrium Surface Detention

[79] Warning: Submerged Pond PA Primary device # 1 INLET by 0.89'

[78] Warning: Submerged Pond PA Tertiary device # 2 by 0.06'

Inflow Area = 2.712 ac, 64.63% Impervious, Inflow Depth > 2.26" for 2-yr event
 Inflow = 9.40 cfs @ 11.98 hrs, Volume= 0.511 af
 Outflow = 9.01 cfs @ 12.00 hrs, Volume= 0.454 af, Atten= 4%, Lag= 1.3 min
 Primary = 9.01 cfs @ 12.00 hrs, Volume= 0.454 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 73.89' @ 12.00 hrs Surf.Area= 3,415 sf Storage= 3,658 cf

Plug-Flow detention time= 97.0 min calculated for 0.454 af (89% of inflow)
 Center-of-Mass det. time= 33.3 min (850.4 - 817.1)

Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	5,026 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
70.00	55	0	0
72.00	327	382	382
73.00	1,694	1,011	1,393
74.25	4,120	3,634	5,026

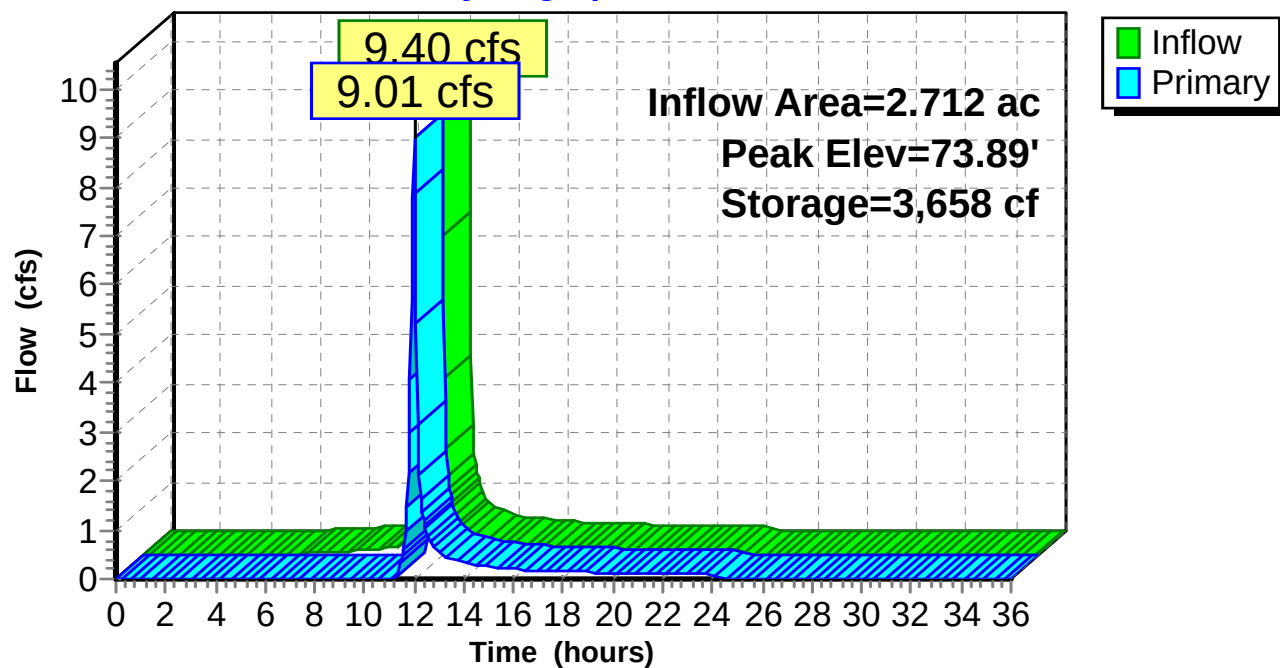
Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	0.1" Round Culvert L= 220.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.00' / 69.20' S= 0.0082 ' /' Cc= 0.900 n= 0.013, Flow Area= 0.00 sf
#2	Primary	73.50'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 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

Primary OutFlow Max=8.96 cfs @ 12.00 hrs HW=73.89' (Free Discharge)

1=Culvert (Barrel Controls 0.00 cfs @ 0.27 fps)
2=Broad-Crested Rectangular Weir (Weir Controls 8.96 cfs @ 1.55 fps)

Pond 6P: Atrium Surface Detention

Hydrograph



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Summary for Pond 7P: Riprap Surface Detention

Inflow Area = 0.600 ac, 52.50% Impervious, Inflow Depth = 2.05" for 2-yr event
 Inflow = 2.03 cfs @ 11.98 hrs, Volume= 0.103 af
 Outflow = 1.93 cfs @ 12.00 hrs, Volume= 0.101 af, Atten= 5%, Lag= 1.2 min
 Primary = 1.93 cfs @ 12.00 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.74' @ 12.00 hrs Surf.Area= 277 sf Storage= 285 cf

Plug-Flow detention time= 22.6 min calculated for 0.101 af (98% of inflow)
 Center-of-Mass det. time= 10.5 min (819.8 - 809.3)

Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	2,180 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	50	0	0
73.00	310	360	360
74.00	846	578	938
75.00	1,637	1,242	2,180

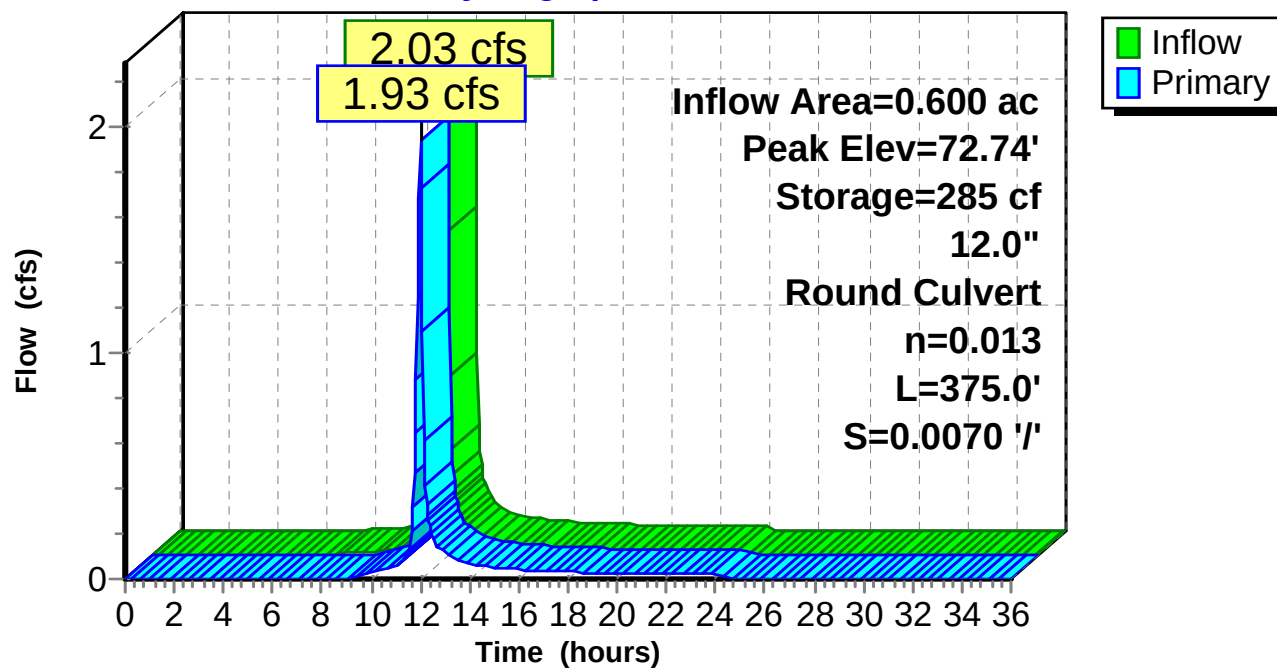
Device	Routing	Invert	Outlet Devices
#1	Primary	71.83'	12.0" Round Culvert L= 375.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.83' / 69.20' S= 0.0070 ' / ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.92 cfs @ 12.00 hrs HW=72.74' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.92 cfs @ 2.56 fps)

Pond 7P: Riprap Surface Detention

Hydrograph



Summary for Pond 8P: OCS-DMH7

[57] Hint: Peaked at 67.02' (Flood elevation advised)

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth > 2.03" for 2-yr event
 Inflow = 6.20 cfs @ 12.12 hrs, Volume= 0.717 af
 Outflow = 6.20 cfs @ 12.12 hrs, Volume= 0.717 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.36 cfs @ 12.12 hrs, Volume= 0.011 af
 Secondary = 5.84 cfs @ 12.12 hrs, Volume= 0.705 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.02' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	12.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.60' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	65.70'	24.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.35 cfs @ 12.12 hrs HW=67.02' (Free Discharge)

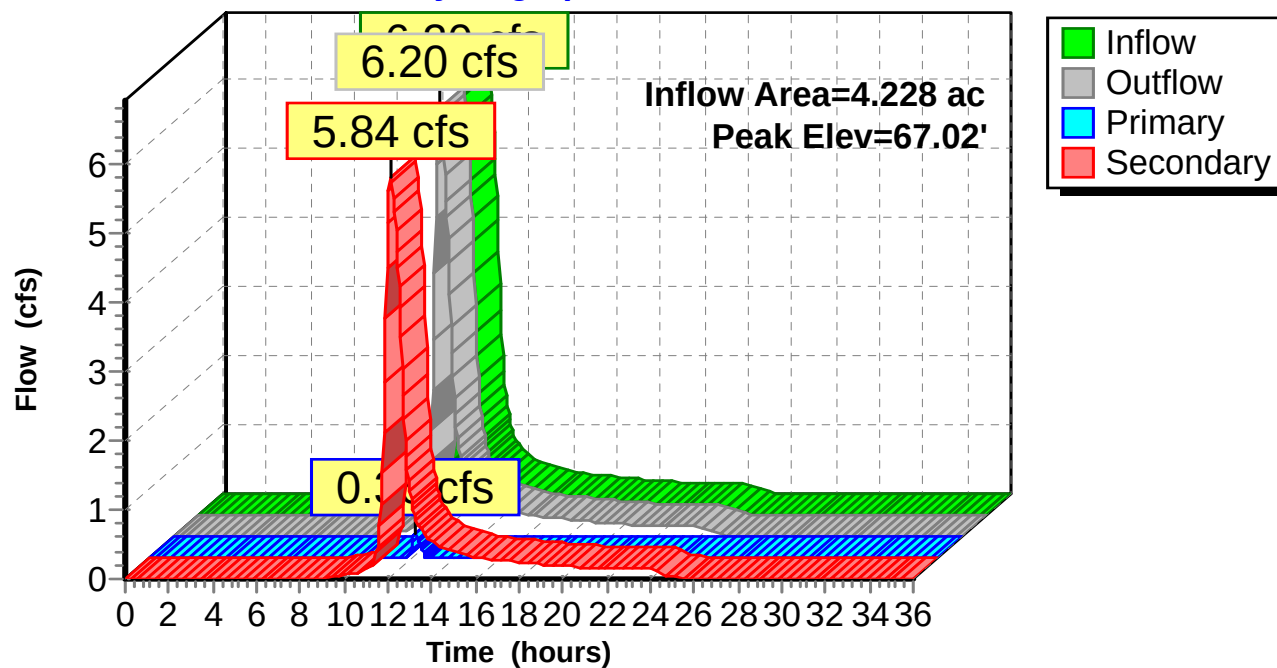
↑**1=Culvert** (Barrel Controls 0.35 cfs @ 1.67 fps)

Secondary OutFlow Max=5.82 cfs @ 12.12 hrs HW=67.02' (Free Discharge)

↑**2=Culvert** (Barrel Controls 5.82 cfs @ 3.76 fps)

Pond 8P: OCS-DMH7

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 2-yr Rainfall=3.17"

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Summary for Pond 9P: UG Detention

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth = 0.03" for 2-yr event
 Inflow = 0.22 cfs @ 12.10 hrs, Volume= 0.009 af
 Outflow = 0.07 cfs @ 12.55 hrs, Volume= 0.009 af, Atten= 69%, Lag= 27.2 min
 Primary = 0.07 cfs @ 12.55 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 65.91' @ 12.55 hrs Surf.Area= 1,536 sf Storage= 300 cf

Plug-Flow detention time= 137.0 min calculated for 0.009 af (97% of inflow)
 Center-of-Mass det. time= 137.6 min (873.6 - 736.1)

Volume	Invert	Avail.Storage	Storage Description
#1	65.70'	2,488 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,619 cf Overall x 95.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.70	1,536	0	0
67.40	1,536	2,611	2,611
67.41	5	8	2,619

Device	Routing	Invert	Outlet Devices
#1	Primary	65.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Primary	67.00'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

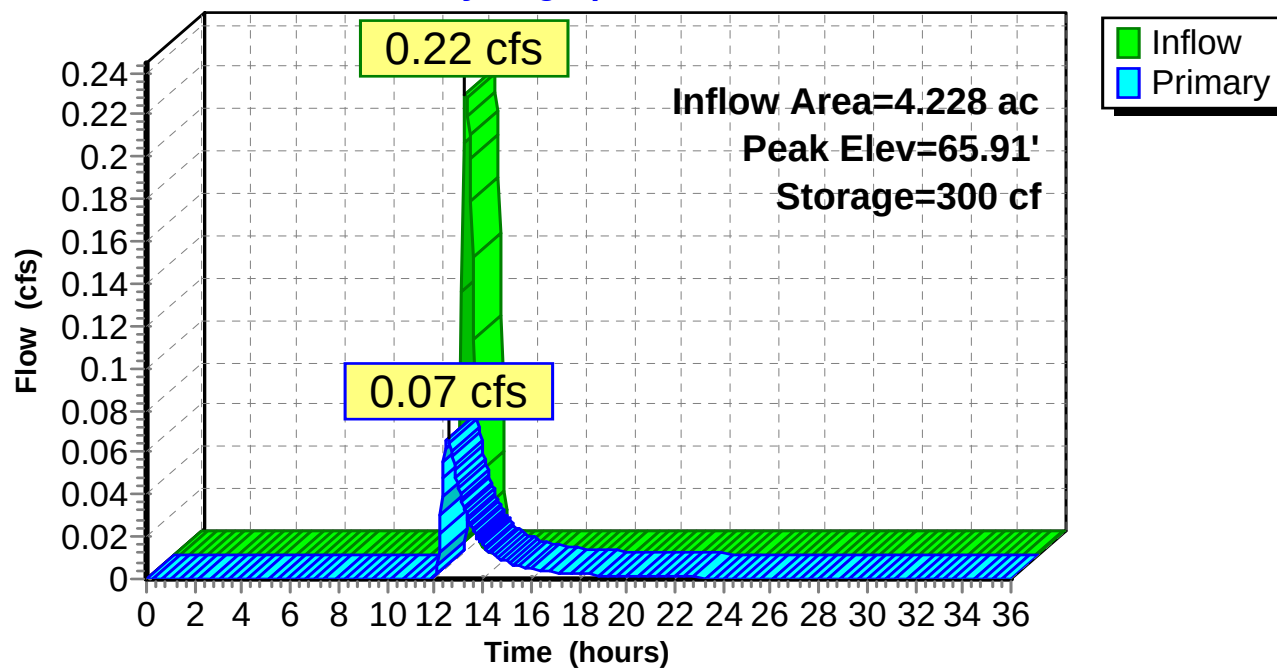
Primary OutFlow Max=0.07 cfs @ 12.55 hrs HW=65.91' (Free Discharge)

1=Culvert (Barrel Controls 0.07 cfs @ 1.70 fps)

2=Culvert (Controls 0.00 cfs)

Pond 9P: UG Detention

Hydrograph



Summary for Pond 10P: Isolator Row x5

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

[81] Warning: Exceeded Pond 8P by 0.87' @ 35.95 hrs

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth = 0.03" for 2-yr event
 Inflow = 0.36 cfs @ 12.12 hrs, Volume= 0.011 af
 Outflow = 0.37 cfs @ 12.12 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.22 cfs @ 12.10 hrs, Volume= 0.009 af
 Secondary = 0.14 cfs @ 12.12 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.21' @ 12.12 hrs Surf.Area= 0.002 ac Storage= 0.001 af

Plug-Flow detention time= 3.1 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 3.3 min (734.9 - 731.7)

Volume	Invert	Avail.Storage	Storage Description
#1	66.60'	0.002 af	ADS_StormTech RC-310 x 5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 2.07 sf x 1 rows

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	4.0" Round Culvert L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.55' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Secondary	67.00'	12.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.55' S= 0.0090 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.22 cfs @ 12.10 hrs HW=67.20' (Free Discharge)

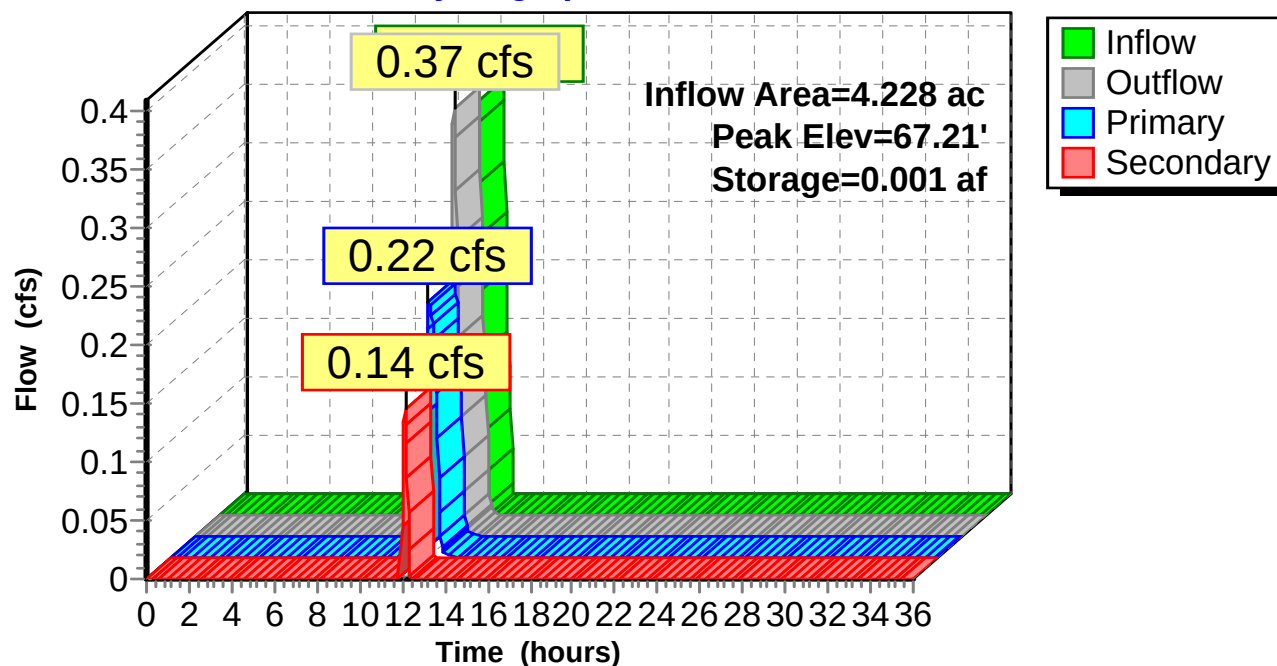
↑**1=Culvert** (Inlet Controls 0.22 cfs @ 2.50 fps)

Secondary OutFlow Max=0.13 cfs @ 12.12 hrs HW=67.20' (Free Discharge)

↑**2=Culvert** (Inlet Controls 0.13 cfs @ 1.20 fps)

Pond 10P: Isolator Row x5

Hydrograph



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Summary for Pond PA: USF A

Inflow Area = 0.196 ac, 67.83% Impervious, Inflow Depth = 2.32" for 2-yr event
 Inflow = 0.73 cfs @ 11.98 hrs, Volume= 0.038 af
 Outflow = 0.02 cfs @ 14.39 hrs, Volume= 0.024 af, Atten= 97%, Lag= 144.8 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.02 cfs @ 14.39 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 76.78' @ 14.39 hrs Surf.Area= 951 sf Storage= 1,128 cf

Plug-Flow detention time= 545.8 min calculated for 0.024 af (64% of inflow)
 Center-of-Mass det. time= 444.8 min (1,240.6 - 795.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	73.00'	2,192 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	585	0.0	0	0
73.01	585	30.0	2	2
75.99	585	30.0	523	525
76.00	585	100.0	6	531
77.00	1,056	100.0	821	1,351
77.33	1,260	100.0	382	1,733
77.67	1,437	100.0	458	2,192

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	12.0" Round Culvert L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 72.20' S= 0.0133 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Tertiary	73.83'	2.410 in/hr Exfiltration over Surface area above 73.83' Excluded Surface area = 585 sf
#3	Device 1	77.00'	24.0" x 24.0" Horiz. Orifice/Grate X 5.00 columns X 5 rows C= 0.600 in 4.0" x 4.0" Grate Limited to weir flow at low heads
#4	Secondary	77.50'	30.0' 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

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Type II 24-hr 2-yr Rainfall=3.17"

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Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' (Free Discharge)

└─1=Culvert (Controls 0.00 cfs)

└─3=Orifice/Grate (Controls 0.00 cfs)

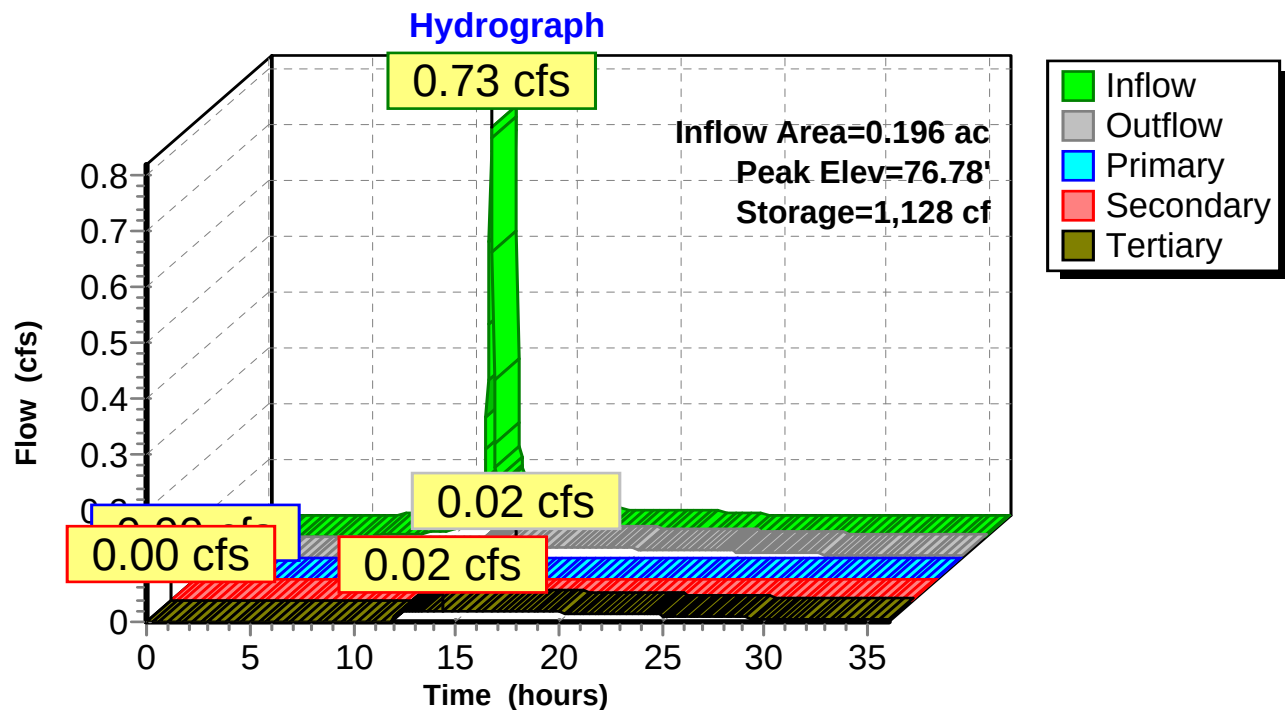
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' (Free Discharge)

└─4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.02 cfs @ 14.39 hrs HW=76.78' (Free Discharge)

└─2=Exfiltration (Exfiltration Controls 0.02 cfs)

Pond PA: USF A



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Summary for Pond PB: USF B

Inflow Area = 0.324 ac, 84.42% Impervious, Inflow Depth = 2.62" for 2-yr event
 Inflow = 1.31 cfs @ 11.98 hrs, Volume= 0.071 af
 Outflow = 0.05 cfs @ 13.55 hrs, Volume= 0.056 af, Atten= 96%, Lag= 94.6 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.05 cfs @ 13.55 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 71.59' @ 13.55 hrs Surf.Area= 1,588 sf Storage= 2,056 cf

Plug-Flow detention time= 526.6 min calculated for 0.056 af (79% of inflow)
 Center-of-Mass det. time= 446.4 min (1,225.2 - 778.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	67.86'	3,817 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.86	715	0.0	0	0
67.87	715	30.0	2	2
70.25	715	30.0	511	513
70.26	715	100.0	7	520
72.00	1,853	100.0	2,234	2,754
72.50	2,400	100.0	1,063	3,817

Device	Routing	Invert	Outlet Devices
#1	Primary	67.50'	15.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.50' / 67.40' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Tertiary	68.09'	2.410 in/hr Exfiltration over Surface area above 68.09' Excluded Surface area = 715 sf
#3	Device 1	72.00'	24.0" x 24.0" Horiz. Orifice/Grate X 5.00 columns X 5 rows C= 0.600 in 4.0" x 4.0" Grate Limited to weir flow at low heads
#4	Secondary	72.25'	30.0' 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=67.86' (Free Discharge)

↑ **1=Culvert** (Passes 0.00 cfs of 0.39 cfs potential flow)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=67.86' (Free Discharge)

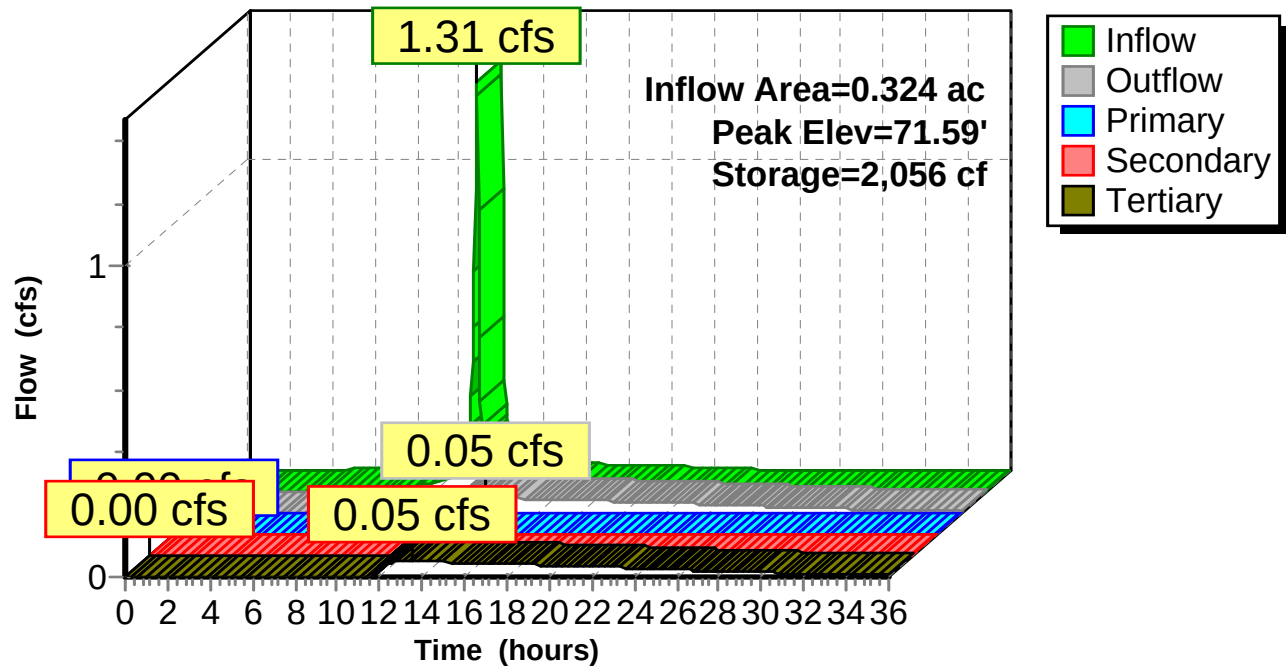
↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.05 cfs @ 13.55 hrs HW=71.59' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond PB: USF B

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.71"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1 Runoff Area=87,665 sf 15.27% Impervious Runoff Depth=2.91"
 Flow Length=177' Slope=0.0100 '/' Tc=29.9 min CN=83 Runoff=5.08 cfs 0.489 af

Subcatchment2S: Subcatchment2 Runoff Area=90,682 sf 66.45% Impervious Runoff Depth=3.81"
 Flow Length=178' Slope=0.0075 '/' Tc=33.7 min CN=92 Runoff=6.18 cfs 0.660 af

Subcatchment3S: Subcatchment3 Runoff Area=40,444 sf 47.45% Impervious Runoff Depth=3.49"
 Flow Length=185' Slope=0.0200 '/' Tc=30.6 min CN=89 Runoff=2.73 cfs 0.270 af

Subcatchment4S: Subcatchment4 Runoff Area=26,132 sf 52.50% Impervious Runoff Depth=3.49"
 Tc=7.0 min CN=89 Runoff=3.36 cfs 0.175 af

Subcatchment5S: Subcatchment5 Runoff Area=109,598 sf 64.38% Impervious Runoff Depth=3.81"
 Tc=7.0 min CN=92 Runoff=14.92 cfs 0.798 af

Subcatchment6S: Subcatchment6 Runoff Area=39,891 sf 54.44% Impervious Runoff Depth=3.60"
 Tc=7.0 min CN=90 Runoff=5.23 cfs 0.275 af

Subcatchment7S: Subcatchment7 Runoff Area=41,419 sf 41.76% Impervious Runoff Depth=3.39"
 Tc=7.0 min CN=88 Runoff=5.21 cfs 0.269 af

Subcatchment8S: Subcatchment8 Runoff Area=1,744 sf 3.61% Impervious Runoff Depth=2.73"
 Tc=7.0 min CN=81 Runoff=0.18 cfs 0.009 af

SubcatchmentSA: SubcatchmentA Runoff Area=8,542 sf 67.83% Impervious Runoff Depth=3.81"
 Flow Length=65' Slope=0.0300 '/' Tc=7.0 min CN=92 Runoff=1.16 cfs 0.062 af

SubcatchmentSB: SubcatchmentB Runoff Area=14,118 sf 84.42% Impervious Runoff Depth=4.13"
 Tc=7.0 min CN=95 Runoff=2.01 cfs 0.112 af

Reach 1SP: Study Point 1 Inflow=4.87 cfs 1.743 af
 Outflow=4.87 cfs 1.743 af

Reach 2SP: Study Point 2 Inflow=1.02 cfs 0.063 af
 Outflow=1.02 cfs 0.063 af

Reach 3SP: Study Point 3 Inflow=0.18 cfs 0.009 af
 Outflow=0.18 cfs 0.009 af

Reach 4SP: Study Point 4 Inflow=2.73 cfs 0.270 af
 Outflow=2.73 cfs 0.270 af

Pond 1P: Wetland A Peak Elev=66.02' Storage=68,121 cf Inflow=18.24 cfs 2.472 af
 Primary=1.02 cfs 0.063 af Secondary=4.87 cfs 1.743 af Outflow=5.89 cfs 1.806 af

Pond 2P: Wetland B Peak Elev=69.25' Storage=10,461 cf Inflow=6.18 cfs 0.660 af
 Outflow=5.34 cfs 0.465 af

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Type II 24-hr 10-yr Rainfall=4.71"

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Pond 3P: Surface Detention Peak Elev=72.57' Storage=14,180 cf Inflow=22.54 cfs 1.236 af
Primary=7.86 cfs 1.225 af Secondary=1.40 cfs 0.009 af Outflow=9.27 cfs 1.234 af

Pond 4P: Surface Detention Peak Elev=71.21' Storage=5,616 cf Inflow=5.26 cfs 0.363 af
Primary=1.91 cfs 0.284 af Secondary=0.00 cfs 0.000 af Outflow=1.91 cfs 0.284 af

Pond 5P: OCS-4P Peak Elev=68.39' Inflow=1.91 cfs 0.284 af
12.0" Round Culvert n=0.013 L=81.0' S=0.0077 ' S Outflow=1.91 cfs 0.284 af

Pond 6P: Atrium Surface Detention Peak Elev=74.01' Storage=4,109 cf Inflow=14.93 cfs 0.846 af
Outflow=14.48 cfs 0.789 af

Pond 7P: Riprap Surface Detention Peak Elev=73.30' Storage=479 cf Inflow=3.36 cfs 0.175 af
12.0" Round Culvert n=0.013 L=375.0' S=0.0070 ' S Outflow=2.95 cfs 0.173 af

Pond 8P: OCS-DMH7 Peak Elev=67.19' Inflow=7.86 cfs 1.225 af
Primary=0.70 cfs 0.038 af Secondary=7.17 cfs 1.187 af Outflow=7.86 cfs 1.225 af

Pond 9P: UG Detention Peak Elev=66.05' Storage=509 cf Inflow=0.26 cfs 0.019 af
Outflow=0.14 cfs 0.019 af

Pond 10P: Isolator Row x5 Peak Elev=67.37' Storage=0.001 af Inflow=0.70 cfs 0.038 af
Primary=0.26 cfs 0.019 af Secondary=0.44 cfs 0.018 af Outflow=0.70 cfs 0.038 af

Pond PA: USF A Peak Elev=77.16' Storage=1,532 cf Inflow=1.16 cfs 0.062 af
Primary=0.22 cfs 0.013 af Secondary=0.00 cfs 0.000 af Tertiary=0.03 cfs 0.035 af Outflow=0.25 cfs 0.048 af

Pond PB: USF B Peak Elev=72.11' Storage=2,962 cf Inflow=2.01 cfs 0.112 af
Primary=0.15 cfs 0.012 af Secondary=0.00 cfs 0.000 af Tertiary=0.07 cfs 0.083 af Outflow=0.22 cfs 0.094 af

Total Runoff Area = 10.566 ac Runoff Volume = 3.118 af Average Runoff Depth = 3.54"
49.18% Pervious = 5.196 ac 50.82% Impervious = 5.370 ac

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Type II 24-hr 10-yr Rainfall=4.71"

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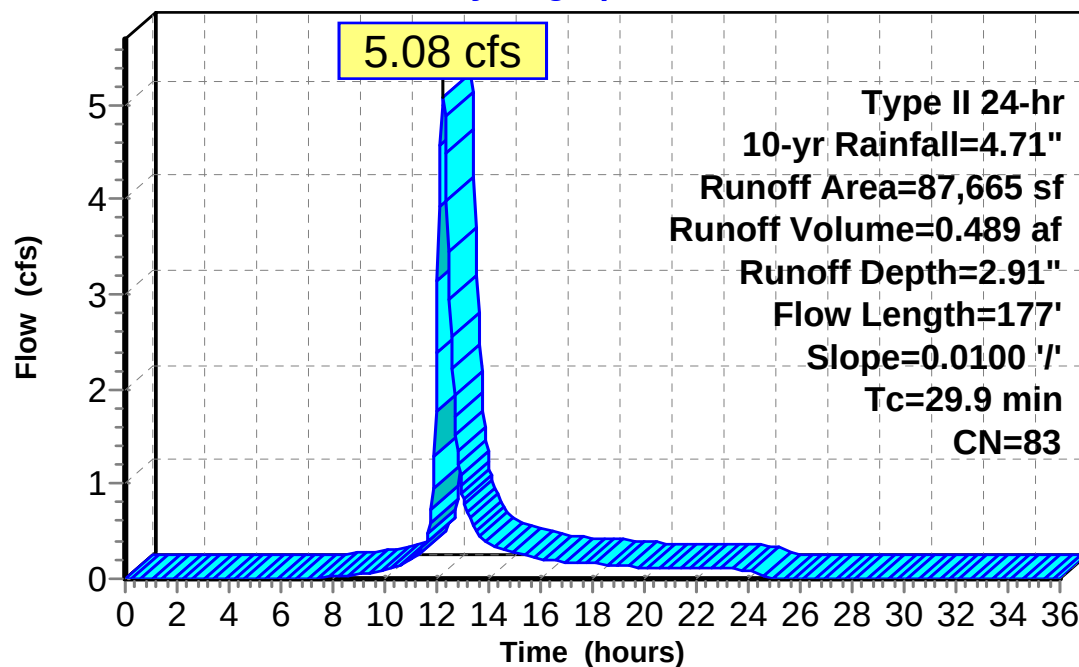
Summary for Subcatchment 1S: Subcatchment 1

Runoff = 5.08 cfs @ 12.24 hrs, Volume= 0.489 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	13,390	98	
	74,275	80	>75% Grass cover, Good, HSG D
	87,665	83	Weighted Average
	74,275		84.73% Pervious Area
	13,390		15.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	177	0.0100	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 1S: Subcatchment 1**Hydrograph**

Summary for Subcatchment 2S: Subcatchment 2

Runoff = 6.18 cfs @ 12.27 hrs, Volume= 0.660 af, Depth= 3.81"

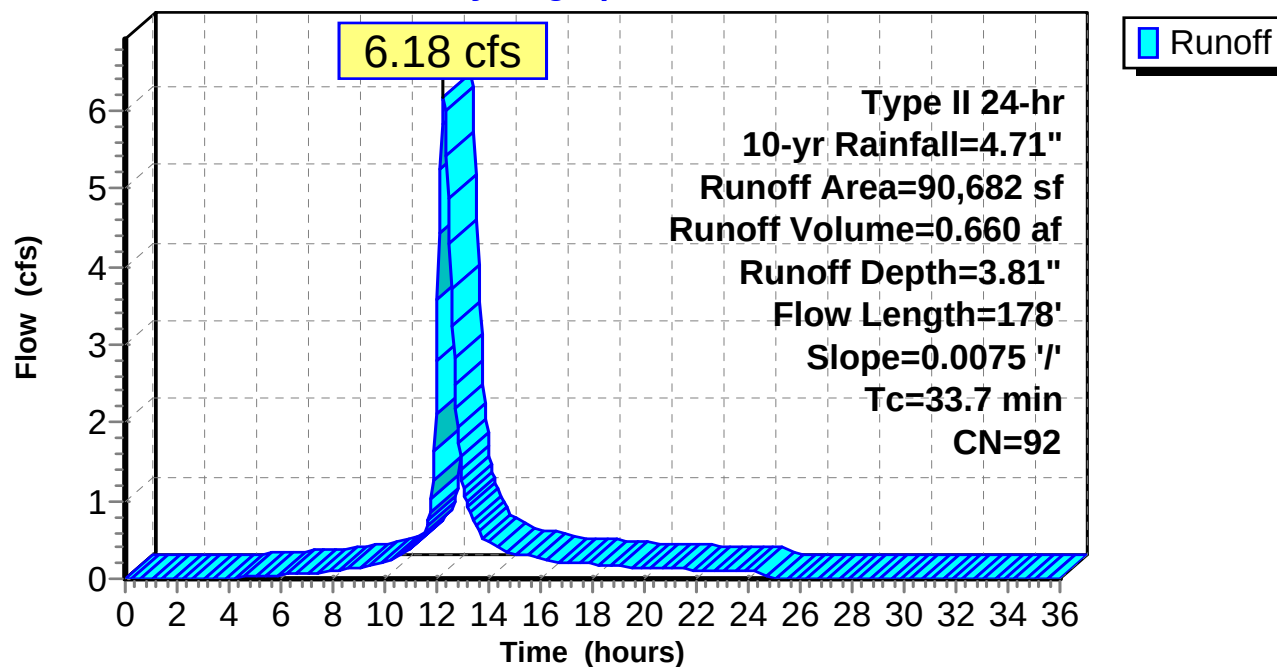
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	60,255	98	
	30,427	80	>75% Grass cover, Good, HSG D
	90,682	92	Weighted Average
	30,427		33.55% Pervious Area
	60,255		66.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.7	178	0.0075	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 2S: Subcatchment 2

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.71"

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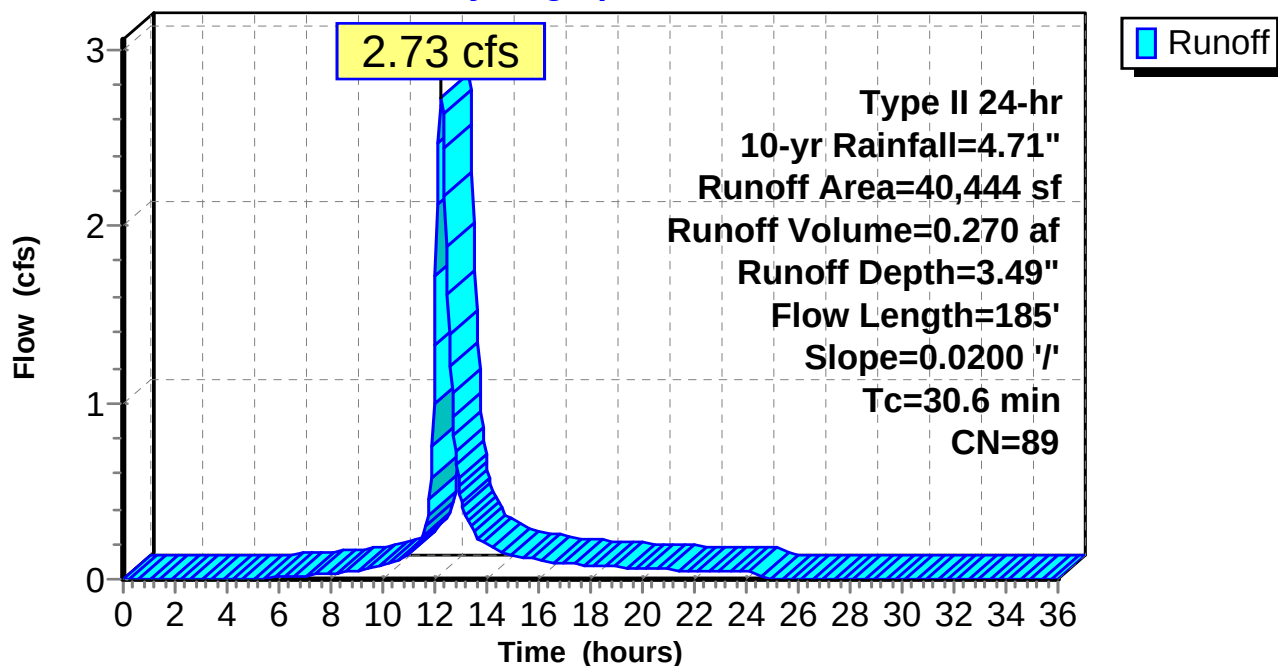
Summary for Subcatchment 3S: Subcatchment 3

Runoff = 2.73 cfs @ 12.24 hrs, Volume= 0.270 af, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

Area (sf)	CN	Description
21,255	80	>75% Grass cover, Good, HSG D
* 19,189	98	
40,444	89	Weighted Average
21,255		52.55% Pervious Area
19,189		47.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	150	0.0200	0.08		Sheet Flow, Sheet
					Woods: Light underbrush n= 0.400 P2= 3.17"
0.8	35	0.0200	0.71		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
30.6	185	Total			

Subcatchment 3S: Subcatchment 3**Hydrograph**

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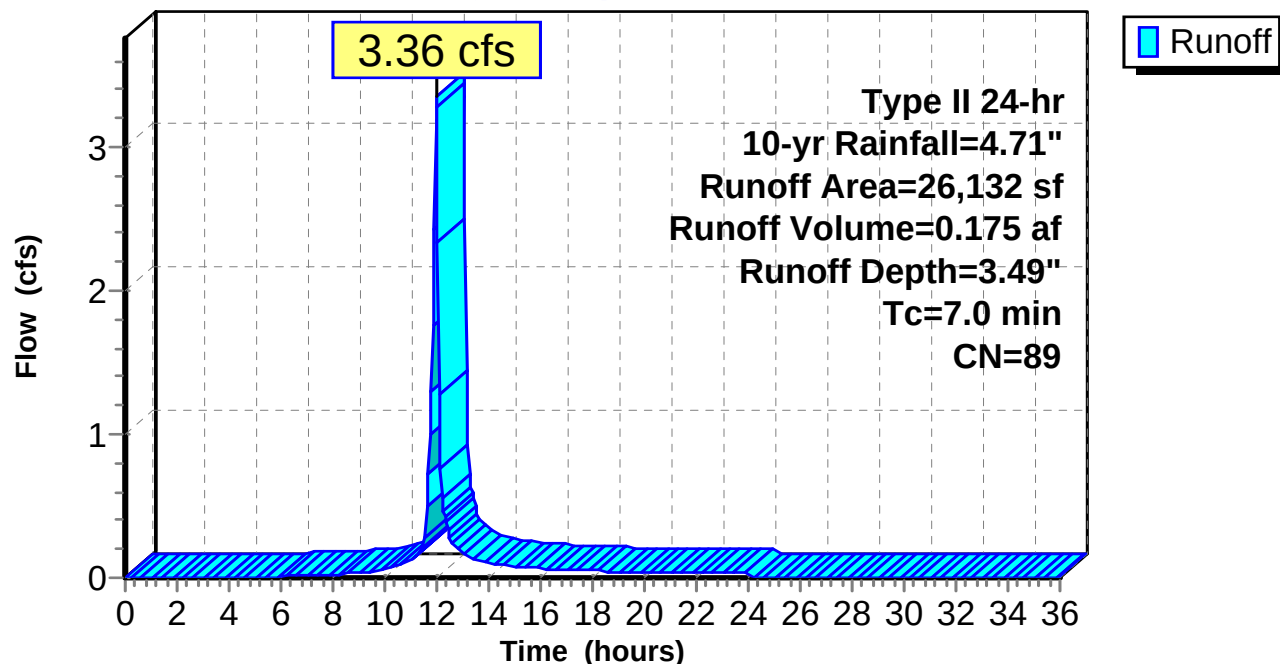
Summary for Subcatchment 4S: Subcatchment 4

Runoff = 3.36 cfs @ 11.98 hrs, Volume= 0.175 af, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	13,720	98	
	12,412	80	>75% Grass cover, Good, HSG D
	26,132	89	Weighted Average
	12,412		47.50% Pervious Area
	13,720		52.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 4S: Subcatchment 4**Hydrograph**

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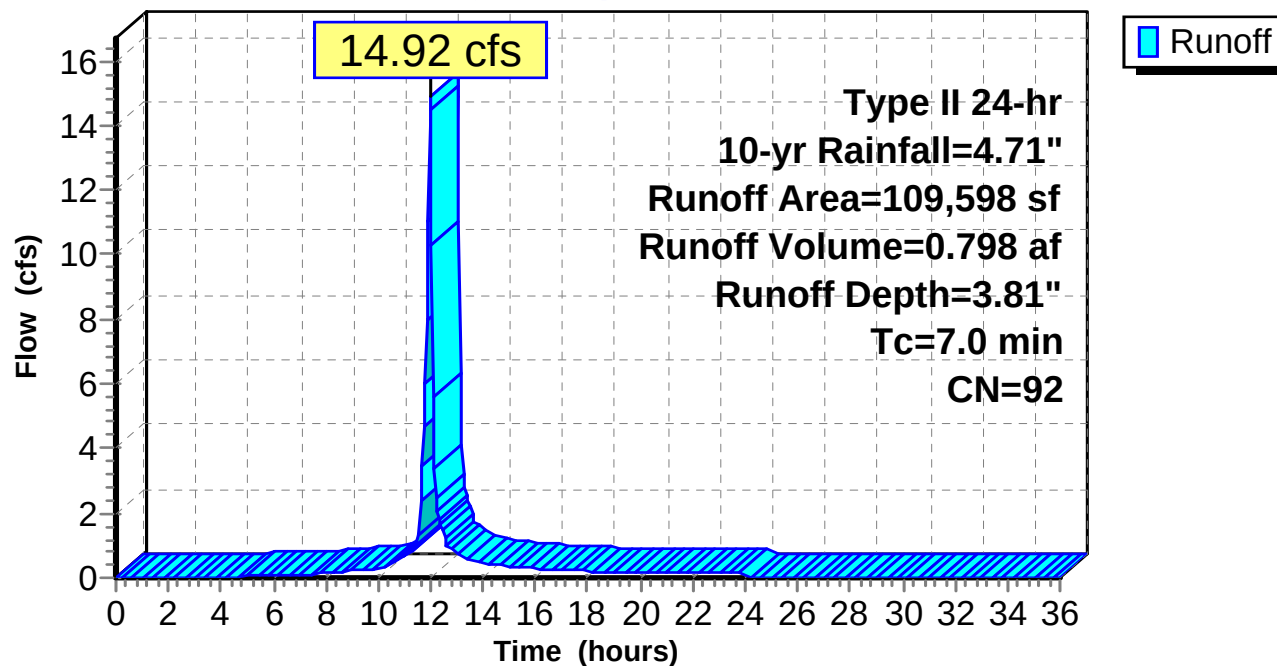
Summary for Subcatchment 5S: Subcatchment 5

Runoff = 14.92 cfs @ 11.98 hrs, Volume= 0.798 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	70,563	98	
	39,035	80	>75% Grass cover, Good, HSG D
	109,598	92	Weighted Average
	39,035		35.62% Pervious Area
	70,563		64.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 5S: Subcatchment 5**Hydrograph**

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Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Subcatchment 6S: Subcatchment 6

Runoff = 5.23 cfs @ 11.98 hrs, Volume= 0.275 af, Depth= 3.60"

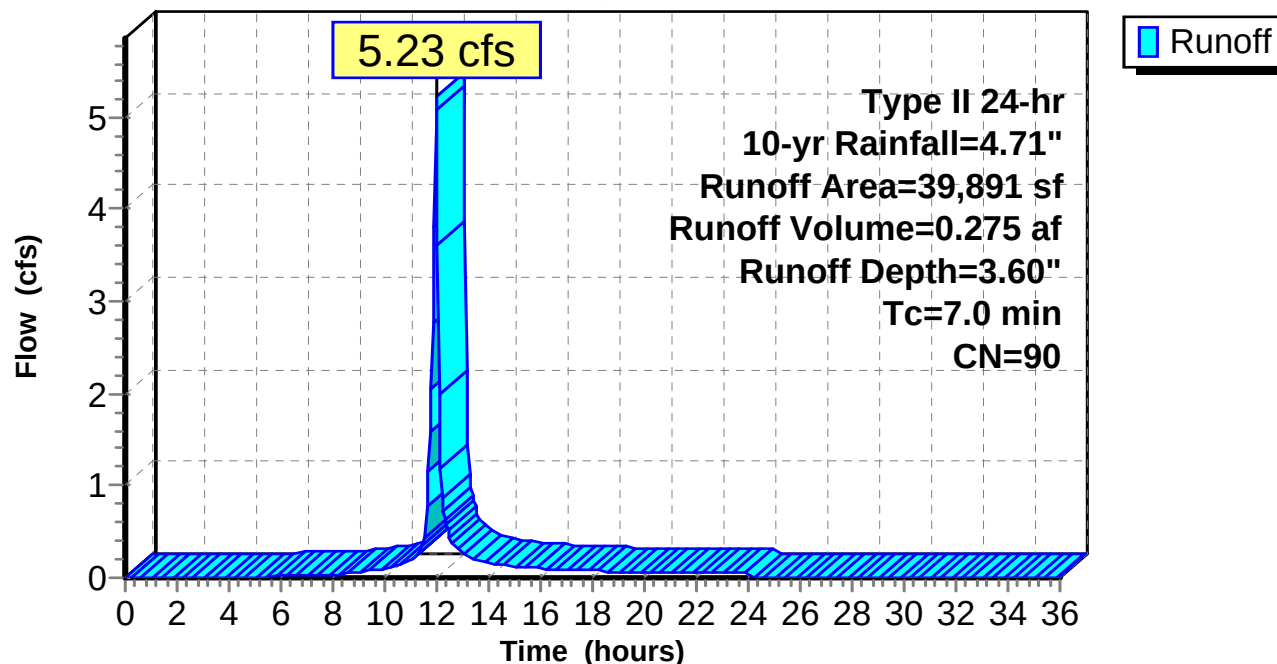
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	21,718	98	
	18,173	80	>75% Grass cover, Good, HSG D
	39,891	90	Weighted Average
	18,173		45.56% Pervious Area
	21,718		54.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 6S: Subcatchment 6

Hydrograph



Post-Development Cedars Model 17-10-16

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Type II 24-hr 10-yr Rainfall=4.71"

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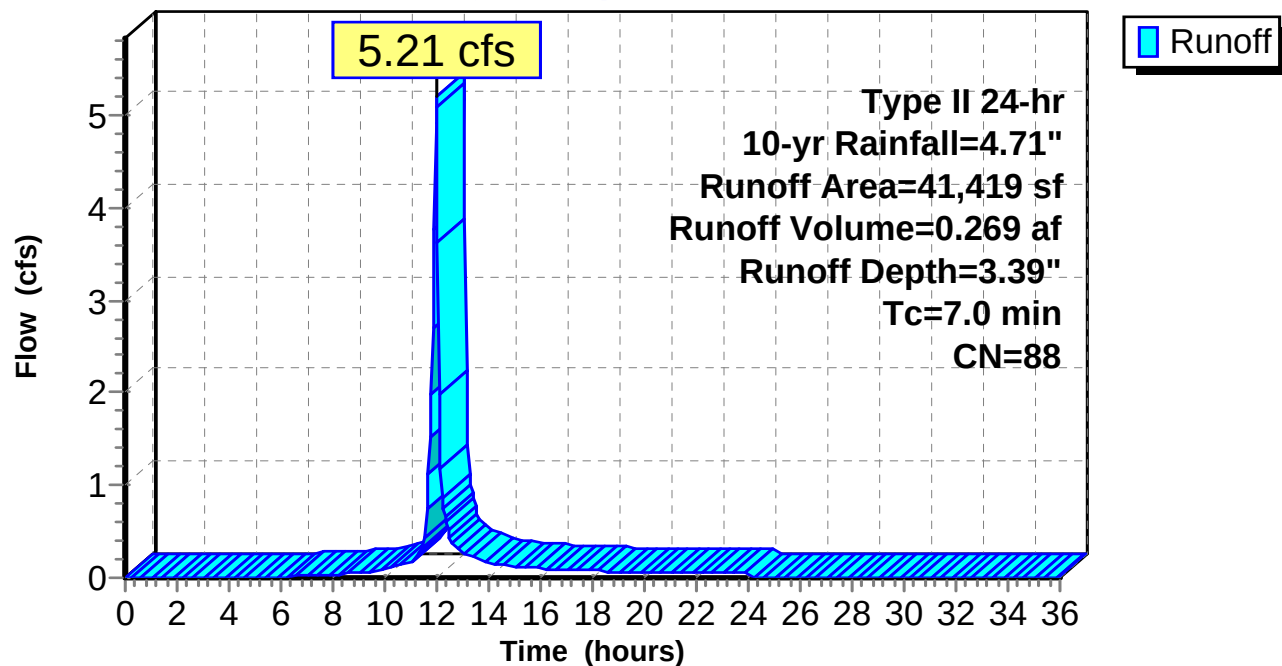
Summary for Subcatchment 7S: Subcatchment 7

Runoff = 5.21 cfs @ 11.98 hrs, Volume= 0.269 af, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	17,297	98	
	24,122	80	>75% Grass cover, Good, HSG D
	41,419	88	Weighted Average
	24,122		58.24% Pervious Area
	17,297		41.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 7S: Subcatchment 7**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 10-yr Rainfall=4.71"

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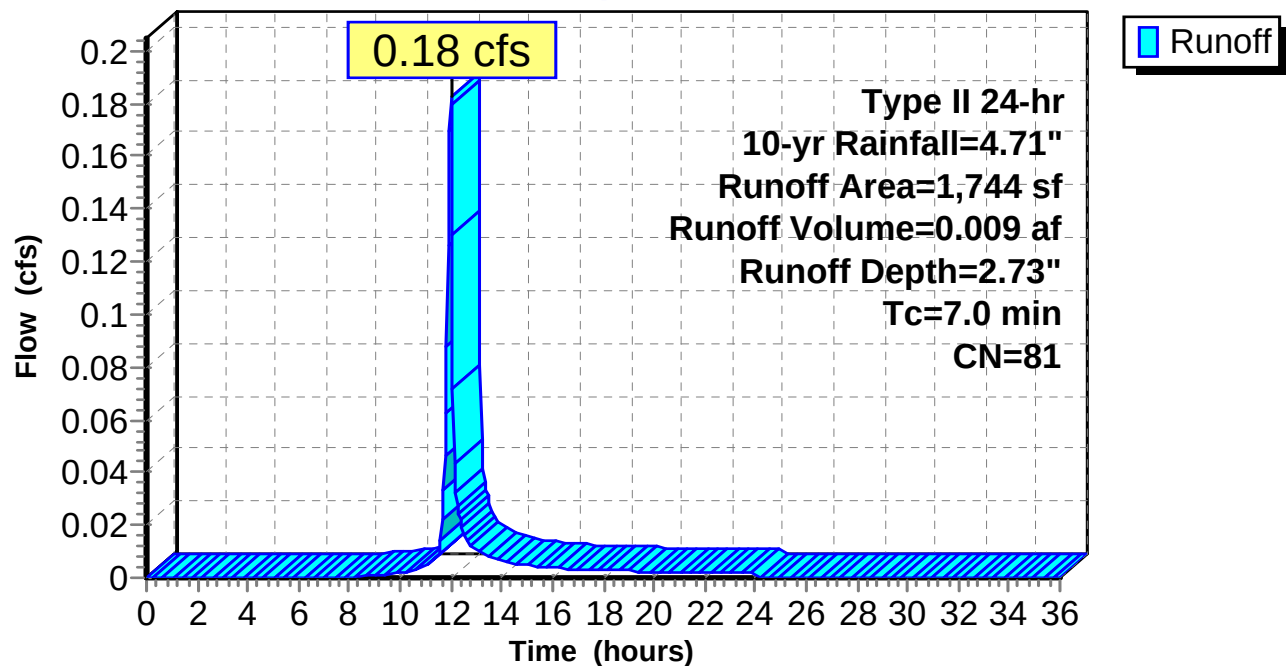
Summary for Subcatchment 8S: Subcatchment 8

Runoff = 0.18 cfs @ 11.98 hrs, Volume= 0.009 af, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

Area (sf)	CN	Description
1,681	80	>75% Grass cover, Good, HSG D
* 63	98	
1,744	81	Weighted Average
1,681		96.39% Pervious Area
63		3.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 8S: Subcatchment 8**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 10-yr Rainfall=4.71"

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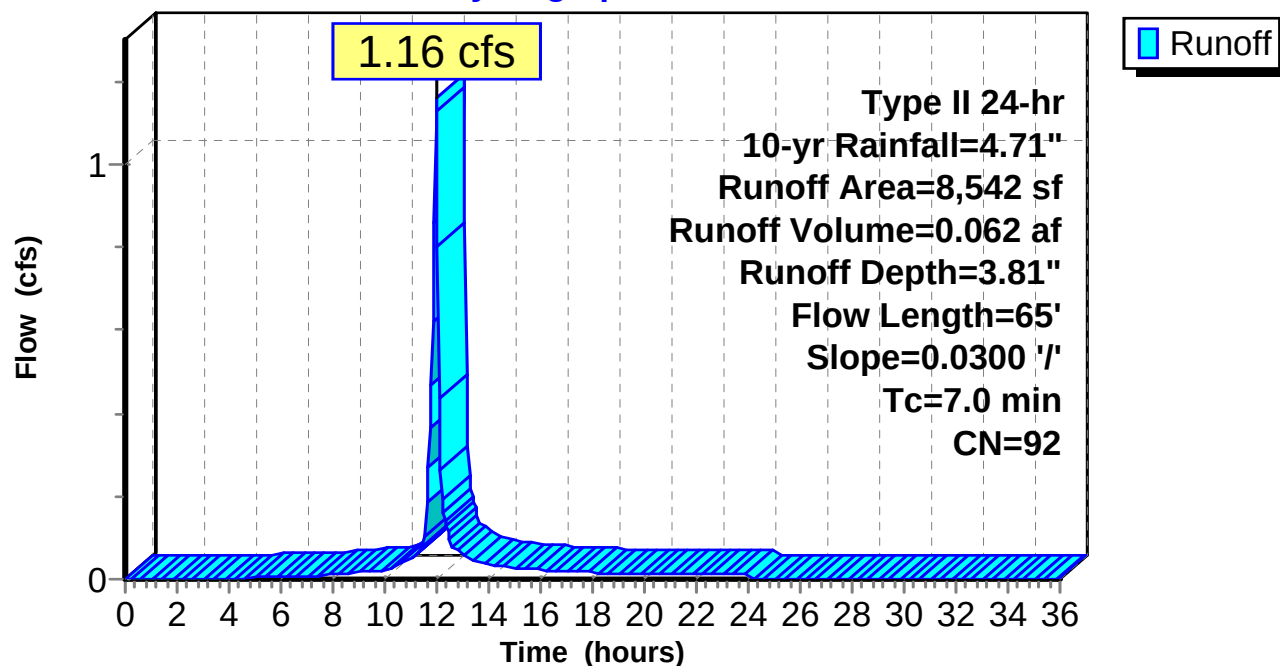
Summary for Subcatchment SA: Subcatchment A

Runoff = 1.16 cfs @ 11.98 hrs, Volume= 0.062 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	5,794	98	
	2,748	80	>75% Grass cover, Good, HSG D
	8,542	92	Weighted Average
	2,748		32.17% Pervious Area
	5,794		67.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	65	0.0300	1.48		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.17"
6.3					Direct Entry, min
7.0	65	Total			

Subcatchment SA: Subcatchment A**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 10-yr Rainfall=4.71"

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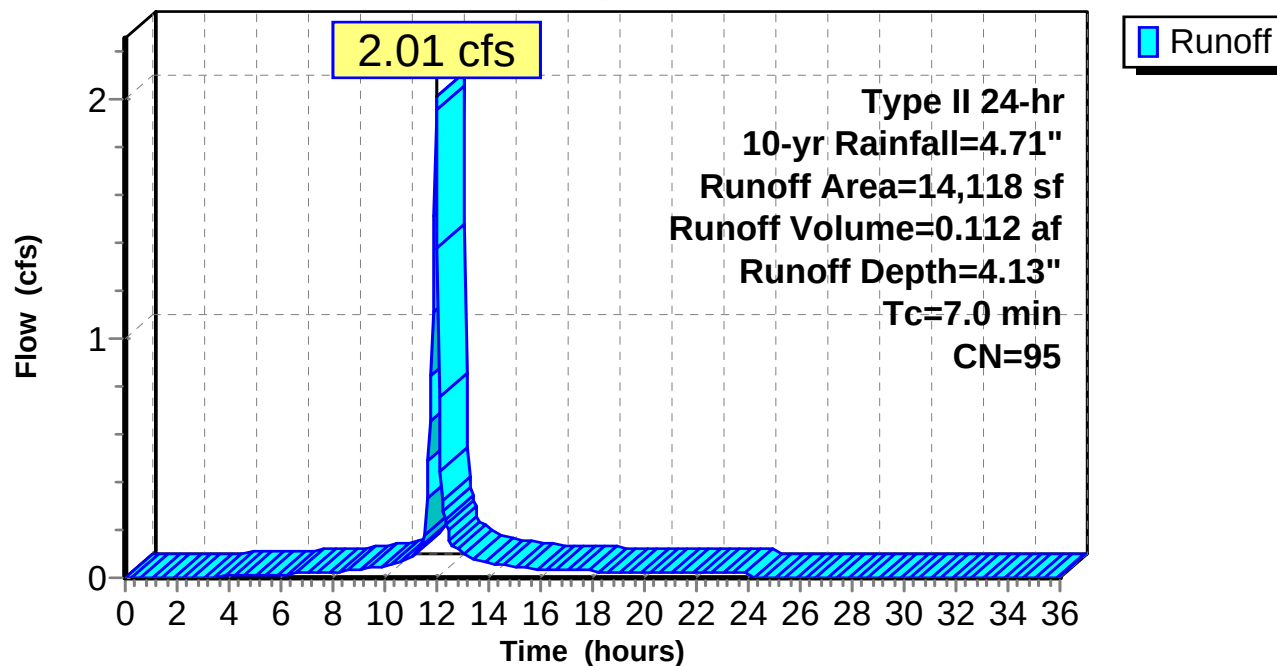
Summary for Subcatchment SB: Subcatchment B

Runoff = 2.01 cfs @ 11.98 hrs, Volume= 0.112 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.71"

	Area (sf)	CN	Description
*	11,919	98	
	2,199	80	>75% Grass cover, Good, HSG D
	14,118	95	Weighted Average
	2,199		15.58% Pervious Area
	11,919		84.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment SB: Subcatchment B**Hydrograph**

Summary for Reach 1SP: Study Point 1

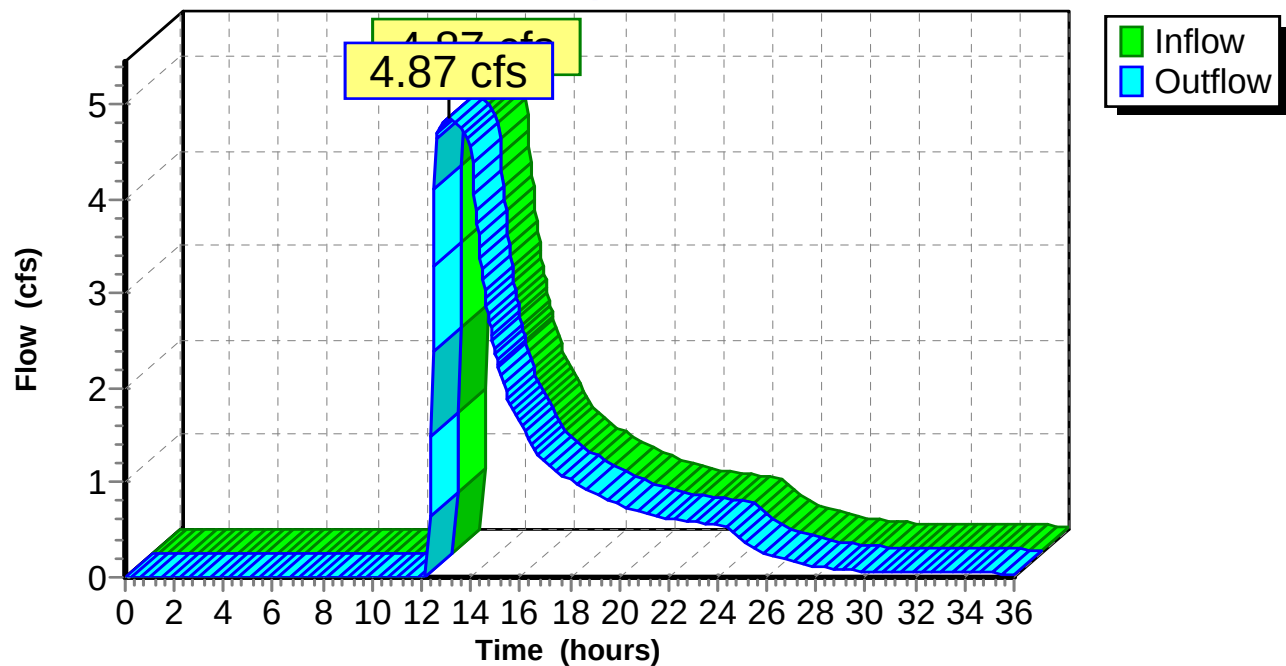
[40] Hint: Not Described (Outflow=Inflow)

Inflow = 4.87 cfs @ 13.07 hrs, Volume= 1.743 af
 Outflow = 4.87 cfs @ 13.07 hrs, Volume= 1.743 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 1SP: Study Point 1

Hydrograph



Summary for Reach 2SP: Study Point 2

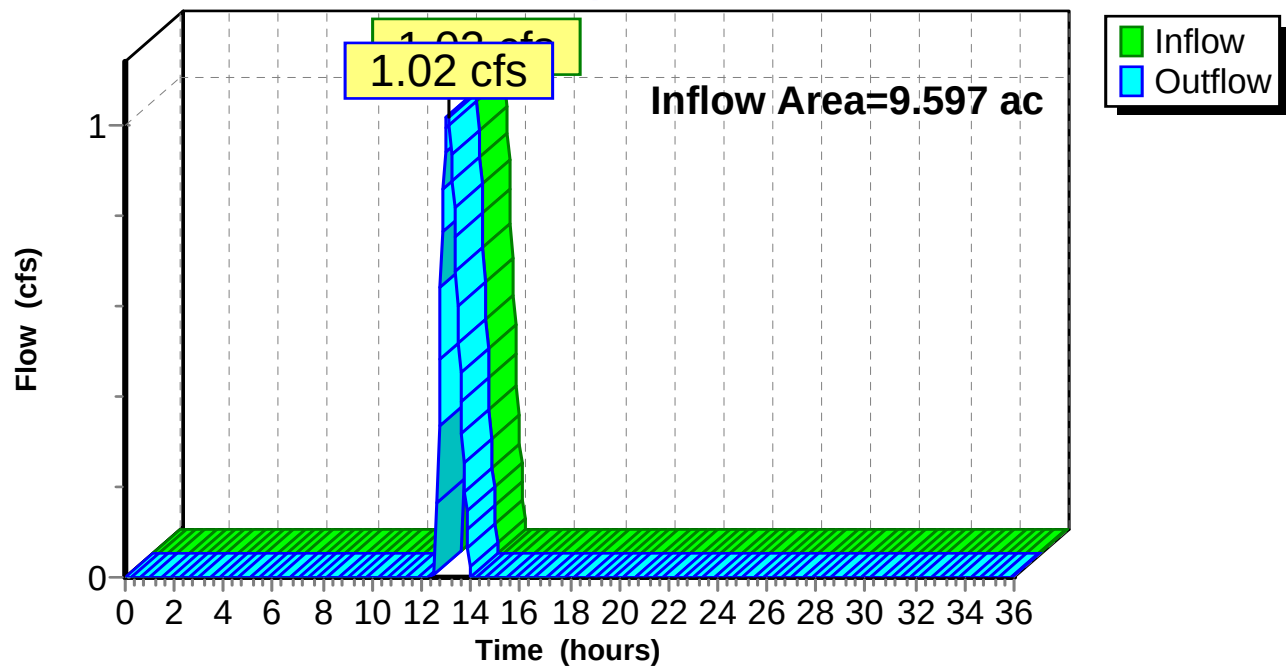
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.597 ac, 51.35% Impervious, Inflow Depth = 0.08" for 10-yr event
 Inflow = 1.02 cfs @ 13.07 hrs, Volume= 0.063 af
 Outflow = 1.02 cfs @ 13.07 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 2SP: Study Point 2

Hydrograph



Summary for Reach 3SP: Study Point 3

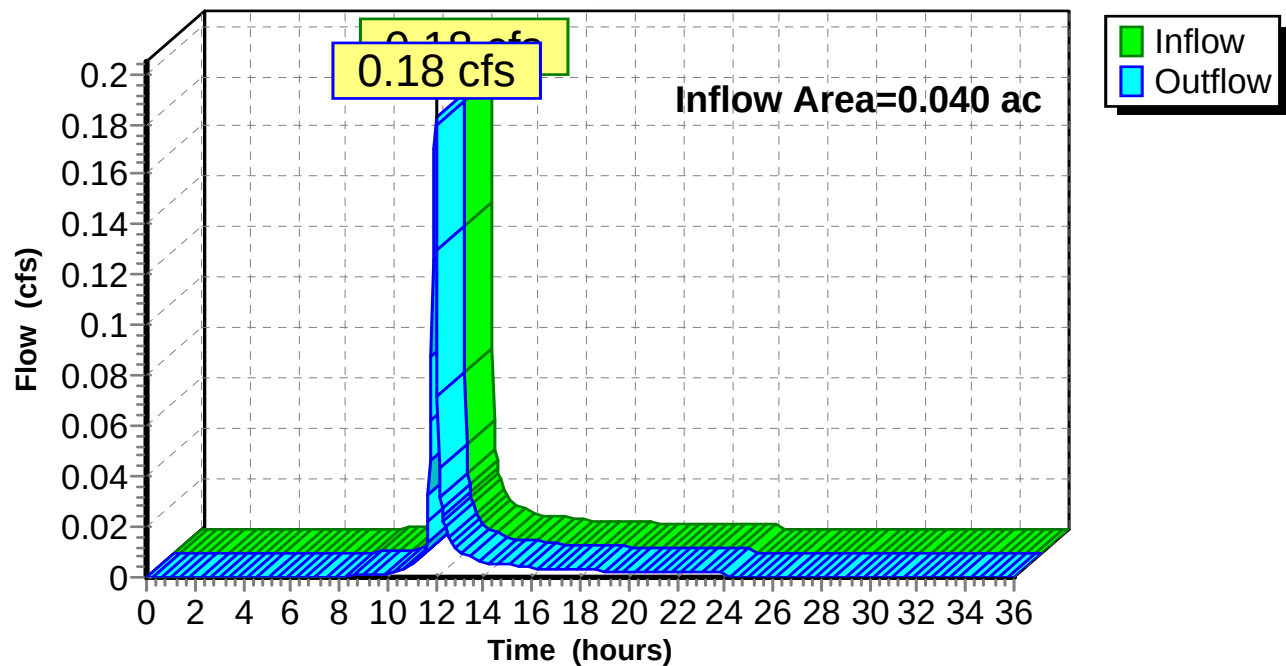
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.040 ac, 3.61% Impervious, Inflow Depth = 2.73" for 10-yr event
 Inflow = 0.18 cfs @ 11.98 hrs, Volume= 0.009 af
 Outflow = 0.18 cfs @ 11.98 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 3SP: Study Point 3

Hydrograph



Summary for Reach 4SP: Study Point 4

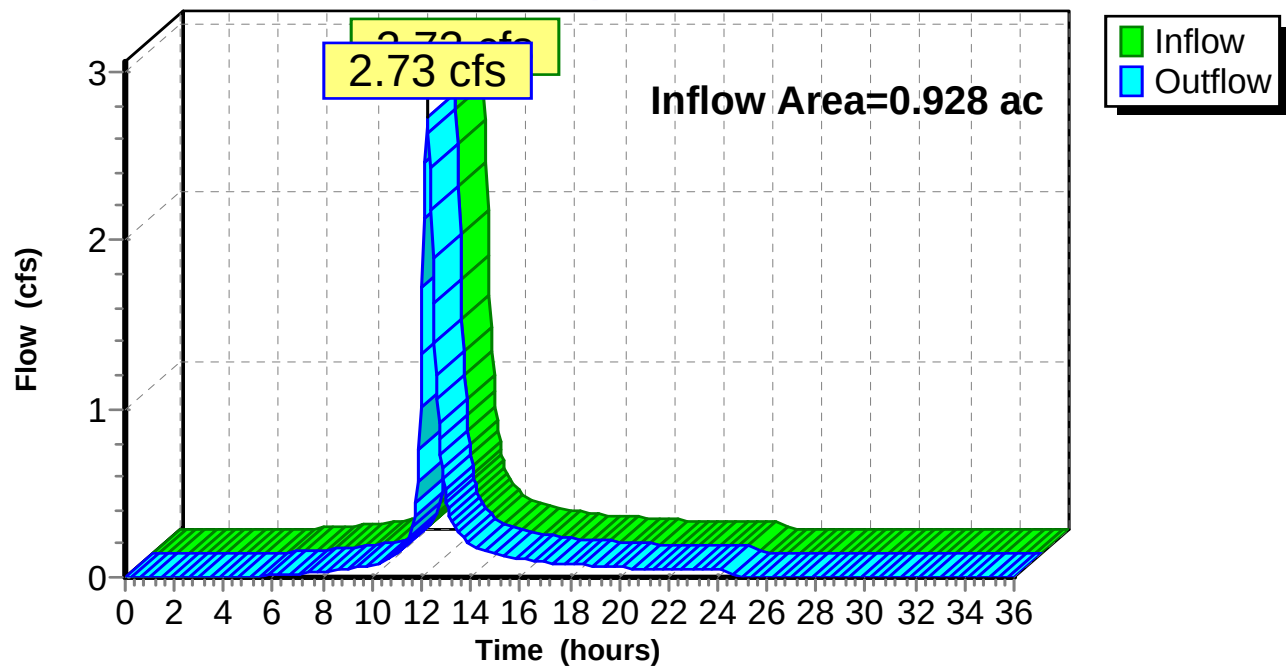
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.928 ac, 47.45% Impervious, Inflow Depth = 3.49" for 10-yr event
 Inflow = 2.73 cfs @ 12.24 hrs, Volume= 0.270 af
 Outflow = 2.73 cfs @ 12.24 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 4SP: Study Point 4

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 1P: Wetland A

[79] Warning: Submerged Pond 8P Secondary device # 2 INLET by 0.32'

[81] Warning: Exceeded Pond 9P by 0.03' @ 13.25 hrs

Inflow Area = 9.597 ac, 51.35% Impervious, Inflow Depth > 3.09" for 10-yr event
 Inflow = 18.24 cfs @ 12.34 hrs, Volume= 2.472 af
 Outflow = 5.89 cfs @ 13.07 hrs, Volume= 1.806 af, Atten= 68%, Lag= 43.6 min
 Primary = 1.02 cfs @ 13.07 hrs, Volume= 0.063 af
 Secondary = 4.87 cfs @ 13.07 hrs, Volume= 1.743 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Starting Elev= 63.50' Surf.Area= 14,739 sf Storage= 17,429 cf

Peak Elev= 66.02' @ 13.07 hrs Surf.Area= 25,888 sf Storage= 68,121 cf (50,693 cf above start)

Plug-Flow detention time= 324.6 min calculated for 1.406 af (57% of inflow)

Center-of-Mass det. time= 128.6 min (993.3 - 864.8)

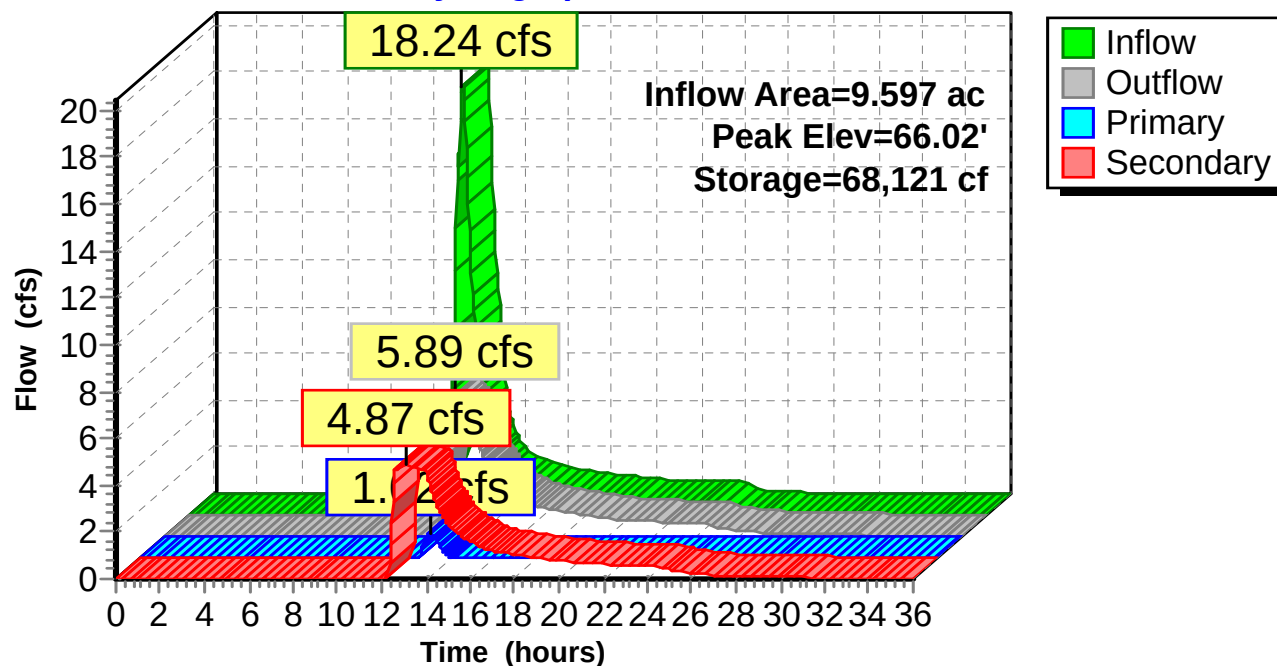
Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	209,276 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	8,500	0	0
65.00	20,977	44,216	44,216
70.00	45,047	165,060	209,276

Device	Routing	Invert	Outlet Devices
#1	Primary	65.75'	3.0' 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
#2	Secondary	62.86'	12.0" Round Culvert L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 62.86' / 58.69' S= 0.0869 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	65.08'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=1.01 cfs @ 13.07 hrs HW=66.02' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.01 cfs @ 1.24 fps)**Secondary OutFlow** Max=4.87 cfs @ 13.07 hrs HW=66.02' (Free Discharge)↑ **2=Culvert** (Inlet Controls 4.87 cfs @ 6.20 fps)↑ **3=Sharp-Crested Rectangular Weir** (Passes 4.87 cfs of 7.68 cfs potential flow)

Pond 1P: Wetland A

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 2P: Wetland B

Inflow Area = 2.082 ac, 66.45% Impervious, Inflow Depth = 3.81" for 10-yr event
 Inflow = 6.18 cfs @ 12.27 hrs, Volume= 0.660 af
 Outflow = 5.34 cfs @ 12.41 hrs, Volume= 0.465 af, Atten= 14%, Lag= 8.5 min
 Primary = 5.34 cfs @ 12.41 hrs, Volume= 0.465 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.25' @ 12.41 hrs Surf.Area= 9,670 sf Storage= 10,461 cf

Plug-Flow detention time= 168.7 min calculated for 0.465 af (70% of inflow)
 Center-of-Mass det. time= 73.4 min (880.4 - 807.0)

Volume	Invert	Avail.Storage	Storage Description
#1	67.00'	21,636 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

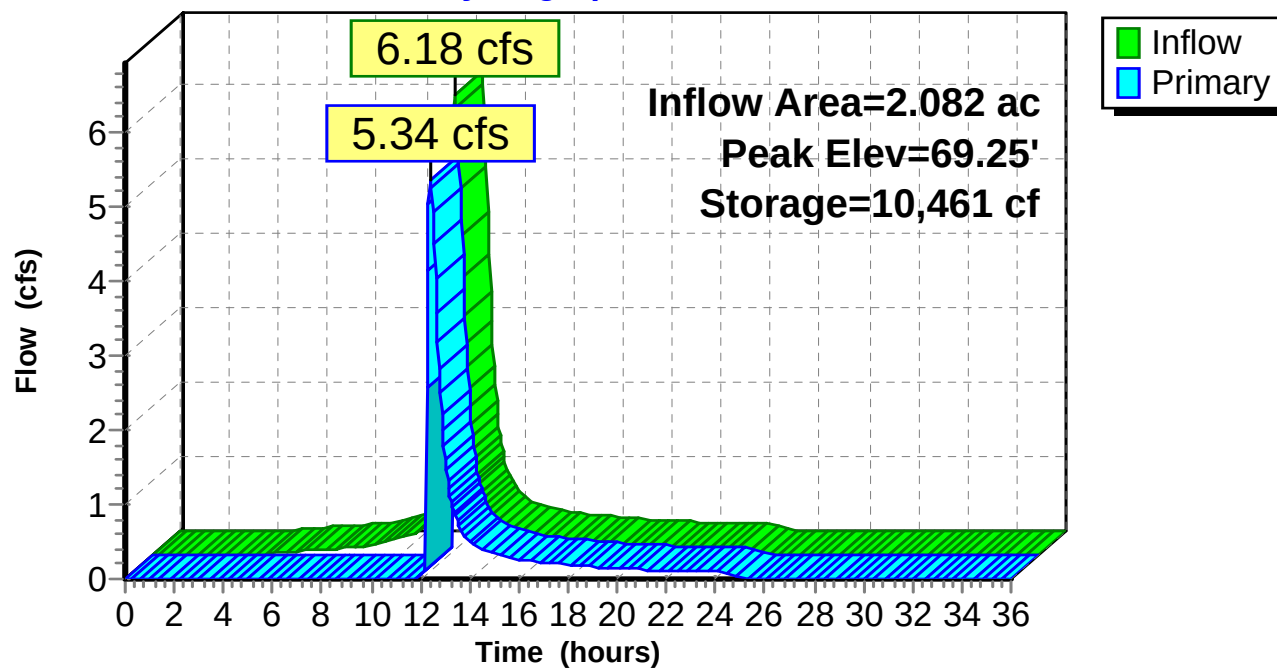
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.00	2,200	0	0
68.00	4,250	3,225	3,225
69.00	6,286	5,268	8,493
70.00	20,000	13,143	21,636

Device	Routing	Invert	Outlet Devices
#1	Primary	69.00'	18.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=5.29 cfs @ 12.41 hrs HW=69.25' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 5.29 cfs @ 1.20 fps)

Pond 2P: Wetland B

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 3P: Surface Detention

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 1.56'

[81] Warning: Exceeded Pond 7P by 0.21' @ 12.20 hrs

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth > 3.51" for 10-yr event
 Inflow = 22.54 cfs @ 11.99 hrs, Volume= 1.236 af
 Outflow = 9.27 cfs @ 12.14 hrs, Volume= 1.234 af, Atten= 59%, Lag= 8.7 min
 Primary = 7.86 cfs @ 12.14 hrs, Volume= 1.225 af
 Secondary = 1.40 cfs @ 12.14 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.57' @ 12.14 hrs Surf.Area= 7,177 sf Storage= 14,180 cf

Plug-Flow detention time= 20.6 min calculated for 1.232 af (100% of inflow)
 Center-of-Mass det. time= 19.1 min (835.5 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	21,926 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

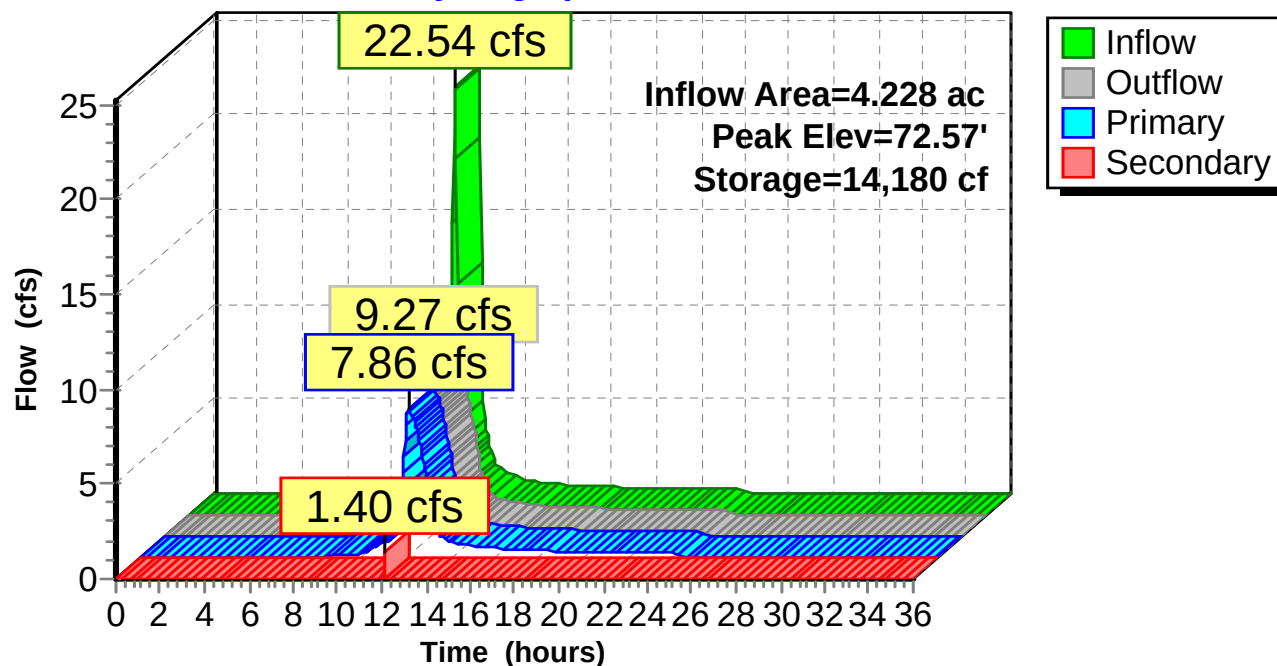
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	400	0	0
70.00	2,991	1,696	1,696
72.00	5,812	8,803	10,499
73.50	9,425	11,428	21,926

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	15.0" Round Culvert L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.10' / 68.75' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	72.50'	35.0' 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=7.85 cfs @ 12.14 hrs HW=72.56' (Free Discharge)↑**1=Culvert** (Inlet Controls 7.85 cfs @ 6.40 fps)**Secondary OutFlow** Max=1.19 cfs @ 12.14 hrs HW=72.56' (Free Discharge)↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.19 cfs @ 0.57 fps)

Pond 3P: Surface Detention

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 4P: Surface Detention

[79] Warning: Submerged Pond PB Primary device # 1 INLET by 3.70'

[78] Warning: Submerged Pond PB Tertiary device # 2 by 3.11'

Inflow Area = 1.275 ac, 52.61% Impervious, Inflow Depth > 3.42" for 10-yr event
 Inflow = 5.26 cfs @ 11.98 hrs, Volume= 0.363 af
 Outflow = 1.91 cfs @ 12.12 hrs, Volume= 0.284 af, Atten= 64%, Lag= 8.2 min
 Primary = 1.91 cfs @ 12.12 hrs, Volume= 0.284 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 71.21' @ 12.12 hrs Surf.Area= 2,698 sf Storage= 5,616 cf

Plug-Flow detention time= 250.8 min calculated for 0.284 af (78% of inflow)
 Center-of-Mass det. time= 113.4 min (1,010.9 - 897.4)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	8,676 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

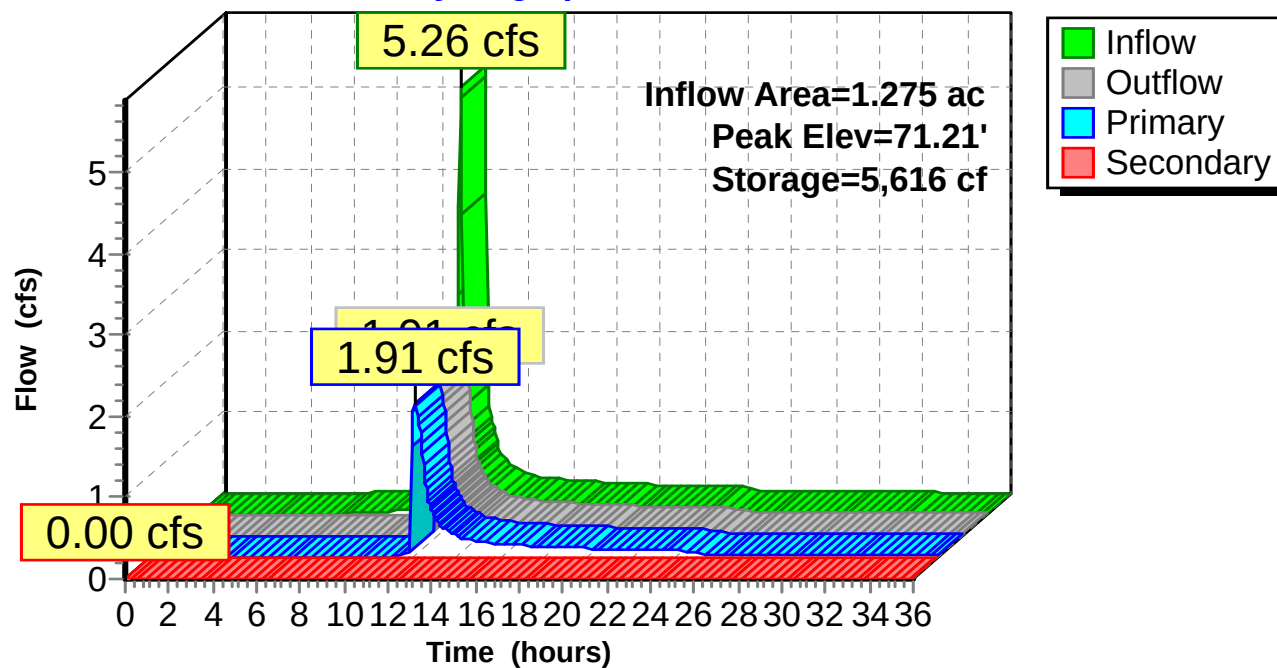
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.00	13	0	0
67.00	71	126	126
68.00	928	500	626
69.00	1,378	1,153	1,779
70.00	1,604	1,491	3,270
71.00	2,104	1,854	5,124
72.00	5,000	3,552	8,676

Device	Routing	Invert	Outlet Devices
#1	Primary	67.66'	1.0" Round Culvert L= 5.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.66' / 67.65' S= 0.0020 '/ Cc= 0.900 n= 0.013, Flow Area= 0.01 sf
#2	Secondary	71.25'	45.0' long x 15.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Primary	70.25'	6.0" Round Culvert X 3.00 L= 1.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 70.25' / 70.25' S= 0.0000 '/ Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=1.90 cfs @ 12.12 hrs HW=71.20' (Free Discharge)↑ **1=Culvert** (Barrel Controls 0.03 cfs @ 5.99 fps)↑ **3=Culvert** (Inlet Controls 1.87 cfs @ 3.17 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=64.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Surface Detention

Hydrograph



Summary for Pond 5P: OCS-4P

[57] Hint: Peaked at 68.39' (Flood elevation advised)

[79] Warning: Submerged Pond 4P Primary device # 1 INLET by 0.72'

Inflow Area = 1.275 ac, 52.61% Impervious, Inflow Depth > 2.67" for 10-yr event
 Inflow = 1.91 cfs @ 12.12 hrs, Volume= 0.284 af
 Outflow = 1.91 cfs @ 12.12 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.91 cfs @ 12.12 hrs, Volume= 0.284 af

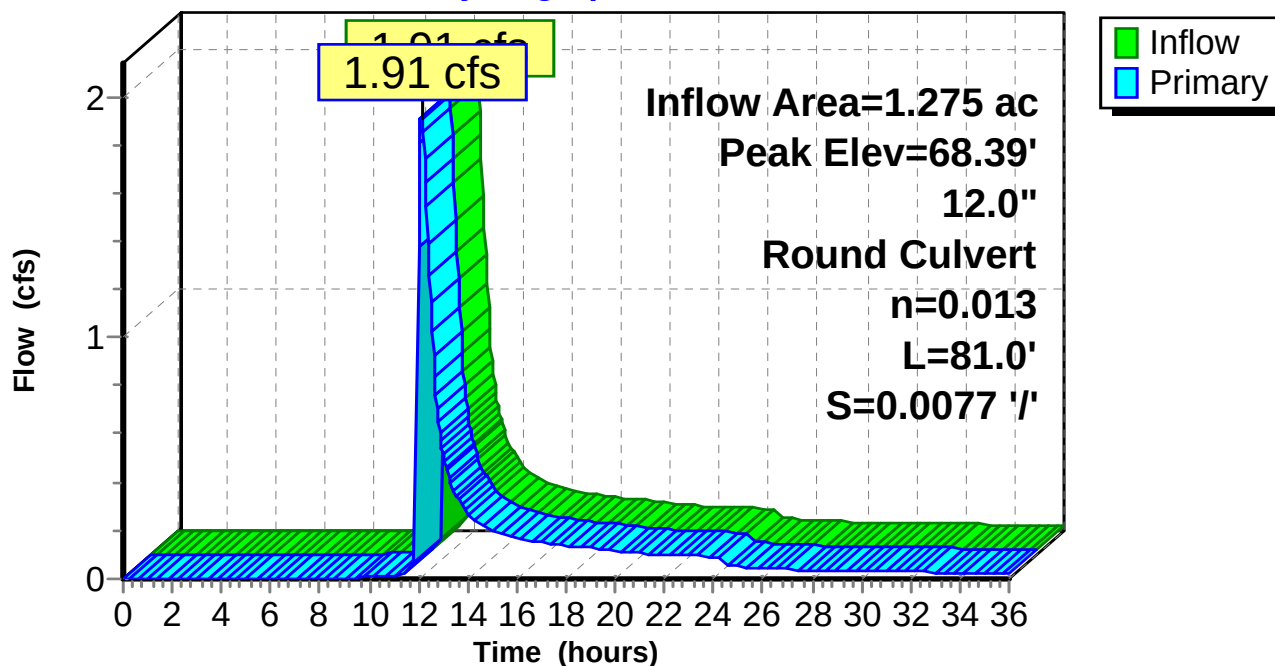
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 68.39' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.48'	12.0" Round Culvert L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.48' / 66.86' S= 0.0077 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.90 cfs @ 12.12 hrs HW=68.38' (Free Discharge)
 ↑1=Culvert (Inlet Controls 1.90 cfs @ 2.55 fps)

Pond 5P: OCS-4P

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 6P: Atrium Surface Detention

[79] Warning: Submerged Pond PA Primary device # 1 INLET by 1.01'

[78] Warning: Submerged Pond PA Tertiary device # 2 by 0.18'

Inflow Area = 2.712 ac, 64.63% Impervious, Inflow Depth > 3.74" for 10-yr event
 Inflow = 14.93 cfs @ 11.98 hrs, Volume= 0.846 af
 Outflow = 14.48 cfs @ 12.00 hrs, Volume= 0.789 af, Atten= 3%, Lag= 1.1 min
 Primary = 14.48 cfs @ 12.00 hrs, Volume= 0.789 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 74.01' @ 12.00 hrs Surf.Area= 3,663 sf Storage= 4,109 cf

Plug-Flow detention time= 70.7 min calculated for 0.789 af (93% of inflow)
 Center-of-Mass det. time= 27.3 min (828.4 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	5,026 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
70.00	55	0	0
72.00	327	382	382
73.00	1,694	1,011	1,393
74.25	4,120	3,634	5,026

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	0.1" Round Culvert L= 220.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.00' / 69.20' S= 0.0082 ' S= 0.0082 ' Cc= 0.900 n= 0.013, Flow Area= 0.00 sf
#2	Primary	73.50'	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

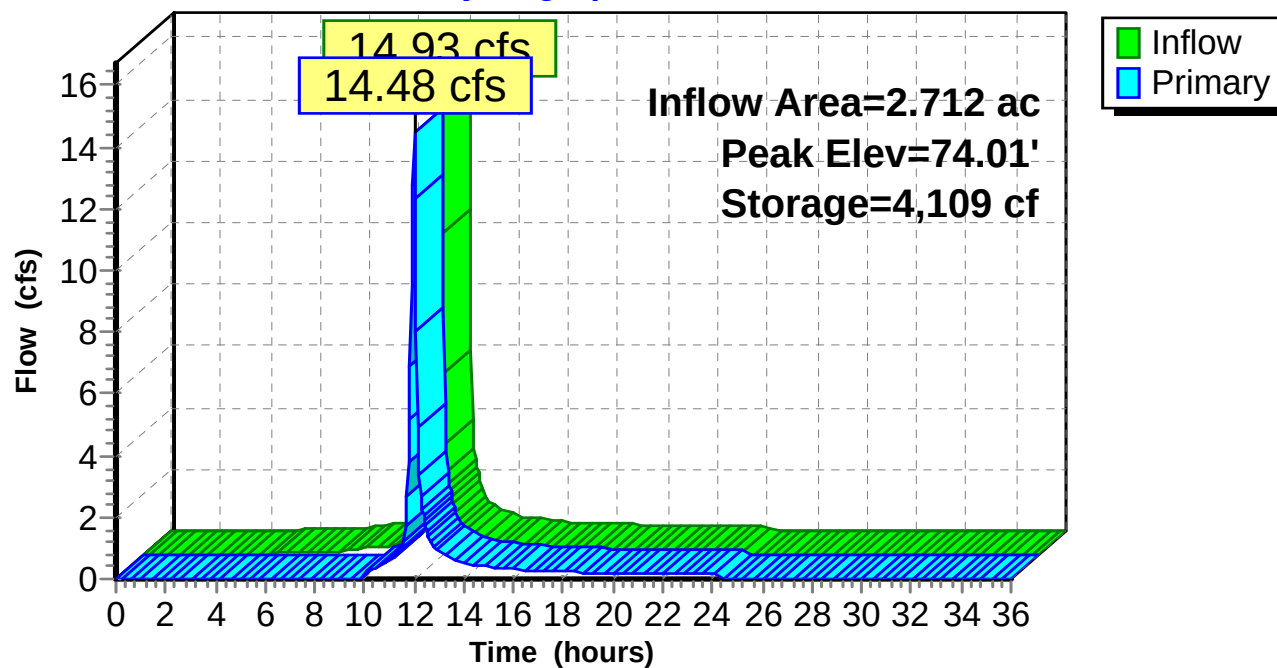
Primary OutFlow Max=14.37 cfs @ 12.00 hrs HW=74.01' (Free Discharge)

1=Culvert (Barrel Controls 0.00 cfs @ 0.28 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 14.37 cfs @ 1.87 fps)

Pond 6P: Atrium Surface Detention

Hydrograph



Summary for Pond 7P: Riprap Surface Detention

Inflow Area = 0.600 ac, 52.50% Impervious, Inflow Depth = 3.49" for 10-yr event
 Inflow = 3.36 cfs @ 11.98 hrs, Volume= 0.175 af
 Outflow = 2.95 cfs @ 12.02 hrs, Volume= 0.173 af, Atten= 12%, Lag= 2.3 min
 Primary = 2.95 cfs @ 12.02 hrs, Volume= 0.173 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 73.30' @ 12.02 hrs Surf.Area= 472 sf Storage= 479 cf

Plug-Flow detention time= 15.5 min calculated for 0.172 af (99% of inflow)
 Center-of-Mass det. time= 8.5 min (802.8 - 794.3)

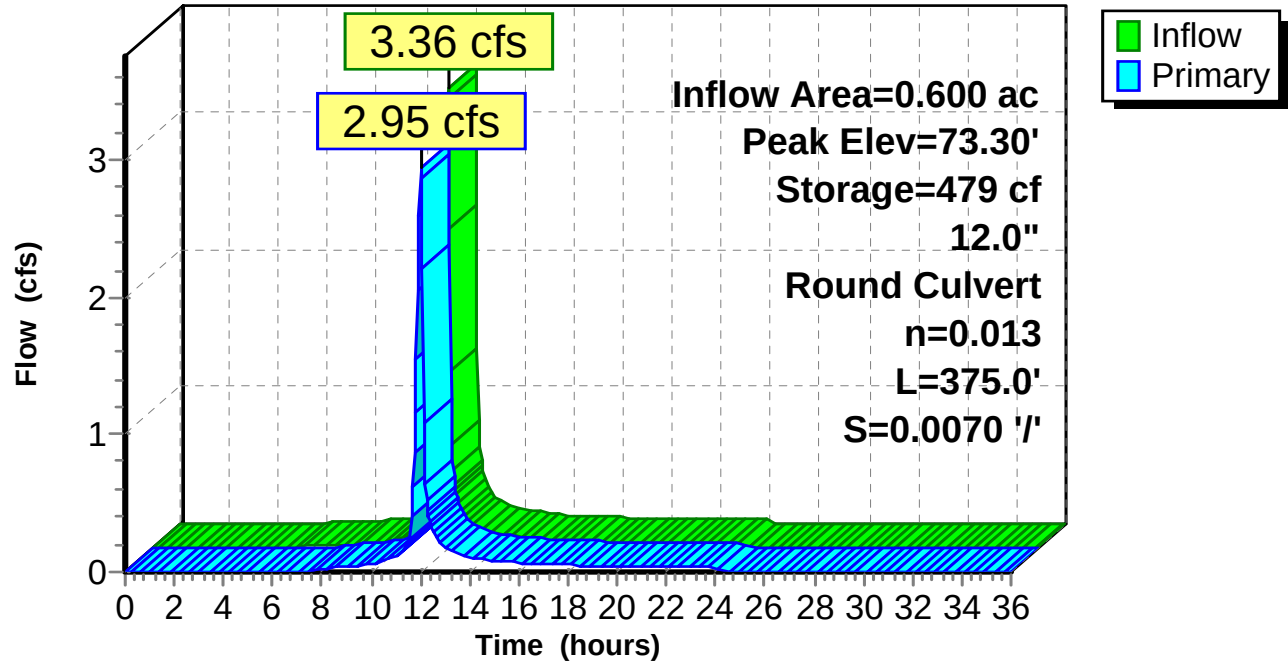
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	2,180 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	50	0	0
73.00	310	360	360
74.00	846	578	938
75.00	1,637	1,242	2,180

Device	Routing	Invert	Outlet Devices
#1	Primary	71.83'	12.0" Round Culvert L= 375.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.83' / 69.20' S= 0.0070 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.90 cfs @ 12.02 hrs HW=73.28' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 2.90 cfs @ 3.70 fps)

Pond 7P: Riprap Surface Detention

Hydrograph



Summary for Pond 8P: OCS-DMH7

[57] Hint: Peaked at 67.19' (Flood elevation advised)

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth > 3.48" for 10-yr event
 Inflow = 7.86 cfs @ 12.14 hrs, Volume= 1.225 af
 Outflow = 7.86 cfs @ 12.14 hrs, Volume= 1.225 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.70 cfs @ 12.14 hrs, Volume= 0.038 af
 Secondary = 7.17 cfs @ 12.14 hrs, Volume= 1.187 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.19' @ 12.14 hrs

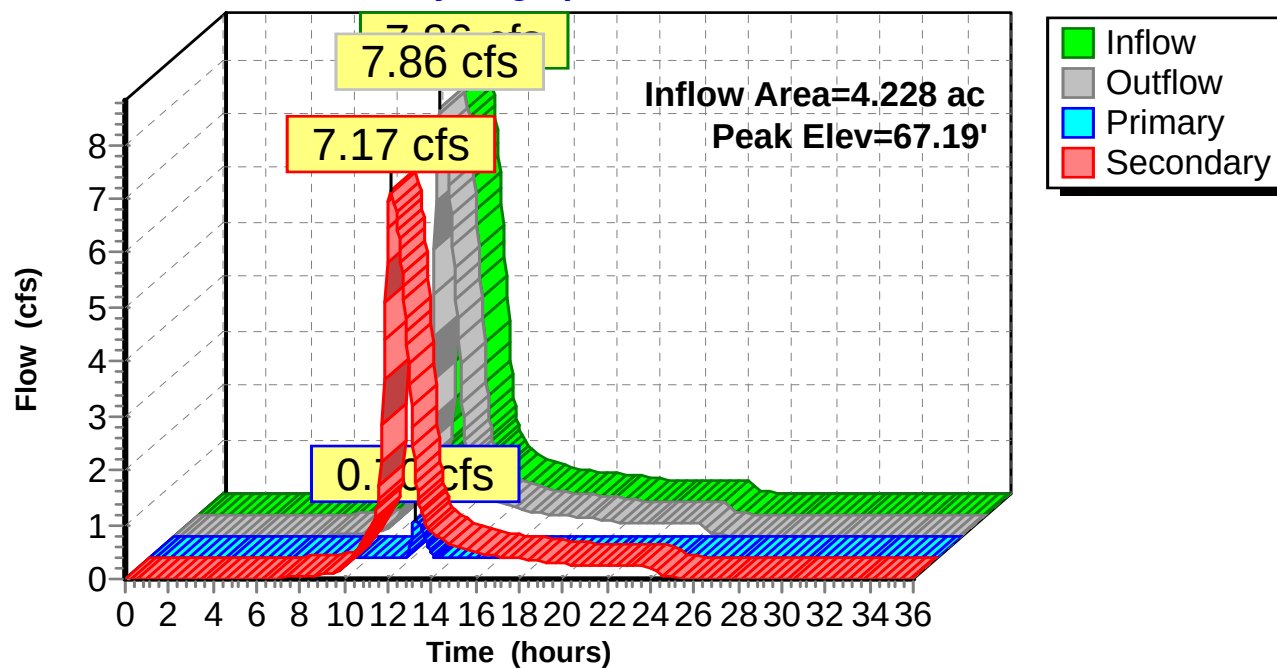
Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	12.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.60' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	65.70'	24.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.69 cfs @ 12.14 hrs HW=67.19' (Free Discharge)
 ↑**1=Culvert** (Barrel Controls 0.69 cfs @ 2.06 fps)

Secondary OutFlow Max=7.16 cfs @ 12.14 hrs HW=67.19' (Free Discharge)
 ↑**2=Culvert** (Barrel Controls 7.16 cfs @ 3.96 fps)

Pond 8P: OCS-DMH7

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond 9P: UG Detention

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth = 0.06" for 10-yr event
 Inflow = 0.26 cfs @ 12.14 hrs, Volume= 0.019 af
 Outflow = 0.14 cfs @ 12.85 hrs, Volume= 0.019 af, Atten= 45%, Lag= 42.7 min
 Primary = 0.14 cfs @ 12.85 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 66.05' @ 12.85 hrs Surf.Area= 1,536 sf Storage= 509 cf

Plug-Flow detention time= 92.8 min calculated for 0.019 af (99% of inflow)
 Center-of-Mass det. time= 93.8 min (837.8 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	65.70'	2,488 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,619 cf Overall x 95.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.70	1,536	0	0
67.40	1,536	2,611	2,611
67.41	5	8	2,619

Device	Routing	Invert	Outlet Devices
#1	Primary	65.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Primary	67.00'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

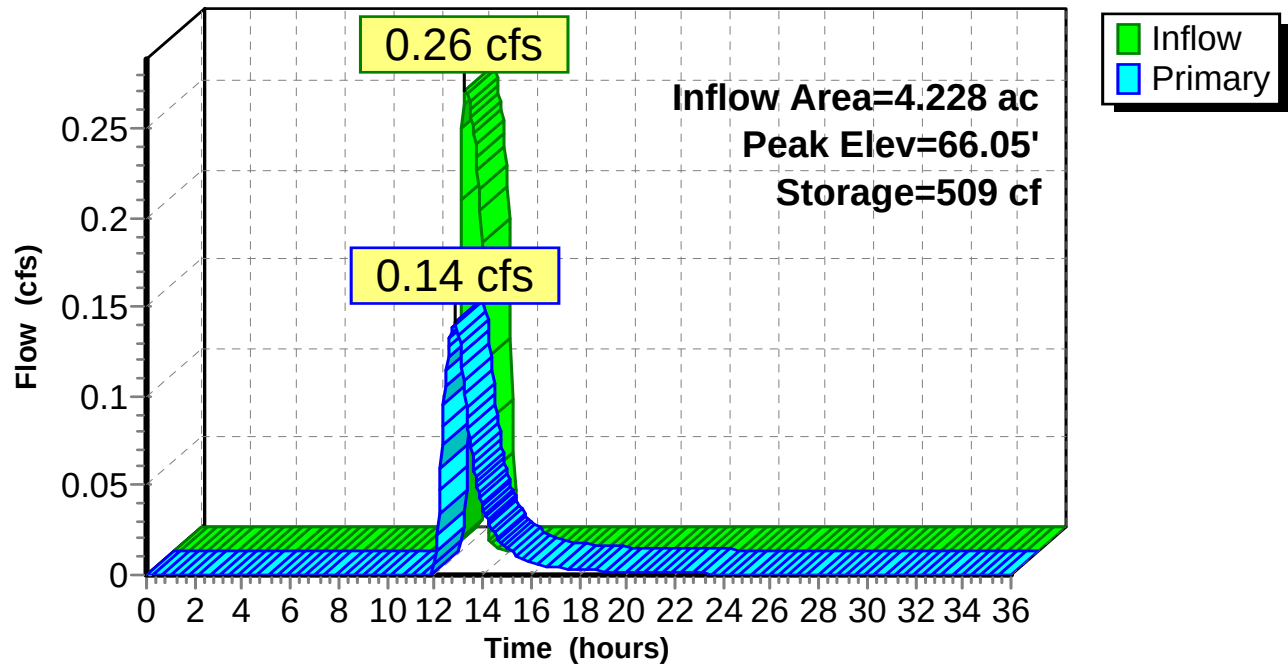
Primary OutFlow Max=0.14 cfs @ 12.85 hrs HW=66.05' (Free Discharge)

1=Culvert (Inlet Controls 0.14 cfs @ 1.62 fps)

2=Culvert (Controls 0.00 cfs)

Pond 9P: UG Detention

Hydrograph



Summary for Pond 10P: Isolator Row x5

[81] Warning: Exceeded Pond 8P by 0.86' @ 35.95 hrs

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth = 0.11" for 10-yr event
 Inflow = 0.70 cfs @ 12.14 hrs, Volume= 0.038 af
 Outflow = 0.70 cfs @ 12.14 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.2 min
 Primary = 0.26 cfs @ 12.14 hrs, Volume= 0.019 af
 Secondary = 0.44 cfs @ 12.14 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.37' @ 12.14 hrs Surf.Area= 0.001 ac Storage= 0.001 af

Plug-Flow detention time= 2.9 min calculated for 0.038 af (100% of inflow)
 Center-of-Mass det. time= 2.0 min (740.5 - 738.5)

Volume	Invert	Avail.Storage	Storage Description
#1	66.60'	0.002 af	ADS StormTech RC-310 x 5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 2.07 sf x 1 rows

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	4.0" Round Culvert L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.55' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Secondary	67.00'	12.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.55' S= 0.0090 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.14 hrs HW=67.37' (Free Discharge)

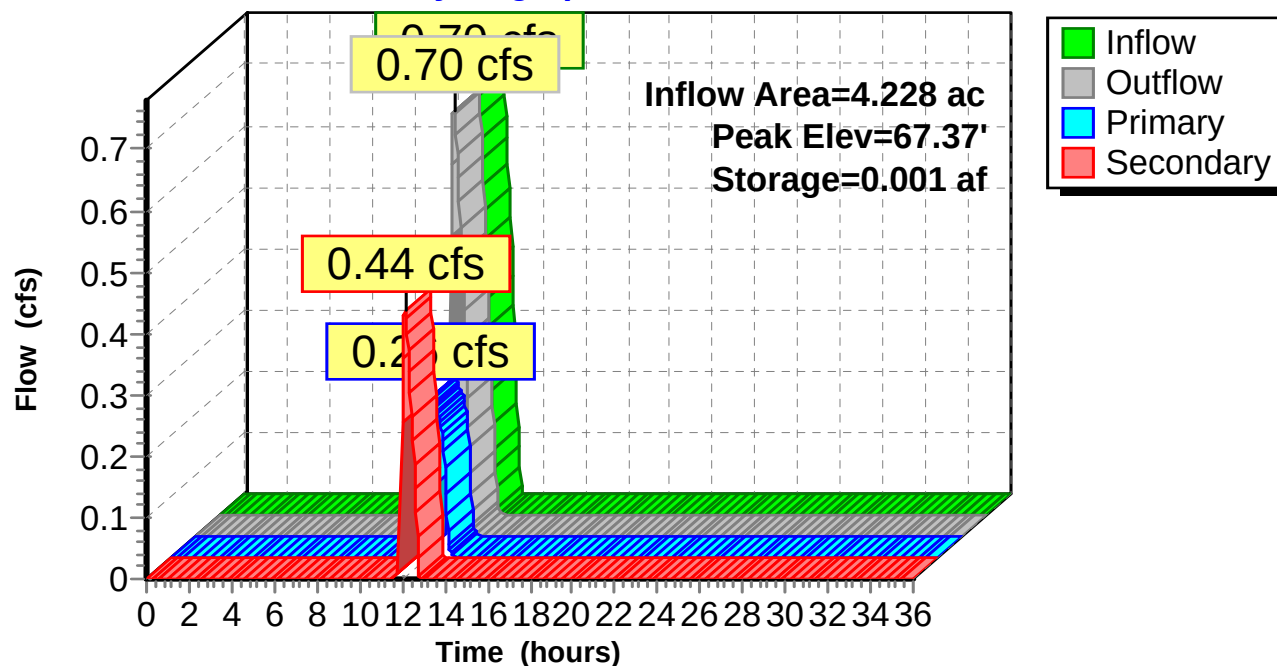
↑ **1=Culvert** (Inlet Controls 0.26 cfs @ 2.96 fps)

Secondary OutFlow Max=0.44 cfs @ 12.14 hrs HW=67.37' (Free Discharge)

↑ **2=Culvert** (Inlet Controls 0.44 cfs @ 1.64 fps)

Pond 10P: Isolator Row x5

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond PA: USF A

Inflow Area = 0.196 ac, 67.83% Impervious, Inflow Depth = 3.81" for 10-yr event
 Inflow = 1.16 cfs @ 11.98 hrs, Volume= 0.062 af
 Outflow = 0.25 cfs @ 12.17 hrs, Volume= 0.048 af, Atten= 79%, Lag= 11.5 min
 Primary = 0.22 cfs @ 12.17 hrs, Volume= 0.013 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.03 cfs @ 12.17 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 77.16' @ 12.17 hrs Surf.Area= 1,157 sf Storage= 1,532 cf

Plug-Flow detention time= 422.4 min calculated for 0.048 af (77% of inflow)
 Center-of-Mass det. time= 336.4 min (1,118.6 - 782.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	73.00'	2,192 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	585	0.0	0	0
73.01	585	30.0	2	2
75.99	585	30.0	523	525
76.00	585	100.0	6	531
77.00	1,056	100.0	821	1,351
77.33	1,260	100.0	382	1,733
77.67	1,437	100.0	458	2,192

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	12.0" Round Culvert L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 72.20' S= 0.0133 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Tertiary	73.83'	2.410 in/hr Exfiltration over Surface area above 73.83' Excluded Surface area = 585 sf
#3	Device 1	77.00'	24.0" x 24.0" Horiz. Orifice/Grate X 5.00 columns X 5 rows C= 0.600 in 4.0" x 4.0" Grate Limited to weir flow at low heads
#4	Secondary	77.50'	30.0' 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

Post-Development Cedars Model 17-10-16

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Type II 24-hr 10-yr Rainfall=4.71"

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Primary OutFlow Max=0.21 cfs @ 12.17 hrs HW=77.16' (Free Discharge)

↑ **1=Culvert** (Passes 0.21 cfs of 6.82 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.21 cfs @ 1.93 fps)

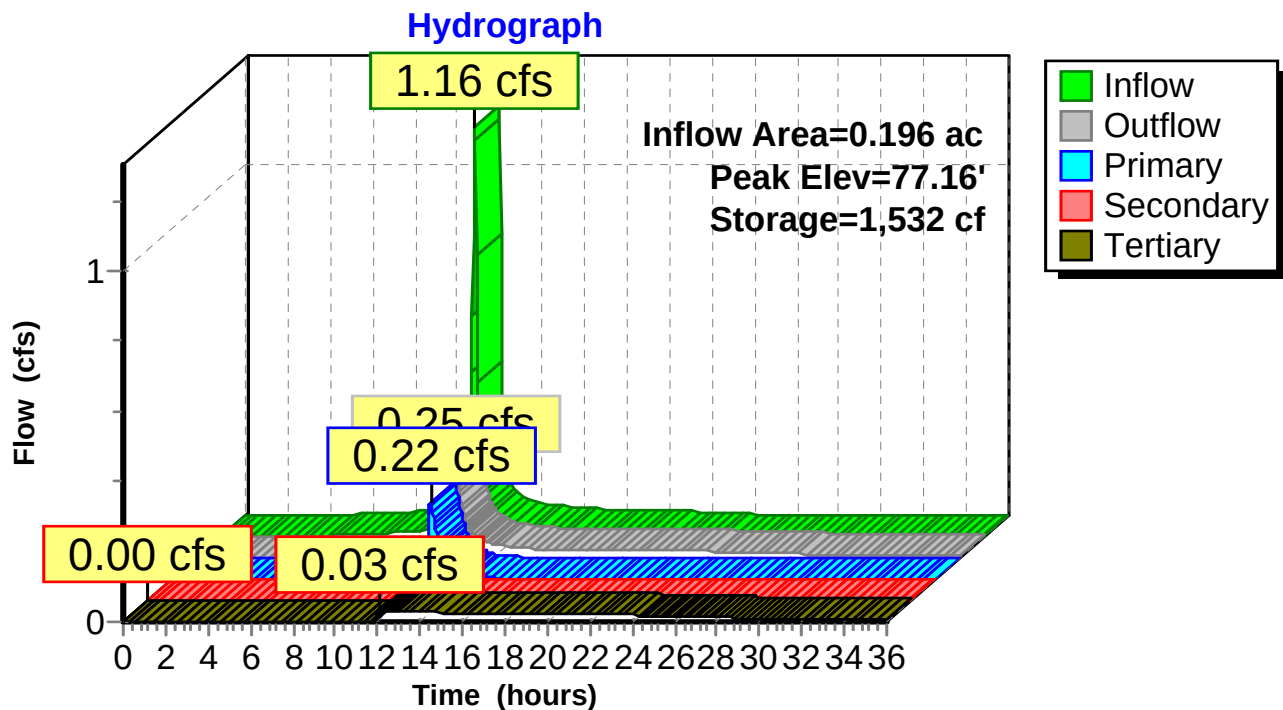
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.03 cfs @ 12.17 hrs HW=77.16' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Pond PA: USF A



Post-Development Cedars Model 17-10-16

Type II 24-hr 10-yr Rainfall=4.71"

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Summary for Pond PB: USF B

Inflow Area = 0.324 ac, 84.42% Impervious, Inflow Depth = 4.13" for 10-yr event
 Inflow = 2.01 cfs @ 11.98 hrs, Volume= 0.112 af
 Outflow = 0.22 cfs @ 12.35 hrs, Volume= 0.094 af, Atten= 89%, Lag= 22.2 min
 Primary = 0.15 cfs @ 12.35 hrs, Volume= 0.012 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.07 cfs @ 12.35 hrs, Volume= 0.083 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.11' @ 12.35 hrs Surf.Area= 1,972 sf Storage= 2,962 cf

Plug-Flow detention time= 482.5 min calculated for 0.094 af (84% of inflow)
 Center-of-Mass det. time= 414.4 min (1,181.6 - 767.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	67.86'	3,817 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.86	715	0.0	0	0
67.87	715	30.0	2	2
70.25	715	30.0	511	513
70.26	715	100.0	7	520
72.00	1,853	100.0	2,234	2,754
72.50	2,400	100.0	1,063	3,817

Device	Routing	Invert	Outlet Devices
#1	Primary	67.50'	15.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.50' / 67.40' S= 0.0050 ' /' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Tertiary	68.09'	2.410 in/hr Exfiltration over Surface area above 68.09' Excluded Surface area = 715 sf
#3	Device 1	72.00'	24.0" x 24.0" Horiz. Orifice/Grate X 5.00 columns X 5 rows C= 0.600 in 4.0" x 4.0" Grate Limited to weir flow at low heads
#4	Secondary	72.25'	30.0' 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=0.16 cfs @ 12.35 hrs HW=72.11' (Free Discharge)

↑ **1=Culvert** (Passes 0.16 cfs of 9.31 cfs potential flow)
 ↑ **3=Orifice/Grate** (Weir Controls 0.16 cfs @ 1.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=67.86' (Free Discharge)

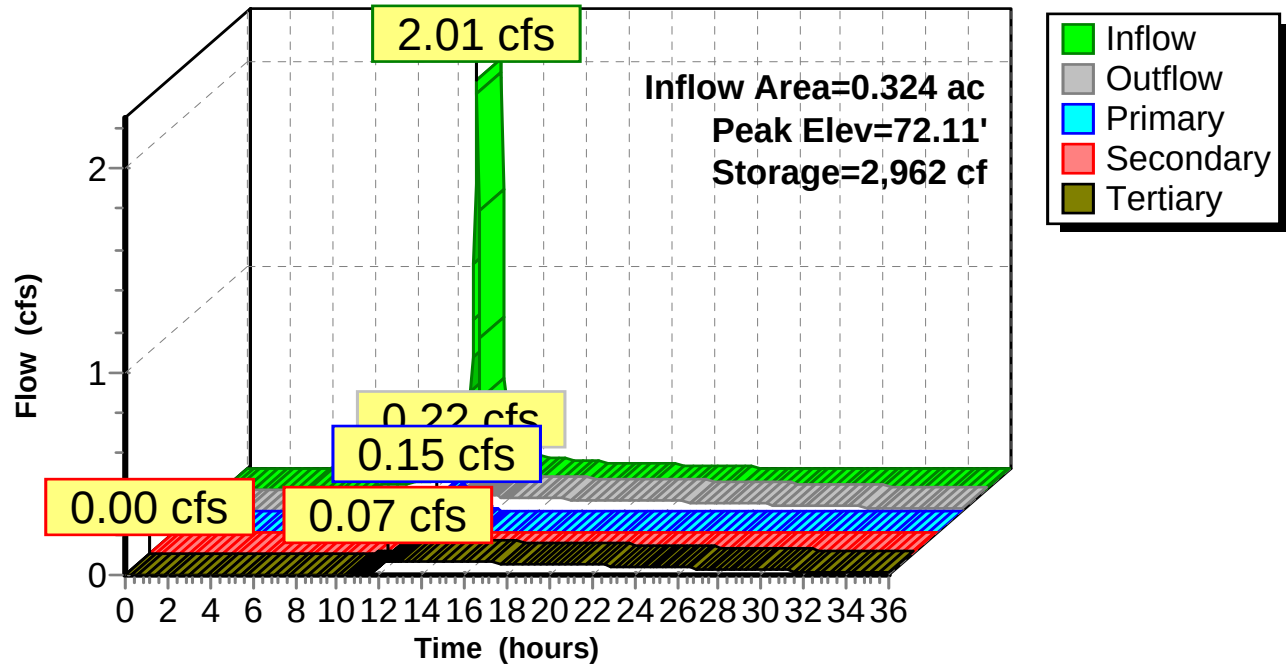
↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.07 cfs @ 12.35 hrs HW=72.11' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Pond PB: USF B

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 25-yr Rainfall=5.92"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Subcatchment1 Runoff Area=87,665 sf 15.27% Impervious Runoff Depth=4.02"
 Flow Length=177' Slope=0.0100 '/' Tc=29.9 min CN=83 Runoff=6.98 cfs 0.674 af

Subcatchment2S: Subcatchment2 Runoff Area=90,682 sf 66.45% Impervious Runoff Depth=4.99"
 Flow Length=178' Slope=0.0075 '/' Tc=33.7 min CN=92 Runoff=8.00 cfs 0.866 af

Subcatchment3S: Subcatchment3 Runoff Area=40,444 sf 47.45% Impervious Runoff Depth=4.66"
 Flow Length=185' Slope=0.0200 '/' Tc=30.6 min CN=89 Runoff=3.60 cfs 0.360 af

Subcatchment4S: Subcatchment4 Runoff Area=26,132 sf 52.50% Impervious Runoff Depth=4.66"
 Tc=7.0 min CN=89 Runoff=4.40 cfs 0.233 af

Subcatchment5S: Subcatchment5 Runoff Area=109,598 sf 64.38% Impervious Runoff Depth=4.99"
 Tc=7.0 min CN=92 Runoff=19.21 cfs 1.046 af

Subcatchment6S: Subcatchment6 Runoff Area=39,891 sf 54.44% Impervious Runoff Depth=4.77"
 Tc=7.0 min CN=90 Runoff=6.81 cfs 0.364 af

Subcatchment7S: Subcatchment7 Runoff Area=41,419 sf 41.76% Impervious Runoff Depth=4.55"
 Tc=7.0 min CN=88 Runoff=6.86 cfs 0.360 af

Subcatchment8S: Subcatchment8 Runoff Area=1,744 sf 3.61% Impervious Runoff Depth=3.81"
 Tc=7.0 min CN=81 Runoff=0.25 cfs 0.013 af

SubcatchmentSA: SubcatchmentA Runoff Area=8,542 sf 67.83% Impervious Runoff Depth=4.99"
 Flow Length=65' Slope=0.0300 '/' Tc=7.0 min CN=92 Runoff=1.50 cfs 0.082 af

SubcatchmentSB: SubcatchmentB Runoff Area=14,118 sf 84.42% Impervious Runoff Depth=5.33"
 Tc=7.0 min CN=95 Runoff=2.55 cfs 0.144 af

Reach 1SP: Study Point 1 Inflow=5.27 cfs 2.219 af
 Outflow=5.27 cfs 2.219 af

Reach 2SP: Study Point 2 Inflow=5.00 cfs 0.465 af
 Outflow=5.00 cfs 0.465 af

Reach 3SP: Study Point 3 Inflow=4.60 cfs 0.062 af
 Outflow=4.60 cfs 0.062 af

Reach 4SP: Study Point 4 Inflow=3.60 cfs 0.360 af
 Outflow=3.60 cfs 0.360 af

Pond 1P: Wetland A Peak Elev=66.48' Storage=80,466 cf Inflow=29.94 cfs 3.350 af
 Primary=5.00 cfs 0.465 af Secondary=5.27 cfs 2.219 af Outflow=10.28 cfs 2.684 af

Pond 2P: Wetland B Peak Elev=69.31' Storage=11,061 cf Inflow=8.00 cfs 0.866 af
 Outflow=7.52 cfs 0.671 af

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Pond 3P: Surface Detention Peak Elev=72.83' Storage=16,133 cf Inflow=28.80 cfs 1.651 af
Primary=8.22 cfs 1.502 af Secondary=15.34 cfs 0.147 af Outflow=23.56 cfs 1.649 af

Pond 4P: Surface Detention Peak Elev=71.37' Storage=6,107 cf Inflow=7.06 cfs 0.478 af
Primary=2.13 cfs 0.357 af Secondary=4.42 cfs 0.041 af Outflow=6.54 cfs 0.398 af

Pond 5P: OCS-4P Peak Elev=68.48' Inflow=2.13 cfs 0.357 af
12.0" Round Culvert n=0.013 L=81.0' S=0.0077 ' /' Outflow=2.13 cfs 0.357 af

Pond 6P: Atrium Surface Detention Peak Elev=74.10' Storage=4,441 cf Inflow=19.46 cfs 1.113 af
Outflow=18.90 cfs 1.056 af

Pond 7P: Riprap Surface Detention Peak Elev=73.85' Storage=818 cf Inflow=4.40 cfs 0.233 af
12.0" Round Culvert n=0.013 L=375.0' S=0.0070 ' /' Outflow=3.26 cfs 0.231 af

Pond 8P: OCS-DMH7 Peak Elev=67.23' Inflow=8.22 cfs 1.502 af
Primary=0.78 cfs 0.047 af Secondary=7.44 cfs 1.455 af Outflow=8.22 cfs 1.502 af

Pond 9P: UG Detention Peak Elev=66.08' Storage=559 cf Inflow=0.27 cfs 0.023 af
Outflow=0.15 cfs 0.023 af

Pond 10P: Isolator Row x5 Peak Elev=67.41' Storage=0.001 af Inflow=0.78 cfs 0.047 af
Primary=0.27 cfs 0.023 af Secondary=0.51 cfs 0.024 af Outflow=0.78 cfs 0.047 af

Pond PA: USF A Peak Elev=77.46' Storage=1,902 cf Inflow=1.50 cfs 0.082 af
Primary=0.36 cfs 0.029 af Secondary=0.00 cfs 0.000 af Tertiary=0.04 cfs 0.038 af Outflow=0.40 cfs 0.067 af

Pond PB: USF B Peak Elev=72.30' Storage=3,366 cf Inflow=2.55 cfs 0.144 af
Primary=0.29 cfs 0.027 af Secondary=0.95 cfs 0.008 af Tertiary=0.08 cfs 0.090 af Outflow=1.33 cfs 0.126 af

Total Runoff Area = 10.566 ac Runoff Volume = 4.142 af Average Runoff Depth = 4.70"
49.18% Pervious = 5.196 ac 50.82% Impervious = 5.370 ac

Post-Development Cedars Model 17-10-16

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Type II 24-hr 25-yr Rainfall=5.92"

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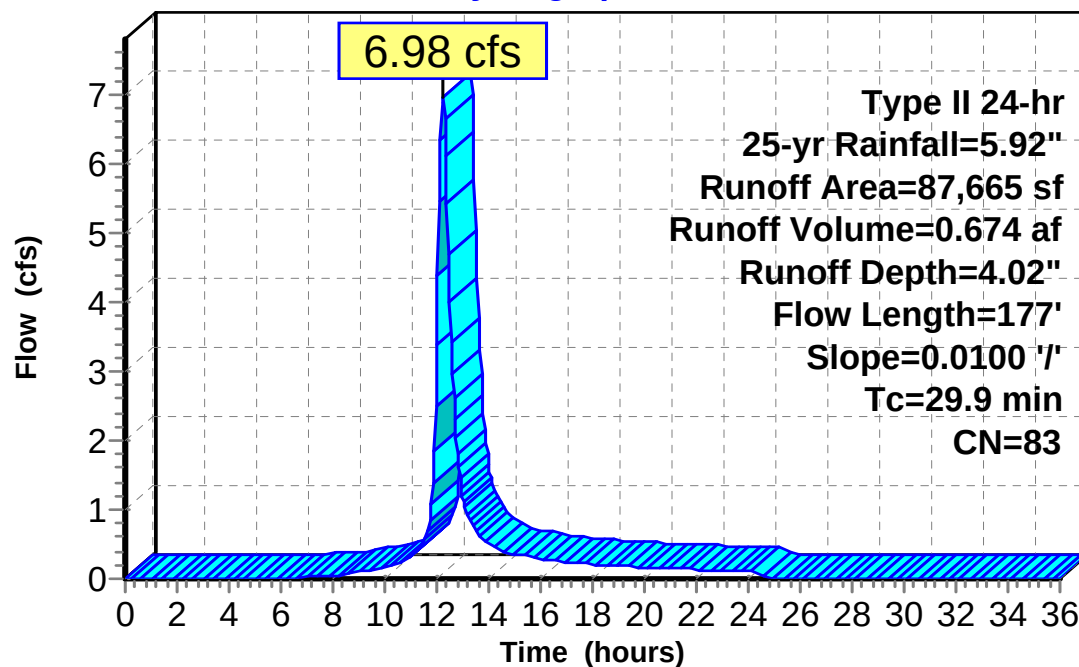
Summary for Subcatchment 1S: Subcatchment 1

Runoff = 6.98 cfs @ 12.24 hrs, Volume= 0.674 af, Depth= 4.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	13,390	98	
	74,275	80	>75% Grass cover, Good, HSG D
	87,665	83	Weighted Average
	74,275		84.73% Pervious Area
	13,390		15.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.9	177	0.0100	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 1S: Subcatchment 1**Hydrograph**

Runoff

Summary for Subcatchment 2S: Subcatchment 2

Runoff = 8.00 cfs @ 12.27 hrs, Volume= 0.866 af, Depth= 4.99"

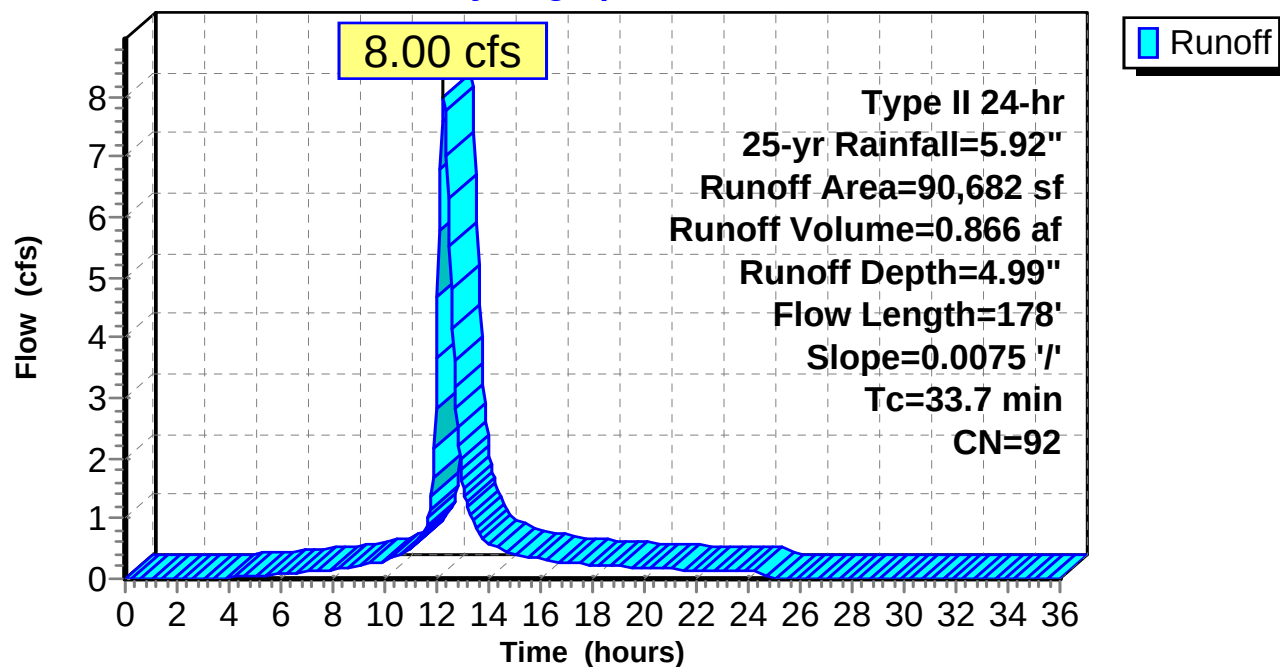
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	60,255	98	
	30,427	80	>75% Grass cover, Good, HSG D
	90,682	92	Weighted Average
	30,427		33.55% Pervious Area
	60,255		66.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.7	178	0.0075	0.09		Sheet Flow, Grass: Dense n= 0.240 P2= 3.17"

Subcatchment 2S: Subcatchment 2

Hydrograph



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Type II 24-hr 25-yr Rainfall=5.92"

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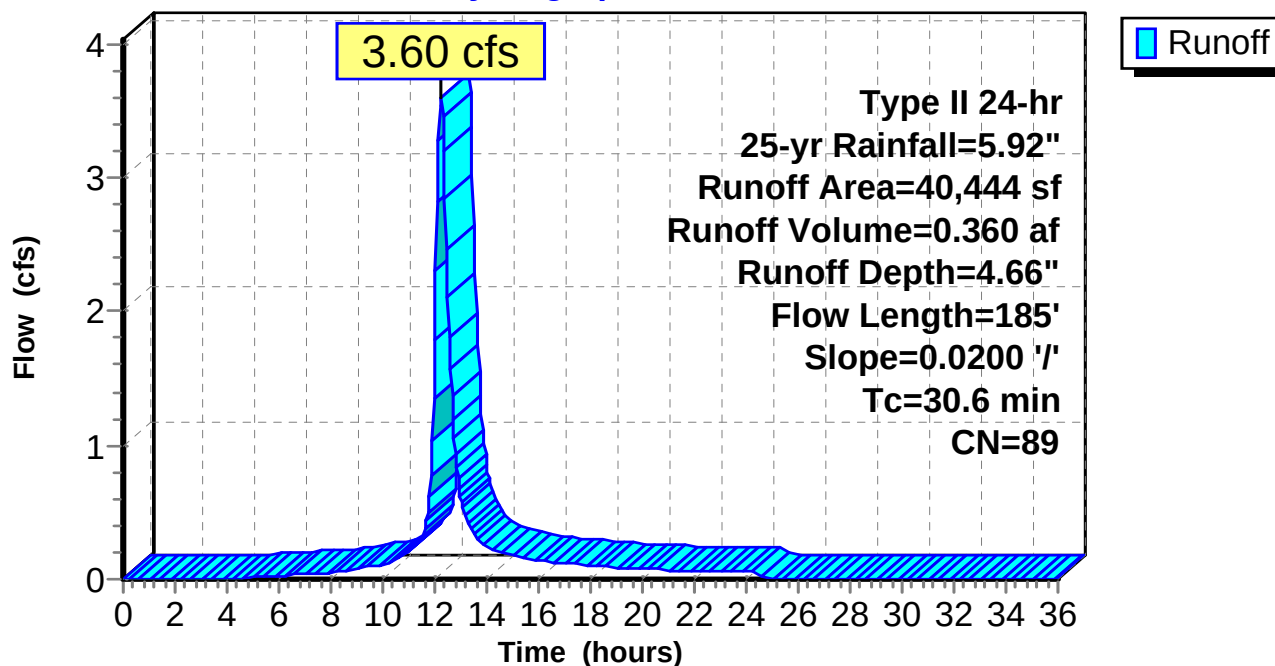
Summary for Subcatchment 3S: Subcatchment 3

Runoff = 3.60 cfs @ 12.24 hrs, Volume= 0.360 af, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

Area (sf)	CN	Description
21,255	80	>75% Grass cover, Good, HSG D
* 19,189	98	
40,444	89	Weighted Average
21,255		52.55% Pervious Area
19,189		47.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	150	0.0200	0.08		Sheet Flow, Sheet
					Woods: Light underbrush n= 0.400 P2= 3.17"
0.8	35	0.0200	0.71		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
30.6	185	Total			

Subcatchment 3S: Subcatchment 3**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 25-yr Rainfall=5.92"

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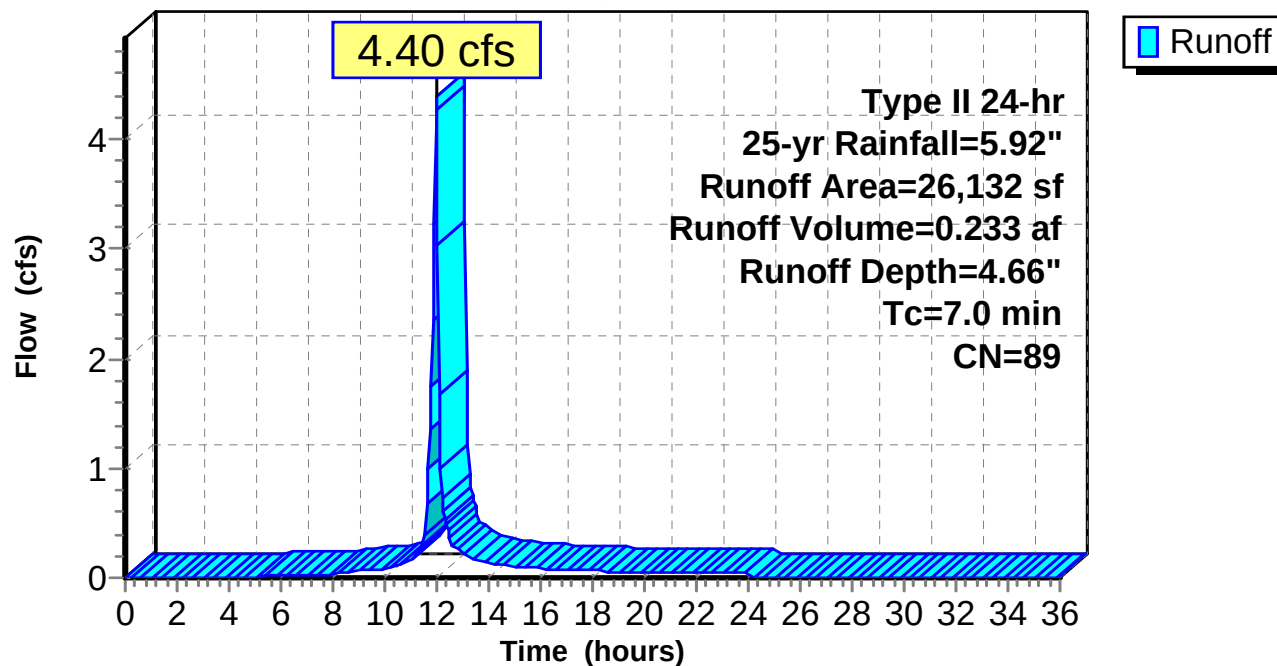
Summary for Subcatchment 4S: Subcatchment 4

Runoff = 4.40 cfs @ 11.98 hrs, Volume= 0.233 af, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	13,720	98	
	12,412	80	>75% Grass cover, Good, HSG D
	26,132	89	Weighted Average
	12,412		47.50% Pervious Area
	13,720		52.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 4S: Subcatchment 4**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Subcatchment 5S: Subcatchment 5

Runoff = 19.21 cfs @ 11.98 hrs, Volume= 1.046 af, Depth= 4.99"

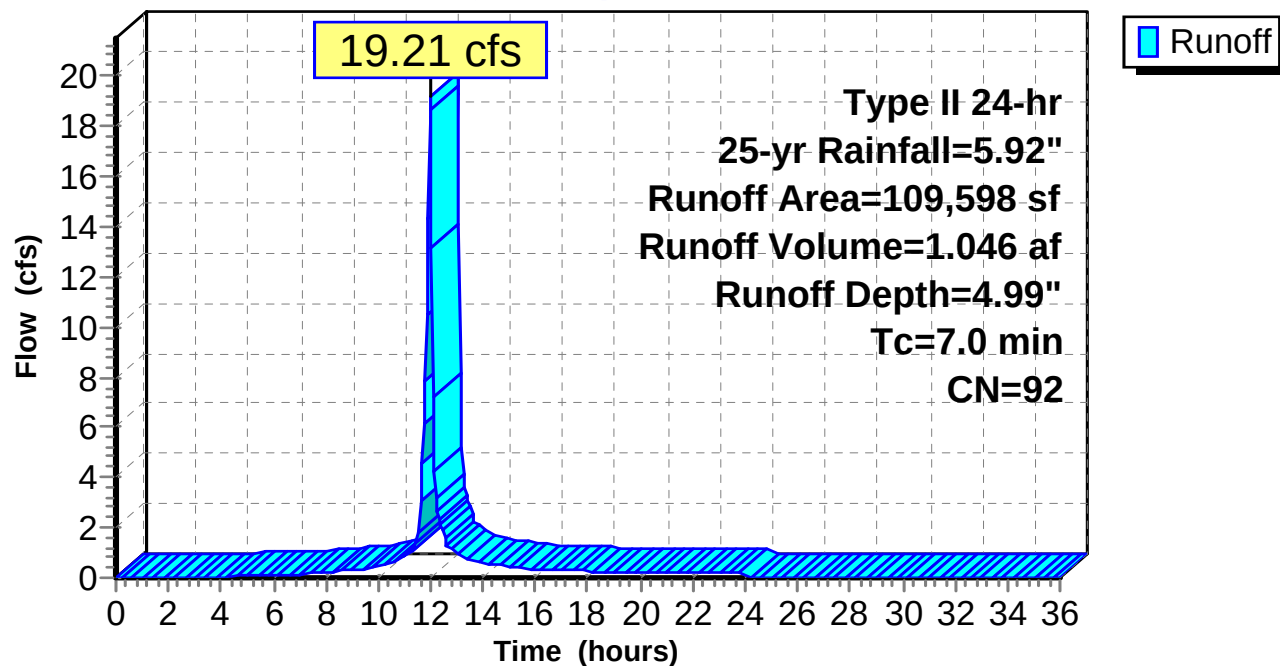
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	70,563	98	
	39,035	80	>75% Grass cover, Good, HSG D
	109,598	92	Weighted Average
	39,035		35.62% Pervious Area
	70,563		64.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 5S: Subcatchment 5

Hydrograph



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Type II 24-hr 25-yr Rainfall=5.92"

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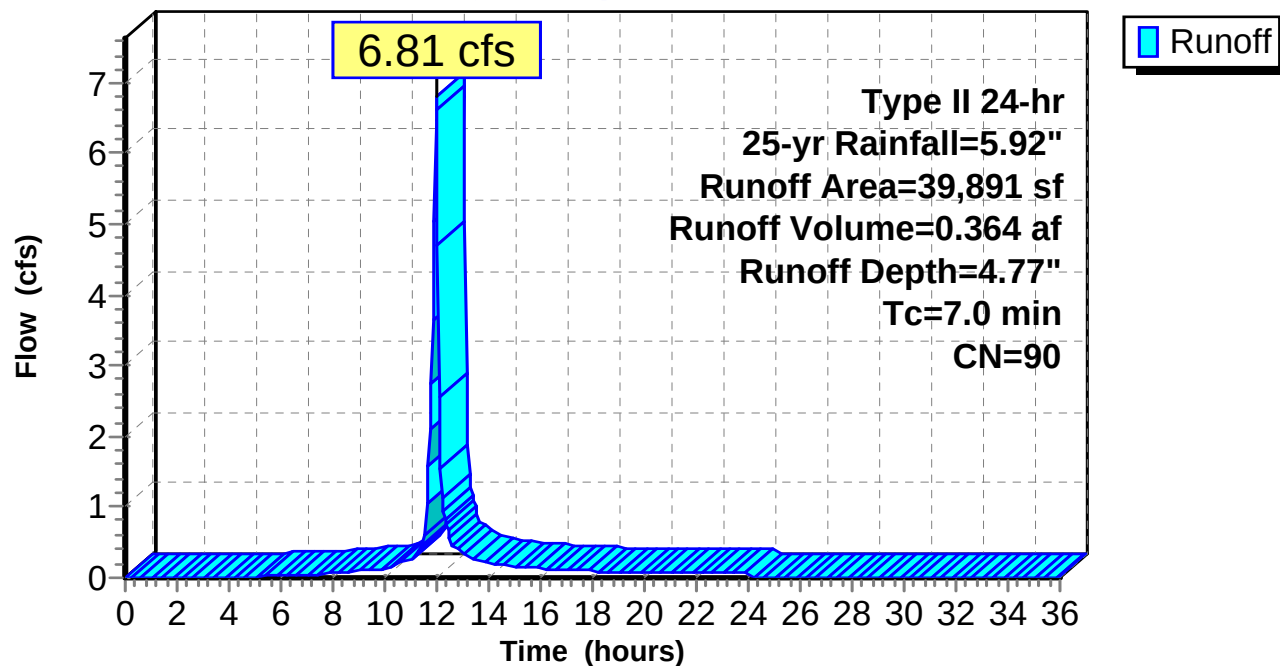
Summary for Subcatchment 6S: Subcatchment 6

Runoff = 6.81 cfs @ 11.98 hrs, Volume= 0.364 af, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	21,718	98	
	18,173	80	>75% Grass cover, Good, HSG D
	39,891	90	Weighted Average
	18,173		45.56% Pervious Area
	21,718		54.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 6S: Subcatchment 6**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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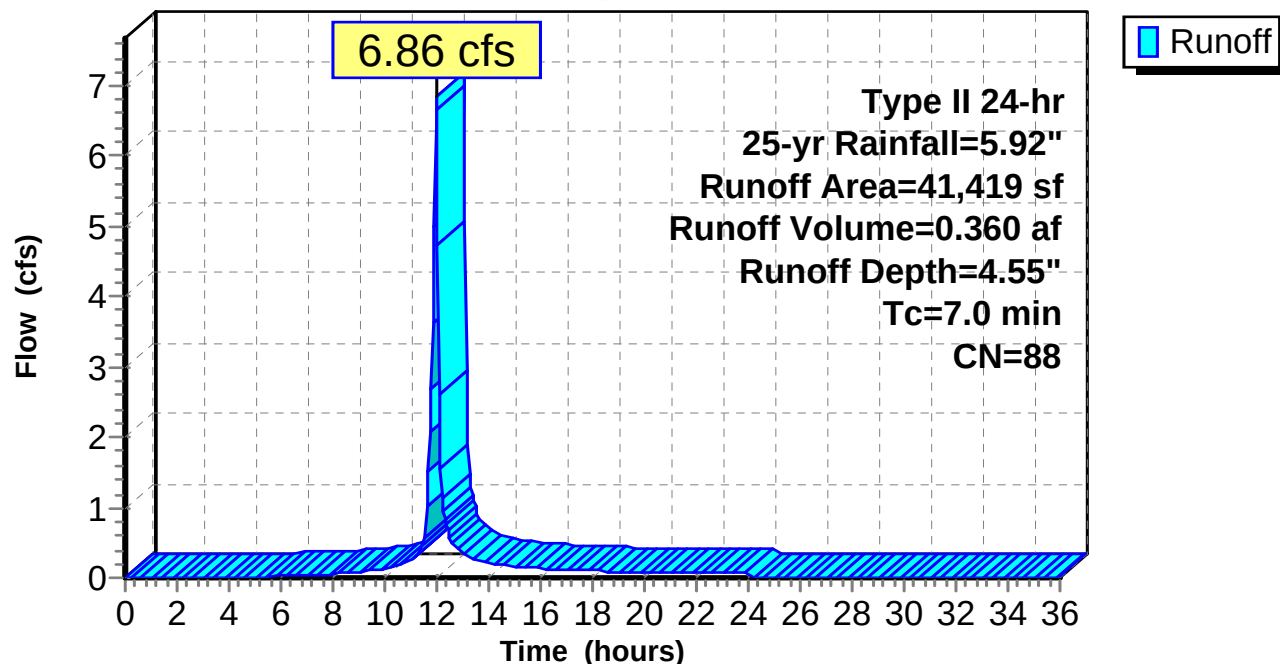
Summary for Subcatchment 7S: Subcatchment 7

Runoff = 6.86 cfs @ 11.98 hrs, Volume= 0.360 af, Depth= 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	17,297	98	
	24,122	80	>75% Grass cover, Good, HSG D
	41,419	88	Weighted Average
	24,122		58.24% Pervious Area
	17,297		41.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 7S: Subcatchment 7**Hydrograph**

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Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Subcatchment 8S: Subcatchment 8

Runoff = 0.25 cfs @ 11.98 hrs, Volume= 0.013 af, Depth= 3.81"

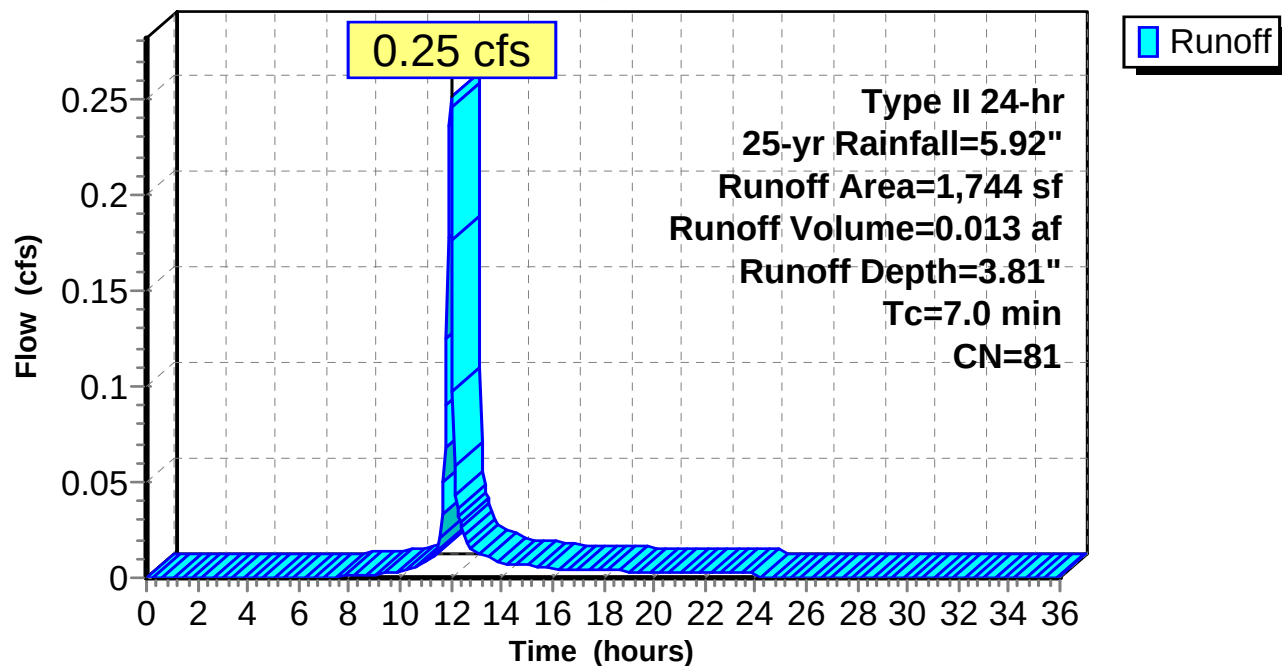
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

Area (sf)	CN	Description
1,681	80	>75% Grass cover, Good, HSG D
* 63	98	
1,744	81	Weighted Average
1,681		96.39% Pervious Area
63		3.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 8S: Subcatchment 8

Hydrograph



Post-Development Cedars Model 17-10-16

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Type II 24-hr 25-yr Rainfall=5.92"

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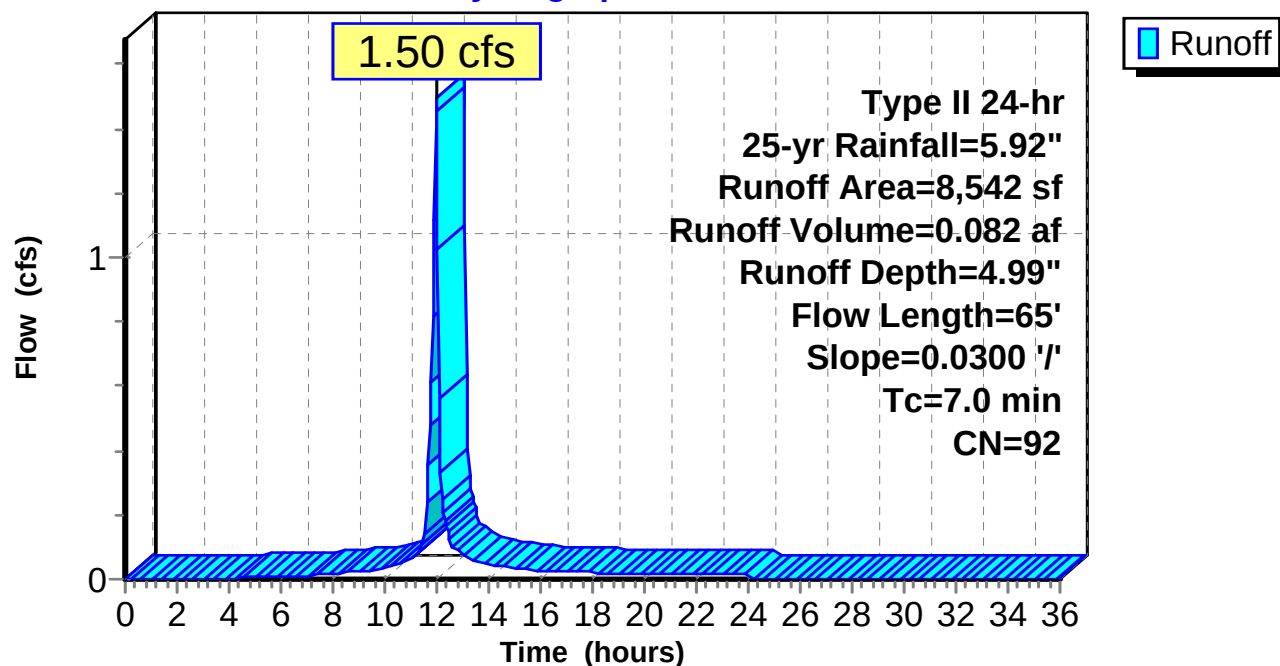
Summary for Subcatchment SA: Subcatchment A

Runoff = 1.50 cfs @ 11.98 hrs, Volume= 0.082 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	5,794	98	
	2,748	80	>75% Grass cover, Good, HSG D
	8,542	92	Weighted Average
	2,748		32.17% Pervious Area
	5,794		67.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	65	0.0300	1.48		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.17"
6.3					Direct Entry, min
7.0	65	Total			

Subcatchment SA: Subcatchment A**Hydrograph**

Post-Development Cedars Model 17-10-16

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Type II 24-hr 25-yr Rainfall=5.92"

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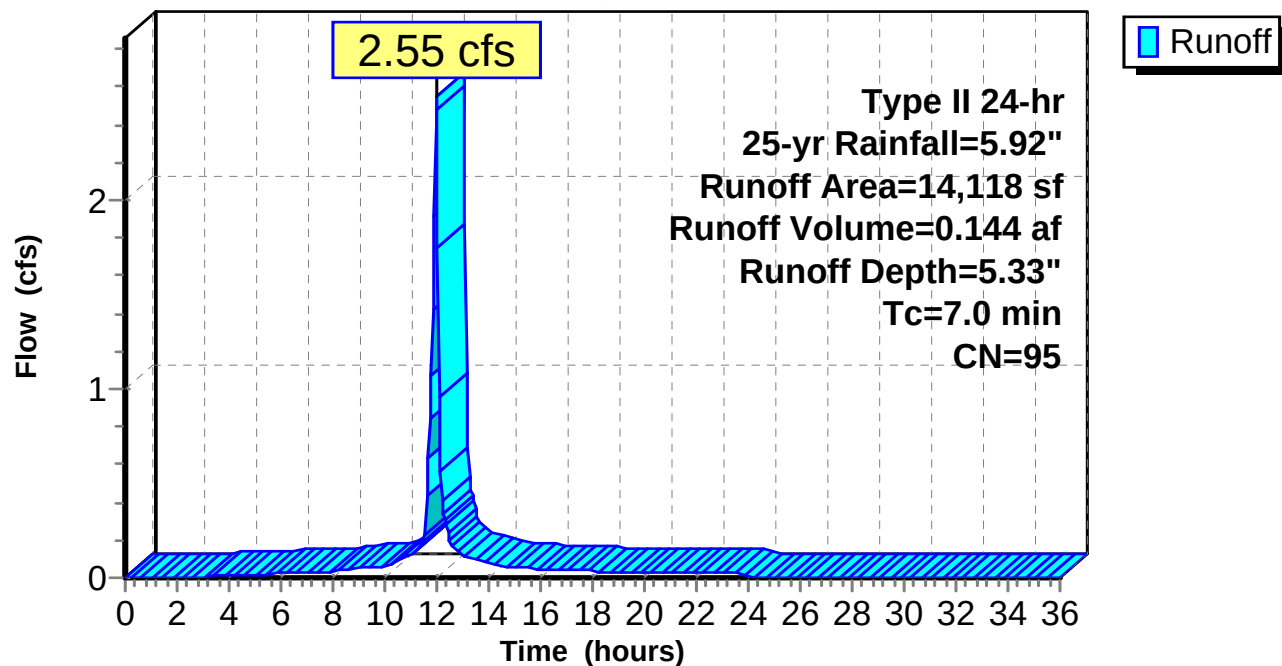
Summary for Subcatchment SB: Subcatchment B

Runoff = 2.55 cfs @ 11.98 hrs, Volume= 0.144 af, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.92"

	Area (sf)	CN	Description
*	11,919	98	
	2,199	80	>75% Grass cover, Good, HSG D
	14,118	95	Weighted Average
	2,199		15.58% Pervious Area
	11,919		84.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment SB: Subcatchment B**Hydrograph**

Summary for Reach 1SP: Study Point 1

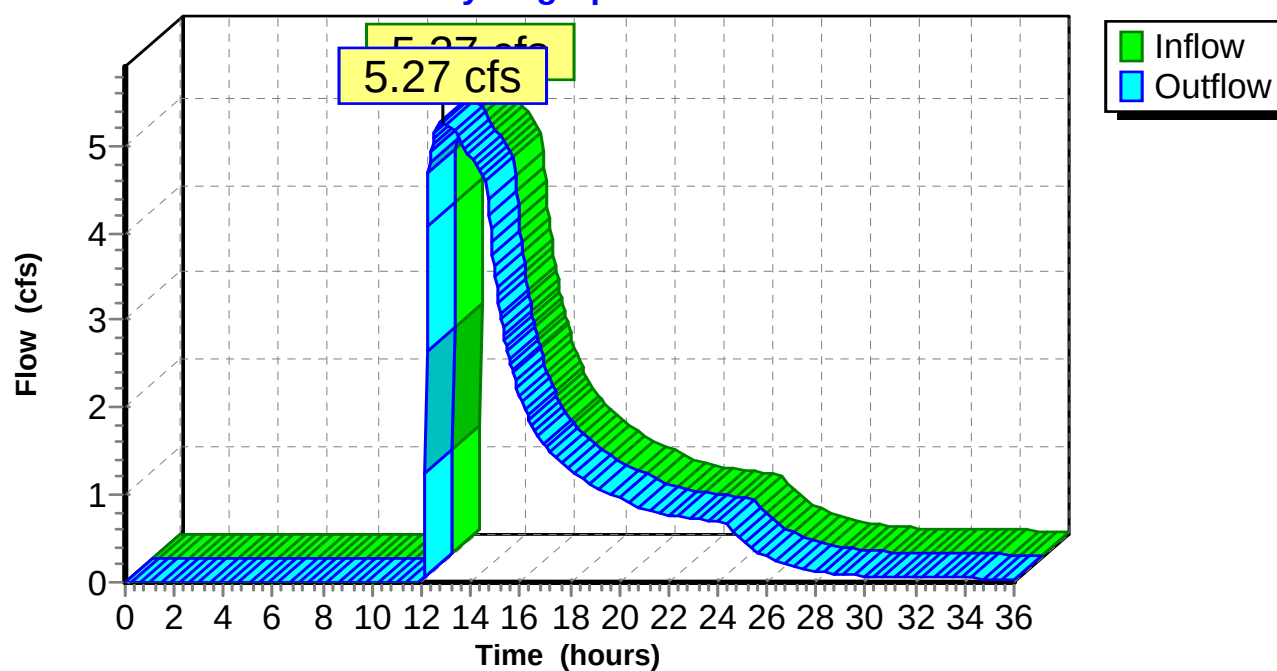
[40] Hint: Not Described (Outflow=Inflow)

Inflow = 5.27 cfs @ 12.87 hrs, Volume= 2.219 af
 Outflow = 5.27 cfs @ 12.87 hrs, Volume= 2.219 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 1SP: Study Point 1

Hydrograph



Summary for Reach 2SP: Study Point 2

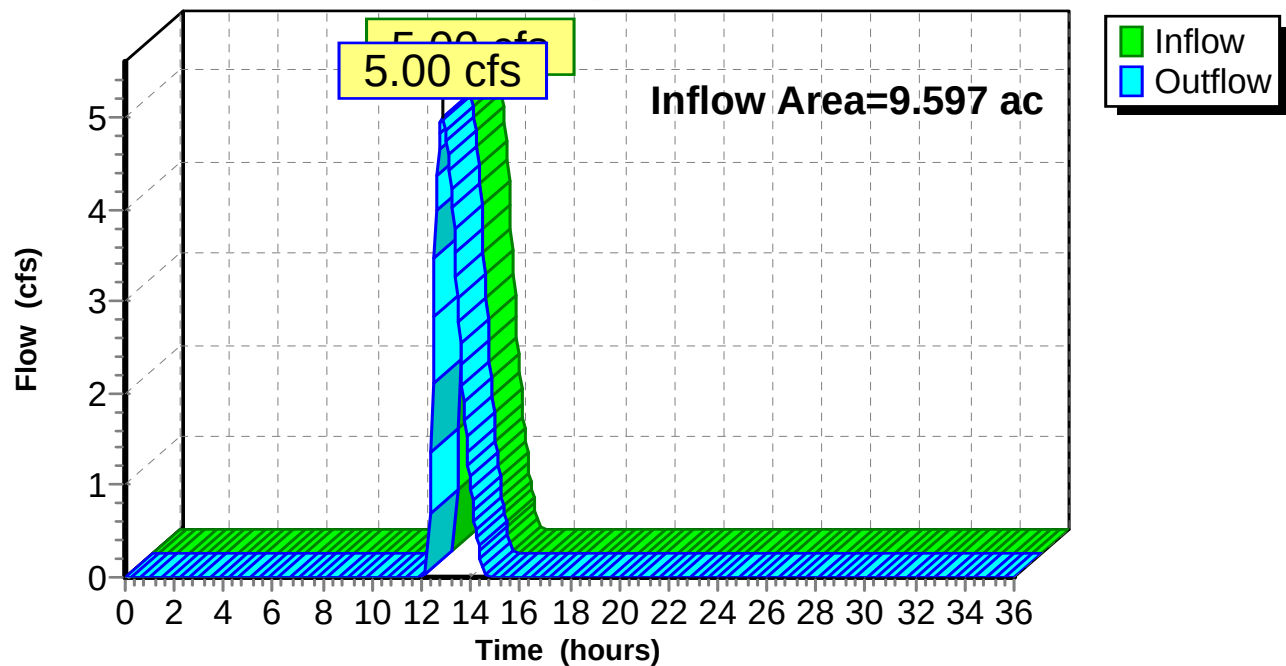
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.597 ac, 51.35% Impervious, Inflow Depth = 0.58" for 25-yr event
 Inflow = 5.00 cfs @ 12.87 hrs, Volume= 0.465 af
 Outflow = 5.00 cfs @ 12.87 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 2SP: Study Point 2

Hydrograph



Summary for Reach 3SP: Study Point 3

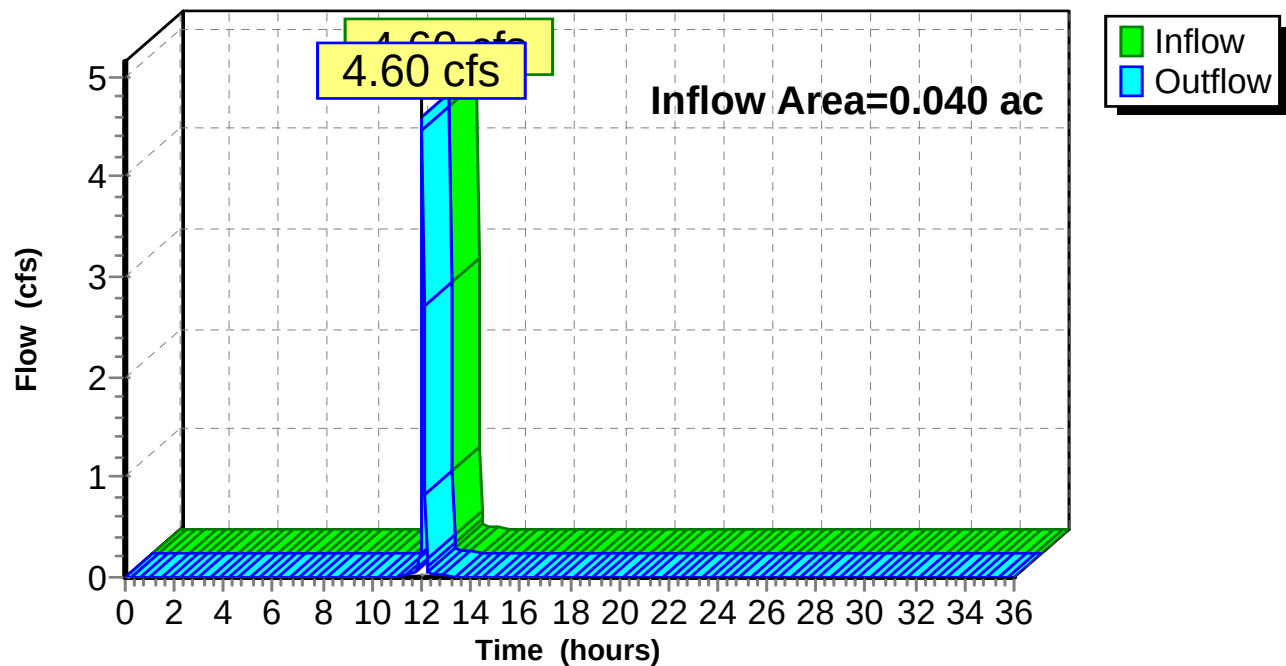
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.040 ac, 3.61% Impervious, Inflow Depth = 18.47" for 25-yr event
 Inflow = 4.60 cfs @ 12.03 hrs, Volume= 0.062 af
 Outflow = 4.60 cfs @ 12.03 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 3SP: Study Point 3

Hydrograph



Summary for Reach 4SP: Study Point 4

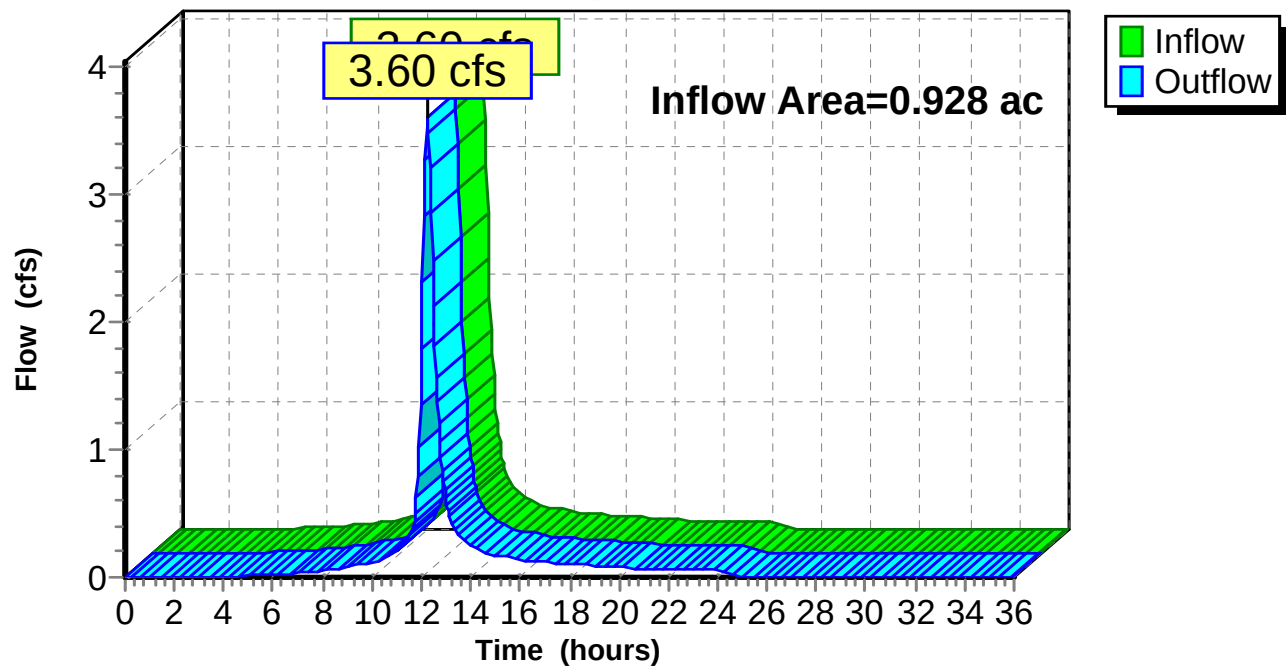
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.928 ac, 47.45% Impervious, Inflow Depth = 4.66" for 25-yr event
Inflow = 3.60 cfs @ 12.24 hrs, Volume= 0.360 af
Outflow = 3.60 cfs @ 12.24 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Reach 4SP: Study Point 4

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 1P: Wetland A

[79] Warning: Submerged Pond 8P Secondary device # 2 INLET by 0.78'

[81] Warning: Exceeded Pond 9P by 0.40' @ 12.80 hrs

Inflow Area = 9.597 ac, 51.35% Impervious, Inflow Depth > 4.19" for 25-yr event
 Inflow = 29.94 cfs @ 12.08 hrs, Volume= 3.350 af
 Outflow = 10.28 cfs @ 12.87 hrs, Volume= 2.684 af, Atten= 66%, Lag= 47.6 min
 Primary = 5.00 cfs @ 12.87 hrs, Volume= 0.465 af
 Secondary = 5.27 cfs @ 12.87 hrs, Volume= 2.219 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Starting Elev= 63.50' Surf.Area= 14,739 sf Storage= 17,429 cf

Peak Elev= 66.48' @ 12.87 hrs Surf.Area= 28,090 sf Storage= 80,466 cf (63,038 cf above start)

Plug-Flow detention time= 257.9 min calculated for 2.283 af (68% of inflow)

Center-of-Mass det. time= 107.2 min (956.0 - 848.9)

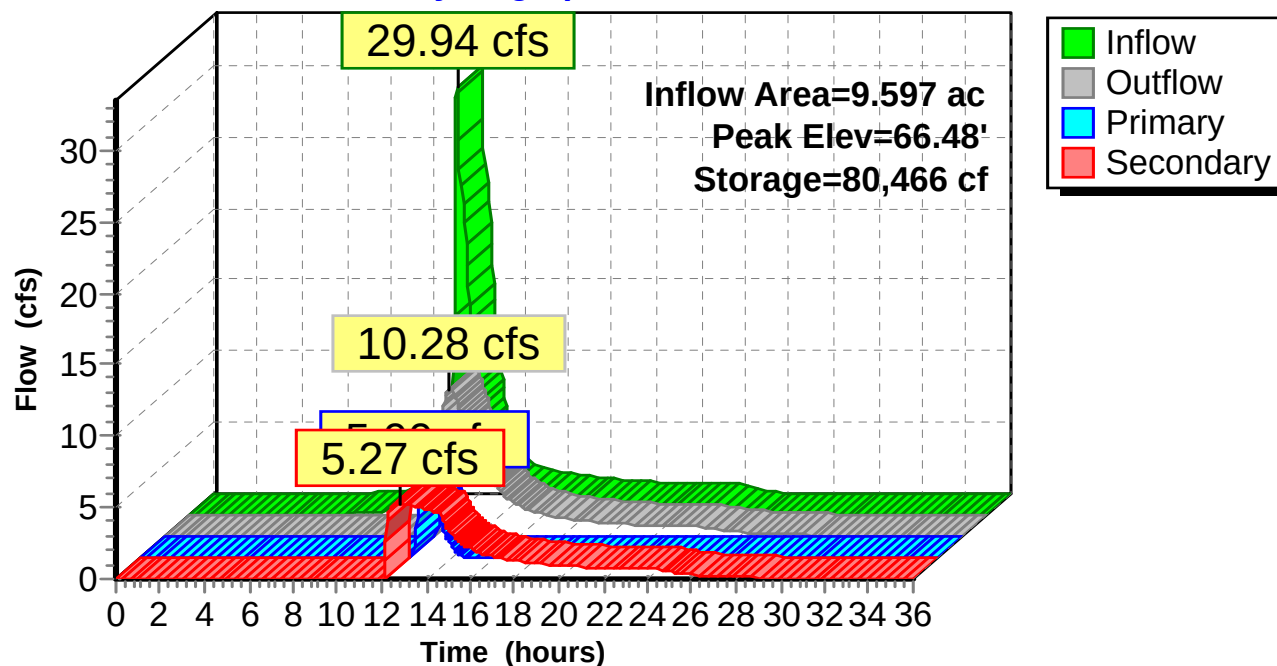
Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	209,276 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	8,500	0	0
65.00	20,977	44,216	44,216
70.00	45,047	165,060	209,276

Device	Routing	Invert	Outlet Devices
#1	Primary	65.75'	3.0' 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
#2	Secondary	62.86'	12.0" Round Culvert L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 62.86' / 58.69' S= 0.0869 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	65.08'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=5.00 cfs @ 12.87 hrs HW=66.48' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 5.00 cfs @ 2.29 fps)**Secondary OutFlow** Max=5.27 cfs @ 12.87 hrs HW=66.48' (Free Discharge)↑ **2=Culvert** (Inlet Controls 5.27 cfs @ 6.71 fps)↑ **3=Sharp-Crested Rectangular Weir** (Passes 5.27 cfs of 14.04 cfs potential flow)

Pond 1P: Wetland A

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 2P: Wetland B

Inflow Area = 2.082 ac, 66.45% Impervious, Inflow Depth = 4.99" for 25-yr event
 Inflow = 8.00 cfs @ 12.27 hrs, Volume= 0.866 af
 Outflow = 7.52 cfs @ 12.36 hrs, Volume= 0.671 af, Atten= 6%, Lag= 5.2 min
 Primary = 7.52 cfs @ 12.36 hrs, Volume= 0.671 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 69.31' @ 12.36 hrs Surf.Area= 10,486 sf Storage= 11,061 cf

Plug-Flow detention time= 146.3 min calculated for 0.670 af (77% of inflow)
 Center-of-Mass det. time= 62.7 min (862.5 - 799.8)

Volume	Invert	Avail.Storage	Storage Description
#1	67.00'	21,636 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

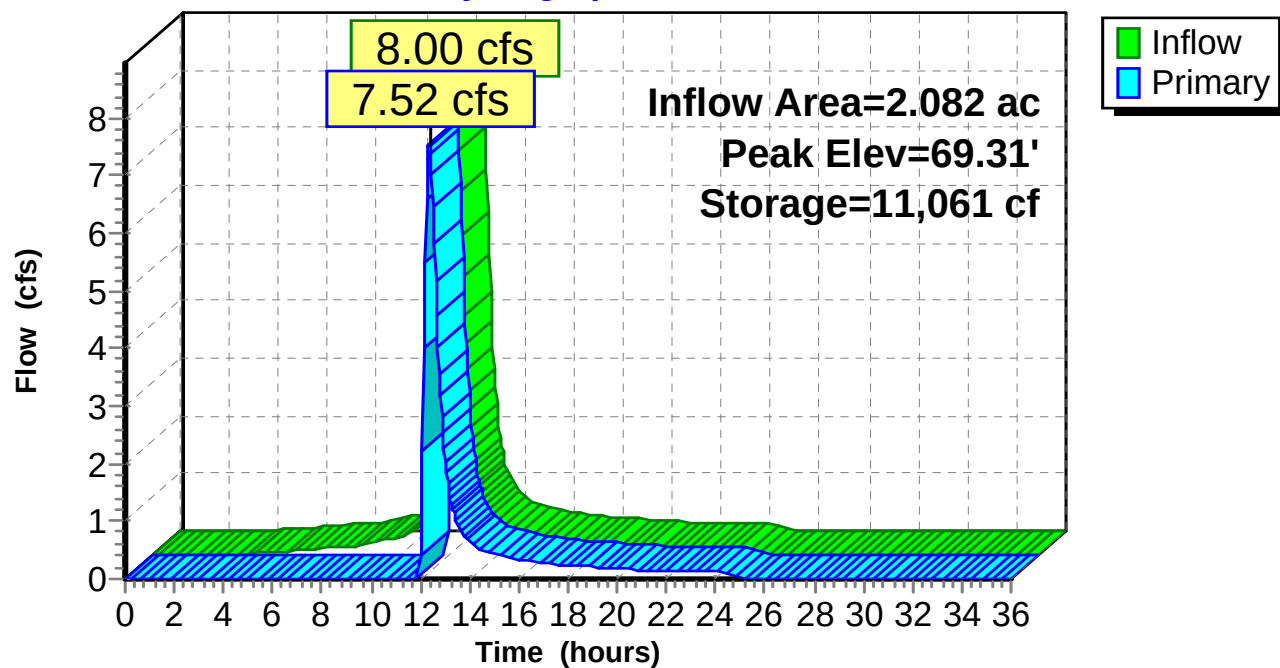
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.00	2,200	0	0
68.00	4,250	3,225	3,225
69.00	6,286	5,268	8,493
70.00	20,000	13,143	21,636

Device	Routing	Invert	Outlet Devices
#1	Primary	69.00'	18.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=7.49 cfs @ 12.36 hrs HW=69.31' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir** (Weir Controls 7.49 cfs @ 1.36 fps)

Pond 2P: Wetland B

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 3P: Surface Detention

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 1.81'

[81] Warning: Exceeded Pond 7P by 0.21' @ 12.25 hrs

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth > 4.69" for 25-yr event
 Inflow = 28.80 cfs @ 11.99 hrs, Volume= 1.651 af
 Outflow = 23.56 cfs @ 12.07 hrs, Volume= 1.649 af, Atten= 18%, Lag= 4.5 min
 Primary = 8.22 cfs @ 12.07 hrs, Volume= 1.502 af
 Secondary = 15.34 cfs @ 12.07 hrs, Volume= 0.147 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.83' @ 12.07 hrs Surf.Area= 7,805 sf Storage= 16,133 cf

Plug-Flow detention time= 18.9 min calculated for 1.649 af (100% of inflow)
 Center-of-Mass det. time= 17.5 min (822.5 - 805.0)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	21,926 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

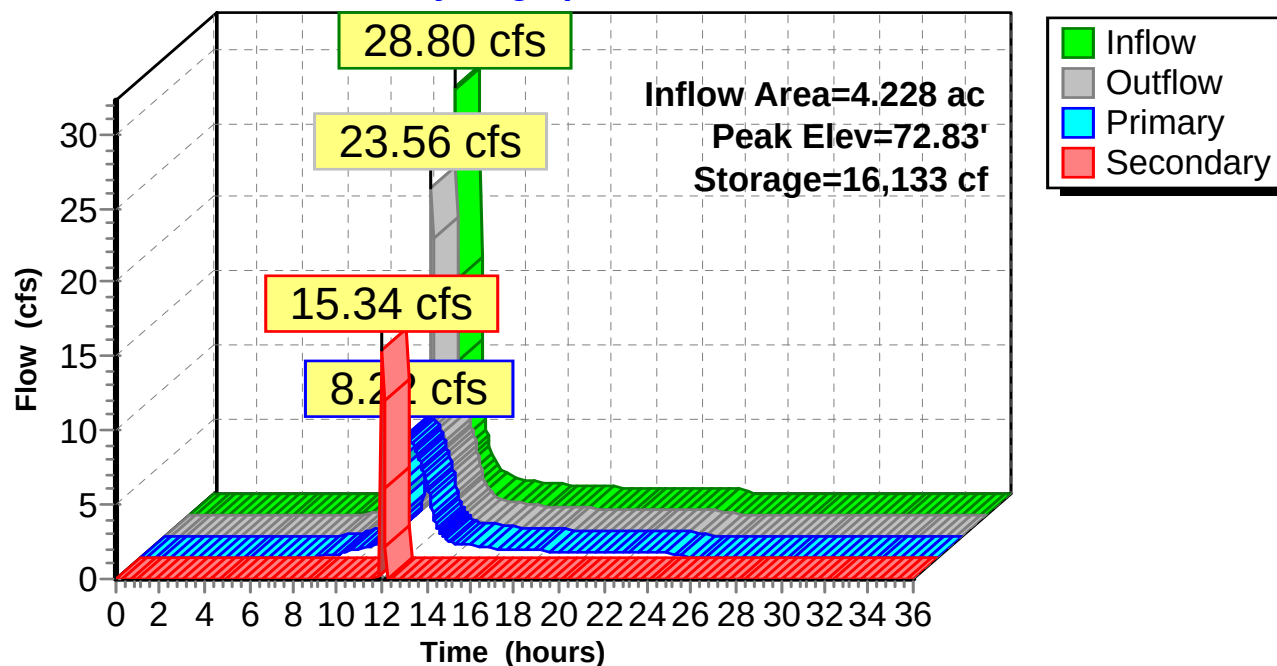
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	400	0	0
70.00	2,991	1,696	1,696
72.00	5,812	8,803	10,499
73.50	9,425	11,428	21,926

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	15.0" Round Culvert L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.10' / 68.75' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	72.50'	35.0' 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=8.17 cfs @ 12.07 hrs HW=72.79' (Free Discharge)↑**1=Culvert** (Inlet Controls 8.17 cfs @ 6.66 fps)**Secondary OutFlow** Max=13.49 cfs @ 12.07 hrs HW=72.79' (Free Discharge)↑**2=Broad-Crested Rectangular Weir** (Weir Controls 13.49 cfs @ 1.31 fps)

Pond 3P: Surface Detention

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 25-yr Rainfall=5.92"

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Summary for Pond 4P: Surface Detention

[79] Warning: Submerged Pond PB Primary device # 1 INLET by 3.85'

[78] Warning: Submerged Pond PB Tertiary device # 2 by 3.26'

Inflow Area = 1.275 ac, 52.61% Impervious, Inflow Depth > 4.50" for 25-yr event
 Inflow = 7.06 cfs @ 11.98 hrs, Volume= 0.478 af
 Outflow = 6.54 cfs @ 12.02 hrs, Volume= 0.398 af, Atten= 7%, Lag= 2.5 min
 Primary = 2.13 cfs @ 12.02 hrs, Volume= 0.357 af
 Secondary = 4.42 cfs @ 12.02 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 71.37' @ 12.02 hrs Surf.Area= 3,181 sf Storage= 6,107 cf

Plug-Flow detention time= 193.9 min calculated for 0.397 af (83% of inflow)
 Center-of-Mass det. time= 83.1 min (955.9 - 872.8)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	8,676 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

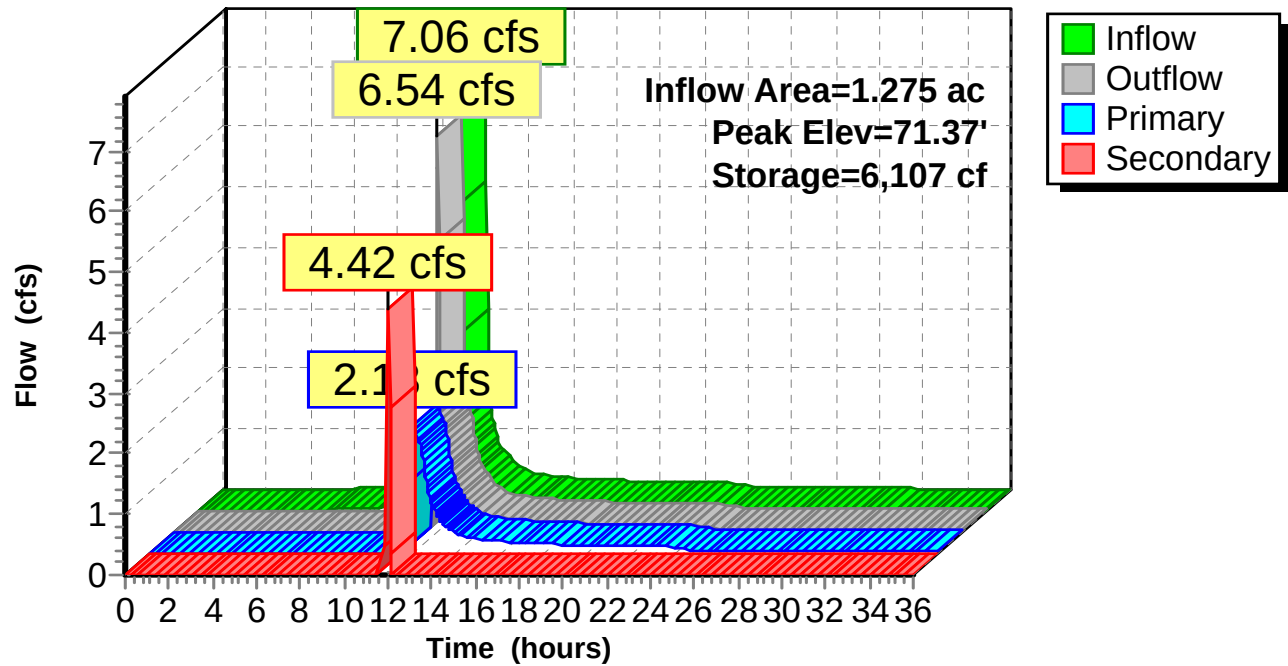
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.00	13	0	0
67.00	71	126	126
68.00	928	500	626
69.00	1,378	1,153	1,779
70.00	1,604	1,491	3,270
71.00	2,104	1,854	5,124
72.00	5,000	3,552	8,676

Device	Routing	Invert	Outlet Devices
#1	Primary	67.66'	1.0" Round Culvert L= 5.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.66' / 67.65' S= 0.0020 '/ Cc= 0.900 n= 0.013, Flow Area= 0.01 sf
#2	Secondary	71.25'	45.0' long x 15.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Primary	70.25'	6.0" Round Culvert X 3.00 L= 1.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 70.25' / 70.25' S= 0.0000 '/ Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Primary OutFlow Max=2.10 cfs @ 12.02 hrs HW=71.35' (Free Discharge)↑ **1=Culvert** (Barrel Controls 0.03 cfs @ 6.12 fps)↑ **3=Culvert** (Inlet Controls 2.06 cfs @ 3.50 fps)**Secondary OutFlow** Max=3.81 cfs @ 12.02 hrs HW=71.35' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 3.81 cfs @ 0.85 fps)

Pond 4P: Surface Detention

Hydrograph



Summary for Pond 5P: OCS-4P

[57] Hint: Peaked at 68.48' (Flood elevation advised)

[79] Warning: Submerged Pond 4P Primary device # 1 INLET by 0.81'

Inflow Area = 1.275 ac, 52.61% Impervious, Inflow Depth > 3.36" for 25-yr event
 Inflow = 2.13 cfs @ 12.02 hrs, Volume= 0.357 af
 Outflow = 2.13 cfs @ 12.02 hrs, Volume= 0.357 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.13 cfs @ 12.02 hrs, Volume= 0.357 af

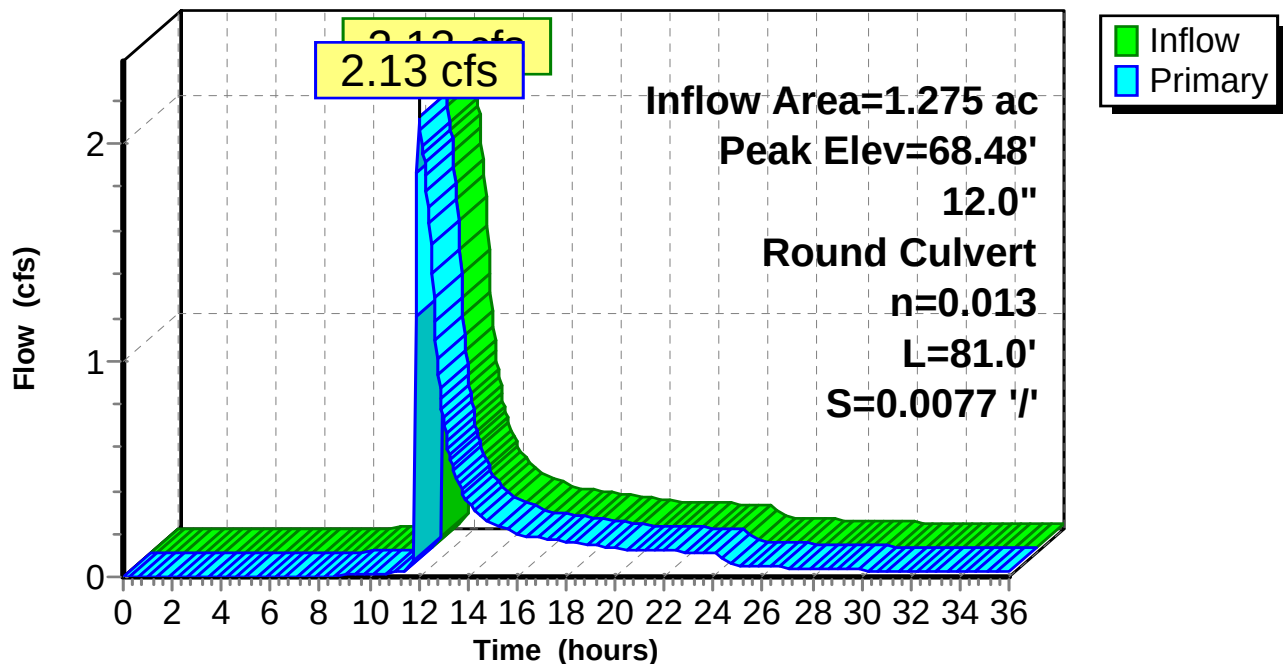
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 68.48' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	67.48'	12.0" Round Culvert L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.48' / 66.86' S= 0.0077 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.10 cfs @ 12.02 hrs HW=68.47' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 2.10 cfs @ 2.67 fps)

Pond 5P: OCS-4P

Hydrograph



Post-Development Cedars Model 17-10-16

Type II 24-hr 25-yr Rainfall=5.92"

Prepared by Microsoft

Printed 11/17/2017

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Summary for Pond 6P: Atrium Surface Detention

[79] Warning: Submerged Pond PA Primary device # 1 INLET by 1.10'

[78] Warning: Submerged Pond PA Tertiary device # 2 by 0.27'

Inflow Area = 2.712 ac, 64.63% Impervious, Inflow Depth > 4.92" for 25-yr event
 Inflow = 19.46 cfs @ 11.98 hrs, Volume= 1.113 af
 Outflow = 18.90 cfs @ 12.00 hrs, Volume= 1.056 af, Atten= 3%, Lag= 1.0 min
 Primary = 18.90 cfs @ 12.00 hrs, Volume= 1.056 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 74.10' @ 12.00 hrs Surf.Area= 3,835 sf Storage= 4,441 cf

Plug-Flow detention time= 58.5 min calculated for 1.056 af (95% of inflow)
 Center-of-Mass det. time= 24.0 min (815.1 - 791.1)

Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	5,026 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
70.00	55	0	0
72.00	327	382	382
73.00	1,694	1,011	1,393
74.25	4,120	3,634	5,026

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	0.1" Round Culvert L= 220.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.00' / 69.20' S= 0.0082 ' S= 0.0082 ' Cc= 0.900 n= 0.013, Flow Area= 0.00 sf
#2	Primary	73.50'	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

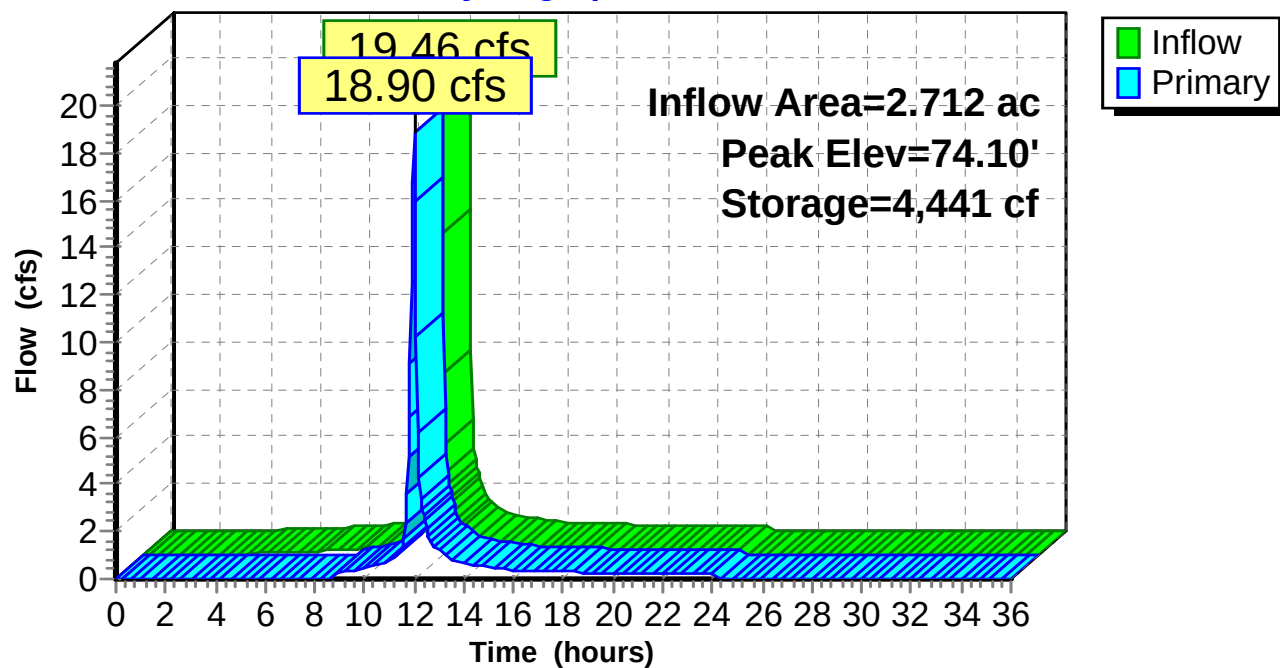
Primary OutFlow Max=18.81 cfs @ 12.00 hrs HW=74.10' (Free Discharge)

1=Culvert (Barrel Controls 0.00 cfs @ 0.28 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 18.81 cfs @ 2.09 fps)

Pond 6P: Atrium Surface Detention

Hydrograph



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Summary for Pond 7P: Riprap Surface Detention

Inflow Area = 0.600 ac, 52.50% Impervious, Inflow Depth = 4.66" for 25-yr event
 Inflow = 4.40 cfs @ 11.98 hrs, Volume= 0.233 af
 Outflow = 3.26 cfs @ 12.04 hrs, Volume= 0.231 af, Atten= 26%, Lag= 3.7 min
 Primary = 3.26 cfs @ 12.04 hrs, Volume= 0.231 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 73.85' @ 12.04 hrs Surf.Area= 766 sf Storage= 818 cf

Plug-Flow detention time= 13.6 min calculated for 0.231 af (99% of inflow)
 Center-of-Mass det. time= 7.8 min (794.1 - 786.3)

Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	2,180 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	50	0	0
73.00	310	360	360
74.00	846	578	938
75.00	1,637	1,242	2,180

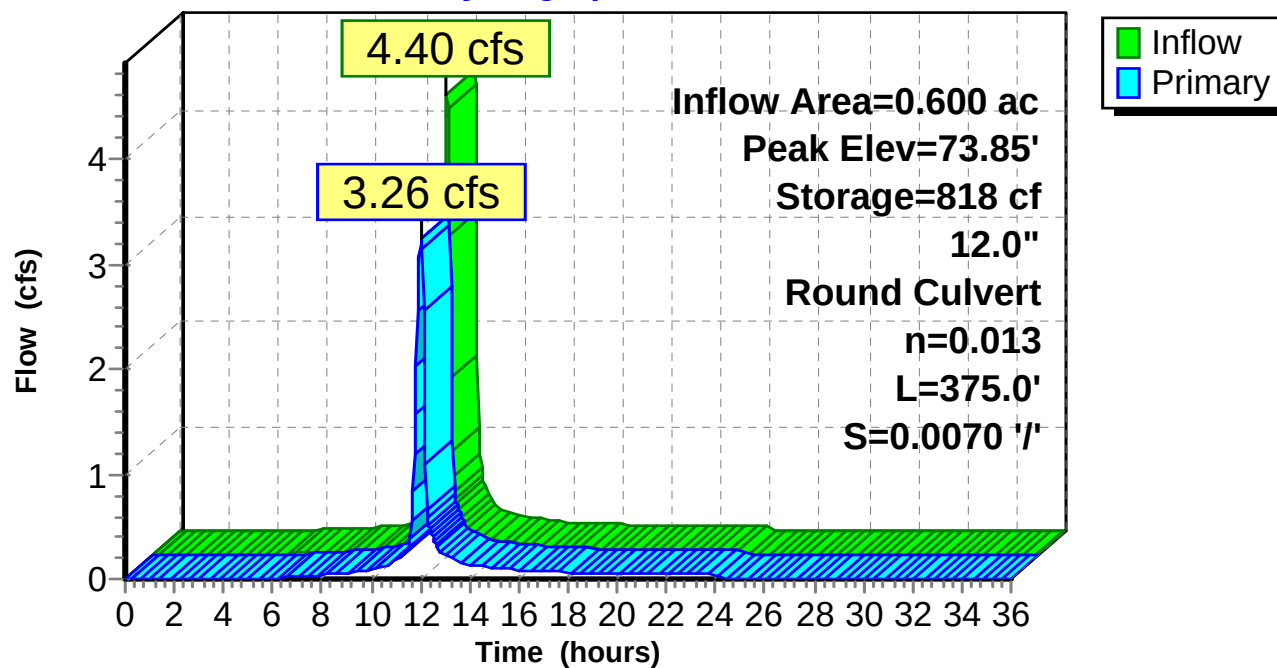
Device	Routing	Invert	Outlet Devices
#1	Primary	71.83'	12.0" Round Culvert L= 375.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 71.83' / 69.20' S= 0.0070 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.25 cfs @ 12.04 hrs HW=73.83' (Free Discharge)

↑**1=Culvert** (Barrel Controls 3.25 cfs @ 4.13 fps)

Pond 7P: Riprap Surface Detention

Hydrograph



Summary for Pond 8P: OCS-DMH7

[57] Hint: Peaked at 67.23' (Flood elevation advised)

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth > 4.26" for 25-yr event
 Inflow = 8.22 cfs @ 12.07 hrs, Volume= 1.502 af
 Outflow = 8.22 cfs @ 12.07 hrs, Volume= 1.502 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.78 cfs @ 12.07 hrs, Volume= 0.047 af
 Secondary = 7.44 cfs @ 12.07 hrs, Volume= 1.455 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.23' @ 12.07 hrs

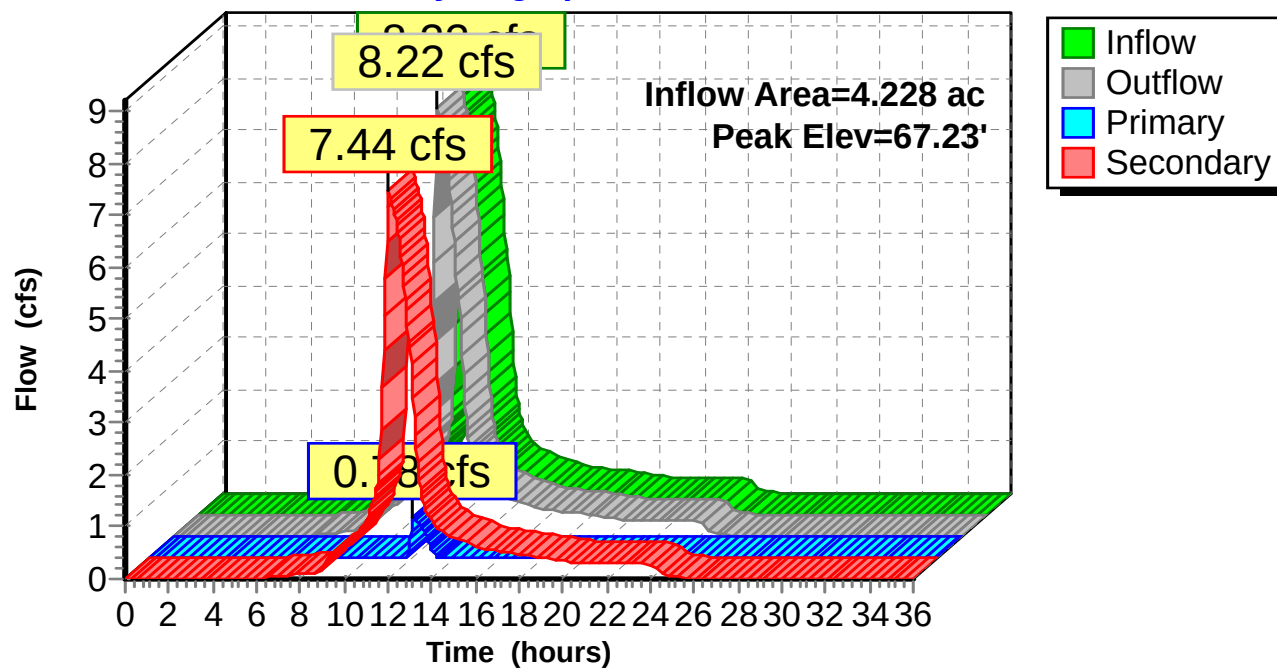
Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	12.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.60' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	65.70'	24.0" Round Culvert L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=0.76 cfs @ 12.07 hrs HW=67.22' (Free Discharge)
 ↑**1=Culvert** (Barrel Controls 0.76 cfs @ 2.12 fps)

Secondary OutFlow Max=7.41 cfs @ 12.07 hrs HW=67.22' (Free Discharge)
 ↑**2=Culvert** (Barrel Controls 7.41 cfs @ 3.99 fps)

Pond 8P: OCS-DMH7

Hydrograph



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Summary for Pond 9P: UG Detention

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth = 0.07" for 25-yr event
 Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.023 af
 Outflow = 0.15 cfs @ 12.94 hrs, Volume= 0.023 af, Atten= 42%, Lag= 52.3 min
 Primary = 0.15 cfs @ 12.94 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 66.08' @ 12.94 hrs Surf.Area= 1,536 sf Storage= 559 cf

Plug-Flow detention time= 88.9 min calculated for 0.023 af (99% of inflow)
 Center-of-Mass det. time= 88.2 min (834.0 - 745.8)

Volume	Invert	Avail.Storage	Storage Description
#1	65.70'	2,488 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,619 cf Overall x 95.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.70	1,536	0	0
67.40	1,536	2,611	2,611
67.41	5	8	2,619

Device	Routing	Invert	Outlet Devices
#1	Primary	65.70'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.70' / 65.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Primary	67.00'	4.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

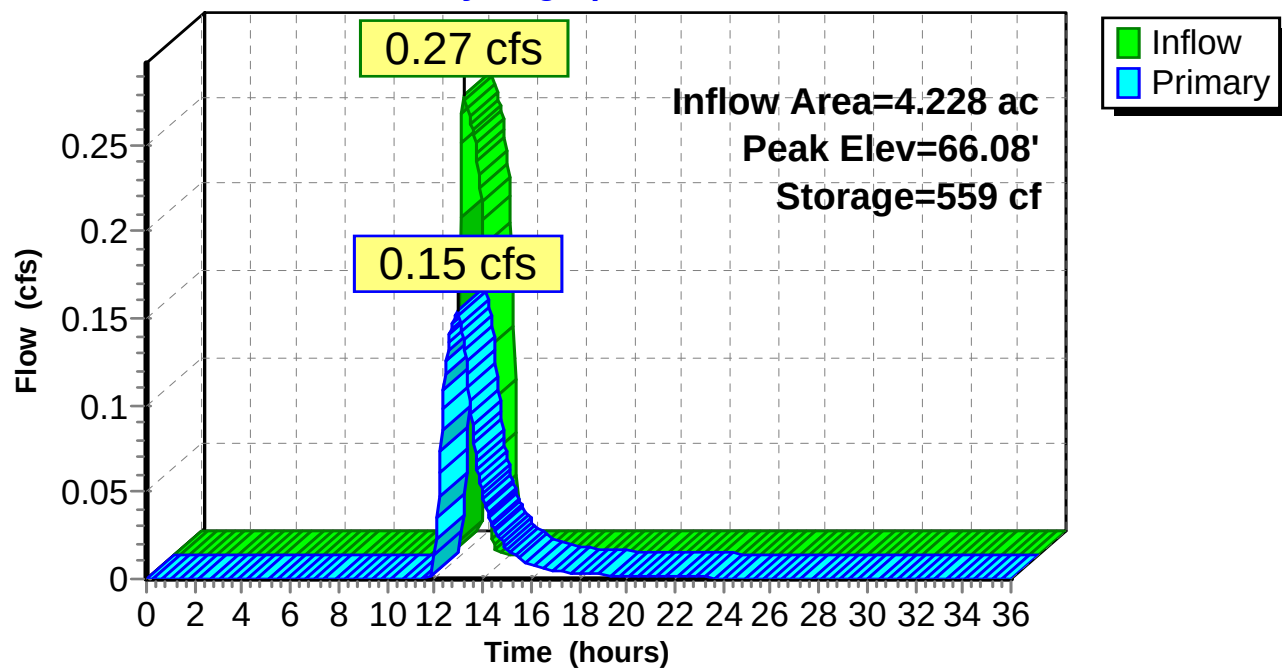
Primary OutFlow Max=0.15 cfs @ 12.94 hrs HW=66.08' (Free Discharge)

1=Culvert (Inlet Controls 0.15 cfs @ 1.77 fps)

2=Culvert (Controls 0.00 cfs)

Pond 9P: UG Detention

Hydrograph



Summary for Pond 10P: Isolator Row x5

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

[81] Warning: Exceeded Pond 8P by 0.86' @ 35.95 hrs

Inflow Area = 4.228 ac, 60.70% Impervious, Inflow Depth = 0.13" for 25-yr event
 Inflow = 0.78 cfs @ 12.07 hrs, Volume= 0.047 af
 Outflow = 0.78 cfs @ 12.07 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.1 min
 Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.023 af
 Secondary = 0.51 cfs @ 12.07 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 67.41' @ 12.07 hrs Surf.Area= 0.001 ac Storage= 0.001 af

Plug-Flow detention time= 2.8 min calculated for 0.047 af (100% of inflow)
 Center-of-Mass det. time= 1.9 min (741.4 - 739.5)

Volume	Invert	Avail.Storage	Storage Description
#1	66.60'	0.002 af	ADS_StormTech RC-310 x 5 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 2.07 sf x 1 rows

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	4.0" Round Culvert L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.55' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#2	Secondary	67.00'	12.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.00' / 66.55' S= 0.0090 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.07 hrs HW=67.40' (Free Discharge)

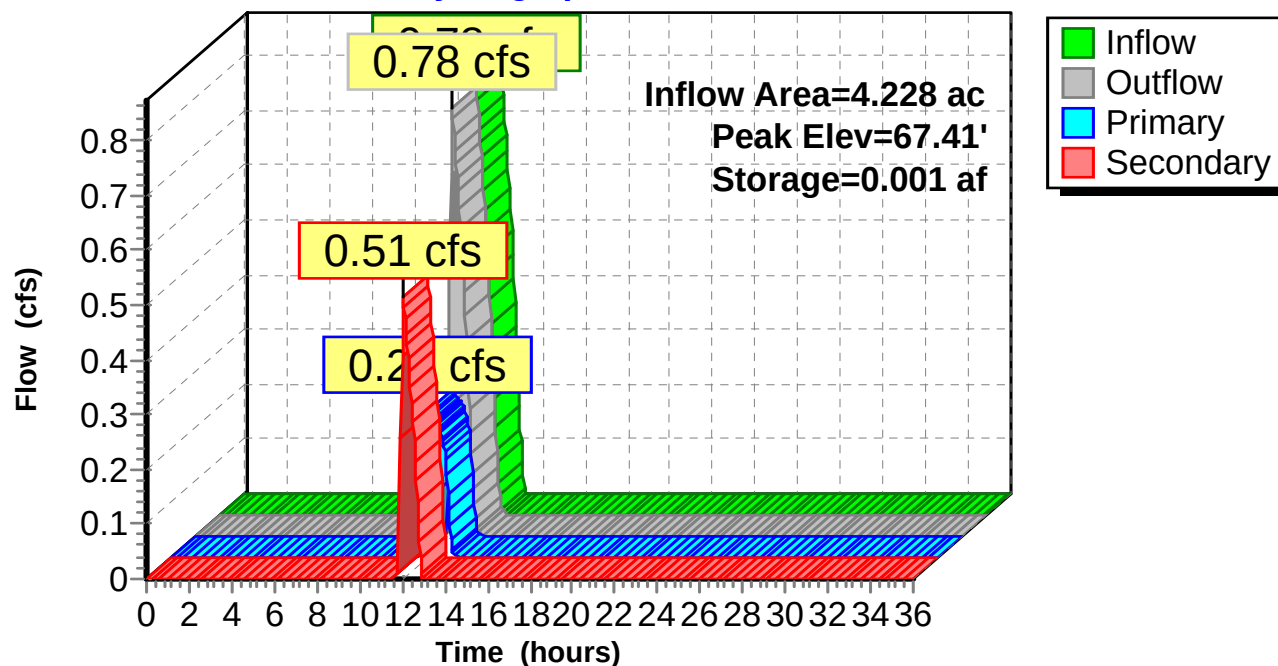
↑**1=Culvert** (Inlet Controls 0.26 cfs @ 3.03 fps)

Secondary OutFlow Max=0.50 cfs @ 12.07 hrs HW=67.40' (Free Discharge)

↑**2=Culvert** (Inlet Controls 0.50 cfs @ 1.70 fps)

Pond 10P: Isolator Row x5

Hydrograph



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Summary for Pond PA: USF A

Inflow Area = 0.196 ac, 67.83% Impervious, Inflow Depth = 4.99" for 25-yr event
 Inflow = 1.50 cfs @ 11.98 hrs, Volume= 0.082 af
 Outflow = 0.40 cfs @ 12.14 hrs, Volume= 0.067 af, Atten= 73%, Lag= 9.7 min
 Primary = 0.36 cfs @ 12.14 hrs, Volume= 0.029 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Tertiary = 0.04 cfs @ 12.14 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 77.46' @ 12.14 hrs Surf.Area= 1,328 sf Storage= 1,902 cf

Plug-Flow detention time= 342.3 min calculated for 0.067 af (82% of inflow)
 Center-of-Mass det. time= 267.6 min (1,042.7 - 775.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	73.00'	2,192 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	585	0.0	0	0
73.01	585	30.0	2	2
75.99	585	30.0	523	525
76.00	585	100.0	6	531
77.00	1,056	100.0	821	1,351
77.33	1,260	100.0	382	1,733
77.67	1,437	100.0	458	2,192

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	12.0" Round Culvert L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 72.20' S= 0.0133 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Tertiary	73.83'	2.410 in/hr Exfiltration over Surface area above 73.83' Excluded Surface area = 585 sf
#3	Device 1	77.00'	24.0" x 24.0" Horiz. Orifice/Grate X 5.00 columns X 5 rows C= 0.600 in 4.0" x 4.0" Grate Limited to weir flow at low heads
#4	Secondary	77.50'	30.0' 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

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Primary OutFlow Max=0.36 cfs @ 12.14 hrs HW=77.46' (Free Discharge)

↑ **1=Culvert** (Passes 0.36 cfs of 7.07 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.36 cfs @ 3.26 fps)

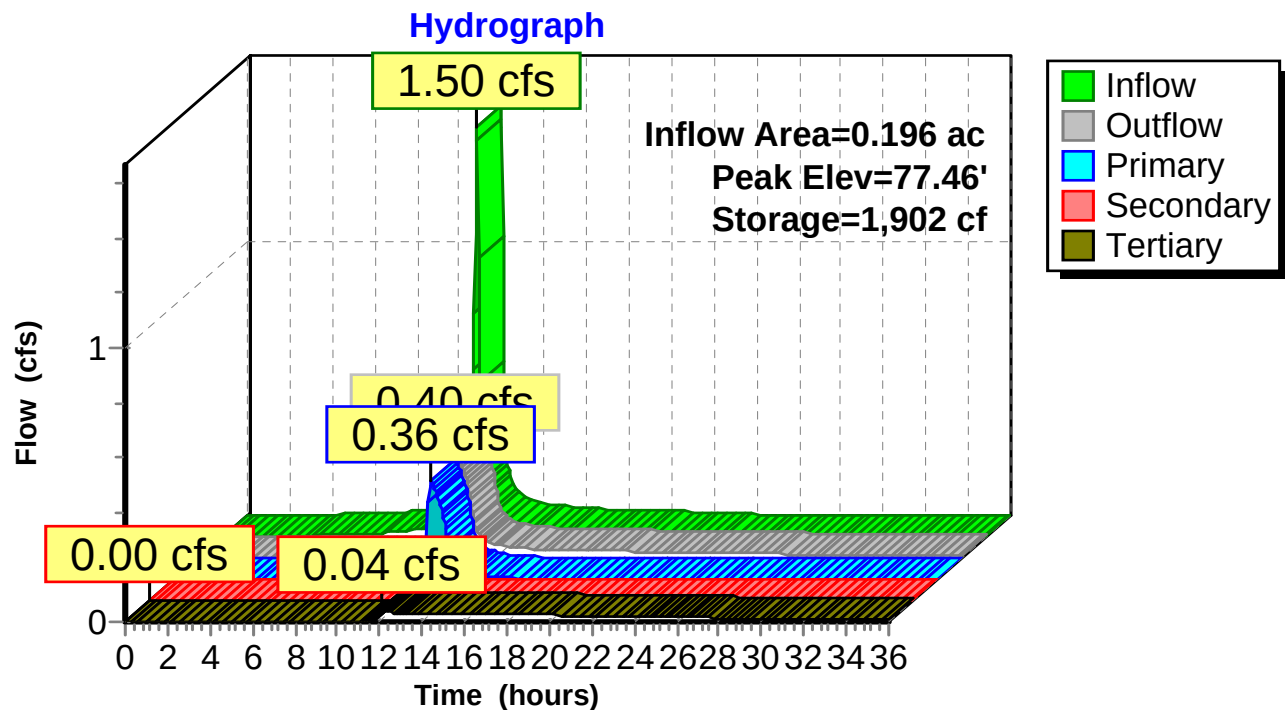
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.04 cfs @ 12.14 hrs HW=77.46' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond PA: USF A



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Summary for Pond PB: USF B

Inflow Area = 0.324 ac, 84.42% Impervious, Inflow Depth = 5.33" for 25-yr event
 Inflow = 2.55 cfs @ 11.98 hrs, Volume= 0.144 af
 Outflow = 1.33 cfs @ 12.10 hrs, Volume= 0.126 af, Atten= 48%, Lag= 7.5 min
 Primary = 0.29 cfs @ 12.10 hrs, Volume= 0.027 af
 Secondary = 0.95 cfs @ 12.10 hrs, Volume= 0.008 af
 Tertiary = 0.08 cfs @ 12.10 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 72.30' @ 12.10 hrs Surf.Area= 2,185 sf Storage= 3,366 cf

Plug-Flow detention time= 400.4 min calculated for 0.126 af (87% of inflow)
 Center-of-Mass det. time= 340.4 min (1,101.6 - 761.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	67.86'	3,817 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
67.86	715	0.0	0	0
67.87	715	30.0	2	2
70.25	715	30.0	511	513
70.26	715	100.0	7	520
72.00	1,853	100.0	2,234	2,754
72.50	2,400	100.0	1,063	3,817

Device	Routing	Invert	Outlet Devices
#1	Primary	67.50'	15.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.50' / 67.40' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Tertiary	68.09'	2.410 in/hr Exfiltration over Surface area above 68.09' Excluded Surface area = 715 sf
#3	Device 1	72.00'	24.0" x 24.0" Horiz. Orifice/Grate X 5.00 columns X 5 rows C= 0.600 in 4.0" x 4.0" Grate Limited to weir flow at low heads
#4	Secondary	72.25'	30.0' 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=0.29 cfs @ 12.10 hrs HW=72.30' (Free Discharge)

↑ **1=Culvert** (Passes 0.29 cfs of 9.53 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.29 cfs @ 2.65 fps)

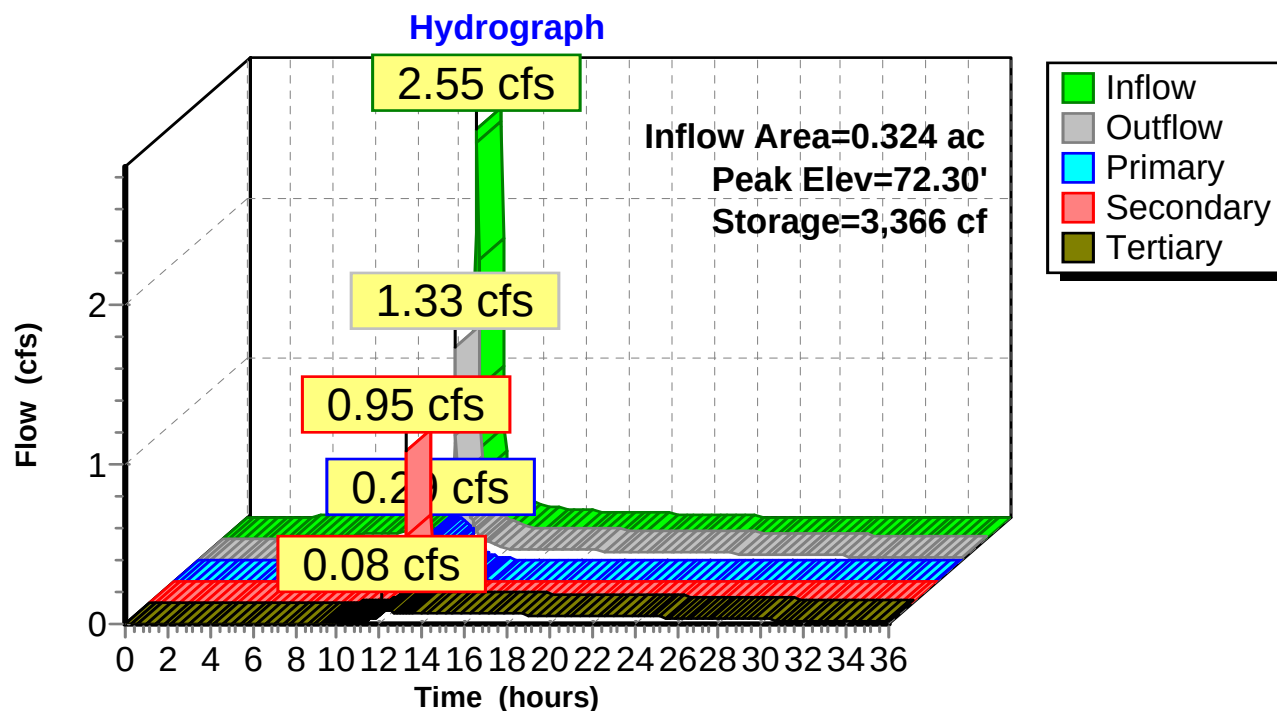
Secondary OutFlow Max=0.88 cfs @ 12.10 hrs HW=72.30' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 0.88 cfs @ 0.56 fps)

Tertiary OutFlow Max=0.08 cfs @ 12.10 hrs HW=72.30' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.08 cfs)

Pond PB: USF B



12.4 - INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

The Cedars Long – Term Care Facility Portland, Maine

Introduction

The following plan outlines the anticipated inspection, maintenance and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in this inspection and maintenance plan are provided as an overview of the anticipated practices to be used on this site. 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. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, material storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a 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. 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.
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. Sediment Barriers:

- 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 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. 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.

C. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.
- Barriers shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the barrier, all accumulated sediments downstream of the structure shall be cleaned from the storm drain system.

D. 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).

E. 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.

F. 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.

G. Stormwater Best Management Practices:

- Some Stormwater Best Management Practices may require inspection during construction. Each Stormwater Best Management Practice shall be inspected in accordance with its associated detail as indicated on the site plan.
- For all Stormwater Best Management Practices, contractor shall ensure that all areas tributary to each Stormwater Best Management Practice are stabilized prior to construction.

After 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. Catch Basins:

- Inspect and, if required, clean-out catch basins at least once a year, preferably in early spring.
- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.
- If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils (using oil-absorptive pads).

C. Winter Sanding:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- 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 or other acceptable method.
- Ensure that no winter sanding is done in Porous Pavement locations.

D. Grassed Underdrained Soil Filters

- Fertilization to establish vegetation within the soil filter should be avoided.
- Snow storage shall not occur in the soil filter.
- Check for accumulated sediments in the bottom of the soil filters. Remove sediments when they occupy 10 percent of the filter or sediment forebay bottom; if trenches fail to drain after surface sediment accumulations are removed, the filter medium must be replaced, using the same design, installation measures, and permeability testing procedures described in this application and related documents.
- Check for the dissipation of water after large storm events. The soil filter should be completely drained 72 hours after filling from the storm event.

3. **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.

Housekeeping

The following general performance standards apply to the proposed project both during and after construction.

- A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials and equipment on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.
- 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, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.
- D. Debris and other materials: Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials 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.
- F. Excavation de-watering: Excavation de-watering is the removal of water from trenches, foundations, coffer dams, 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 removed from the ponded area, either through gravity or pumping, 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 by the department.
- G. Authorized non-stormwater discharges: Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
- (a) discharges from firefighting activity;
 - (b) fire hydrant flushings;
 - (c) vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
 - (d) dust control runoff in accordance with permit conditions and appendix (c)(3);
 - (e) routine external building washdown, not including surface paint removal, that does not involve detergents;

- (f) pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
 - (g) uncontaminated air conditioning or compressor condensate;
 - (h) uncontaminated groundwater or spring water;
 - (i) foundation or footer drain-water where flows are not contaminated;
 - (j) uncontaminated excavation dewatering (see requirements in appendix c(5));
 - (k) potable water sources including waterline flushings; and
 - (l) landscape irrigation.
- H. Unauthorized non-stormwater discharges: The department's approval under this chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with appendix c (6). Specifically, the department's approval does not authorize discharges of the following:
- (a) wastewater from the 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; and
 - (d) toxic or hazardous substances from a spill or other release.
- I. Staging of Operations: All stockpiling of materials and staging of construction equipment shall be completed in the outlined limit of work, or at the contractor's facilities off-site. All stockpiles shall be stabilized in the manner described in the Erosion and Sedimentation Control Plan and narrative.
- J. Additional requirements. Additional requirements may be applied on a site-specific basis.

Stormwater Inspection and Maintenance Form

City of Portland, Maine

The Cedars - Long Term Care Facility

Inspector: _____

Date: _____

Maintenance Personnel: _____

	Inspection		Maintenance	
<u>SITE AREA</u>	Date	Comments	Date	Corrective Action
USF Vegetation and Mulch				
USF Media				
USF Sediment Riprap				
USF Misc				
General: Overflow Structures				
General: Vegetated areas adjacent to pavement runoff				
General: Lawn Vegetation				
General: Slope Vegetation				
General: Entrance Road Sweeping				
General: Catch Basins				

Sediment/Debris Disposal

[illegible]

12.6 - EROSION AND SDEIMENTATION CONTROL PLAN

The Cedars Long-Term Care Facility Portland, Maine

INTRODUCTION

This Erosion and Sedimentation Control Plan (E&S Plan) has been developed to provide a strategy to prevent unreasonable erosion of soil and sediment transport beyond the project site or into a protected natural resource. These strategies apply to the proposed development immediately prior to soil disturbing activities on the site and shall remain in place until the site is permanently stabilized.

The information presented in this E&S Plan is provided as an overview of the anticipated measures to be used on this site. In some instances, additional measures may be required due to unexpected conditions that arise during construction. Also, specific detail on the application of a recommended practice for an unexpected instance may not be covered in this E&S Plan. For additional detail on any of the erosion and sedimentation control measures discussed in this E&S Plan or for further recommendations of applicable practices, refer to the “Maine Erosion and Sedimentation Control BMP” manual published by the Maine Department of Environmental Protection (MDEP) dated March 2003, as revised.

1.0 PLAN IMPLEMENTATION PHASES

Generally, the implementation of this plan occurs in three distinct phases as described below:

1.1 Pre-construction Phase

Prior to the beginning of any construction, perimeter sediment barriers (i.e. silt fence, erosion control mix berm, etc...) shall be installed at, or just below, the limits of clearing or grubbing, and/or just above any adjacent property line or protected natural resource. Prior to any clearing or grubbing, a construction entrance shall be constructed at the intersection with the proposed access drive and the existing roadway to avoid tracking of mud, dust and debris from the site.

1.2 Construction Phase

Areas undergoing actual construction shall only expose that amount of mineral soil necessary for progressive and efficient site construction. Any area that has been disturbed and is not “permanently stabilized” (as described by this E&S Plan) shall be considered “open.” Open areas shall be protected and stabilized with temporary erosion and sedimentation control measures as shown on the project plans and as described within this E&S Plan.

Preparation for winter stabilization applies to some disturbed areas that are open on or after September 15th of the construction season (refer to the Winter Construction Section of this E&S Plan, Paragraph B – Overwinter Stabilization Timeframe). Any areas that remain open after November 1 or new soil disturbance that occurs after November 1, but before April 15, must be protected by additional measures as described in the Winter Construction section of this E&S Plan. The recommendations outlined in the Winter Construction section of this E&S Plan shall supersede other conflicting recommendations.

1.3 Post-construction phase

Once the site has reached permanent stabilization, remove any temporary sediment control measures, such as silt fence, within 30 days. All accumulated sediment/debris in the permanent

stormwater management system, ditches, swales, paved surfaces, and/or any other location that has accumulated sediment/debris during construction shall be removed and disposed of in an approved manner.

2.0 PERMANENT STABILIZATION

The strategies outlined in this E&S Plan shall be in effect until the site reaches permanent stabilization. Newly seeded or sodded areas must be protected from vehicle traffic, excessive pedestrian traffic, and concentrated runoff until the vegetation is well established. If necessary, areas must be seeded and mulched again if germination is sparse, plant coverage is spotty, or topsoil erosion is evident. The following list defines permanent stabilization for applicable situations.

- 2.1 Seeded Areas:** For seeded areas, permanent stabilization means a 90% cover of vigorous perennial growth with no evidence of washing or rilling of the topsoil.
- 2.2 Sodded Areas:** 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.
- 2.3 Permanent Mulch:** 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 approved application rates and limitations.
- 2.4 Riprap:** For areas stabilized with riprap, permanent stabilization means that slopes stabilized with riprap have an appropriate backing of well-graded gravel or approved geotextile to prevent soil movement from behind the riprap.
- 2.5 Paved Areas:** For paved areas, permanent stabilization means the placement of compacted gravel subbase is completed.
- 2.6 Ditches, channels, and swales:** For open channels, permanent stabilization means the channel is stabilized with a 90% cover of vigorous perennial growth, a well-graded riprap lining, or with another non-erosive lining such as specified. There must be no evidence of slumping of the channel lining, undercutting of the channel banks, or down-cutting of the channel.

3.0 TEMPORARY EROSION AND SEDIMENTATION CONTROL BMPS

The placement/use of the following erosion and sedimentation control measures shall be in accordance with the “Maine Erosion and Sedimentation Control BMP” manual published by the Maine Department of Environmental Protection (MDEP) dated March 2003, as revised.

- 3.1 Sediment Barriers:** Prior to the beginning of any construction, sediment barriers (i.e. silt fence, erosion control mix berms, etc...) shall be installed across the slope(s), on the contour, at or just below the limits of clearing or grubbing, and/or just above any adjacent property line or watercourse to protect against construction related erosion. Sediment barriers shall be maintained until all tributary open areas have been permanently stabilized. The following are recommended perimeter sediment barriers.

- **Silt fence:** Shall be installed per the detail on the plans. The effective height of the fence shall not exceed 36 inches. It is recommended that silt fence be removed by cutting the fence materials at ground level so as to avoid additional soil disturbance.
- **Staked hay bales:** Shall be installed per the detail on the plans. Bales shall be wire-bound or string-tied and these bindings must remain parallel with the ground surface during installation to prevent deterioration of the bindings. Bales shall be installed within a minimum four (4) inch deep trench line with ends of adjacent bales tightly abutting another.
- **Erosion control mix berm:** Shall be installed per the detail on the plans. The mix shall consist primarily of organic material and contain a well-graded mixture of particle sizes. The mix must meet the most recent composition specifications published by the MDEP. No trenching is required for installation of this barrier.

3.2 Surface Stabilization: All disturbed areas that will not be worked for more than 7 days shall be protected and stabilized with mulch or other non-erodible cover. Areas located within 75 feet of a wetland or waterbody must be protected and stabilized within 48 hours of the initial disturbance of the soil or prior to any storm event, whichever comes first. Areas that have been seeded (temporary or permanent) shall be stabilized immediately. The following are recommended practices for surface stabilization:

- **Hay or straw Mulch:** Organic mulches including hay and straw need to be air-dried, free of undesirable seeds and coarse materials. Application rate shall be 2 bales (70-90 lbs) per 1000 square feet or 1.5 to 2 tons (90-100 bales) per acre. This type of mulch must be anchored with a tackifier amendment and/or via physical means (i.e. vehicle tracking, jute netting, etc...) to avoid displacement by wind or water.
- **Erosion control mix:** Erosion Control Mix can be manufactured on or off the site. It is composed primarily of shredded bark, stump grindings, composted bark, or other acceptable products based on a similar raw source. The mix must meet the most recent composition specifications published by the MDEP. The mix shall be placed evenly and must provide 100% soil coverage. Erosion control mix shall be applied such that the thickness on slopes 3:1 or less is 2 inches plus ½ inch per 20 feet of slope up to 100 feet. The thickness on slopes between 3:1 and 2:1 is 4 inches plus ½ inch per 20 feet of slope up to 100 feet. This shall not be used on slopes greater than 2:1.
- **Erosion control blankets:** Erosion Control Blankets are used on steep slopes (greater than 3H:1V) and also areas that will receive concentrated stormwater flows. Blankets aid in controlling erosion on disturbed soils and critical areas during the establishment period of vegetation. Various forms of erosion control blankets are commercially available, each with different advantages for different applications. The type of blanket to be used for individual applications shall be as indicated on the development plan set or via the use of an approved equivalent blanket. In all applications, the blanket manufacturer's specifications and installation methods shall be referenced and adhered to.

3.3 Soil Stockpiles: All topsoil shall be stockpiled for future use on the project at a stable location on-site. Structural measures, such as sediment barriers, may be warranted for additional sediment control of the stockpile areas. Stockpiles of soil or subsoil shall be mulched with hay or straw or with erosion control mix. This must be done within 24 hours of stocking and re-established prior to any rainfall. Any soil stockpile will not be placed (even covered with hay or straw) within 75 feet from any protected natural resources.

3.4 Stabilized Construction Entrance/Exit: Prior to any clearing or grubbing, a stabilized construction entrance/exit shall be constructed wherever traffic will exit the construction site onto

a paved roadway in order to minimize the tracking of sediment and debris from the construction site onto public roadways. The entrances and adjacent roadway areas shall be periodically swept or washed to further minimize the tracking of mud, dust or debris from the construction area. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. Stabilized construction exits shall be constructed in areas as specified and detailed on the plans.

- 3.5 **Stone Check Dams:** Stone check dams are generally temporary devices, which are constructed across a swale or drainage ditch. Their purpose is to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch. These devices will also trap small amounts of sediment generated in the ditch itself, however, they are not an effective sediment trapping device and should not be used as such. Stone check dams are typically constructed of 2"-3" crushed stone and stand 24 inches in height.
- 3.6 **Storm Drain Inlet Protection:** Storm drains are typically operational prior to permanent stabilization of tributary areas. In these instances, hay bales, crushed stone barriers, and/or silt sacks shall be used within a catch basin or prior to a pipe entrance. This temporary protection will assist in the removal of sediment prior to entrance into a storm drainage system and the prevention of clogging and/or loss of capacity. These devices alone will not prevent all sediment from entering the stormwater system and should be used in conjunction with other devices to achieve desired sediment removal levels.
- 3.7 **Dewatering:** Water from construction dewatering will pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing and sediment discharges to a protected natural resource. Discharge is permitted within the filter basin locations prior to the installation of the filter media.
- 3.8 **Dust Control:** Dust control during construction shall be achieved by the use of a watering truck to periodically sprinkle the exposed roadway areas as necessary to reduce dust during the dry months. Applying other dust control products such as calcium chloride or other manufactured products are allowed if authorized by the proper local, state and/or federal regulating agencies. However, it is the contractor's ultimate responsibility to mitigate dust and soil loss from the site.
- 3.9 **Concrete Washout:** Concrete washout(s) shall be made available on-site during times when cast-in-place concrete structures are being poured. Concrete washout shall be large enough to wash out trucks, inspection equipment, and working tools as necessary. No concrete washwater shall be directly discharged to any stormwater infrastructure or to any protected natural resources. Once dried, concrete shall be disposed in accordance with proper local, state, and/or federal regulating agencies. Concrete washout shall be constructed in accordance with Dewatering Filter Detail, or other method as approved by engineer.

4.0 VEGETATIVE MEASURES

- 4.1 **Temporary Vegetation:** If any disturbed area of soil will be left bare for more than 7 days, or if construction is to be completed in phases over an extended duration, temporary seeding and mulching shall commence immediately following initial fine grading of the site. In sensitive areas (within 75 feet of protected natural resources) temporary mulch must be applied within 48 hours or prior to any storm event on all disturbed surfaces. It shall be maintained and reseeded, as necessary,

to ensure good vegetative cover for the entire duration of construction. Seed will be selected from the following table (Table 1 - Temporary Seed Mixture) according to the time of year or via an approved equivalent method.

**TABLE 1
TEMPORARY SEED MIXTURE**

Seed	Lbs./Acre	Lbs./1000s.f.	Recommended Seeding Date
Winter Rye	112	2.6	8/15 thru 10/1
Oats	80	1.8	4/1 thru 7/1 8/15 thru 9/15
Annual Ryegrass	40	0.9	4/1 thru 7/1
Sudangrass	40	0.9	5/15 thru 8/15
Perennial	40	0.9	8/15 thru 9/15

Note:

Some tree and shrub species may be desirable for sites primarily covered with sand and gravel. These methods shall be approved by the appropriate regulatory authority prior to use.

4.2 Permanent Vegetation: Revegetation measures shall commence immediately upon completion of final grading of areas to be loamed and seeded. Revegetation measures shall consist of the following:

4.2.1 Seedbed Preparation

- Four (4) inches of loam will be spread over disturbed areas and smoothed to a uniform surface. Loam shall be free of subsoil, clay lumps, stones and other objects over 2" in any dimension, and without weeds, roots or other objectionable material.
- Soil tests shall be taken at the time of soil stripping to determine fertilization requirements. Soil tests shall be taken promptly as to not interfere with the 7-day limit on soil exposure (48-hours adjacent to a protected natural resource). Based upon test results, soil amendments shall be incorporated into the soil prior to final seeding. In lieu of soil tests, soil amendments may be applied as shown below in Table 2:

TABLE 2
RECOMMENDED SOIL AMENDMENTS

Item	Application Rate
10-20-20 Fertilizer (N-P205-K20 or equal)	18.4lbs./1,000 s.f.
Ground Limestone (50% calcium and magnesium oxide)	138-lbs./1,000 s.f.

- Work lime and fertilizer into the soil as nearly as practical to a depth of four (4) inches with proper equipment. Roll the area to firm the seedbed except on clay, silty soils or coarse sand.

4.2.2 Application of Seed

- **Seeding:** The seed mixture shown below in Table 3 shall be utilized for permanent seeding for the majority of the project:

TABLE 3
PERMANENT SEED MIXTURE

Seed Type	Application Rate
Creeping Red Fescue	0.46 lbs/1,000 s.f. (20 lbs/acre)
Red Top	0.05 lbs/1,000 s.f. (2 lbs/acre)
Tall Fescue	0.46 lbs/1,000 s.f. (20 lbs/acre)
Total:	0.97 lbs/1,000 s.f. (42 lbs/acre)

- **Seeding:** The seed mixture shown below in Table 4 shall be utilized for permanent seeding for modifications adjacent to the athletics fields:

TABLE 4
PERMANENT SEED MIXTURE

Seed Type	Application Rate
Kentucky Bluegrass	2.5 lbs/1,000 s.f. (110 lbs/acre)

- **Hydroseeding:** Shall be conducted on prepared areas as described above. Hydroseeding shall not be done on slopes steeper than 2H:1V. Lime and fertilizer may be applied simultaneously with the seed. Recommended seeding rates must be increased by 10% when hydroseeding.
- **Surface Stabilization:** Mulching or other approved surface stabilization methods shall commence immediately after seed is applied. Refer to the surface stabilization section of this plan for more information.

4.2.3. Sodding

Following seedbed preparation, sod can be applied in lieu of seeding in areas where immediate vegetation is most beneficial such as ditches, around stormwater drop inlets and areas of aesthetic value. Sod should be laid at right angles to the direction of flow starting at the lowest elevation. Sod should be rolled or tamped down to even out the joints once laid down. Where flow is prevalent the sod must be properly anchored down. Irrigate the sod immediately after installation. In most cases, sod can be best established between April 1 and November 15 of the construction year.

5.0 WINTER CONSTRUCTION

The winter construction period is from November 1 through April 15. If the construction site is not permanently stabilized by November 15 then the site needs to be protected with over-winter stabilization.

Winter excavation and earthwork shall be completed such that no more than 1 acre of the site is without stabilization at any one time. Limit the exposed area to those areas in which work is expected to be undertaken during the proceeding 15 days and that can be mulched in one day prior to any snow event. All areas shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched.

Any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions, must be installed. Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized, in order to minimize areas without erosion control protection.

5.1 Winter Construction BMP Adjustments

- 1) **Sediments Barriers:** During frozen conditions, sediment barriers shall consist of erosion control mix berms as frozen soil prevents the proper installation of hay bales and silt fences.
- 2) **Mulching:** Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, asphalt emulsion chemical, track or weed cellulose fiber. When the ground surface is not visible through the mulch then cover is sufficient. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.
 - **Open Surfaces (flatter than 8%):** 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 square feet or 1.5 tons/acre) and shall be properly anchored. Mulch shall not be spread on top of snow. The snow will be removed down to one-inch depth or less prior to application. After each day of final grading, the area will 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 with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored that ground surface is not visible through the mulch.
 - **Open Slopes (8% or steeper) and Drainage Ways:** Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with netting or erosion control blankets. Mulching shall be applied at a rate of 230-lbs/1,000 square feet on all slopes steeper than 8%. Mulch netting shall

be used to anchor mulch in all drainage ways with a slope steeper than 3% for slopes exposed to direct winds and for all other slopes steeper than 8%. Erosion control blankets shall be used in lieu of mulch in all drainage ways. Erosion control mix can be used to substitute erosion control blankets on slopes that do not exceed 2H:1V. In this case, the erosion control mix shall be spread out, not placed in a berm as it is installed as a sedimentation barrier.

- 3) **Soil Stockpiles:** Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or at 150-lbs/1,000 square feet (3 tons per acre) or with a four-inch layer of wood waste erosion control mix. This will be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpile will not be placed (even covered with hay or straw) within 100 feet from any natural resources.
- 4) **Natural Resources Protection:** Any areas within 100 feet from any protected natural resources, if not stabilized with a minimum of 90% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats. During winter construction, a double line of sediment barriers (i.e. silt fence backed with hay bales or erosion control mix) will be placed between any natural resource and the disturbed area. Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.
- 5) **Seeding:** Between the dates of October 15 and April 1st, loam or seed will 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 been loamed, final graded 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 selected to be placed prior to the placement of mulch and fabric netting anchored with staples. 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/1000 square feet. All areas seeded during the winter will 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.

5.2 Overwinter Stabilization Timeframe

- 1) **Ditches and Channels:** All stone-lined ditches and channels must be constructed and stabilized on the site by November 15. All grass-lined ditches and channels must be constructed and stabilized by September 15. If a ditch or channel is not grass-lined by September 15, then one of the following actions must be taken to stabilize the ditch for late fall and winter.
 - **Install a sod lining in the ditch:** A ditch must be lined with properly installed sod by October 1. Proper installation includes the contractor pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and

underlying soil, watering the sod to promote root growth into the disturbed soil, and anchoring the sod with jute or plastic mesh to prevent the sod strips from sloughing during flow conditions.

- **Install a stone lining in the ditch:** A ditch must be lined with stone riprap by November 15. A registered professional engineer must be hired to determine the stone size and lining thickness needed to withstand the anticipated flow velocities and flow depths within the ditch. If necessary, the ditch must be regraded prior to placing the stone lining to prevent the stone lining from reducing the ditch's cross-sectional area.

2) **Disturbed Slopes:** All stone-covered slopes must be constructed and stabilized by November 15. All slopes to be vegetated must be seeded by September 15. The MDEP will consider any area having a grade greater than 15% (10H:1V) to be a slope. If a slope to be vegetated is not stabilized by September 1, then one of the following actions must be taken to stabilize the slope for late fall and winter.

- **Stabilize the soil with temporary vegetation and erosion control blankets:** By October 1 the disturbed slope must be seeded with winter rye at a seeding rate of 3 pounds per 1,000 square feet and apply erosion control blankets over the mulched slope. If the rye fails to grow at least three inches or cover at least 90% of the disturbed slope by November 1, the slope will be covered with a layer of erosion control mix or stone riprap as described in the following standards.
- **Stabilize the slope with sod:** The disturbed slope must be stabilized with properly installed sod by October 1. Proper installation includes 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. Slopes steeper than 33% (3H:1V) or having groundwater seeps on the slope face, may not use late-season sod installation for stabilization.
- **Stabilize the slope with erosion control mix:** A six-inch layer of erosion control mix must be spread over the slope by November 15. Prior to placing the erosion control mix, any snow accumulation on the disturbed slope must be removed. Slopes steeper than 50% (2H:1V) or having groundwater seeps on the slope face can not use erosion control mix to stabilize slopes.
- **Stabilize the slope with stone riprap:** A layer of stone riprap can be placed on the slope by November 15. A registered professional engineer must be hired to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

3) **Other Disturbed Soils:** By September 15, all disturbed soils on areas having a slope flatter than 15% (15H:1V) must receive seed and mulch. If disturbed areas are not stabilized by this date, then one of the following actions must be taken to stabilize the soil for late fall and winter.

- **Stabilize the soil with temporary vegetation:** By October 1, seed the disturbed soil with winter rye at a seeding rate of 3 pounds per 1,000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per 1000 square feet, 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 cover at least 90% of the disturbed soil before November 1, then mulch the area for over-winter protection as described in the following “Stabilize the soil with mulch” standard.

- **Stabilize the soil with sod:** Stabilize the disturbed soil with properly installed sod by October 1. 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 15, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Prior to applying the mulch, any snow accumulation on the disturbed area must be removed. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

6.0 INSPECTION AND MAINTENANCE

Inspection and maintenance are required of all erosion and sedimentation control measures outlined in this plan. The Owner shall identify a qualified firm or person prior to construction to perform inspections and identify maintenance needs for the proposed project. Refer to the Inspection, Maintenance, and Housekeeping plan for this project (provided under separate cover) for an outline of the associated inspection and maintenance requirements.

Section 13: Consistency with City Master Plans

13.0 City Master Plans Consistency

No master plans were identified for this portion of the City. The project is located outside of the Fall Brook watershed.

Section 14: Capacity to Serve Letters

14.0 Capacity to Serve Letters

Ability/capacity to Serve letters were sent to the following utilities:

Water (Portland Water District)

Sewer (Portland DPW)

Electric (Central Maine Power)

Gas (Unitil)

Communications (Fairpoint)

Responses were obtained from Unitil indicating that the existing infrastructure was adequate. Portland Water District indicated that they site had the ability to serve the proposed development if fire suppression and domestic water lines were tied to the Ocean Avenue water main.

A sewer capacity form was also sent to the Department of Public Works. A copy of this sheet is included within this section.

Electric, Communications and Sewer confirmations were not received at the time of submission.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991



Bradley Roland, P.E.
Water Resources Division

Date: October 6, 2017

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 630 Ocean Avenue, Portland, Maine (Development near corner of Byfield and Slemons
Chart Block Lot Number: 174 A013

Proposed Use: Residential/Institution
Previous Use: Residential
Existing Sanitary Flows: 300 GPD
Existing Process Flows: GPD
Description and location of City sewer that is to
receive the proposed building sewer lateral.

Use Category
Commercial (see part 4 below)
Industrial (complete part 5 below)
Governmental
Residential

X

Connect to internal sewer, then discharge to sewer
within Ocean Avenue (address 630 Ocean Avenue)

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: Barbara Barhydt Phone: 207-874-8699
Owner/Developer Name: John Watson: The Cedars
Owner/Developer Address: 630 Ocean Avenue, Portland, ME 04103
Phone: 207-221-7005 Fax: N/A E-mail: JWatson@thecedarsportland.org
Engineering Consultant Name: Michael Guethle, PE, Wright-Pierce Engineers
Engineering Consultant Address: 75 Washington Avenue, Ste 202, Portland Maine 01401
Phone: 207-319-1512 Fax: N/A E-mail: michael.guethle@wright-pierce.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 4.800 GPD
Peaking Factor/ Peak Times:
Specify the source of design guidelines: (i.e. "Handbook of Subsurface Wastewater Disposal in
Maine," "Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records,
Other (specify) Metcalf & Eddy

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

Total Drainage Fixture Unit (DFU) Values:	3 shared kitchen sinks (3*4 = 12)
Size of External Grease Interceptor:	1,000 gallons
Retention Time:	83 minutes (12 Gal/min max. at 1000 gal)
Peaking Factor/ Peak Times:	7A-9A, 4P-6P

5. Please, Submit Industrial Process Wastewater Flow Calculations

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Kathleen O. Sculley

From: Robert Bartels <rbartels@pwd.org> on behalf of AMaP MEANS <means@pwd.org>
Sent: Friday, October 20, 2017 8:11 AM
To: Michael A. Guethle
Cc: Jan B. Wiegman; Matthew R. LaPierre
Subject: RE: 167461-630 Ocean Avenue, PO
Attachments: Peak Flow Based on Fixture Count_2017.xls

Follow Up Flag: Follow up
Flag Status: Flagged

Mike,

We would prefer no meter pits if that is possible. Depending on how you configure the new services from Ocean, they should be able to connect directly to the building, with the meter and backflow protection devices in a basement or mechanical room within the building. That would be our preference. Please let me know what you are thinking and send over an updated drawing of your services as soon as practical.

We will need a fixture count for the building to determine the meter size and to verify the service size. Attached is a spreadsheet to fill out and return to MEANS.

Thanks,

Robert Bartels
Senior Project Engineer
Portland Water District
Phone:
E-mail: rbartels@pwd.org
<http://www.pwd.org>

From: Michael A. Guethle [mailto:michael.guethle@wright-pierce.com]
Sent: Thursday, October 19, 2017 4:28 PM
To: AMaP MEANS <means@pwd.org>
Cc: Jan B. Wiegman <jan.wiegman@wright-pierce.com>; Matthew R. LaPierre <matt.lapierre@wright-pierce.com>
Subject: RE: 167461-630 Ocean Avenue, PO

Hi Robert,

Thanks for your note. Just following up on this item, we will provide 2 connections from Ocean Avenue. One will be a 6" fire sprinkler line, and one will be a 2" service line. Can these meters be located in the same large meter pit, or can each be placed in a standard-sized meter pit? If a large meter pit is necessary, we did not see a detail posted online and would appreciate if a CAD drawing of it would be available.

As far as location, we anticipate placing meter pit(s) on the ROW line. If it is acceptable to place the meter pits within the Right-Of-Way, please let us know and we will plan accordingly.

Should you have any concerns or other questions regarding these items, please let me know.

-Mike

Michael A. Guethle, P.E. | Project Engineer

75 Washington Avenue, Suite 202 | Portland, ME 04101

Office 207.319.1512

WRIGHT-PIERCE

From: Robert Bartels [<mailto:rbartels@pwd.org>] **On Behalf Of** AMaP MEANS

Sent: Tuesday, October 17, 2017 9:16 AM

To: Michael A. Guethle <michael.guethle@wright-pierce.com>

Subject: 167461-630 Ocean Avenue, PO

Michael,

Thank you for submitting the Ability to Serve request for the proposed expansion at 630 Ocean Avenue. PWD is concerned with the plan to connect to the existing water service onsite after the meter. This existing service already provides fire protection to private hydrants as well as the existing facility. Additionally, the meter in the pit is a 6"x1.5" compound meter (6" on the fire side, 1.5" on the domestic side). This meter would need to be evaluated for the additional domestic demand from the new building and may require replacement with a larger meter. A fire sprinkler designer would need to analyze the existing fire suppression system for the existing facility as well as the hydrants to determine if the service line could also be used for fire protection to the new building. PWD recommends considering separate fire and domestic services from the 12" main in Ocean Avenue for the new development.

Robert Bartels, PE

Robert Bartels

Senior Project Engineer

Portland Water District

Phone:

E-mail: rbartels@pwd.org

<http://www.pwd.org>

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer
Street Address
City

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	4	x		=	0
Bidet	1	x		=	0
Dental Unit	1	x		=	0
Drinking Fountain - Public	0.5	x		=	0
Kitchen Sink	1.5	x		=	0
Bathroom Sink	1	x		=	0
Showerhead (Shower Only)	2	x		=	0
Service Sink	3	x		=	0
Toilet -Flushometer(high pressure)	5	x		=	0
-Tank Type	2.5	x		=	0
Urinal -Flushometer Valve	5	x		=	0
-Tank Type	2	x		=	0
Wash Sink (Each Set of Faucets)	2	x		=	0
Dishwasher	1.5	x		=	0
Washing Machine	4	x		=	0
Hose (outdoor spigot) <3/4 in.	2.5	x		=	0
Combined Fixture Value Total					<u>0</u>

Customer Peak Demand From Fig. 4-2 or 4-3
Pressure Factor From Table 4-1

Irrigation(Yes/No)?

If yes, gpm required by
irrigation designer:

Total Fixed Demand (Peak Flow)

0 gpm

**Customer only needs to complete the
cells highlighted in blue**



October 19, 2017

Michael A. Guethle
Wright-Pierce
75 Washington Avenue, Suite 202
Portland, ME 04101

Re: Proposed redevelopment at 630 Ocean Avenue, (The Cedar's)

Dear Michael:

Thank you for your interest in using natural gas for the above referenced project.

Unitil has natural gas Ocean Avenue and is able to service this projects need of 800 CFH. Please let me know the equipment breakdown so that we know how much cooking, hot water, heat and back up generation there will be by CFH. Also please let me know the delivery pressure that is requested. We can deliver either 2 PSI or 7" water column.

If you have any further questions or require additional information, please contact me directly at (207) 541-2543 or at carpenters@unitil.com.

Sincerely,

Scott Carpenter

Scott Carpenter
Senior Business Development Representative
Unitil Corporation
(o) 207-541-2543 (f) 207-541-2593

ME GAS CUSTOMER ENERGY SOLUTIONS
1075 Forest Avenue
Portland, ME 04103-3586

T 207-541-2508 www.unitil.com

Section 15: Solid Waste Generation

15.0 Solid Waste

Solid waste is currently stored in external receptacles, screened by wood fencing, as noted on Sheet C-2. Solid waste receptacles are hauled off-site for disposal at a licensed facility by a private waste hauler.

Using an average of 4.4 lb/person/day of solid waste, an increase of solid waste generation by 90lbs/day of solid waste is anticipated as a result of the proposed project. There are currently two dumpsters on-site, approximately 10-CY each. Whereas 10-CY dumpsters can hold approximately 4,000 lbs of waste each, no changes in solid waste disposal are proposed as a result of the proposed project. There is a location available for a third dumpster in the screened enclosure should it be necessary, or the maintenance staff can schedule more frequent solid waste removals.

Information regarding construction debris has been included in Section 9 of this application, the Construction Management Report.

Section 16: Fire Department Technical Standards

16.0 Fire Department Technical Standards

For site access items, existing fire hydrant locations have been identified on the existing conditions plan. From the pre-application meeting, it was discussed that a 16'-wide fire access lane would be required through the facility. These locations have been identified within the proposed plans.

Additional information to be provided by the architect in regards to fire department standards specific to the building design.

Section 17: Consistency with City of Portland Design Manual

17.0 Consistency with City of Portland Design Manual

Sections of the City of Portland Design Manual have been identified within this section, including applicability and identification of any waivers. If a section has not been identified as being applicable to the proposed project, then that section has been given an N/A for the site.

17.1 Transportation Systems and Street Design Standards:

Information regarding traffic studies is indicated within Section 10 of this permit application.

Sidewalks and driveway aprons are proposed to be asphalt with granite curing. Sidewalk width is equal to or greater than 5' in all areas, and no vertical level changes greater than 1/4" are proposed. Sidewalk slopes are designed to be at the running slope of the proposed circulation areas that they abut, with a cross-slope of 2%. Sidewalk ramps have been designed in accordance with section 1.8.4. The former driveway location for the building proposed to be demolished is to be replaced with curbed sidewalk.

Aggregates for roadway surface and base pavement, as well as base gravels and pipe support gravels, have been detailed to be in accordance with section 1.10.

Parking spaces have been designed in accordance with the technical manual, including for compact parking spaces and minimum drive aisles. Bicycle and Motorcycle/Scooter parking are proposed as part of the parking lot re-striping. Section 19 of this permit application discusses the project's ability to meet Division 20 of the City Land Use Code and Site Plan Standards.

Public crosswalks have been designed in accordance with section 1.20.

17.2 Sanitary Sewer and Storm Drain Design Standards

Proposed design is in accordance with the applicable sections of Division 24 of the City Code.

Storm drain trunk pipes are designed to carry stormwater flow through pipes sized as indicated in the plans. A calculation is included to show a minimum of 3cfs flow through the proposed pipes. The proposed drainage system has been designed to replace an existing broken storm drain. Pipe material shall be in accordance with technical manual. Underdrains are sized at 4" for the

stormwater treatment facility; stormwater treatment design has been included in Section 12 of this manual.

Catch basins have been designed in accordance with Figure II-2. Calculations indicating the ability for drainage to pass flows of 3cfs (minimum slope of .004 ft/ft) have been attached to this section.

Standard aggregates have been proposed for use within the circulation facility. Loam and seed will cover the proposed aggregates that are not to be paved or planted.

17.3 Public Safety Standards

Locations of existing fire hydrants have been identified on the project plans. No fire hydrants are proposed to be modified or relocated.

Emergency access lanes are discussed in Section 16 of this permit application.

The proposed project is altering site access/circulation, and as these standards, as well as emergency access, are identified in Section 10 of this application. The proposed project is not a subdivision, and therefore subdivision standards are not anticipated to apply.

Blasting to remove ledge is not part of the proposed project. If ledge is encountered, it will likely remain in place unless it is substantially higher than the proposed surface, or near to proposed pipe locations. If ledge is to be removed, it is preferred to be removed through mechanical means. If any blasting is to occur, it shall be completed in accordance with the City's blasting protocols outlined within the technical manual.

17.4 Landscaping and Landscape Preservation Standards

Significant natural features have been identified on the existing conditions plan, and were identified in the report by Jones Associates, included within Section 11. Trees in the project location greater than 10" diameter have been identified on the existing conditions plan.

Landscaping measures have been incorporated into parking areas, except in areas where snow removal would become impractical if plantings were included.

Retaining walls are proposed in certain areas of the project. In these locations, plantings will be placed to soften the hardscape of the retaining walls.

Trees are proposed along the edge of parking areas in locations where their placement is practicable to provide the general effect of street trees throughout the site. However, where the proposed site layout is not that of a typical street, street trees standards were not anticipated to be designed.

Shrubs consist of at least 50% native plantings.

Trees are proposed to be installed at the edge of the parking areas. The trees are an approved species in accordance with the technical standards, as indicated in the landscaping plan and details. Grasses will be a standard MaineDEP grass application in areas where lawn grasses are not specified.

17.5 Portland Stormwater Management Standards

Section 12 of this permit application includes for applicability with this section. Please see Section 12 for additional information.

17.6 Erosion and Sedimentation Control Standards for Two-Family Homes

An erosion and sedimentation control plan and report has been developed as part of the permit and contract drawings. This proposed plan and report is in accordance with Maine DEP regulations, and can be found in Section 12.

17.7 Soil Survey Standards

A high intensity soil survey is not required for the proposed project, as the project is being constructed largely on developed soils. However, please see the medium-intensity soils information provided in Section 11.

17.8 Standards for Development in and Adjacent to Wetlands

The site was observed for wetlands by Power Engineers, Inc. on August 25, 2016. The associated wetlands report has been included as an appendix to Section 11. The proposed project does not anticipate filling any wetlands.

17.9 Water Supply Standards

N/A

17.10 Municipal Street Lighting Standards:

N/A

17.11 Shadow Standards:

N/A

17.12 Site Lighting Standards:

An exterior lighting/Site Lighting plan is attached to this section.

17.13 Boundary Survey Requirements

A boundary survey has been incorporated to the Overall Existing Conditions Plan, Sheet C-2.

17.14 Standards for Local Site Location of Development Review:

N/A

17.15 Solar Energy Generation:

N/A

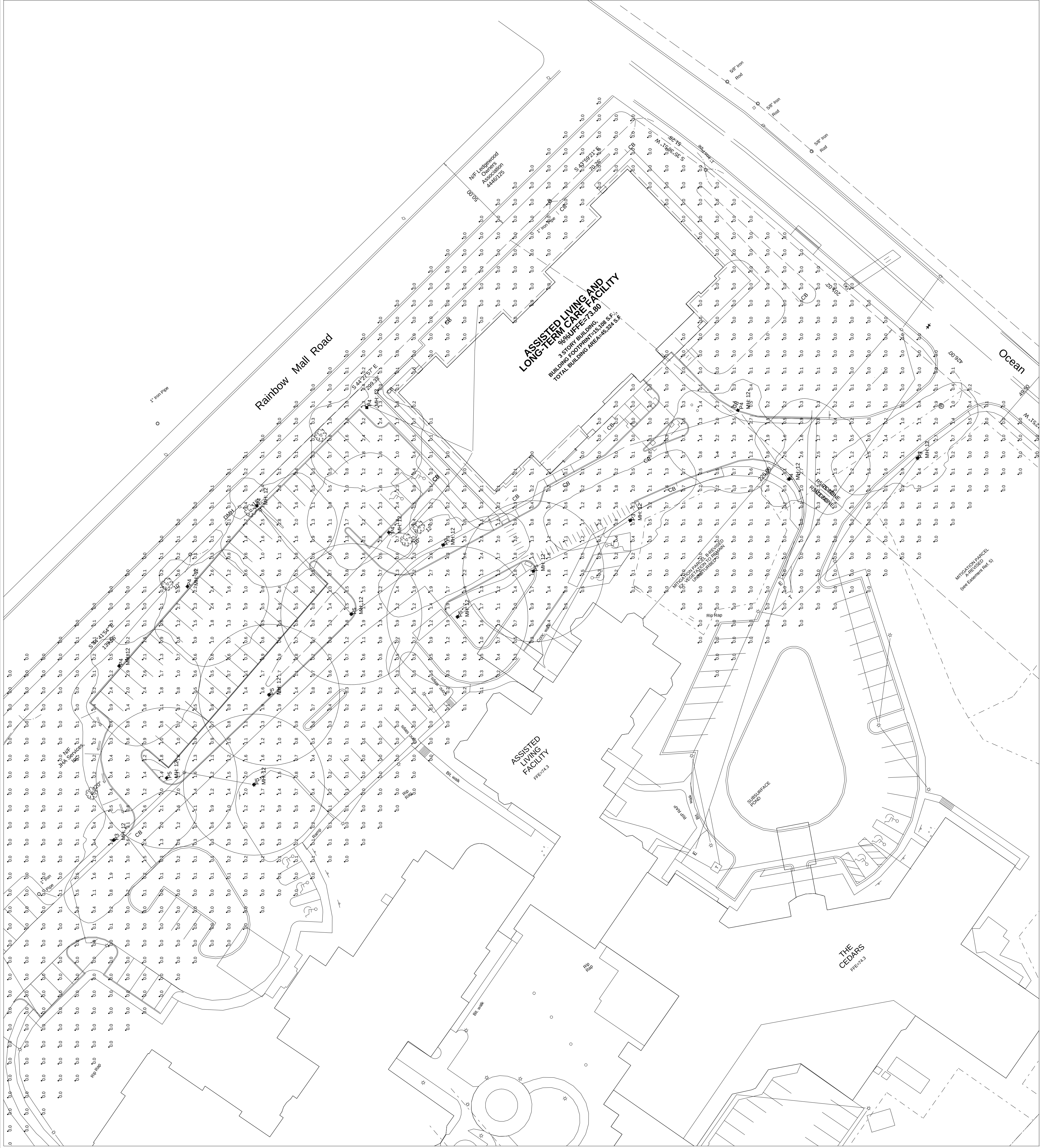
The Cedars Ocean Avenue
City of Portland, Maine

CAPACITY OF PIPES FLOWING FULL
MINIMUM SLOPES USED IN DESIGN

Pipe Dia. (inches)	Pipe Dia. (feet)	Area (sq. ft.)	R (ft)	Slope (ft/ft)	Capacity with pipe flowing full (MGD) (n=0.012)	Velocity (n=0.012) (ft/s)	Capacity with pipe flowing full (CFS) (n=0.013)	Capacity with pipe flowing full (CFS) (n=0.015)
Minimum Slopes - Sewers								
12	1	0.785	0.5	0.004	2.51	2.01	3.880652	3.104521
15	1.25	1.226563	0.625	0.0028	3.81	3.04	5.887253	4.709802
18	1.5	1.76625	0.75	0.0022	5.48	4.39	8.486359	6.789087

Quick Flow Conversions:

- 1 CFS = 448.8 GPM
- 1 CFS = 0.646 MGD
- 1 MGD = 1.548 CFS
- 1 MGD = 694.4 GPM



- NOTES:
- 1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
 - 2) CALCULATIONS MAY OR MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
 - 3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
 - 4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
 - 5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
 - 6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS.
 - 7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES.
- IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
SITE	0.44	4.3	0.0	N.A.	N.A.
33 park	1.12	2.9	0.4	2.80	7.25

Luminaire Schedule (note fixture catalogue numbers are not complete)					
Type	Qty	Lumens	LLF	Watts	Description
P3	4	4800	0.900	57	TRA30-AC-24NB-55-3K-UNV-DIR3
P5	6	4864	0.900	57	TRA30-AC-24NB-55-3K-UNV-DIR5
P4	7	4618	0.900	55	TRA30-AC-24NB-55-3K-UNV-DIR4

Type:
Project Name:
Notes:

rev. 03.20.2017

TRA30 (LED)

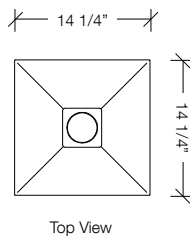
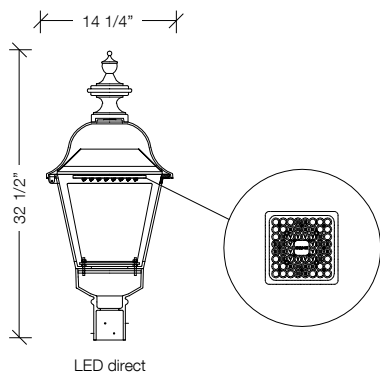
30" Traditional Luminaire

Max Weight: 35.0 lbs

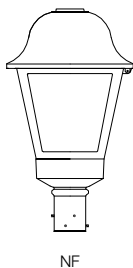
Max EPA: 2.60 sq ft

Sample	TRA30	AC	24NB-55	5K	UNV	DIR5	PEC	GENIXX	PM	NF	BBT
Ordering											
	A	B	C	D	E	F	G	H	I	J	K

DETAILS



STYLE OPTIONS



A. MODEL

TRA30 Traditional 30"

B. LENS OPTIONS

AC acrylic, clear
AF acrylic, frosted
AS acrylic, seeded
AW acrylic, white
PC polycarbonate, clear
PF polycarbonate, frosted

C. ENGINE-WATTS

24NB-55 55 Watts - LED array
36NB-80 80 Watts - LED array
48NB-110 110 Watts - LED array
60NB-136 136 Watts - LED array

D. CCT - COLOR TEMP

3K 3000K
4K 4000K
5K 5000K (std.)

E. VOLTAGE

UNV 120-277V
347 347V³
480 480V³

F. OPTICS

DIR2 type II
DIR3 type III
DIR4 type IV
DIR5 type V

G. ELECTRICAL OPTIONS

PEC photocell, button

H. CONTROL OPTIONS

GENI-XX energeni ¹

I. MOUNTING OPTIONS

PT post top
PM pendant mount ²

J. STYLE OPTIONS

NF no finial

K. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

¹ When ordering Energeni, specify the routine setting code (example GENI-04). See Energeni brochure and instructions for setting table and options. Not available with sensor options.

² consult factory

³ 24NB - 55 only



rev. 03.20.2017

TRA30 (LED)

30" Traditional Luminaire

Max Weight: 35.0 lbs

Max EPA: 2.60 sq ft

Housing: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

Construction: The upper chamber/lid shall be topped by a decorative cast aluminum finial/cap and mechanically fastened to the optical chamber. The cast multi-sided cage shall accommodate UV stabilized acrylic or polycarbonate lenses (side panels) which shall be sealed for weather tight operation.
The electrical chamber/fitter shall be aluminum, decorative fitter designed to accommodate the ballast assembly and shall mount to 3 OD x 3" H tenon and secured by three stainless steel set screws.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Bezel Optical System: Each luminaire is supplied with an optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. Two-piece silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications. The optical cartridge is secured to the extruded housing with fasteners and a heat pad to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using a specially designed acrylic optical lens over each LED.

Power Supply/Driver Requirements: U.L. UL1310, Class 2 and UL48 compliant

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure. Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Electrical: Luminaires are equipped with LED driver(s) that accept 90 through 305

VAC, 50 Hz to 60 Hz (UNIV). Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL-217F Notice 2. All driver components supplied are component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Agency Certification: The luminaire shall bear an NRTL label and be marked suitable for wet locations.

Limited Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

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

Section 18: HVAC and Manufacturing Emissions Requirements

18.0 HVAC and Manufacturing Emissions Requirements

Additional information to be provided by the architect/mechanical engineer in regards to the HVAC system

Section 19: Compliance with Site Plan and Parking Standards

19.0 Consistency with City of Portland Design Manual

Portions of the City of Portland City Code, Chapter 14, include Site Plan Standards (14-526), and Parking (Division 20). The following information discusses these items, with the understanding that most information is either not applicable to this particular development, or has been included in another specific section of this permit application.

19.1 Site Plan Standards:

Transportation standards have been addressed in Section 17 of this application addressing impacts on abutting streets, site circulation, sidewalk use, and incorporation of school busses. Snow storage has been indicated as part of the permitting plans. Information regarding any Transportation Demand Management plan is identified in Section 10 of this application.

The site is located a distance of 1,180 feet from a bus stop along the right-of-way. This is within the minimum of within 1,320 feet of a bus stop. Therefore, no new bus stops are required for the proposed development.

Proposed signage is in accordance with MUTCD standards.

Locations of significant natural features have been identified on the existing conditions plan. 4 of the 10 trees greater than 10" DBH that were identified within the property setbacks are to be removed. This meets the standard stating that 30% of existing trees 10" DBH or greater are to remain.

Parking lot landscaping has been provided for the proposed project. The City requires 2 trees per 5 spaces. A continuous strip of trees will remain along the northeastern edge of the proposed parking lot. 47 parking spaces will be provided in the large parking lot, and providing 2 trees for every 5 would require a minimum of 20 trees. Whereas trees will remain along this continuous edge, and islands are to be populated with clusters of three shrubs, the proposed project meets this standard. There are no sections of parking lot where 40 continuous spaces exist without planted islands.

A total number of parking spaces on-site has been calculated in the plan application.

Screening in the form of plantings will be completed around the proposed transformer. Screening will be provided by the ledge wall for new parking areas. Plantings have been incorporated in front of the proposed building at a rate of 6 shrubs per 45 feet of frontage. Red Maple, Karpick variety, trees have been proposed at 25' spacing along the developed portion of the Ocean Avenue. This meets the requirement of providing street trees at a maximum of 45' spacing within the developed roadway corridor, and has been designed with shrubs to provide a higher level of screening and blending the landscape in to what is present in the surrounding community. No street trees are not proposed within the site, as no new roadway construction is proposed.

No modifications to the existing solid waste layout/management are proposed.

A letter from the Historic Preservation Commission stating that the proposed development will not impact know historic or archaeological resources is attached to this section.

19.2 Parking Standards

Bicycle Parking, in the form of two 2-bicycle racks, has been provided at a location adjacent to the building entrance. These improvements include for a total of 4 new bicycle parking spaces. The City standard is for 2 bicycles per 10 parking spaces for the first 100 parking spaces, and then 1 bicycle for each additional 10 parking spaces. With 13 new spaces provided, this would total 2.6 bicycle parking spaces. This standard is met for the proposed improvements.

There are 142 existing standard parking spaces, 18 existing garage spaces, and 10 existing handicap accessible parking spaces on-site. For the proposed development, Division 20, Chapter 14 of Portland City Code requires 1 new parking space is per 5 beds in institutional developments; this amounts to 4 required new parking spaces from the 20 new beds. The proposed development will create 9 new peak-hour employees, and as such 9 new parking spaces are provided for employees.

The proposed development includes 11 additional standard parking spaces and 2 handicap accessible parking spaces total to 13 additional parking spaces (not including the 1 motorcycle/scooter parking space). The new parking layout for the site is 18 garage spaces, 12 handicap accessible spaces, and 153 standard parking spaces for a total of 183. Parking lots are to be curbed.

No proposed parking spaces are sized for compact spaces, and therefore the site meets the 20% maximum compact parking space standard.



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

PAUL R. LEPAGE
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

November 6, 2017

Mr. Michael A. Guethle
Wright-Pierce
75 Washington Ave, Suite 202
Portland, ME 04101

Project: MHPC# 1466-17 The Cedars Long Term Facility; 630 Ocean Ave
Demolish Existing Building; Construct New Long Term Facility

Town: Portland, ME

Dear Mr. Guethle,

In response to your recent request, I have reviewed the information received October 24, 2017 to initiate consultation on the above referenced project.

Based on the information provided, I have concluded that there are no National Register listed or known National Register eligible properties on or adjacent to the parcels. In addition, the project area is not considered sensitive for archaeological resources.

Please contact Megan M. Hopkin of our staff, at megan.m.hopkin@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer



Conditional Use for Planning Board Review Development Review Application Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Conditional Use where the Planning Board is listed as the reviewing authority rather than the Zoning Board of Appeals. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

A. Conditional Use: Standards and Criteria – Section 14-474 and Zone Related Criteria

Conditional uses are listed in the Zoning Ordinance for each zone and these proposed uses must address the criteria contained in Section 14-474 in the written application. In addition to the criteria in Section 14-474, each application must address any applicable conditional use standards contained in the applicable zone and the proposed specific use. The Zoning Ordinance specifies when the Planning Board is designated as the reviewing authority rather than the Zoning Board of Appeals. This application is for Planning Board reviews only.

Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines 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.

B. Site Plan Application: Please submit the Conditional Use Application in addition to the applicable Site Plan Application.

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: <http://me-portland.civicplus.com/DocumentCenter/Home/View/1080>

Design Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2355>

Technical Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2356>

Planning Division

Fourth Floor, City Hall

389 Congress Street

(207) 874-8719

planning@portlandmaine.gov

Office Hours

Monday thru Friday

8:00 a.m. – 4:30 p.m.

PROJECT NAME:

The Cedars - Long Term and Assisted Living Memory Care Facility

PROPOSED DEVELOPMENT ADDRESS:

630 Ocean Avenue, Portland, ME 04103

CHART/BLOCK/LOT (s): 174 A013

Applicable Zone: R-3, R-5

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: The Cedars c/o Kathy Callnan Business Name, if applicable: JHA Assisted Living, Inc. and Cedars Nursing Care, Inc. Address: 630 Ocean Avenue City/State : Portland, Maine Zip Code: 04103	Applicant Contact Information Work # 207.221.7000 Home# Cell # Fax# e-mail: kcallnan@thecedarsportland.org
Owner – (if different from Applicant) Name: JHA Services, Inc. Address: 630 Ocean Avenue City/State : Portland, ME Zip Code: 04103	Owner Contact Information Work # 207.221.7000 Home# Cell # Fax# e-mail: kcallnan@thecedarsportland.org
Billing Information Name: Cedars Nursing Care, Inc. Address: 630 Ocean Avenue City/State : Portland, ME Zip Code: 04103	Billing Information Work # 207.221.7000 Cell # Fax# e-mail:kcallnan@thecedarsportland.org
Designated person/person(s) for uploading to e-Plan: Name: Michael Guethle e-mail: michael.guethle@wright-pierce.com Name: Alex Toye e-mail: alex.toye@actionpact.com Name: e-mail:	

RIGHT, TITLE OR INTEREST:

The property is owned by the applicant, property deeds are attached.

(Please identify the status provide documentary evidence, attached to this application, of the applicant’s right, title, or interest in the subject property (ex: deed, option or contract to purchase or lease the property.)

VICINITY MAP: (Please attach a map showing the subject parcel and abutting parcels, labeled as to ownership and/or current use.)

EXISTING USE: Describe the existing use of the subject property.

The existing use on the property is Institutional: Long Term Care and Intermediate Care Facility

PROPOSED USE: Describe the proposed use of the subject property
The proposed uses are an expansion of the existing uses:

Institutional: Long Term Care and Intermediate Care Facility

TYPE OF CONDITIONAL USE PROPOSED (Refer To Specific Provisions Of Land Use Code Authorizing The Proposed Conditional Use).

R-3 Zoning District: Section 14-88 (c) 2.a. and 2.b.

R-5 Zoning District: Section 14-118 (b) 2.a. and 2.b.

SITE PLAN: Submit a separate site plan application for the proposal that provides a site plan for the property, showing existing and proposed improvements, which meets the submission requirements of the applicable level of site plan review.

CONDITIONAL USE STANDARDS AND CONDITIONS – 14-474

Address the following criteria in your written application and any applicable conditional use standards contained in the zoning code for the specific use. Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines 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.

CONDITIONAL USE AUTHORIZED BY: SECTION 14--88 and 14-118

Address any specific conditional use standards for the specific use contained in the zoning code in the written submission.

APPLICATION FEES:

___ Conditional Use Review (\$100.00) (Please submit a separate application for the applicable site plan review. Fees and charges are listed within the application)	The City invoices separately for the following: • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$50.00 hour) • Legal Review (\$75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.
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INSTRUCTIONS FOR ELECTRONIC SUBMISSION:

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. Fill out the application completely and e-mail the **application only** to planning@portlandmaine.gov
(Please be sure to designate a person who will be responsible for uploading documents and drawings.)
This step will generate the project ID number for your project.
2. An invoice for the application fee will be e-mail to you. Payments can be made on-line at [Pay Your Invoice](#) , by mail or in person at City Hall, 4th Floor. Please reference the Application Number when submitting your payment which is located in the upper left hand corner of the invoice.
3. The designated person responsible for uploading documents and drawings will receive an email from eplan@portlandmaine.gov with an invitation into the project. At this time, you will upload all corresponding documents and plans into the project. For first time users you will receive a temporary password which you must change on entry. Make note of your username and password for any future projects.

Reminder: Before the project can move forward, the application fee shall be paid in full and all required documents and drawings shall be uploaded into e-plan correctly.

4. Follow the link below (Applying Online Instructions) for step by step instructions on how to do the following:
Tab 1 - Setting up the appropriate compatibility settings for your PC and getting started in e-plan.
Tab 2 - Preparing your drawings, documents and photos for uploading using the correct naming conventions
Tab 3 - Preparing and uploading revised drawings and documents

[Applying Online Instructions](#)

5. When ready, upload your files and documents into the following folders:
"Application Submittal – Drawings"
"Application Submittal – Documents"
6. Once a preliminary check has been made of the submittal documents and drawings, staff will move them to permanent folders labeled Drawings and Documents. As the process evolves you will be able to log in and see markups, comments and upload revisions as requested into these folders.

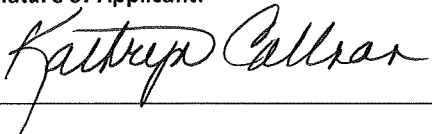
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
X		1	Completed Application Form
X		1	Cover letter stating the nature of the project.
X		1	Evidence of right, title and interest.
X		1	Written Submittals that address the conditional use standards of Sec. 14-474.
X		1	Written submittals that address any applicable standards of review contained in the zoning code for the specific use.
X		1	A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet and containing the information required for the applicable level of site plan review.
X		1	An accompanying site plan application, as applicable.

APPLICANT SIGNATURE:

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a **legal signature** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Conditional Use. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant: 	Date: 
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December 21, 2017
W-P Project No. 13682A

Barbara Barhydt,
City of Portland
389 Congress Street, 4th Floor
Portland, ME 04101

Subject: The Cedars – Long Term and Assisted Living Memory Care Facility Expansion
Conditional Use Permit – Portland, Maine

Dear Ms Barhydt:

The Cedars long term care facility, located at 630 Ocean Avenue in Portland, Maine, is proposing an expansion and redevelopment of a portion of its facilities. The project is largely driven by the evolution of the care model with a shift towards the household model of care delivery and private rooms for residents. The existing long term care facility at the Hoffman Center has semi-private rooms and will be converted to three households with private rooms. The 40 displaced beds will be moved to the proposed new facility and two household will be created, occupying two floors of the building. A new 20 bed assisted living memory care household will occupy the first floor of the new facility as well.

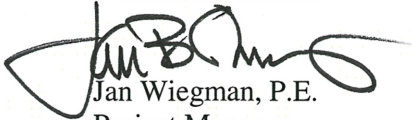
The Assisted Living/Memory care represents an expansion of services and beds for the campus. The new facility will be located on the campus, near the intersection with Ocean Avenue and Rainbow Mall Road, and will have a footprint of approximately 15,000 s.f. The Hoffman Center renovations will not add to the existing building but will be interior renovations.

Parking improvements associated with the proposed project, are designed to accommodate the City Code requirements for the expanded institutional use, the AL Memory Care household, and to replace any parking spaces that are displaced by the new building. Site demolition will include the removal of an administrative building, parking areas, trees, and lawn space.

Landscaping is proposed around the perimeter of the site and other areas adjacent to proposed improvements. Landscaping will include trees, shrubs, ornamental grasses and lawns areas.

The existing drainage system will largely remain in place and in some cases upgraded with new underdrains, structures, and pipe. The drainage upgrades will include revisions to the existing detention basins, new underdrained soil filters and new storm drain structures to accommodate the site revisions and the new facility.

Sincerely,
WRIGHT-PIERCE



Jan Wiegman, P.E.
Project Manager
Jan.wiegman@wright-pierce.com
JBSW/kos

Section 2: Evidence of Right, Title, and Interest

2.0 Existing Deeds

A list of deeds and easements for the parcels for this project have been attached to this section.

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that JHA Properties, Inc., a Maine nonprofit corporation, of Portland, County of Cumberland, and State of Maine, for consideration paid, grants to JHA Assisted Living, Inc., a Maine nonprofit corporation organized and existing under the laws of the State of Maine, and having its principal place of business at Portland, in the County of Cumberland, and State of Maine, whose mailing address is 630 Ocean Avenue, Portland, Maine, with **WARRANTY COVENANTS**, the land in Portland, County of Cumberland, State of Maine, described as follows: The Unit ("Unit") designated as Number 3 of the Cedars Condominium located at 630 Ocean Avenue, Portland, Cumberland County, Maine, ("Condominium"), together with the Unit's undivided percentage interest in the Common Elements of the Condominium as set forth in the Declaration, created pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended, and set forth in Declaration of Cedars Condominiums, dated as of June 30, 2006 and recorded in Cumberland County Registry of Deeds in Book 24129, Page 276, as may be amended, and shown on the related plats and plans recorded in Plan Book 206, Page 430. The Unit is subject to and has the benefit of the Declaration, the Plats, Plans and the Act which are incorporated herein by reference, to which reference is hereby made for a more particular specification of the definition, location and description of the real property hereby conveyed and of the rights, obligations, easements, development rights, special Declarant rights, restrictions, covenants and conditions pertaining thereto.

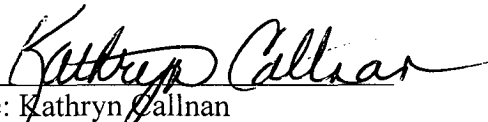
IN WITNESS WHEREOF, it, the said JHA Properties, Inc., has caused this deed to be signed and sealed in its corporate name by Kathryn Callnan, its President/Chief Executive Officer, thereunto duly authorized, this 1st day of May, 2014.

WITNESS:

JHA Properties, Inc.

Received
Recorded Register of Deeds
May 06, 2014 09:12:50A
Cumberland County
Pamela E. Lovley

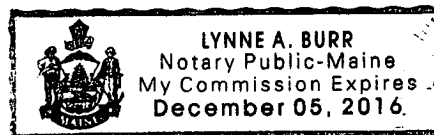


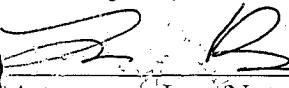
By: 
Name: Kathryn Callnan
Title: President/Chief Executive Officer

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

May 1, 2014

Then personally appeared the above named Kathryn Callnan, President/Chief Executive Officer of said Corporation, as aforesaid, and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity and the free act and deed of said Corporation, before me,




Attorney at Law/Notary Public

SEAL

AMENDMENT TO DECLARATION OF COVENANTS AND RESTRICTIONS

THIS AMENDMENT TO DECLARATION OF COVENANTS AND RESTRICTIONS is made this 30th day of June, 2006 by, Cedars Nursing Care Center, Inc., and JHA Properties, Inc., both Maine non-profit corporations having a place of business at 630 Ocean Avenue, Portland, Cumberland County, Maine, 04103, (herein collectively referred to as the "Declarants") and the State of Maine Department of Environmental Protection, a governmental agency having a place of business in Augusta, Kennebec County, Maine, and a mailing address of 17 State House Station, Augusta, Maine 04333-0017 (referred to as the "MDEP"), pursuant to MDEP Natural Resource Protection Act Project Number 97-441-S (formerly Tier #T-00441-TE-A-N), dated September 26, 1997 (collectively referred to as "Order"), as amended by the MDEP Order #L-22483-TG-B-M, dated February 20, 2006 (hereinafter referred to as "New Order"), relating to preservation of portions of an approximately ten (10) acre parcel of land near 630 Ocean Avenue, Portland, Maine.

RECITALS

WHEREAS, the Declarants made a Declaration of Covenants and Restrictions, dated March 27, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75 (the "Original Declaration"), pursuant to MDEP Natural Resource Protection Act Project Number 97-441-S (formerly Tier #T-00441-TE-A-N), dated September 26, 1997 (collectively referred to as "Order"), relating to preservation of three certain parcels of land bounded and described as set forth on Exhibits A and A-1 to the Original Declaration and respectively described therein (and herein) as "Mitigation Parcel A," "Mitigation Parcel B" and "Mitigation Parcel C;"

WHEREAS, MDEP Natural Resource Protection Act Project Number 97-441-S (formerly Tier #T-00441-TE-A-N) was amended by MDEP Order #L-22483-TG-B-M, dated February 20, 2006 (hereinafter referred to as "New Order");

WHEREAS, the Site Plan Location Permit issued by the City of Portland, Maine, Permit No. _____, dated September 13, 2005, and the application of JHA Assisted Living, Inc. for a MDEP Natural Resources Protection Act permit, Application No. DEP #L-22483-TE-B-M both contemplate (1) that certain portions of the property included in Mitigation Parcel A and Mitigation Parcel B as set forth in the Original Declaration would be released from the Original Declaration by amendment to the legal descriptions of said Mitigation Parcel A and Mitigation Parcel B and (2) that additional mitigation parcels would be created in replacement thereof;

WHEREAS, the Declarants have executed and delivered a Declaration of Covenants and Restrictions of even date herewith creating the two additional mitigation parcels (designated as "Mitigation Parcel A-1" and "Mitigation Parcel D," both as shown on Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, revised April 5, 2006, and to be recorded in the Cumberland County Registry of Deeds;

WHEREAS, Declarant Cedars Nursing Care Center, Inc., holds title to Mitigation Parcel A as described in the Original Declaration by virtue of a certain real property situated in Portland, Maine, described in a deed from Sidney J. Haijar to The Jewish Home for the Aged, dated April 24, 1987, and recorded in Book 7732, Page 282 at the Cumberland County Registry of Deeds and to certain real property situated in Portland, Maine, described in a deed from JHA Services, Inc., to Cedars Nursing Care Center, Inc., dated March 27, 1988, and recorded in Book 13696, Page 315 at the Cumberland County Registry of Deeds, all of which real property is subject to a certain Loan Agreement and Mortgage given by Cedars Nursing Care Center, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of May 1, 1993, recorded in the Cumberland County Registry of Deeds in Book 10717, Page 311;

WHEREAS, Declarant JHA Properties, Inc., holds title to Mitigation Parcel B as described in the Original Declaration by virtue of a deed from JHA Services, Inc., to JHA Properties, Inc., dated March 27, 1998, recorded in Book 13696, Page 317 at the Cumberland County Registry of Deeds, which real property is subject to a certain Loan Agreement and Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of March 1, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 1 and as amended and supplemented by a Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of October 9, 1998, and recorded in the Cumberland County Registry of Deeds in Book 14221, Page 222;

WHEREAS, the New Order permits the Declarant to fill 16,018 square feet of forested freshwater wetlands and for the after-the-fact filling of 1,000 square feet of forested freshwater wetlands in order to construct an Independent Living Facility, subject to the conditions set forth therein;

WHEREAS, pursuant to the Natural Resources Protection Act, Title 38 M.R.S.A. Section 480-A et seq. and Chapter 310 of regulations promulgated by the MDEP (the "Wetland Protection Rules") and in satisfaction of the New Order, Declarants desire by this Amendment to Declaration of Covenants and Restrictions, to amend the description of Mitigation Parcel A and Mitigation Parcel B as described in the Original Declaration as more particularly set forth herein and to confirm their agreement that the Original Declaration, as so amended, may be enforced by the MDEP;

NOW, THEREFORE, Cedars Nursing Care Center, Inc., and JHA Properties, Inc., as Declarants, and MDEP, hereby covenant and agree as follows:

1. Declarants and the MDEP hereby AMEND the description of Mitigation Parcel A to read as set forth on Exhibit I attached hereto and made a part hereof and hereby RELEASE from the Original Declaration the following released area from said Mitigation Parcel A as described in the Original Declaration:

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point lying N 40°48'48" E a distance of One Hundred Fifty-Three and 38/100 (153.38) feet from the southerly corner of Mitigation Parcel A as described in a deed recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75; **thence, from said point of beginning**, N 38°27'46" W a distance of Eight-Four and 24/100 (84.24) feet to a point; thence N 55°39'58" E a distance of Six and 40/100 (6.40) feet to a point; thence S 83°16'49" E a distance of Thirty-Three and 51/100 (33.51) feet to a point; thence S 58°44'00" E a distance of Eight and 31/100 (8.31) feet to a point; thence S 34°11'12" E a distance of Twenty-Six and 44/100 (26.44) feet to a point; thence S 12°22'27" E a distance of Twenty-Four and 54/100 (24.54) feet to a point; thence S 40°48'48" W a distance Twenty and 47/100 (20.47) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described released easement area contains 2,121 square feet and lies over a portion of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282, and is a portion of Mitigation Parcel A as described in a Declaration of Covenants and Restrictions recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75.

2. Declarants and MDEP hereby AMEND the description of Mitigation Parcel B to read as set forth on **Exhibit II** attached hereto and made a part hereof and hereby RELEASE from the Original Declaration the following the following released area from said Mitigation Parcel B as described in the Original Declaration:

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point lying the following two courses and distances from said Ocean Avenue and the easterly corner of land now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282: thence N 33°52'30" W by said land of Cedars Nursing Care Center, Inc. a distance of One Hundred Sixty-Four and 46/100 (164.46) feet to a 5/8" capped iron rod ("PLS 509") and land now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in said Registry in Book 13696, Page 315; thence N 52°41'19" W by said land of Cedars Nursing Care Center, Inc. a distance of Fifty-Three and 55/100 (53.55) feet to said point of beginning; **thence, from said point of beginning**, S 35°08'49" W a distance of Nineteen and 01/100 (19.01) feet to a point; thence S 62°52'24" E a distance of Sixteen and 66/100 (16.66) feet to a point; thence S 10°12'08" E a distance of Twenty-Three and 48/100 (23.48) feet to a point; thence N 66°31'23" W a distance of Twenty-One and 47/100 (21.47) feet to a point; thence N 25°23'48" E a distance of Seventeen and 68/100 (17.68) feet to a point; thence N 64°36'12" W a distance of Eighty-Two and 00/100 (82.00) feet

to a point; thence S 25°23'48" W a distance of Eighteen and 39/100 (18.39) feet to a point; thence N 89°17'25" W a distance of Thirty-Six and 41/100 (36.41) feet to a point; thence N 19°30'34" E a distance of Sixty-Eight and 29/100 (68.29) feet to a point; thence N 01°46'29" W a distance of Thirty-Four and 09/100 (34.09) feet to a point; thence N 46°36'49" E a distance of Eighty-Seven and 87/100 (87.87) feet to a point; thence S 82°01'39" E a distance of Seventeen and 23/100 (17.23) feet to a point; thence S 33°39'21" E a distance of Twenty-Three and 77/100 (23.77) feet to a point; thence S 03°35'26" W a distance of Sixty-Three and 84/100 (63.84) feet to a point; thence S 67°26'24" E a distance of Sixty and 83/100 (60.83) feet to a point; thence S 24°08'41" E a distance of Thirty and 34/100 (30.34) feet to a point; thence N 83°22'48" W a distance of Eleven and 21/100 (11.21) feet to a point; thence N 78°14'02" W a distance of Twenty-Eight and 91/100 (28.91) feet to a point; thence S 35°08'49" W a distance of Thirty-Two and 24/100 (32.24) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described released easement area contains 15,956 square feet and lies over portions of property now or formerly of Cedars Nursing Care Center, Inc. as described in deeds recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282 and Book 13696, Page 315; also lying over a portion of property now or formerly of JHA Properties, Inc. as described in a deed recorded in said Registry in Book 13696, Page 317. The above-described released easement area is a portion of Mitigation Parcel B as described in a Declaration of Covenants and Restrictions recorded in said Registry in Book 13709, Page 75.

Declarants hereby confirm all other covenants and restrictions in the Original Declaration

Any provision contained in the Original Declaration or in this Amendment to Declaration of Covenants and Restrictions may be amended or revoked only by the recording of a written instrument or instruments specifying the amendment or the revocation signed by the owner or owners of all of the Property subject thereto and by the MDEP.

Each provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions, and any agreement, promise, covenant and undertaking to comply with each provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions, shall be deemed a covenant running with the land as a burden and upon the title to the property subject thereto.

Invalidity or unenforceability of any provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions in whole or in part shall not affect the validity of enforceability of any other provision or any valid and enforceable part of a provision of the Original Declaration as amended by this Amendment to Declaration of Covenants and Restrictions.

This Amendment to Declaration of Covenants and Restrictions shall be governed by and interpreted in accordance with the laws of the State of Maine.

IN WITNESS WHEREOF, each of the Declarants has caused this Amendment to Declaration of Covenants to be signed and sealed in its corporate name by its duly authorized officer as of the day and year first above written.

CEDARS NURSING CARE CENTER, INC.

By: Kathryn J. Callnan
Kathryn J. Callnan
Its President

JHA PROPERTIES, INC.

By: Kathryn J. Callnan
Kathryn J. Callnan
Its President

STATE OF MAINE

Cumberland, ss.

April 24, 2006

Personally appeared before me the above named Kathryn J. Callnan, President of Cedars Nursing Care Center, Inc., and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said non-profit corporation.

Sylvia Gill

Notary Public

Print Name: Sylvia Gill

Commission Expires: 10/21/2006

STATE OF MAINE

Cumberland, ss.

April 24, 2006

Personally appeared before me the above named Kathryn J. Callnan, President of JHA Properties, Inc., and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said non-profit corporation.

Sylvia Gill

Notary Public

Print Name: Sylvia Gill

Commission Expires: 10/21/2006

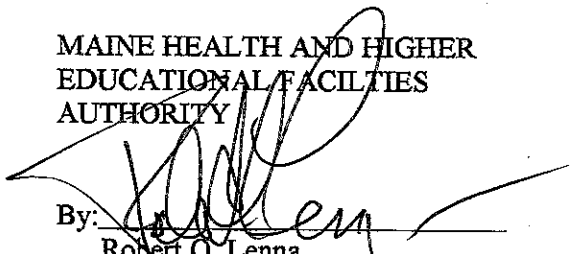
MAINE HEALTH AND HIGHER EDUCATIONAL FACILITIES AUTHORITY (the "Authority") joins herein for purposes of

(1) consenting to the execution and delivery of the foregoing Amendment to Declaration of Covenants and Restrictions, and

(2) agreeing, for itself and its successors and assigns, that the mortgage lien and other rights of the Authority under (a) that certain Loan Agreement and Mortgage, given by Cedars Nursing Care Center, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of May 1, 1993, recorded in the Cumberland County Registry of Deeds in Book 10717, Page 311 and/or (b) that certain Loan Agreement and Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of March 1, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 1, and as amended and supplemented by a Mortgage given by JHA Properties, Inc., to the Maine Health and Higher Educational Facilities Authority, dated as of October 9, 1998, and recorded in the Cumberland County Registry of Deeds in Book 14221, Page 222, shall be subject and subordinate to the Declaration of Covenants and Restrictions, dated March 27, 1998, recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75, as amended by the foregoing Amendment to Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, Maine Health and Higher Educational Facilities Authority has caused this Amendment to Declaration of Covenants and Restrictions to be signed and sealed in its corporate name by its duly authorized officer as of the day and year first above written.

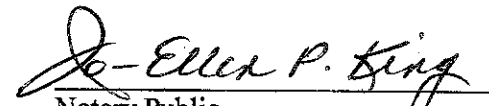
MAINE HEALTH AND HIGHER
EDUCATIONAL FACILITIES
AUTHORITY

By: 
Robert O. Lenna
Its Executive Director

STATE OF MAINE
Kennebec, ss.

JUNE 29th, 2006

Personally appeared before me the above named Robert O. Lenna, Executive Director of Maine Health and Higher Educational Facilities Authority and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Maine Health and Higher Educational Facilities Authority.


Notary Public

Print Name: JO-ELLEN P. KING

Commission Expires: OCTOBER 27, 2011

1110838.1

Jo-Ellen P. King
Notary Public, Maine
My Commission Expires
October 27, 2011

THE STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION HEREBY
JOINS IN THE RELEASE AND AMENDMENT AS SET FORTH ABOVE AND HEREBY
ACKNOWLEDGES THE FOREGOING:

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:

Name:

Title:

ANDREW FISK
BUREAU DIRECTOR

STATE OF MAINE

Kennebec, ss.

May 26, 2006

Personally appeared before me the above named Andrew Fisk, Director
of the Maine Department of Environmental Protection, and acknowledged the foregoing
instrument to be his/her free act and deed in his/her said capacity and the free act and deed of the
Maine Department of Environmental Protection.

Lynn Boutilier
Notary Public Lynn Boutilier
Print Name:
Commission Expires: 4/10/11

EXHIBIT I

DESCRIPTION OF MITIGATION PARCEL A - REVISED

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point being the southerly corner of Mitigation Parcel A as described in a deed recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75;

Thence N 57°43'44" W a distance of Twenty-Four and 95/100 (24.95) feet to a point;

Thence N 20°00'29" E a distance of Sixty-Nine and 06/100 (69.06) feet to a point;

Thence N 88°05'33" W a distance of Thirty-Nine and 67/100 (39.67) feet to a point;

Thence N 52°36'18" W a distance of Thirty-Two and 69/100 (32.69) feet to a point;

Thence N 25°47'25" W a distance of Twenty-Nine and 33/100 (29.33) feet to a point;

Thence N 60°36'26" E a distance of Sixteen and 83/100 (16.83) feet to a point;

Thence N 68°16'52" E a distance of One Hundred and 11/100 (100.11) feet to a point;

Thence N 55°39'58" E a distance of Nineteen and 41/100 (19.41) feet to a point;

Thence S 38°27'46" E a distance of Eighty-Four and 24/100 (84.24) feet to a point;

Thence S 40°48'48" W a distance of One Hundred Fifty-Three and 38/100 (153.38) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described easement contains 14,972 square feet and lies over a portion of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282. The above described easement is a portion of Mitigation Parcel A as described in a Declaration of Covenants and Restrictions recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75.

Reference is made to "Mitigation Parcel A—Revised" as shown on the Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, to be recorded in the Cumberland County Registry of Deeds, for a depiction of Mitigation Parcel A as revised by this Amendment.

EXHIBIT I

DESCRIPTION OF MITIGATION PARCEL A - REVISED

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point being the southerly corner of Mitigation Parcel A as described in a deed recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75;

Thence N 57°43'44" W a distance of Twenty-Four and 95/100 (24.95) feet to a point;

Thence N 20°00'29" E a distance of Sixty-Nine and 06/100 (69.06) feet to a point;

Thence N 88°05'33" W a distance of Thirty-Nine and 67/100 (39.67) feet to a point;

Thence N 52°36'18" W a distance of Thirty-Two and 69/100 (32.69) feet to a point;

Thence N 25°47'25" W a distance of Twenty-Nine and 33/100 (29.33) feet to a point;

Thence N 60°36'26" E a distance of Sixteen and 83/100 (16.83) feet to a point;

Thence N 68°16'52" E a distance of One Hundred and 11/100 (100.11) feet to a point;

Thence N 55°39'58" E a distance of Nineteen and 41/100 (19.41) feet to a point;

Thence S 38°27'46" E a distance of Eighty-Four and 24/100 (84.24) feet to a point;

Thence S 40°48'48" W a distance of One Hundred Fifty-Three and 38/100 (153.38) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described easement contains 14,972 square feet and lies over a portion of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282. The above described easement is a portion of Mitigation Parcel A as described in a Declaration of Covenants and Restrictions recorded in the Cumberland County Registry of Deeds in Book 13709, Page 75.

Reference is made to "Mitigation Parcel A—Revised" as shown on the Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, to be recorded in the Cumberland County Registry of Deeds, for a depiction of Mitigation Parcel A as revised by this Amendment.

EXHIBIT II

DESCRIPTION OF MITIGATION PARCEL B - REVISED

A certain easement located northwesterly of, but not adjacent to, Ocean Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point, said point lying N 33°52'30" W by land now or formerly of Cedars Nursing Care Center, Inc. as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282, a distance of One Hundred Thirty-Two and 37/100 (132.37) feet from said Ocean Avenue and the easterly corner of said land of Cedars Nursing Care Center, Inc.;

Thence S 58°09'19" W a distance of Eleven and 06/100 (11.06) feet to a point;

Thence N 66°31'23" W a distance of Forty-Six and 92/100 (46.92) feet to a point;

Thence N 10°12'08" W a distance of Twenty-Three and 48/100 (23.48) feet to a point;

Thence N 62°52'24" W a distance of Sixteen and 66/100 (16.66) feet to a point;

Thence N 35°08'49" E a distance of Fifty-One and 25/100 (51.25) feet to a point;

Thence S 78°14'02" E a distance of Twenty-Eight and 91/100 (28.91) feet to a point;

Thence S 83°22'48" E a distance of Eleven and 21/100 (11.21) feet to a point;

Thence S 24°08'41" E a distance of Forty-One and 40/100 (41.40) feet to a point;

Thence S 03°56'26" E a distance of Thirty and 30/100 (30.30) feet to a point;

Thence S 58°09'19" W a distance of Nineteen and 47/100 (19.47) feet to the point of beginning.

Bearings are referenced to magnetic north 1924.

The above described easement contains 5,277 square feet and lies over portions of property now or formerly of Cedars Nursing Care Center, Inc. as described in a deeds recorded in the Cumberland County Registry of Deeds in Book 7732, Page 282 and book 13696, Page 315; also lying over a portion of property now or formerly of JHA Properties, Inc. as described in a deed recorded in said Registry in Book 13696, Page 317. The above described easement is a portion of Mitigation Parcel B as described in a Declaration of Covenants and Restrictions recorded in said Registry in Book 13709, Page 75.

Reference is made to "Mitigation Parcel B—Revised" as shown on the Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey prepared by Titcomb Associates, dated September 8, 2005, to be recorded in the Cumberland County Registry of Deeds, for a depiction of Mitigation Parcel B as revised by this Amendment.

Received
Recorded Register of Deeds
Jun 30:2006 01:31:55P
Cumberland County
John B O'Brien

DECLARATION OF CONDOMINIUM

OF

CEDARS CONDOMINIUMS

Portland, Maine

June 30, 2006

DECLARATION OF CONDOMINIUM
OF
CEDARS CONDOMINIUMS
PORTLAND, MAINE

THIS DECLARATION OF CONDOMINIUM is made this 30th day of June 2006, by and between JHA Properties, Inc. a Maine non-profit corporation, its successors and assigns ("JHA Properties"), and Cedars Nursing Care Center, Inc., a Maine non-profit corporation, its successors and assigns ("Cedars"; together with JHA Properties, the "Declarants"), each with a place of business at 630 Ocean Avenue, Portland, Maine 04103, as the owners in fee simple of the Real Estate (as hereinafter defined).

ARTICLE I
SUBMISSION

Section 1.1. Property. Declarants hereby submit the real estate described in Exhibit A attached hereto and made a part hereof (the "Real Estate") situated in the City of Portland, County of Cumberland and State of Maine, together with and subject to all easements, rights and appurtenances thereto belonging and the Buildings (as hereinafter defined) thereon (collectively, the "Property") to the provisions of Chapter 31 of Title 33 of the Maine Revised Statutes Annotated, as the same may be amended from time to time, known as the Maine Condominium Act (the "Act") and hereby creates with respect to the Property a condominium to be known as "Cedars Condominiums" (the "Condominium"). The Condominium consists of the land described in Exhibit A and those Units (as hereinafter defined) listed in Exhibit B, attached hereto and made a part hereof, and depicted on the Plat (as hereinafter defined).

The submission of the Real Estate to the Condominium shall create three (3) Condominium Units, as more particularly described herein, which upon recording of the Declaration shall be owned in fee by the Declarants as follows:

(a) Unit No. 1 shall be owned in fee by Cedars, its successors and assigns, and JHA Properties, for itself and its successors and assigns, hereby **grants and releases** to Cedars, its successors and assigns all right, title and interest JHA Properties may have in and to Unit No.1 and the development rights associated therewith.

(b) Unit No. 2 shall be owned in fee by Cedars, its successors and assigns, and JHA Properties, its successors and assigns, as tenants in common, in the following percentages:

- (i) Cedars 33.6% ("Cedars' Tenancy-in-Common Interest"); and
- (ii) JHA Properties 66.4% ("JHA Properties' Tenancy-in-Common Interest").

JHA Properties, for itself and its successors and assigns, hereby **grants and releases** to Cedars, its successors and assigns all right, title and interest JHA Properties may have in and to Cedars' Tenancy-in-Common Interest in Unit No.2 and the development rights associated therewith. Cedars, for itself and its successors and assigns, hereby **grants and releases** to JHA Properties, its successors and assigns all right, title and interest Cedars may have in and to JHA Properties' Tenancy-in-Common Interest in Unit No.2 and the development rights associated therewith.

(c) Unit No. 3 shall be owned in fee by JHA Properties, its successors and assigns, and Cedars, for itself and its successors and assigns, hereby **grants and releases** to JHA Properties, its successors and assigns all right, title and interest Cedars may have in and to Unit No.3 and any development rights associated therewith.

(d) In consideration of the rights and easements created under this Declaration each of the Declarants, for itself and its successors and assigns, hereby **grants and releases** to the other all right, title and interest it may have in and to the following easements of record with respect to the Real Estate:

(i) Utility and Access Easement described as Parcel B in easement deed from Cedars Nursing Care Center, Inc., to JHA Services, Inc., dated May 25, 1990, and recorded in the Cumberland County Registry of Deeds, Book 9188, Page 115, as amended and modified Short Form Quitclaim Deed from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 17, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 319, and by Easement Modification, between JHA Services, Inc. and Cedars Nursing Care Center, Inc., dated April 1, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13708, Page 305 (said deed dated May 25, 1990, as so modified being the "Granting Deed");

3 ref

(ii) Emergency Access Road Easement described as Parcel C in the Granting Deed;

(iii) Parking Easement, Utility and Access Easement and Loop Road Easement retained as Items 1, 2 and 3 of Parcel C in the Granting Deed;

(iv) Access Easement in easement deed from JHA Properties, Inc., to Cedars Nursing Care Center, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 321;

1 reference

(v) Access Easement in easement from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 325; and

reference

(v) Agreement and Reciprocal Easement Deed, between Cedars Nursing Care Center, Inc., and JHA Properties, Inc., dated as of March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 331.

reference

Section 1.2. Maximum Number of Units. The maximum number of Units the Declarants reserve the right to create is three (3).

Section 1.3. Address of Condominium. The address of the Condominium is:

Cedars Condominiums
630 Ocean Avenue
Portland, Maine 04103

ARTICLE 2 DEFINITIONS

Section 2.1. Terms Defined in the Act. Capitalized terms not otherwise defined in this Declaration or in the Plat, shall have the meanings specified or used in the Act.

Section 2.2. Terms Specifically Defined in this Declaration. In addition to the terms defined above, the following terms shall have the following meanings in this Declaration, the Bylaws, and the Plat:

- (a) "Act" has the meaning set forth in Section 1.1.
- (b) "Association" means the Unit owners' association of the Condominium, which shall be known as the Cedars Condominiums Owners Association.
- (c) "Budget" has the meaning set forth in Section 13.1(a).
- (d) "Buildings" (or in the singular, a "Building") means any residential, commercial, long term care, service or recreational structure or other improvement now existing or hereafter constructed on the Real Estate.
- (e) "Bylaws" means the document having that name and providing for the governance of the Association, pursuant to Section 1603-106 of the Act, as such document may be amended from time to time.
- (f) "Cedars" has the meaning set forth in introductory paragraph of this Declaration.
- (g) "Cedars' Tenancy-in-Common Interest" has the meaning set forth in Section 1.1(b).
- (h) "Common Elements" (or in the singular, a "Common Element") means those parts of the Property either described in the Act as being common elements or described in this Declaration or in the Plat as being common elements.
- (i) "Common Expenses" means expenditures made by or financial liabilities of the Association together with any allocations to reserves.

- (j) "Condominium" means the condominium described in Section 1.1.
- (k) "Condominium Documents" means the Declaration, the Plat, Bylaws and Rules and Regulations.
- (l) "Declarants" has the meaning set forth in introductory paragraph of this Declaration.
- (m) "Declaration" means this document, as the same may be amended from time to time.
- (n) "Development Rights" means those rights, if any, which the Declarants have reserved to themselves as set forth in Article 14 and elsewhere in this Declaration.
- (o) "Eligible Mortgage Holder" means the holder of a recorded first mortgage on a Unit which has requested in writing that the Association notify it of actions by the Association upon which such mortgage holders are entitled to vote or whose consent is required under this Declaration.
- (p) "Executive Board" means the executive board of the Association.
- (q) "JHA Properties" has the meaning set forth in introductory paragraph of this Declaration.
- (r) "JHA Properties' Tenancy-in-Common Interest" has the meaning set forth in Section 1.1(b).
- (s) "Identifying Number" means the number assigned to a Unit in the Plat.
- (t) "Insurance Trust Agreement" means that certain agreement, if any, between the Association and the Insurance Trustee providing for the management and disbursement of insurance proceeds in accordance with Section 9.2 hereof.
- (u) "Insurance Trustee" means that certain entity responsible for the management and disbursement of insurance proceeds pursuant to the Insurance Trust Agreement, if any.
- (v) "Limited Common Elements" (or in the singular, a "Limited Common Element") means those parts of the Property either described in the Act as being limited common elements or described herein or in the Plat as being limited common elements.
- (w) "Monthly Assessment" means the Unit owner's share of the anticipated Common Expenses, allocated by Unit, for each month of the Association's fiscal year as reflected in the budget adopted by the Executive Board for such year.

(x) "Mortgagee" means the holder of any recorded first mortgage encumbering one or more of the Units.

(y) "Percentage Interest" means the undivided interest in the Common Elements appurtenant to a Unit, as set forth on Exhibit B attached hereto, as the same may be amended from time to time.

(z) "Plat" means the Cedars Condominiums Recording Plat/Condominium Plan/ALTA/ASCM/Land Title Survey, made for JHA Properties, Inc., & Cedars Nursing Care Center, Inc., JHA Assisted Living, Inc., prepared by Titcomb Associates, dated September 8, 2005, and revised April 5, 2006, recorded in the Cumberland County Registry of Deeds in Plan Book 206 at Page 430 as the same may be amended from time to time, reduced photocopies of which are attached hereto as Exhibit C.

(aa) "Property" has the meaning set forth in Section 1.1.

(bb) "Real Estate" has the meaning set forth in Section 1.1.

(cc) "Record" means to record in the Cumberland County Registry of Deeds.

(dd) "Rules and Regulations" means such rules and regulations as are promulgated by the Declarants or the Executive Board from time to time with respect to the use of all or any portion of the Property.

(ee) "Special Assessment" means a Unit owner's share of any assessment made by the Executive Board in addition to the Monthly Assessment.

(ff) "Special Declarant Rights" means those rights which the Declarants have reserved to themselves as set forth in Article 14 and elsewhere in this Declaration.

(gg) "Unit" means a physical portion of the Condominium created by this Declaration or any amendment thereto and designated for separate ownership or occupancy, the boundaries of which are described in Article 3 or in any amendment creating such Unit.

Section 2.3. Provisions of the Act. The provisions of the Act shall apply to and govern the operation and governance of the Condominium, except to the extent that contrary provisions, not prohibited by the Act, are contained in one or more of the Condominium Documents.

ARTICLE 3 UNIT BOUNDARIES AND MAINTENANCE RESPONSIBILITIES

Section 3.1. Unit Boundaries.

(a) The boundary lines of each Unit are formed by the following planes:

(1) the upper boundary shall be a horizontal plane at an elevation of one hundred and thirty-five feet (135) above sea level (determined by reference to City of Portland datum: masonry nail in Utility Pole #82 located on Ocean Avenue (elevation=70.90) as shown on the Plat),

(2) the lower boundary shall be a horizontal plane at an elevation of forty-five (45) feet above sea level; and

(3) the vertical boundaries shall be perpendicular planes located three (3.00) feet outside the perimeter of the footprint of the building located or to be located within said Unit as shown on the Plat, each projected (A) horizontally to meet the projection of the adjacent vertical planes and (B) downward and upward to meet the upper and lower horizontal boundaries; except that, at those locations where the outside surface of an exterior wall of a Building in one Unit is adjacent to the outside surface of an exterior wall of a Building in another Unit, the vertical boundary of each Unit shall be a vertical plane that is equidistant between the outside of the finish material forming the exterior walls of the Buildings in question, except that in the case of Unit No. 1, Unit No. 1 shall also include:

(i) The enclosed triangular structure on the first floor at the intersection of the north-facing exterior surfaces of the two Building wings at the north end of the Building in Unit No. 1, one wing that extends in a northwesterly direction and the other wing that extends in a northeasterly direction;

(ii) The enclosed triangular structure on the first floor at the intersection of the south-facing exterior surfaces of the two Building wings at the south end of the Building in Unit No. 1, one wing that extends in a southwesterly direction and the other wing that extends in a southeasterly direction; and

(iii) The enclosed vestibule at the entrance of Unit No. 1 on the east side of the Building in Unit No. 1.

NOTE: Although the foundations of each Building will be located as shown on the Plat, the vertical boundaries for each Unit described above are located outside of the perimeter of such foundations in order to accommodate roof eaves and overhangs and other building features that extend beyond such foundation perimeter.

(b) Each Unit consists of all portions of any Building that is located within the aforesaid boundary lines, except the air space displaced Common Elements extending into or within such Unit which serve other Unit(s) and/or the Common Elements, including without limitation chutes, flues, chases, ducts, wires, conduits and pipe runs as described in clause (a)(3) of this section. The finish material, such as plaster or drywall, and furring around chutes, flues, chases, ducts, conduits, pipe runs and similar structures containing wires, vents, pipes, utilities or services that serve another Unit or Units and/or the Common Elements, the Unit to include the thickness of such finish material around chutes, flues, chases, ducts, conduits, pipe runs and

similar structures but not the cavity within such wires, vents, pipes, utilities or services are located.

- (c) Each Unit's Identifying Number is shown on the Plat.

Section 3.2. Relocation of Unit Boundaries; Subdivision of Unit. The owners of any Unit shall be permitted to (i) relocate boundaries between Units or (ii) subdivide a Unit in accordance with the procedures for an amendment of this Declaration as set forth in Article 16 below.

Section 3.3. Maintenance Responsibilities.

(a) The Association, through the Executive Board and as determined by the Unit owners, shall be responsible for (i) maintenance, repair and replacement of the Common Elements, but excluding the Limited Common Elements, and (ii) maintenance, repair and replacements as may be required for the functioning of or for the bringing of utilities, such as water, gas, electricity and sewer to all of the Units, all of which maintenance, repair and replacement shall be furnished by the Association as part of the Common Expenses.

(b) The Association, through the Executive Board and as determined by the Unit owners, shall be responsible for maintenance, repair and replacement of the Limited Common Elements at the cost and expense of the owners of the Unit or Units to which such Limited Common Elements are allocated.

(c) If damage is caused to (i) the Common Elements or (ii) any other part of the Condominium, in each case by any Unit owner, or guests, tenants, or invitees of such Unit owner for which maintenance, repairs and replacements shall be required that would otherwise be a Common Expense, such Unit owner shall pay for such damage and such maintenance, repairs and replacement as may be determined necessary or advisable by the Association. Each Unit owner shall be responsible for the cleanliness, including, but not limited to, ice and snow removal, of any Limited Common Element allocated to such Unit owner's Unit. In addition to the maintenance, repair and replacement of the Common Elements, the Association, through the Executive Board and upon the request of the Unit owners, shall arrange for or provide to each Unit owner trash and garbage removal service on a regular basis. The Executive Board, in its discretion, may provide the maintenance and other services described in this Section 3.2(a) either through its own employees or through independent contractors or both. The cost of the provision of such services shall be a Common Expense.

(d) Each Unit owner is responsible for the maintenance, repair and replacement of such Unit owner's Unit, including, without limitation, exterior glass windows, roofs, skylights, garage doors and other doors included within the Unit. Each Unit owner shall afford to the Association, and other Unit owners, and to their agents and employees, access through such Unit owner's Unit reasonably necessary for the maintenance, repair and replacement of the Common Elements and the shared Limited Common Elements.

(e) Charges for electric, sewer, water service, telephone and cable television service will be separately metered and each Unit owner will be responsible for the cost of such services furnished to such owner's Unit. Utilities that are not separately metered or billed by the respective utility companies and that are used by all of the Units shall be treated as part of the Common Expenses. Electricity for lighting of the Common Elements may be provided by the Association as part of the Common Expenses.

ARTICLE 4
DESCRIPTION AND ALLOCATION OF COMMON ELEMENTS AND
LIMITED COMMON ELEMENTS

Section 4.1. Description of Common Elements. Common Elements shall include:

(a) Within Unit Boundaries. The following portions of any Building within the boundaries of a Unit that are not Limited Common Elements: (i) the portion of any chute, flue, duct, wire, conduit, bearing wall, bearing column or any other fixture within the designated boundaries of a Unit that serve, in whole or in part, another Unit or Units and/or the Common Elements, (ii) all driveways on the Property providing access to and from any public way, (iii) those parking areas not designated as Limited Common Elements on the Plat, (iv) any signage not physically attached to a Unit; (v) those portions identified and designated as Common Elements on the Plat, in each case including, by way of description but not limitation, and, if applicable, within the Units' boundaries to the extent that they are constructed:

(b) Land. All lands submitted to the Condominium as described herein, except land (i) directly under a Unit, which land shall be a Limited Common Element allocated to such Unit, and (ii) other Limited Common Elements, all subject to the easements set forth in Article 6 of this Declaration.

(c) Improvements. All improved surfaces, drives, driveways, curbs, sidewalks and parking spaces that are not Limited Common Elements, subject to the easements and provisions set forth in Article 6 of this Declaration.

(d) Ornamentals, Drainage System and Utilities. Lawn areas, drainage systems located on the Property, shrubbery, and waterways, and all conduits and utility lines over, on or under the Land that are not Limited Common Elements, subject to the easements and provisions set forth in Article 6 of this Declaration.

(e) Utilities. Connections for gas, electricity, light, telephone and water not owned by the public utility or other agencies providing such services, provided that any portion of such connections that serves only one or two of the Units shall be a Limited Common Element allocated with the Unit or Units so served.

(f) Lighting. Any exterior lighting or other facilities necessary to the upkeep and safety of the grounds.

(g) After-Constructed Improvements. All other improvements that may be constructed on the property except those improvements that are part of a Unit or a Limited Common Element.

(h) Certain Other Buildings and Improvements. The so-called "White House" located near Ocean Avenue and northeasterly of the entrance drive to the Condominium from Ocean avenue shall be a Common Element.

(i) Other Elements. All other elements of the Condominium rationally of common use and necessary to the existence, upkeep and safety thereof and, in general, all other devices or installations existing for common use that are not Limited Common Elements.

Section 4.2. Description of Limited Common Elements. Limited Common Elements shall include (i) at those locations where the outside surface of an exterior wall of a Building in one Unit is adjacent to the outside surface of an exterior wall of a Building in another Unit, any expansion joints connecting such exterior walls, and any expansion joints connecting the roofs of such Units, all of which shall be a Limited Common Element associated with both of such Units; (ii) the portion of any chute, flue, chase, duct, wire, conduit, bearing wall, bearing column or any other fixture lying within the designated boundaries of a Unit that serves less than all of the Units, which shall be Limited Common Elements associated with the Unit or Units so served, (iii) the portion of any connections for gas, electricity, light, telephone and water not owned by the public utility or other agencies providing such services that serves only one or two of the Units, which shall be a Limited Common Element associated with the Unit or Units so served or (iv) any structure, improvement or other property that is identified and designated as Limited Common Elements on the Plat, including, without limitation, the garages that are assigned as Limited Common Elements to Unit 3. Those portions of the Limited Common Elements serving only the Unit adjacent to such Limited Common Element are Limited Common Elements allocated only to the Unit which they serve. This allocation shall not be changed without the consent of the Unit owners served or benefited by such Limited Common Elements.

Section 4.3. [Intentionally Omitted.]

Section 4.4. [Intentionally Omitted.]

Section 4.5. Reserved Common Elements. The Executive Board shall have the power in its discretion from time to time to grant revocable licenses in designated Common Elements to the Association or to any Unit owners and to establish a reasonable charge to such Unit owners for the use and maintenance thereof. Such designation by the Executive Board shall not be construed as a sale or disposition of the Common Elements.

Section 4.6. Alteration of Common Elements by the Declarant. The Declarants reserve the right to modify, alter, remove or improve portions of the Common Elements, including without limitation, any equipment, fixtures and appurtenances, when in the Declarants' judgment it is necessary or desirable to do so, until the completion of all Units. Such rights do not include rights to add or remove real estate not deemed to be fixtures.

Section 4.7. Allocation of Common Elements. Each Unit owner shall acquire, as an appurtenance to each Unit, its Percentage Interest in the Common Elements as set forth on Exhibit B attached hereto, as the same may be amended from time to time. The said Percentage Interest shall not be divisible from the Unit to which it appertains and shall be deemed to be conveyed or encumbered with the Unit even though such interest is not expressly mentioned or described in the conveyance or other instrument. Except as otherwise permitted under the Act or this Declaration, the Percentage Interest of each Unit owner shall not be altered without the consent of all of the Unit owners expressed in an amendment to this Declaration duly recorded. Said Percentage Interests shall be used to allocate the division of proceeds, if any, resulting from any casualty, loss, eminent domain proceedings, common surplus, or from any other disposition of the Property.

Section 4.8. Allocation of Parking Spaces. The Declarant reserves the right, until the construction of all Units is completed, to allocate to particular Units as Limited Common Elements the parking spaces shown on the Plat that are not otherwise designated Limited Common Elements on said Plat. Such right shall be deemed a Development Right and shall be subject to the terms and conditions set forth in Article 14 of this Declaration. After the expiration of such Development Right pursuant to Article 14 of this Declaration, the Executive Board shall have the power in its discretion from time to time to so allocate those parking spaces.

ARTICLE 5

ALLOCATION OF PERCENTAGE INTERESTS IN COMMON EXPENSES AND VOTING RIGHTS

Section 5.1. Percentage Interests. Attached as Exhibit B hereto is a list of all Units by their Identifying Number and the Percentage Interest appurtenant to each Unit, together with an explanation of the formula by which such Percentage Interest is determined. All calculations on Exhibit B shall be conclusive and binding on all Unit owners, the Executive Board, the Association and any Mortgagees.

Section 5.2. Common Expenses. The liability allocated to each Unit for the Common Expense of the Condominium shall be the same percentage share as the Percentage Interest allocated to such Unit on Exhibit B.

Section 5.3. Allocation of Unit Owner's Voting Rights. Each Unit owner shall be entitled to one (1) vote for each Unit owned by such person to permit equality of voting power among the Units.

ARTICLE 6 EASEMENTS

Section 6.1. Utility Easements. The Units, Common Elements and Limited Common Elements shall be, and hereby are, made subject to easements in favor of the

Declarants, other Unit owners, appropriate utility and service companies, cable television companies and governmental agencies or authorities for such utility and service lines and equipment as may be necessary or desirable to serve any portion of the Property. The easements created by this Section 6.1 shall include, without limitation, rights of the Declarants, any Unit owner or the providing utility or service company, or governmental agency or authority to install, lay, maintain, repair, relocate and replace gas lines, pipes and conduits, water mains and pipes, sewer and drain lines, drainage ditches and pump stations, telephone wires and equipment, television equipment and facilities (cable or otherwise), electrical wires, conduits, and equipment and ducts and vents over, under, through, along and on the Units and Common Elements. Notwithstanding the foregoing provisions of this Section 6.1, any such easement through a Unit shall be located either in substantially the same location as such facilities or similar facilities existed at the time of the completion of the initial construction of the Buildings and other improvements within the affected Unit or so as not to materially interfere with the use or occupancy of such Buildings and other improvements by its occupants. With respect to any utility lines or equipment serving only the Condominium and located upon the Common Elements, the Executive Board shall have the right and power to assign the easement related to such Common Elements to any private or public utility company. The Executive Board shall also have the right and power to convey to any private or public utility company permits, licenses and easements over the Common Elements for the installation, maintenance, repair and replacement of utility poles, lines, wires and other equipment. In addition, the Executive Board shall have the right to grant permits, licenses and easements over the Common Elements for the building and maintenance of roads and for other purposes necessary for the proper operation of the Condominium.

Section 6.2. Maintenance of Surface Water Drainage. Declarants reserve for themselves and the Association an easement on, over and under those portions of the Common Elements not located within a Unit for the purpose of maintaining and/or correcting drainage of surface water in order to maintain reasonable standards of health, safety and appearance and to comply with and observe any conservation easement or declaration now or hereafter recorded with respect of the Property or any portion thereof. The easement created by this Section 6.2 expressly includes the right to cut any trees, bushes, or shrubbery, to grade the soil, or to take any other action reasonably determined to be necessary and otherwise in compliance with applicable standards of health, safety and appearance conservation easements or declarations. The Declarants or the Association, as the case may be, shall restore the affected property as closely to its original condition as is practicable.

Section 6.3. Common Elements Easements. The Common Elements (other than the Limited Common Elements) shall be, and hereby are, made subject to an easement in favor of the Unit owners and their invitees, employees, tenants and servants, the Association and the agents and employees of the Association for access, egress and ingress over, through and across each portion thereof, pursuant to such requirements and subject to such charges as the Executive Board may from time to time prescribe; *provided* that nothing contained herein shall create any access easement in favor of Unit owners with respect to such portions of the Common Elements that are not needed in order to gain access to one or more Units and as to which the Executive Board may from time to time determine it to be necessary or desirable to limit or control access

by Unit owners or the occupants of Units, or both, including, by way of illustration and not limitation, machinery and equipment rooms; *provided, further*, that every Unit owner shall have an unrestricted right of ingress and egress to such Unit owner's Unit.

Section 6.4. Declarant's Easements for Maintenance Repair and Renovation. The Units, Common Elements and Limited Common Elements are subject to an easement in favor of the Declarants for the purposes of construction, reconstruction, maintenance, repair, renovation, replacement or correction of the Common Elements or Limited Common Elements.

Section 6.5. Association's Easements for Maintenance, Repair and Renovation. The Units, Common Elements and the Limited Common Elements shall be and hereby are made subject to an easement in favor of the Association and the agents, employees and independent contractors thereof for the purpose of the inspection, upkeep, maintenance, repair and replacement of the Common Elements and the Limited Common Elements.

Section 6.6. Easements Burdening Common Elements and Limited Common Elements. The Common Elements and the Limited Common Elements shall be and hereby are made subject to the following easements in favor of the Units benefited:

(a) For the installation, repair, maintenance, use, removal and/or replacement of pipes, ducts, heating and air conditioning systems, electrical, telephone and other communication wiring and cables and all other utility lines and conduits which are part of or exclusively serve a single Unit and which pass across or through a portion of the Common Elements;

(b) For the installation, repair, maintenance, use, removal and/or replacement of overhead lighting fixtures, electrical receptacles and the like which are located in a portion of the ceiling, wall or floor adjacent to a Unit which is a part of the Common Elements; *provided that* the installation, repair, maintenance, use, removal or replacement of such fixtures, receptacles and the like does not unreasonably interfere with the common use of any part of the Common Elements or impair or structurally weaken any Building;

(c) For the maintenance of the encroachment of any lighting devices, outlets, exhaust fans, ventilation ducts, registers, grilles and similar fixtures which serve only one Unit but which encroach into any part of any Common Element or Limited Common Element; and

(d) For the construction of improvements upon Limited Common Elements as such construction may be approved in writing by the Executive Board. Each Unit owner shall be liable to the Association for any damage to the Common Elements as the result of such Unit owner's exercise of the easement rights described in this paragraph (e).

Section 6.7. Structural Support Easements. To the extent necessary, each Unit shall have an easement for structural support over every other Unit, the Common Elements and the Limited Common Elements, and each Unit and the Common Elements shall be subject to an

easement for structural support in favor of every other Unit, the Common Elements and the Limited Common Elements.

Section 6.8. Easements Burdening Units and Limited Common Elements. The Units and the Limited Common Elements are hereby made subject to the following easements:

(a) In favor of the Association and its agents, employees and independent contractors, (i) for inspection of the Units and Limited Common Elements in order to verify the performance by Unit owners of all items of maintenance and repair for which they are responsible, (ii) for inspection, maintenance, repair and replacement of the Common Elements or the Limited Common Elements situated in or accessible from such Units or Limited Common Elements or both, (iii) for correction of emergency conditions in one or more Units or Limited Common Elements, or both, or casualties to the Common Elements, the Limited Common Elements and/or the Units, and (iv) to do any other work reasonably necessary for the proper maintenance of the Condominium, it being understood and agreed that the Association and its agents, employees and independent contractors shall take reasonable steps to minimize any interference with a Unit owner's use of his Unit resulting from the Association's exercise of any rights it may have pursuant to this Section 6.8; and

(b) In favor of the Unit owner benefited thereby and the Association, and their respective agents, employees and independent contractors, for the installation, repair, maintenance, use, removal and/or replacement of pipes, ducts, electrical, telephone, telegraph or other communication systems and all other utility lines and conduits which are part of the Common Elements and which pass across or through a portion of one or more Units.

(c) In favor of the Unit owner or owners benefited thereby and the Association and their respective patients, residents, tenants, invitees, agents, employees and independent contractors to the full extent from time to time required in order that the Units and the Buildings conform with all applicable life safety and other governmental and licensing requirements (i) for egress from Unit No. 1 through adjacent first floor corridors and hallways of the so-called "Service Connector" portion of Unit No. 3 to exterior exits located in said "Service Connector"; (ii) for egress from Unit No. 2 through adjacent first floor corridors and hallways in Unit No. 1 to exterior exits located in Unit No. 1; (iii) for egress from the exterior court yard area enclosed by the Buildings in Unit No. 1, Unit No. 2 and Unit No. 3, through the first floor corridors and hallways in the "Service Connector" portion of Unit No. 3 to exterior exits located in said Service Connector; and (iv) for egress from any Unit through adjacent corridors and hallways in any other for purposes of providing access to exits or other life safety features now or hereafter required for compliance with applicable life safety and other governmental and licensing requirements.

(d) In favor of the Unit owners benefited thereby and the Association and their agents, employees and independent contractors, for the installation, repair, maintenance, use, removal and/or replacement of walls, doors, jambs and doorframes in any corridor providing passage from one Unit to another in order to regulate or restrict passage between the Units

through such corridor (a "Corridor Separation Structure"), *provided that* (i) the Association shall be required to install a Corridor Separation Structure only at the written request of the Unit owner and Mortgagee of at least one of the Units in question; (ii) the costs of design and installation of a Corridor Separation Structure shall be born by the Unit owner or Unit owners requesting such Corridor Separation Structure; (iii) a Corridor Separation Structure shall be designed, installed, maintained and operated so that the requirements of all applicable life safety and other governmental and licensing requirements are satisfied; (iv) each Corridor Separation Structure shall be a Limited Common Element with the costs of maintenance, operation, repair, replacement and removal thereof allocated to the Units in question; and (v) a Corridor Separation Structure shall be removed only at the written request of the Unit owners and Mortgagees of both of the Units in question.

Section 6.9. Easements for Encroachments. If construction, reconstruction, repair, shifting, settlement or other movement of any portion of the Condominium results either in the Common Elements encroaching on any Unit, or in any Unit encroaching on the Common Elements or on any other Unit, a valid easement shall exist during the period of the encroachment for the encroachment and for the maintenance thereof.

Section 6.10. Duration of Easements. All easements, rights and restrictions described and mentioned in this Declaration are easements appurtenant, running with the land and the Property, including by way of illustration but not limitation, the Units, the Common Elements and the Limited Common Elements, and (except as expressly may be otherwise provided herein or in the instrument creating the same) shall continue in full force and effect until the termination of this Declaration.

Section 6.11. Certain Other Easements. The Property is subject to, and benefited by, the following easements:

(a) Snow Plowing Easement given by Cedars Nursing Care Center, Inc. to the City of Portland, dated April 17, 1990, and recorded in the Cumberland County Registry of Deeds, Book 9260, Page 236;

(b) Utility Easements given by Cedars Nursing Care Center, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 7, 1990 and September 5, 1990, and recorded in the Cumberland County Registry of Deeds respectively in Book 9162, Page 206 and Book 9306, Page 219;

(c) Utility Easements given by JHA Properties, Inc. to Central Maine Power Company, dated July 26, 1990, and recorded in the Cumberland County Registry of Deeds, Book 14382, Pages 187 and 188;

(d) Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. dated March 27, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13709, Page 75, as amended by Amendment to Declaration of Covenants and Restrictions, among the Maine Department of Environmental Protection, Cedars

Nursing Care Center, Inc. and JHA Properties, Inc., dated June ___, 2006, to be recorded in the Cumberland County Registry of Deeds;

(e) Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc., dated June ___, 2006, to be recorded in the Cumberland County Registry of Deeds;

(f) Certificate of Variance Approval, dated February 6, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13595, Page 182;

ARTICLE 7 RESTRICTIONS ON USE, SALE AND LEASE OF UNITS

Section 7.1. Use. The following restrictions shall apply to the use of the Condominium:

(a) The Units shall be used as part of an integrated campus providing skilled nursing care, assisted living residences and independent living residences, and such other uses as shall be determined from time to time by the Association through the Executive Board.

(b) No Unit owner may obstruct the Common Elements in any way. No Unit owner may store anything in or on the Common Elements other than in or on any Common Element storage area without the prior written consent of the Executive Board.

(c) No Unit owner may carry on any practice, or permit any practice to be carried on, which unreasonably interferes with the quiet enjoyment of the occupants of any other Unit. The Property is to be maintained in a clean and sanitary condition, and no Unit owner may place any garbage, trash or rubbish anywhere in the Property other than in a Unit owner's own Unit and in or on such parts of the Common Elements as may be designated for such purpose by the Executive Board.

(d) No Unit shall be used, occupied or kept in a manner that in any way increases the fire insurance premiums for the Property without the prior written consent of the Executive Board.

(e) The Executive Board may from time to time promulgate reasonable Rules and Regulations, not in conflict with the provisions of this Declaration, concerning the use and enjoyment of the Property. Copies of the then current Rules and Regulations and any amendments thereto shall be furnished to all Unit owners by the Association promptly after the adoption of such Rules and Regulations and any amendments thereto.

(f) The owner of a Unit shall be responsible for maintaining such Unit in good order and repair, at the expense of such owner, including (but not limited to) cleaning and replacing glass panes in any window serving such Unit.

(g) The owner of a Unit shall be responsible for the cleanliness of any Limited Common Element serving such Unit, at the expense of such Unit owner.

(h) Without the prior written consent of the Executive Board, the owner of a Unit shall not alter in any way any portion of such Unit owner's Unit that is part of the exterior facade of the Units, including by way of example, but not by way of limitation, roofing materials or design, exterior doors, siding type and color, and windows.

Section 7.2. Sale and Lease of Units.

A Unit owner, including but not limited to any Declarant, may sell or lease such Unit owner's Unit at any time and from time to time, *provided* that each tenant and lease shall be subject to and be bound by all of the covenants, restrictions and conditions set forth in the Condominium Documents.

ARTICLE 8 RIGHTS OF MORTGAGE HOLDERS, INSURERS AND GUARANTORS

Section 8.1. Subject to Declaration. Whether or not it expressly so states, any mortgage constituting a lien against a Unit and an obligation secured thereby shall provide generally that the mortgage and the rights and obligations of the parties thereto shall be subject to the terms and conditions of the Act, the Declaration, the Plat and any Rules and Regulations.

Section 8.2. Rights of Eligible Mortgage Holders.

(a) The Association shall send reasonable prior written notice by prepaid United States mail to Eligible Mortgage Holders of the consideration by the Association of the following proposed actions:

- (1) The termination of the Condominium pursuant to Section 1602-118 of the Act;
- (2) A change in the allocated interest of a Unit, a change in the boundaries of a Unit or a subdivision of a Unit;
- (3) The merger or consolidation of the Condominium with another condominium;
- (4) The conveyance or subjection to a security interest of any portion of the Common Elements;
- (5) The proposed use of any proceeds of hazard insurance required to be maintained by the Association under Section 1603-113(a) of the Act for purposes other than the repair or restoration of the damaged property;

(6) The adoption of any proposed budget by the Executive Board under Section 1603-103(c) of the Act, and of the date of the scheduled Unit owners meeting to consider ratification thereof, which notice shall be accompanied by a summary of the proposed Budget; and

(7) Any default in the performance or payment by a Unit owner of any obligations under this Declaration, including, without limitation, default in the payment of Common Expense liabilities.

(b) In the event of any proposed actions described in clauses (1) through (5) of paragraph (a) of this Section 8.2, an Eligible Mortgage Holder shall have the right, but not the obligation, in place of the Unit owner to cast the votes allocated to that Unit or give or withhold any consent required of the Unit owner for such action by delivering written notice to the Association with a copy to the Unit owner prior to or at the time of the taking of the proposed action, which notice shall be sent by prepaid United States mail, return receipt requested, or by delivery in hand. Failure of the Eligible Mortgage Holder to so exercise such rights shall not constitute a waiver thereof and shall not preclude the Unit owner from exercising such right. In the event of any default described in subsection (a), paragraph (7) of this Section 8.2, the Eligible Mortgage Holder shall have the right, but not the obligation, to cure such default.

(c) An Eligible Mortgage Holder, or its representative, shall have the right to attend Association and Executive Board meetings for the purposes of discussing the matters described in paragraphs (1) through (6) of Section 8.2 (a).

Section 8.3. Rights of Mortgage Holders, Insurers or Guarantors.

(a) The Association shall send timely prior written notice of the following matters by prepaid United States mail to holders, insurers and guarantors of a mortgage on any Unit:

(1) Any condemnation or casualty loss that affects either a material portion of the Condominium or the Unit securing the mortgage;

(2) A lapse, cancellation or material modification of any insurance policy maintained by the Association; and

(3) Any proposed action that requires the consent of fifty-one percent (51%) of the Eligible Mortgage Holders.

(b) To receive such notice, the mortgage holder, insurer or guarantor shall send a written request therefor to the Association, stating its name and address and the Unit identifying number or address of the Unit on which it holds, insures or guarantees the mortgage.

Section 8.4. Liability for Use and Charges. Notwithstanding any term in Section 10.1 hereof to the contrary, any Mortgagee who obtains title to a Unit pursuant to the remedies provided in a mortgage for foreclosure of such mortgage or a deed in lieu of foreclosure shall not

be liable for such Unit owner's unpaid assessments or charges which accrue prior to the acquisition of title to such Unit by the Mortgagee, except to the extent otherwise provided for in the Act and except to the extent that such Mortgagee is liable as a Unit owner for the payment of such unpaid assessment or charge that is assessed against the Mortgagee as a result of all Unit owners being reassessed for the aggregate amount of such deficiency.

Section 8.5. Condemnation Rights. No provision of this Declaration shall give a Unit owner, or any other party, priority over any rights of the Mortgagee of a Unit pursuant to its mortgage in the case of a distribution to such Unit owner of insurance proceeds or condemnation award for loss to or a taking of one or more Units and/or Common Elements.

Section 8.6. Books and Records. Any Mortgagee shall have the right, exercisable by written notice to the Executive Board, to examine the books and records of the Association and to require that it be provided with a copy of each annual report of the Association and other financial data of the Association reasonably requested by such Mortgagee.

ARTICLE 9 INSURANCE

Section 9.1. Types and Amounts. The Association shall maintain at a minimum, as a Common Expense and to the extent reasonably available, the following types and amounts of insurance:

(a) Property insurance on the Common Elements, insuring against all risks of direct physical loss commonly insured against under the fire and extended coverage endorsement and such other insurance as the Executive Board deems necessary or desirable. The total amount of any insurance after application of any deductions shall not be less than 80% of the actual cash value of the insured property at the time the insurance is purchased and at each renewal date exclusive of land, foundations, excavation and other items normally excluded from property policies. The loss payable clause of such policy shall show the Association or the Insurance Trustee, if any, as a trustee for each Unit owner and each Mortgagee of a Unit. Such policy may also contain the standard mortgagee clause, naming each Mortgagee, its successors and assigns. If the Executive Board fails within sixty (60) days after the date of an insured loss to initiate a claim for damages recoverable under the policy or policies obtained pursuant to this paragraph (a), any Mortgagee may initiate such a claim on behalf of the Association.

(b) Liability insurance, including medical payments insurance, complying with the requirements of Section 9.2 hereof, covering all occurrences commonly insured against for death, bodily injury and property damage arising out of or in connection with the use, ownership or maintenance of the Common Elements. Such insurance policy shall contain a "severability of interest endorsement" or equivalent coverage which precludes the insurer from denying the claim of a Unit owner because of the negligent acts of the Association or another Unit owner. The amount of such liability insurance shall be at least \$1,000,000.00 for bodily injury and property damage for any single occurrence. The scope and amount of coverage of all liability insurance policies shall be reviewed at least once each year by the Executive Board and may be changed in

its discretion, *provided* that such policies shall continue to comply with the requirements of this Section 9.1 and Section 9.2 hereof.

(c) If the insurance described in paragraphs (a) and (b) of this Section 9.1 is not reasonably available, the Association shall provide notice of the same to the Unit owners and shall carry any other insurance that will provide similar coverage that can be reasonably obtained.

(d) Such worker's compensation insurance as applicable laws may require.

(e) Insurance to satisfy the indemnification obligation of the Association set out in Section 10.2 hereof, if and to the extent reasonably available, including but not limited to insurance coverage commonly referred to as "directors and officers insurance".

(f) If at any time it is determined that all or any part of the Property lies within a special flood hazard area, a master or blanket policy of flood insurance covering the Property, including but not limited to, all Common Elements and Limited Common Elements, the Units and all improvements, fixtures and appliances contained within the Unit as of the date of settlement on the Unit or the value thereof, and building service equipment and common equipment, fixtures, personal property and supplies owned by the Association, but excluding any improvements or appliances subsequently added by a Unit owner and all other personal property of the Unit owner. The amount of any such flood insurance obtained pursuant to this paragraph (f) shall be equal to the lesser of one hundred percent (100%) of the insurable value of the property insured or the maximum coverage available under the appropriate National Flood Insurance Administration program. Such flood insurance policy may, at the option of the Association, contain a "deductible" provision in an amount not to exceed the lesser of \$5,000 or one percent (1%) of the policy face amount. Funds to cover this amount shall be included in the Association reserve fund.

Section 9.2. Required Provisions. Insurance obtained by the Association shall be in accordance with the following provisions:

(a) Exclusive authority to adjust losses under policies hereafter in force on the Common Elements and the Limited Common Elements shall be vested in the Executive Board or its authorized representative.

(b) Each Unit owner may obtain additional insurance at his own expense; *provided, however*, that: (1) such policies shall not be invalidated by the waivers of subrogation required to be contained in policies required by this Declaration; and (2) no Unit owner shall be entitled to exercise his right to maintain insurance coverage in such a way as to decrease the amount which the Association may realize under any insurance policy which the Association may have in force on the Property at any particular time.

(c) With respect to the insurance policies described in paragraphs (a) and (b) of Section 9.1 issued to the Association and covering all or any part of the Property, the Association shall cause such policies to provide that:

(1) Each Unit owner is an insured person under such policies with respect to liability arising out of such Unit owner's ownership of an undivided interest in the Common Elements or membership in the Association.

(2) The insurer waives its right to subrogation under the policy against any Unit owner or members of such Unit owner's household.

(3) No act or omission by any Unit owner, unless acting within the scope of his authority on behalf of the Association, will void such policies or be a condition to recovery under such policies.

(4) If at the time of a loss under such policies there is other insurance in the name of a Unit owner covering the same risk covered by the policy, the Association's policy provides primary insurance.

(5) The liability of the insurer shall not be affected by, and the insurer shall not claim, any right of set-off, counterclaim, apportionment, proration, or contribution by reason of any other insurance obtained by or for any Unit owner.

(6) An insurer that has issued an insurance policy under this Article shall issue certificates or memoranda of insurance to the Association and, upon request, to any Unit owner or Mortgagee. Such policies may not be canceled nor may coverage thereunder be substantially changed (whether or not requested by the Executive Board) except by the insurer giving at least twenty (20) days prior written notice thereof to the Executive Board, the Insurance Trustee, if any, Unit owners, each holder of a first mortgage on a Unit, and every other party in interest who shall have requested such notice of the insurer;

(7) The insurer will recognize any Insurance Trust Agreement entered into by the Association.

Section 9.3. Additional Insurance. Nothing in this Declaration shall be construed to limit the authority of the Executive Board to obtain additional insurance which it deems advisable.

ARTICLE 10

UNITS SUBJECT TO CONDOMINIUM DOCUMENTS; EMINENT DOMAIN

Section 10.1. Applicability of Condominium Documents. Each present and future owner, tenant, occupant and holder of a mortgage on a Unit shall be subject to and shall comply with the provisions of the Act, and with the covenants, conditions and restrictions as set forth in the Condominium Documents and the deed to such Unit; *provided that*, nothing contained herein shall impose upon any tenant or holder of a mortgage on a Unit any obligation which the Act or one or more of the Condominium Documents, or both, make applicable only to Unit owners (including, without limitation, the obligation to pay assessments for Common Expenses). The acceptance of a deed or mortgage to any Unit, or the entering into of a lease or the entering into

occupancy of any Unit shall constitute an agreement that the provisions of the Act and the covenants, conditions and restrictions set forth in the Condominium Documents and the deed to such Unit are accepted and ratified by such grantee, holder of a mortgage on a Unit or tenant. All of such provisions shall be covenants running with the land and shall bind any person having at any time any interest or estate in such Unit, as though such provisions were recited and stipulated at length in each and every deed, conveyance mortgage or lease thereof. Failure to comply with the covenants, conditions and restrictions set forth in the Condominium Documents and the deed to such Unit shall be grounds for an action to recover damages or for injunctive relief, or both, maintainable by the Executive Board on behalf of the Association or by an aggrieved Unit owner.

Section 10.2. Eminent Domain. Whenever all or part of the Common Elements shall be taken, injured or destroyed by eminent domain, each Unit owner shall be entitled to notice thereof and to participate in the proceedings incident thereto; *provided, however*, that the Association shall officially represent the Unit owners in such proceedings. In any proceedings for the determination of damages, such damages shall be determined for such taking, injury or destruction as a whole and not for each Unit owner's interest therein and any award for such damage shall be payable to the Association for the benefit of the Unit owners and of the Mortgagees.

ARTICLE 11

ASSOCIATION; EXECUTIVE BOARD OF THE ASSOCIATION

Section 11.1. The Association. The Association is the governing body for all Unit owners with respect to the administration, maintenance, repair, replacements, cleaning and management of the Common Elements. The membership of the Association shall at all times consist exclusively of all Unit owners. Each Unit owner shall automatically become and be a member of the Association as long as such person is a Unit owner and upon the termination of the interest of a Unit owner in the Condominium, such Unit owner's membership and any interest in the common funds of the Association shall thereupon automatically terminate and transfer and inure to the next Unit owner or Unit owners succeeding such Unit owner in interest. The Association shall have all of the powers granted pursuant to Section 1603-102 of the Act, including the powers to assign its right to future income.

Section 11.2. Members of the Executive Board.

- (a) The initial Executive Board shall consist of three (3) members.
- (b) There shall be no Declarant control period. The Unit owners (including the Declarants to the extent of any Units owned by a Declarant at that time) shall each have the right to appoint one person to be its designated representative on and a member of the Executive Board in accordance with the Bylaws. The members of the Executive Board so appointed shall serve until the first regular election of the Executive Board held at the next annual meeting of the Association held in accordance with the Bylaws; thereafter, members of the Executive Board shall be elected in accordance with the Bylaws. The Bylaws may provide for the members of the Executive Board to serve staggered terms.

(c) Subject to the terms and provision of the Act, this Declaration or the Bylaws, the Executive Board shall have the power to act on behalf of the Association. The Executive Board shall possess all of the duties and powers granted to the Executive Board by the Act.

Section 11.3. Disputes. In the event of any dispute or disagreement between any Unit owners relating to the Property, or any questions of interpretation or application of the provisions of the Condominium Documents, the determination thereof by the Executive Board shall be final and binding on each and all such Unit owners. The Executive Board shall have the authority to seek a declaratory judgment or other appropriate judicial relief in order to assist it in carrying out its responsibilities under this Section 11.3. All costs of obtaining such judgment shall be borne by the disputants, or in the absence of disputants, by the Association as a Common Expense.

Section 11.4. Abating and Enjoining Violations by Unit Owners. The violation of any Rules and Regulations adopted by the Executive Board, the breach of any provision contained in the Condominium Documents, the deed to any Unit, or the Act by any Unit owner or any tenant of such Unit owner, shall give the Executive Board the right, in addition to any other rights to which it may be entitled, to enjoin, abate or remedy by appropriate legal proceedings, either by law or in equity, the continuance of any such violation or breach.

Section 11.5. Limited Liability of the Executive Board. To the maximum extent permitted by applicable law, the Executive Board, and its members in their capacity as members, officers and employees:

(a) Shall not be liable for the failure of any service to be obtained by the Executive Board and paid for by the Association, or for injury or damage to persons or property caused by the elements or by another Unit owner or person on the Property, or resulting from electricity, gas, water, rain, dust or sand which may leak or flow from the outside or from any part of the Units, or from any of its pipes, drains, conduits, appliances, or equipment, or from any other place unless in each such instance such injury or damage has been caused by the willful misconduct or gross negligence of the Association or the Executive Board;

(b) Shall not be liable as a result of the performance of the Executive Board members' duties for any mistakes of judgment, negligence or otherwise, except for the Executive Board members' own willful misconduct or gross negligence;

(c) Shall have no personal liability in contract to a Unit owner or any other person or entity under any agreement, check, contract, deed, lease, mortgage, instrument or transaction entered into by them on behalf of the Executive Board or the Association in the performance of the Executive Board members' duties;

(d) Shall not be liable to a Unit owner, or such Unit owner's tenants, employees, agents, customers or guests, for loss or damage caused by theft of or damage to personal property left by such Unit owner or his tenants, employees, agents, customers or guests in a Unit, or in or

on the Common Elements or Limited Common Elements, except for the Executive Board members' own willful misconduct or gross negligence;

(e) Shall have no personal liability in tort to a Unit owner or any other person or entity, direct or imputed, by virtue of acts performed by or for them, except for the Executive Board members' own willful misconduct or gross negligence in the performance of their duties; and

(f) Shall have no personal liability arising out of the use, misuse or condition of the Buildings, or which might in any other way be assessed against or imputed to the Executive Board members as a result of or by virtue of their performance of their duties, except for the Executive Board members' own willful misconduct or gross negligence.

Section 11.6. Indemnification. Each member of the Executive Board in his capacity as an Executive Board member, officer or both, shall be indemnified by the Association against all expenses and liabilities, including attorneys' fees, reasonably incurred by or imposed upon the Executive Board Member in connection with any proceeding in which the Executive Board member may become involved by reason of the Executive Board member being or having been a member and/or officer of the Executive Board, or any settlement of any such proceeding, whether or not the Executive Board member is an Executive Board member, officer or both at the time such expenses are incurred, except with respect to any matter as to which such Executive Board member shall have been finally adjudicated in any action, suit or proceeding not to have acted in good faith in the reasonable belief that his or her action was in the best interests of the corporation or, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful; *provided that*, in the event of a settlement, this indemnification shall apply only if and when the Executive Board (with the affected member abstaining if still an Executive Board member at the time of settlement) approves such settlement and reimbursement as being in the best interests of the Association. The indemnification by the Unit owners set forth in this Section 11.6 shall be paid by the Association on behalf of the Unit owners and shall constitute a Common Expense and shall be assessed and collectible as such. Such right of indemnification shall not be deemed exclusive of any other rights to which such Executive Board member and/or officer may be entitled as a matter of law or agreement or by vote of the Unit owners or otherwise.

Section 11.7. Defense of Claims. Complaints brought against the Association, the Executive Board or the officers, employees or agents thereof in their respective capacities as such, or the Condominium as a whole, shall be directed to the Executive Board of the Association, which shall promptly give written notice thereof to the Unit owners and the Eligible Mortgage Holders and such complaints shall be defended by the Association. The Unit owners and the Eligible Mortgage Holders shall have no right to participate other than through the Association in such defense. Complaints of a nature specified in Section 3.3. hereof against one or more but less than all Unit owners shall be defended by such Unit owners who are defendants themselves and such Unit owners shall promptly give written notice of the institution of any such suit to the Association and to the holders of any mortgages encumbering such Units.

Section 11.8. Storage; Disclaimer of Bailee Liability. Neither the Executive Board, the Association, any Unit owner nor the Declarant shall be considered a bailee of any personal property stored on the Common Elements (including property located in storage areas on the Common Elements, including the Limited Common Elements), whether or not exclusive possession of the particular area is given to a Unit owner for storage purposes, and shall not be responsible for the security of such personal property or for any loss or damage thereto, whether or not due to negligence, except to the extent covered by insurance in excess of any applicable deductible.

ARTICLE 12 MANAGEMENT

The Association shall have the right to employ a professional, experienced managing agent who shall oversee the daily operation of the Condominium in accordance with the provisions of the Act and the Condominium Documents.

ARTICLE 13 ASSESSMENTS; LIABILITY OF UNIT OWNERS

Section 13.1. Power to Assess.

(a) The Association, acting through the Executive Board in accordance with the Bylaws, shall have the power to fix and determine, from time to time, the sums necessary and adequate to provide for the Common Expenses (based on the Budget for such fiscal period), including, but not limited to, such amounts as are necessary for (i) the maintenance, repair and replacement of the Common Elements and the Limited Common Elements, as set forth in Section 3.3(a) hereof, (ii) uncollectable assessments, (iii) budget deficits, (iv) such other reserves as are hereinafter described, (v) such additional reserves as the Executive Board shall deem necessary or prudent, and (vi) such other expenses as are specifically provided for in the Act, this Declaration, and the Bylaws. The Association may establish an adequate reserve fund for maintenance, repair and replacement of those Common Elements and Limited Common Elements for which the Association is responsible that are anticipated to require replacement, repair or maintenance on a periodic basis, and to cover any deductible amount for insurance policies maintained by the Association. If such reserve fund is established by the Association, the Association may fund it by the Monthly Assessments. Common Expenses, to the extent they are imposed, shall be assessed against each Unit in accordance with the allocation set forth in Section 5.2 above and Section 1602-107 of the Act. Charges incurred by the Association and related to Limited Common Elements shall be assessed against only those Units benefiting from the Limited Common Elements. After the adoption of the first annual proposed budget by the Executive Board, the Executive Board shall annually adopt a proposed budget (the "Budget"), and, within thirty (30) days of adoption shall provide a summary of the proposed Budget to all Unit owners, *provided that* the Association shall have no obligation to adopt the first Budget unless requested to do so by all of the Unit owners. The Executive Board shall also schedule a meeting of the

Unit owners to consider ratification of the Budget not less than fourteen (14) days nor more than thirty (30) days after the mailing of such summary. Unless at that meeting a majority of all of the Unit owners reject the Budget, the Budget is ratified, whether or not a quorum is present. In the event the Budget is not ratified, the current Monthly Assessment, if any, shall continue until the adoption of a new Budget is made at a meeting of the Association called for that purpose no sooner than fifteen (15) days nor later than thirty (30) days after the initial ratification meeting of the Unit owners. The Declarant shall pay the Monthly Assessment for Units owned by the Declarant in the same manner as the other Unit owners, beginning with the first Monthly Assessment as provided in Section 13.3 hereof.

(b) In addition to paragraph (a) of this Section 13.1, the following shall apply:

(1) Any Common Expense associated with the maintenance, repair or replacement of a Limited Common Element shall be assessed against the Unit or Units to which that Limited Common Element is assigned.

(2) Any payments, fees or charges for the use, rental or operation of any Common Element shall be applied first, to reduce the Common Expense relating to such Common Element and, second, any excess shall be applied to Common Expenses generally.

(3) Assessments to pay a judgment against the Association shall be a lien only against the Units in the Condominium at the time the judgment was entered, in proportion to their Common Expense liability.

(4) If any Common Expense is caused by the misconduct of any Unit owner, the Association may assess that expense exclusively against such Unit owner's Unit.

(5) If Common Expense liabilities are reallocated, Common Expense assessments and any installment thereof not yet due shall be recalculated in accordance with the reallocated Common Expense liabilities.

(6) Any Common Expense that is to be reimbursed by Unit owners according to use shall be paid as part of the Common Expense installment billed at the same time as the reimbursable expense, and for all purposes except allocation by Percentage Interest in the Common Elements, all such reimbursable expenses shall be treated as Common Expenses.

Section 13.2. Special Assessments. If the cash requirement estimated at the beginning of any fiscal year shall prove to be insufficient to cover the actual Common Expenses for such fiscal year for any reason (including by way of illustration and not limitation, any Unit owner's non-payment of its assessment or municipal assessments not yet assessed), the Executive Board shall have the power, at any time it deems necessary and proper, to levy one or more Special Assessments against each Unit owner. Special Assessments shall be due and payable in the manner and on the date set forth in the notice thereof.

Section 13.3. Payment of Assessments. Each Unit owner, including each Declarant to the extent a Declarant owns a Unit, shall pay all Monthly Assessments and Special Assessments levied by the Association in accordance with this Declaration and the Bylaws. Liability for such assessments shall be determined in accordance with Section 5.2 hereof. Such assessments shall begin accruing at the time of the creation of the Condominium and they shall be due and payable on a monthly basis as and if designated by the Executive Board. Assessments that are unpaid for over fifteen (15) days after the due date shall bear interest at the rate determined from time to time by the Executive Board from the due date until paid. In the sole discretion of the Executive Board, a late charge may be assessed against the delinquent Unit owner.

Section 13.4. New Assessments. After the initial assessment has been made by the Association, subsequent assessments shall be made by the Association annually on or before the anniversary date of the initial assessment or such other date as the Association may choose, based on the Budget adopted by the Association not later than sixty (60) days prior to the assessment. If the Executive Board shall fail to fix new Monthly Assessments for Common Expenses for the subsequent fiscal year before the expiration of any fiscal year, the Unit owners shall continue to pay the same sums they were paying for such Monthly Assessments during the fiscal year just ended and such sum shall be deemed to be the new Monthly Assessments for the succeeding fiscal year. If the Executive Board shall change the Monthly Assessment at a later date, the difference between the new Monthly Assessment, if greater, and the previous year's Monthly Assessment up to the effective date of the new Monthly Assessment shall be treated as if it were a Special Assessment under Section 13.2. hereof; thereafter each Unit owner shall pay the new Monthly Assessment. In the event the new Monthly Assessment is less than the previous year's Monthly Assessment, in the sole discretion of the Executive Board, the excess shall either be refunded to the Unit owners, credited against future Monthly Assessments or retained by the Association for reserves.

Section 13.5. No Exemption by Waiver. No Unit owner may exempt himself from liability for the Common Expenses by waiver of the enjoyment of the right to use any of the Common Elements or by the abandonment of such Unit owner's Unit or otherwise.

Section 13.6. Personal Liability of Unit Owners. All sums assessed by the Association as a Monthly Assessment or Special Assessment shall constitute the personal liability of the owner of the Unit so assessed and also, until fully paid, shall constitute a lien against such Unit pursuant to Section 1603-116 of the Act. Multiple owners of a Unit shall each be jointly and severally liable for all unpaid Monthly Assessments and Special Assessments. The Association may take such actions as are permitted by Section 1603-116 of the Act for failure to pay any assessment or other charges. The delinquent owner shall be obligated to pay (a) all expenses of the Executive Board, including reasonable attorneys' fees, incurred in the collection of the delinquent assessment by legal proceedings or otherwise, and (b) any amounts paid by the Executive Board for taxes or on account of superior liens or otherwise to protect its lien, which expenses and amounts, together with accrued interest, shall be deemed to constitute part of the delinquent assessment and shall be collectible as such.

Section 13.7. Liability of Purchaser of Unit for Unpaid Assessments.

(a) Upon the voluntary sale, conveyance or any other voluntary transfer of a Unit or any interest therein, the grantee thereof shall not be personally liable with the grantor thereof for all unpaid assessments for Common Expenses which are a charge against the Unit as of the date of consummation of the sale, conveyance or transfer, unless such grantee agrees to assume the obligation therefor; *provided, however*, except as provided in clause (b), a lien against the Unit so purchased for assessments imposed pursuant to this Declaration or the Act shall not be affected by such sale, conveyance or other transfer.

(b) Prior to or at the time of any conveyance of a Unit by Unit Owner, all unpaid assessments shall be paid in full. Any purchaser of a Unit shall be entitled to a written statement by the Association setting forth the accrued assessments for Common Expenses that are then unpaid, and such purchaser shall not be liable for, nor shall the Unit conveyed be subject to a lien for, accrued but unpaid assessments in excess of the amount therein set forth.

Section 13.8. Subordination of Certain Charges. The lien for any Monthly Assessments or any fees, charges, late charges, fines and interest that may be levied by the Association pursuant to Section 1603-102 of the Act shall be subordinate to any first mortgage lien recorded before or after such Monthly Assessment, fee, charge, late charge, fine or interest was due.

ARTICLE 14

SPECIAL DECLARANT RIGHTS AND DEVELOPMENT RIGHTS

Section 14.1. Special Declarant Rights and Development Rights. In addition to the easement rights reserved in Article 6, the Declarants reserve to themselves and for the benefit of their respective successors and assigns, and subjects the Property to, the right:

(a) to effect the construction of the Building and other improvements constituting Unit No. 2, in accordance with the description thereof set forth on the Plat.

(b) to effect an expansion of Unit No. 1, by (i) modifying the vertical boundaries thereof in the area of the single story structure attached to the west side of the Building constituting Unit No. 1 between the wing of said Building that extends southwesterly and the wing of said Building that extends in a northwesterly direction (the "Loading Structure"), as follows: (A) projecting in a northwesterly direction the vertical boundary that is three feet outside the southwest facing exterior wall of the Loading Structure that extends in a northwesterly direction from the northwest side of the southwesterly wing of said Building to the intersection of such projected vertical boundary with the extended vertical boundary described in clause (B); and (B) projecting the vertical boundary that is three feet outside the northwest facing fascia of overhanging roof of the Loading Structure that extends in a southwesterly direction from the westerly side of the Loading Structure to the intersection of such projected vertical

boundary with the projected vertical boundary described in clause (A); and (ii) constructing within the boundaries so modified additions to the Building and other improvements constituting Unit No. 1.

(b) until the construction of all Units is completed, to connect with and make use of utility lines, wires, pipes and conduits located on the Property for construction and sales purposes;

(c) until the construction of all Units is completed, to use the Common Elements for ingress and egress, for the repair and construction of Units and Common Elements, including, but not limited to, the movement and temporary storage of construction materials and equipment, and for the installation of signs and lighting for sales and promotional purposes; and

(d) to use easements through the Common Elements for the purposes of making improvements within the Condominium.

The real estate subject to these Development Rights and Special Declarant Rights is the Property.

Section 14.2 Amendment. This Article 14 shall not be amended without the written consent of the Declarants duly recorded in the Cumberland County Registry of Deeds.

ARTICLE 15 ASSIGNABILITY OF DECLARANT'S RIGHTS

The Declarants may assign any or all of their respective rights or privileges reserved or established by this Declaration or the Act in accordance with the provisions of the Act.

ARTICLE 16 AMENDMENT OF DECLARATION

Section 16.1. Amendments to Declaration. Except as otherwise provided herein or in Section 1602-117 of the Act, this Declaration may be amended only by unanimous vote or agreement of the Unit owners.

Section 16.2. Rights of Mortgagees. Approval of amendments of a material nature must be obtained from Eligible Mortgage Holders representing at least 51% of the votes of Units that are subject to mortgages held by Eligible Mortgage Holders. A change to any of the following, except where such change may be effected by the Declarants, the Association or certain Unit owners under the Act or this Declaration, are deemed to be material:

- (a) voting rights;
- (b) reallocation of interests in the Common Elements or Limited Common Elements, or rights to their use;

- (c) boundaries of any Unit;
- (d) convertibility of Units into Common Elements or Common Elements into Units;
- (e) expansion or contraction of the Condominium, or the addition, annexation or withdrawal of property to or from the Condominium;
- (i) insurance;
- (j) restoration or repair of the Condominium (after a hazard damage or partial condemnation) in a manner other than that specified in the Condominium Documents;
- (k) any action to terminate the legal status of the Condominium after substantial destruction or condemnation occurs; or
- (l) any provisions that expressly benefit holders of mortgages on the Units.

The approval of an Eligible Mortgage Holder may be assumed when that Eligible Mortgage Holder has failed to submit a response to any written proposal for an amendment within thirty (30) days after the proposal is made. No amendment to the Condominium Documents shall diminish or impair the rights of the Declarants under the Condominium Documents without the prior written consent of the Declarants. No amendment may modify this Article 16 or the rights of any person hereunder. Except as specifically provided in the Condominium Documents, no provision of the Condominium Documents shall be construed to grant to any Unit owner, or to any other person, any priority over any rights of mortgagees of any Unit owner.

ARTICLE 17 TERMINATION

The Condominium may be terminated only by agreement of the Unit owners representing one hundred percent (100%) of the Percentage Interests. Termination of the Condominium will be governed by the provisions of Section 1602-118 of the Act.

ARTICLE 18 GENERAL PROVISIONS

Section 18.1. Headings. The headings used in this Declaration and any table of contents are inserted solely as a matter of convenience for the readers of this Declaration and shall not be relied upon or used in construing the effect or meaning of any of the provisions of this Declaration.

Section 18.2. Severability. The provisions of this Declaration shall be deemed independent and severable, and the invalidity or unenforceability of any provision or portion

thereof shall not affect the validity or enforceability of any other provision or portion hereof unless such deletions shall destroy the uniform plan of development and operation of the Condominium which this Declaration is intended to create.

Section 18.3. Applicable Law. This Declaration shall be governed by and construed according to the laws of the State of Maine.

Section 18.4. Interpretation. The provisions of this Declaration shall be liberally construed in order to effect Declarants' desire to create a uniform plan for development and operation of the Condominium. In the event of any conflict or discrepancy between this Declaration, the Bylaws and the Plat, the provisions of this Declaration shall govern.

Section 18.5. Effective Date. This Declaration shall become effective when it and the Plat have been recorded.

Section 18.6. Notices. All notices and other communications required or permitted to be given under or in connection with this Declaration shall be in writing and shall be deemed given when delivered in person or on the second business day after the day on which mailed by certified mail, return receipt requested, addressed to the address maintained in the register of current addresses established by the Association.

Section 18.7. Exhibits. All exhibits attached to this Declaration are hereby made a part of this Declaration.

Section 18.8. Pronouns. Wherever used, the singular number shall include the plural, the plural the singular and the use of any gender shall include all genders.

[The balance of this page is left blank intentionally. Signature page follows.]

IN WITNESS WHEREOF, the Declarants have caused this Declaration to be executed by their duly authorized representatives as of this 21 day of June, 2006.

JHA PROPERTIES, INC.

Holly Nicholson
Witness

By: Kathryn J. Callnan
Kathryn J. Callnan, President

CEDARS NURSING CARE CENTER, INC.

Holly Nicholson
Witness

By: Kathryn J. Callnan
Kathryn J. Callnan, President

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

June 21, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of JHA PROPERTIES, INC., a Maine non-profit corporation, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said JHA PROPERTIES, INC.

Before me,

[Signature]

Lynne A. Burr, Notary Public
State of Maine
My Commission Expires 12/5/2009

Notary Public/Attorney at Law
Print Name: Lynne Burr
My commission expires: 2009

STATE OF MAINE
COUNTY OF CUMBERLAND, ss

June 21, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of CEDARS NURSING CARE CENTER, INC., a Maine non-profit corporation, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of said CEDARS NURSING CARE CENTER, INC.,

Before me,

[Signature]

Lynne A. Burr, Notary Public
State of Maine
My Commission Expires 12/5/2009

Notary Public/Attorney at Law
Print Name: Lynne Burr
My commission expires: 2009

LIMITED JOINDER AGREEMENT OF MORTGAGEE

The undersigned, MAINE HEALTH AND HIGHER EDUCATIONAL FACILITIES AUTHORITY, a public body corporate and politic of the State of Maine, created and existing under the Constitution and the laws of the State of Maine, with a place of business at 3 University Drive, P.O. Box 2268, Augusta, Maine 04330 (herein called the "Mortgagee"), as holder of and mortgagee under the following instruments:

1. A certain Loan Agreement and Mortgage by JHA Properties, Inc., a Maine nonprofit corporation ("JHA Properties"), to the Mortgagee, dated as of March 1, 1998 and recorded in the Cumberland County Registry of Deeds in Book 13709, Page 1, and a certain Mortgage by JHA Properties, Inc., to the Mortgagee, dated as of October 9, 1998 and recorded in the Cumberland County Registry of Deeds in Book 14221, Page 222 (the "JHA Properties Mortgage"); and

2. A certain Loan Agreement and Mortgage by Cedars Nursing Care Center, Inc., a Maine nonprofit corporation ("Cedars"), to the Mortgagee, dated as of May 1, 1993 and recorded in the Cumberland County Registry of Deeds in Book 10717, Page 311 (the "Cedars Mortgage");

(herein the instruments described in paragraphs 1 and 2 above are sometimes collectively called the "Mortgages"), for itself and its successors and assigns, hereby

- (i) **joins with** JHA Properties and Cedars (herein collectively called the "Declarants") in submitting the Property, as defined and described in this Declaration, separate portions of which are subject to the lien of one or the other of the Mortgages, to the provisions of the Maine Condominium Act, 33 M.R.S.A. Chapter 31, §§ 1601-101, et seq., as amended, for the sole and limited purposes of evidencing Mortgagee's consent as owner and holder of the Mortgages to the submission of the Property under this Declaration and to the creation and granting of those easements, uses, rights and privileges described in this Declaration and granting and releasing the liens, rights and interests described in clauses (ii) through (vi);
- (ii) **grants and releases** to Cedars, its successors and assigns, all of Mortgagee's right, title and interest under the JHA Properties Mortgage in and to Unit No. 1 as created by this Declaration;
- (iii) **grants and releases** to Cedars, its successors and assigns, and Properties, its successors and assigns, all of Mortgagee's right, title and interest under the Mortgages in and to Unit No. 2 as created by this Declaration and all Development Rights related to the construction of the Building and other improvements constituting Unit No. 2 in accordance with the description thereof set forth on the Plat;

- (iv) **grants and releases** to JHA Properties, its successors and assigns, all of Mortgagee's right, title and interest under the Cedars Mortgage in and to Unit No. 3 as created by this Declaration;
- (v) **grants and releases** to JHA Properties and Cedars, their respective successors and assigns, all of Mortgagee's right, title and interest under either of the Mortgages in and to the following easements of record:
 - (A) Utility and Access Easement described as Parcel B in easement deed from Cedars Nursing Care Center, Inc., to JHA Services, Inc., dated May 25, 1990, and recorded in the Cumberland County Registry of Deeds, Book 9188, Page 115, as amended and modified Short Form Quitclaim Deed from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 17, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 319, and by Easement Modification, between JHA Services, Inc. and Cedars Nursing Care Center, Inc., dated April 1, 1998, and recorded in the Cumberland County Registry of Deeds, Book 13708, Page 305 (the "Granting Deed");
 - (B) Emergency Access Road Easement described as Parcel C in the Granting Deed ;
 - (C) Parking Easement, Utility and Access Easement and Loop Road Easement retained as Items 1, 2 and 3 in the Granting Deed;
 - (D) Access Easement in easement deed from JHA Properties, Inc., to Cedars Nursing Care Center, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 321;
 - (E) Access Easement in easement from Cedars Nursing Care Center, Inc., to JHA Properties, Inc., dated March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 325; and
 - (F) Agreement and Reciprocal Easement Deed, between Cedars Nursing Care Center, Inc., and JHA Properties, Inc., dated as of March 27, 1998 and recorded in the Cumberland County Registry of Deeds, Book 13696, Page 331; and
- (vi) **expressly retains, excepts and reserves**, for itself and its successors and assigns, the lien of and all other rights under the Cedars Mortgage in and to Unit No. 1; and

- (vii) **expressly retains, excepts and reserves**, for itself and its successors and assigns, the lien of and all other rights under the JHA Properties Mortgage in and to Unit No. 3;

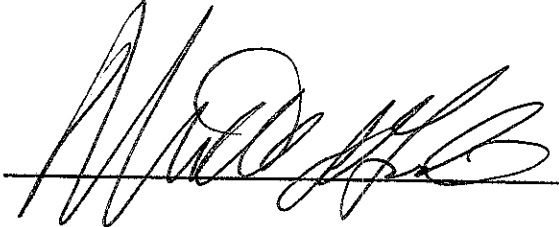
PROVIDED, that such joinder and consent shall not be construed to make said Mortgagee, its successors and assigns, as mortgagee, the Declarant or to impose on it any of the obligations or liabilities of the Declarant under this Declaration, including, without limitation, any obligation or liability of any kind to any purchaser(s) of any condominium unit(s), and said Mortgagee makes no warranties or covenants to any person or party, express or implied, as to title, merchantability, fitness for any particular purpose, physical condition or otherwise as to the Condominium premises.

The Mortgagee hereby agrees that its lien on Unit No. 1 under the Cedars Mortgage and its lien on Unit No. 3 under the JHA Property Mortgage, all as excepted and reserved herein, shall be subject to the provisions of said Maine Condominium Act and shall attach to the Units and Percentage Interests created by this Declaration, as it may be amended. The Mortgagee further agrees that, in the exercise of its rights as mortgagee under the aforesaid Mortgages, the Mortgagee will recognize the establishment of a condominium by this Declaration of Condominium.

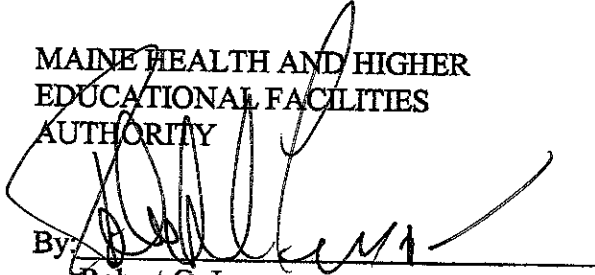
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IN WITNESS WHEREOF, the Mortgagee has caused this instrument to be executed and sealed in its corporate name by its officer thereunto duly authorized as of the date of the foregoing Declaration.

WITNESS:



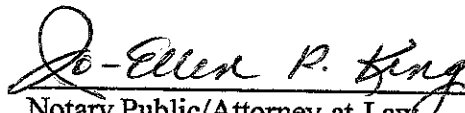
MAINE HEALTH AND HIGHER
EDUCATIONAL FACILITIES
AUTHORITY

By: 
Robert O. Lenna
Its Executive Director

STATE OF MAINE
COUNTY OF CUMBERLAND, ss.

JUNE 29th, 2006

Personally appeared before me the above-named Robert O. Lenna, Executive Director of Maine Health and Higher Educational Facilities Authority, and acknowledged the foregoing instrument to be his free act and deed in said capacity, and the free act and deed of said Maine Health and Higher Educational Facilities Authority.


Notary Public/Attorney-at-Law
Print Name: JO-ELLEN P. KING
My Commission Expires: OCTOBER 27, 2011

Jo-Ellen P. King
Notary Public, Maine
My Commission Expires
October 27, 20 11

EXHIBIT A**PROPERTY DESCRIPTION**

A certain lot or parcel of land lying on the northwesterly side of Ocean Avenue and the northeasterly terminus of Byfield Road in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point and the intersection of the northeasterly terminus of said Byfield Road with the northwesterly sideline of said Byfield Road;

Thence S 50°04'08" W by the northwesterly sideline of said Byfield Road a distance of Thirty and 45/100 (30.45) feet to a point and the easterly corner of land now or formerly of Christopher J. King and Elizabeth C. King as described in a deed recorded in the Cumberland County Registry of Deeds in Book 20322, Page 332;

Thence N 39°56'15" W by said land of King a distance of Ninety-Nine and 20/100 (99.20) feet to a point;

Thence S 52°11'01" W by said land of King; by land now or formerly of Barry E. Scott and Mary A. Scott as described in a deed recorded in said Registry in Book 2809, Page 26; and by land now or formerly of N. Penrose Hallowell IV as described in a deed recorded in said Registry in Book 15501, Page 236, a distance of Two Hundred Thirty-Nine and 65/100 (239.65) feet to a point and the northeasterly corner of land now or formerly of Brian R. Sheets and Gaye L. Sheets as described in a deed recorded in said Registry in Book 13242, Page 35;

Thence N 37°59'05" W by said land of Sheets a distance of Sixty and 00/100 (60.00) feet to a point and the southeasterly line of land now or formerly of John Tevanian and Thelma M. Tevanian as described in a deed recorded in said Registry in Book 3627, Page 59;

Thence N 52°11'01" E by said land of Tevanian a distance of One Hundred and 04/100 (100.04) feet to a point;

Thence N 37°52'24" W by said land of Tevanian a distance of Sixty-Four and 64/100 (64.64) feet to a point and the southerly corner of land now or formerly of Old Port Realty Corp. as described in a deed recorded in said Registry in Book 4013, Page 113;

Thence N 52°11'01" E by said land of Old Port Realty Corp. a distance of Six Hundred Sixty-Eight and 07/100 (668.07) feet to a point and land now or formerly of Ledgewood Owners Association as described in a deed recorded in said Registry in Book 4446, Page 125;

Thence S 58°38'42"E by said land of Ledgewood Owners Association a distance of Zero and 97/100 (0.97) feet to a point, said point herein designated as "Point A";

Thence Southeasterly by said land of Ledgewood Owners Association following a non- tangent curve to the right having a radius of Two Hundred Fifty-Two and 54/100 (252.54) feet an arc distance of Two Hundred Fifteen and 57/100 (215.57) feet to a point, said point being located S 69°09'08" E a distance of Two Hundred Nine and 08/100 (209.08) feet from said "Point A";

Thence S 44°41'54" E by said land of Ledgewood Owners Association a distance of One Hundred Thirty-Nine and 56/100 (139.56) feet to a capped 5/8" rebar (PLS #199);

Thence S 44°27'57" E by said land of Ledgewood Owners Association a distance of Two Hundred Ninety-Nine and 33/100 (299.33) feet to a 1" iron pipe;

Thence S 43°59'21" E by said land of Ledgewood Owners Association a distance of Seventy and 26/100 (70.26) feet to a point and the northwesterly sideline of said Ocean Avenue;

Thence S 35°36'51" W by said Ocean Avenue a distance of Fifty-One and 28/100 (51.28) feet to a point;

Thence S 40°42'51" W by said Ocean Avenue a distance of Four Hundred Twenty-Six and 00/100 (426.00) feet to a point and the easterly corner of land now or formerly of David H. Littlefield and Bonnie S. Littlefield as described in a deed recorded in said Registry in Book 4458, Page 44;

Thence N 47°24'30" W by said Littlefield a distance of One Hundred and 58/100 (100.58) feet to a capped 5/8" rebar (PLS #509);

Thence S 45°36'30" W by said land of Littlefield a distance of One Hundred and 00/100 (100.00) feet to a point and land now or formerly of Domenico Floridino and Anna Floridino as described in a deed recorded in said Registry in Book 3029, Page 521;

Thence N 47°19'15" W by said land of Floridino; by land now or formerly of Peter J. Molloy and Elizabeth D. Molloy as described in a deed recorded in said Registry in Book 16537, Page 279; by land now or formerly of Elizabeth F. Searles and Harold E. Searles as described in a deed recorded in said Registry in Book 3122, Page 381; by land now or formerly of Leslie E. Conley and Avis J. Conley as described in deeds recorded in said Registry in Book 2640, Page 412 and Book 2649, Page 394; and by the northeasterly terminus of said Byfield Road a distance of Four Hundred Eighty and 78/100 (480.78) feet to the point of beginning.

Bearings are based on magnetic north 1924.

The above described parcel contains 10.57 acres.

Reference is herein made to a plan entitled "Cedars Condominiums Recording Plat/Condominium Plan, ALTA/ACSM Land Title Survey Cedars Plan/ALTA/ACSM/Land Title Survey" made for JHA Properties, Inc., Cedars Nursing Care Center, and JHA Assisted Living, Inc. dated September 8, 2005, and revised April 5, 2006, made by Titcomb Associates.

EXHIBIT B

<u>Unit Identifying Number</u>	<u>Percentage Interest</u>
Unit 1	33.333%
Unit 2	33.333%
Unit 3	33.333%

Formula Calculating Percentage Interest

All Units shall have an equal Percentage Interest to be calculated by (i) dividing one (1) by three (3).

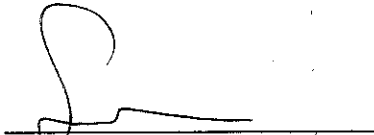
QUIT CLAIM DEED WITH COVENANT

KNOW ALL MEN BY THESE PRESENTS, that, CEDARS NURSING CARE CENTER, INC., a Maine non-profit corporation with a principal place of business in Portland, Cumberland County, Maine, for consideration paid grants to JHA ASSISTED LIVING, INC., a Maine non-profit corporation having a mailing address of 630 Ocean Avenue, Portland, Maine 04103, WITH QUIT CLAIM COVENANT its 33.6% (Thirty-Three and Six-Tenths Percent) tenancy-in-common interest in the following described property:

SEE EXHIBIT A ATTACHED HERETO
AND INCORPORATED HEREIN

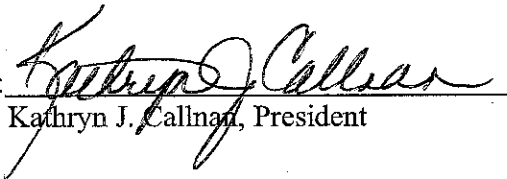
WITNESS my hand and seal this 6th day of July, 2006.

Signed, Sealed and Delivered
in the presence of



Witness

CEDARS NURSING CARE CENTER, INC.

By: 

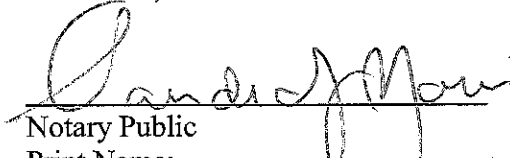
Kathryn J. Callnan, President

State of New Hampshire
County of Hillsborough

July 6, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of Cedars Nursing Care Center, Inc., duly authorized, and acknowledged the foregoing instrument to be her free act and deed, and the free act and deed of Cedars Nursing Care Center, Inc.

Before me,



Notary Public
Print Name:
Commission Expires:

SEAL

SANDRA J. MORIN
Notary Public
My Commission Expires April 3, 2007

MAINE REAL ESTATE TAX PAID

EXHIBIT A

The Unit ("Unit") designated as Number 2 of the Cedars Condominiums located at 630 Ocean Avenue, Portland, Cumberland County, Maine, ("Condominium") created pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended, and set forth in Declaration of Cedars Condominiums, dated as of June 30, 2006, and recorded in Cumberland County Registry of Deeds in Book 24129, Page 276, as may be amended, and shown on the related plats and plans recorded in Plan Book 206, Page 430. The Unit is subject to and has the benefit of the Declaration, the Plats, Plans and the Act which are incorporated herein by reference, to which reference is hereby made for a more particular specification of the definition, location and description of the real property hereby conveyed and of the rights, obligations, easements, development rights, special Declarant rights, restrictions, covenants and conditions pertaining thereto.

Received
Recorded Register of Deeds
Jul 10, 2006 02:40:15P
Cumberland County
John E OBrien

QUIT CLAIM DEED WITH COVENANT

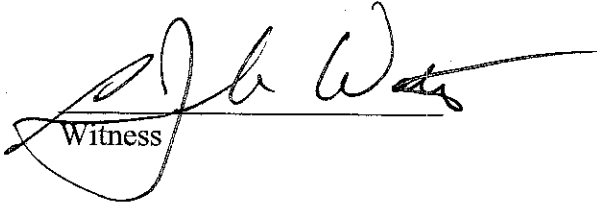
KNOW ALL MEN BY THESE PRESENTS, that, JHA PROPERTIES, INC., a Maine non-profit corporation with a principal place of business in Portland, Cumberland County, Maine, for consideration paid grants to JHA ASSISTED LIVING, INC., a Maine non-profit corporation having a mailing address of 630 Ocean Avenue, Portland, Maine 04103, WITH QUIT CLAIM COVENANT its 66.4% (Sixty-Six and Four Tenths Percent) tenancy-in-common interest in the following described property:

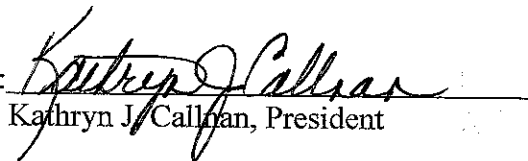
SEE EXHIBIT A ATTACHED HERETO
AND INCORPORATED HEREIN

WITNESS my hand and seal this 27th day of September, 2006.

Signed, Sealed and Delivered
in the presence of

JHA PROPERTIES, INC.


Witness

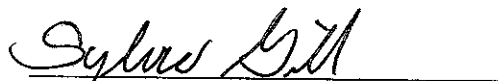
By: 
Kathryn J. Callnan, President

State of Maine
County of Cumberland

September 27, 2006

Personally appeared the above-named Kathryn J. Callnan, President, of JHA Properties, Inc., duly authorized, and acknowledged the foregoing instrument to be her free act and deed, and the free act and deed of JHA Properties, Inc.

Before me,


Notary Public
Print Name:
Commission Expires:

SYLVIA GILL
Notary Public, Maine
My Commission Expires October 21, 2013

EXHIBIT A

The Unit ("Unit") designated as Number 2 of the Cedars Condominiums located at 630 Ocean Avenue, Portland, Cumberland County, Maine, ("Condominium") created pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended, and set forth in Declaration of Cedars Condominiums, dated as of June 30, 2006, and recorded in Cumberland County Registry of Deeds in Book 24129, Page 276, as may be amended, and shown on the related plats and plans recorded in Plan Book 206, Page 430. The Unit is subject to and has the benefit of the Declaration, the Plats, Plans and the Act which are incorporated herein by reference, to which reference is hereby made for a more particular specification of the definition, location and description of the real property hereby conveyed and of the rights, obligations, easements, development rights, special Declarant rights, restrictions, covenants and conditions pertaining thereto.

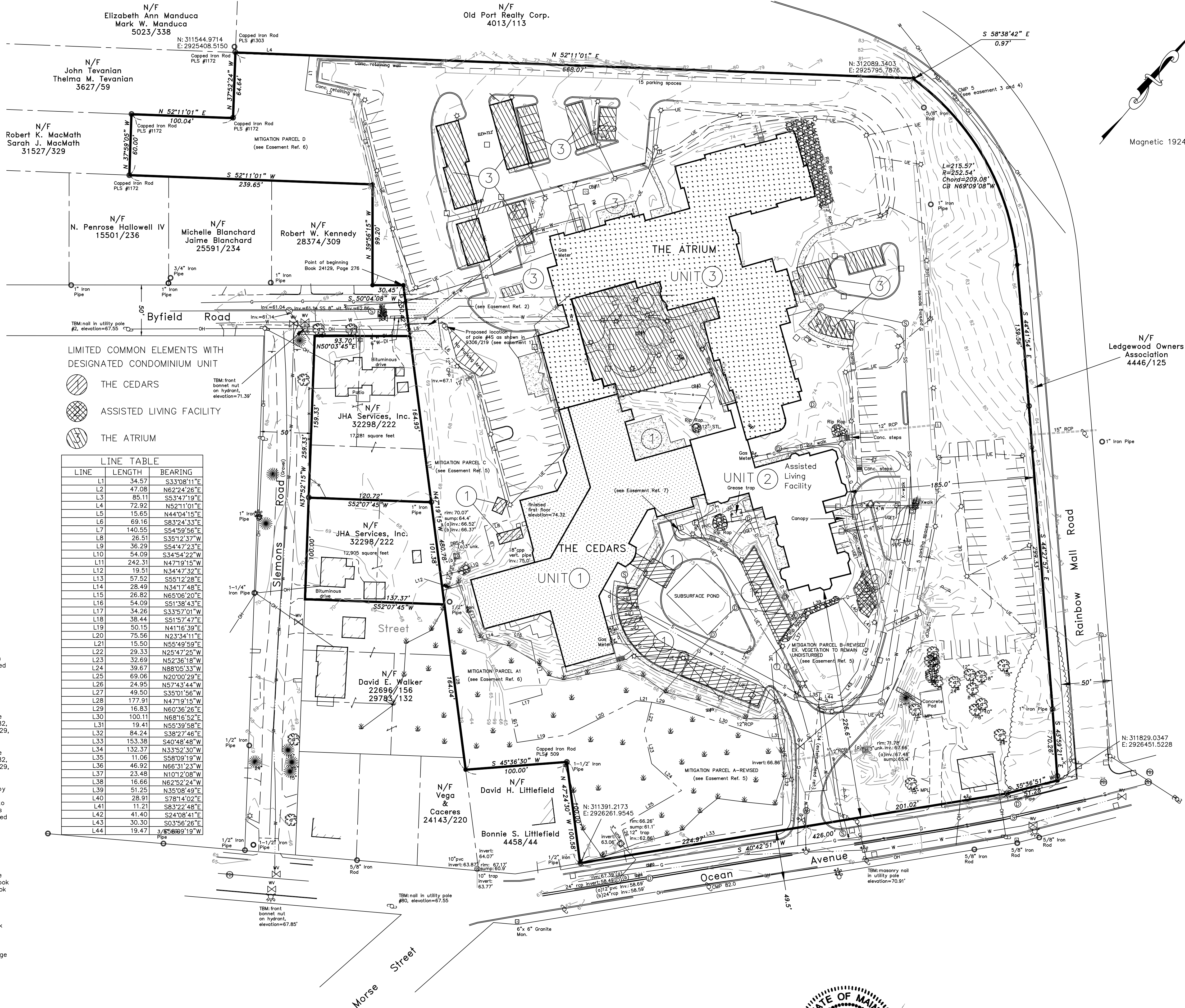
Received
Recorded Register of Deeds
Oct 10:2006 11:34:34A
Cumberland County
John B O'Brien

LEGEND

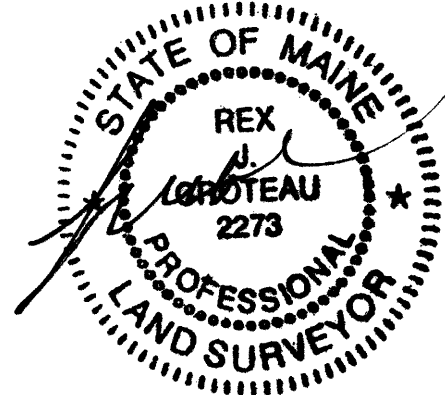
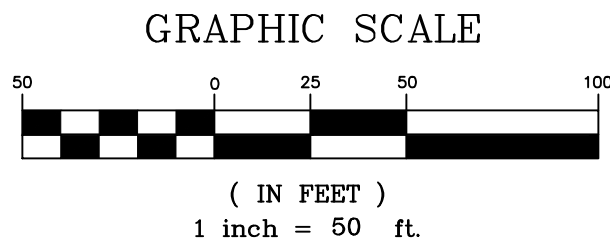
- 5/8" Capped iron rod set
- Iron pin found
- Monument found
- Catch basin
- Sewer manhole
- Drain manhole
- Gas valve
- Water shutoff
- Fire hydrant
- Utility pole
- Light pole
- Elec. manhole
- Tel. manhole
- Sign
- Edge of pavement
- Curb
- Abutter's line
- Property line
- Easement line
- Sanitary sewer
- Storm drain
- Water line
- OH Overhead utility wires
- G Underground gas
- UET Underground tel./ elec.
- UGET Underground tel./ elec./ cable
- Fence
- 1' contour
- 5' contour
- Concrete pad or walk
- Existing building
- Concrete pad or surface
- Elec. Transformer
- Existing Unit 3
- Existing Unit 1

EASEMENTS AND ENCUMBRANCES

- Utility Easement conveyed to Central Maine Power Company and New England Telephone and Telegraph Company by Cedars Nursing Care Center, Inc. described in Book 9306, Page 219. The proposed utility pole mentioned in description was not found on premises.
- Snow Plowing Easement conveyed to the City of Portland by Cedars Nursing Care Center, Inc. and Jewish Home for the Aged described in Book 9260, Page 236.
- Underground Line Easement conveyed to Central Maine Power Company by JHA Properties described in Book 14382, Page 187; encumbers the property described in Book 24129, Page 276.
- Underground Line Easement conveyed to Central Maine Power Company by JHA Properties described in Book 14382, Page 187; encumbers the property described in Book 24129, Page 276.
- The Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. described in Book 13709, Page 75, and the Amendment to Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. described in Book 24129, Page 254. The amended and unamended Mitigation Parcels have been delineated on plan.
- Declaration of Covenants and Restrictions made by Cedars Nursing Care Center, Inc. and JHA Properties, Inc. described in Book 24129, Page 265.
- Underground Line Easement conveyed to Central Maine Power Company by Cedars Nursing Care Center, Inc. in Book 9162, Page 206; encumbers the property described in Book 24129, Page 276.
- Certification of Variance Approval granted to Cedars Nursing Care Center, Inc., JHA Properties, Inc., and JHA Services, Inc. by the City of Portland in Book 13595, Book 182.
- Department of Environmental Protection Stormwater Standards and Conditions as set forth in Book 26415, Page 50.



LINE TABLE		
LINE	LENGTH	BEARING
L1	34.57	S33°08'11"E
L2	47.08	N62°24'26"E
L3	85.11	S53°47'19"E
L4	72.92	N52°11'01"E
L5	15.65	N44°04'15"E
L6	69.16	S83°24'33"E
L7	140.55	S54°59'56"E
L8	26.51	S35°12'37"W
L9	36.29	S54°47'23"W
L10	54.09	S34°54'22"W
L11	242.31	N47°19'15"W
L12	19.51	N34°47'32"E
L13	57.92	S55°12'28"E
L14	28.49	N34°17'48"E
L15	26.82	N65°06'20"E
L16	54.09	S51°38'43"E
L17	34.26	S33°57'01"W
L18	38.44	S51°57'47"E
L19	50.15	N41°16'39"E
L20	75.56	N23°34'11"E
L21	15.50	N55°49'59"E
L22	29.33	N25°47'25"W
L23	32.69	N52°36'18"W
L24	39.67	N88°05'33"W
L25	69.06	N20°00'29"E
L26	24.95	N57°34'44"W
L27	49.50	S35°01'58"W
L28	177.91	N47°19'15"W
L29	16.83	N60°36'26"E
L30	100.11	N68°16'52"E
L31	19.41	N55°39'58"E
L32	84.24	S38°27'46"E
L33	153.38	S40°48'48"W
L34	132.37	N33°52'30"W
L35	11.06	S58°09'19"W
L36	46.92	N66°31'23"W
L37	23.48	N101°2'08"W
L38	16.66	N62°52'24"W
L39	51.25	N35°08'49"E
L40	28.91	S78°14'02"E
L41	11.21	S83°22'48"E
L42	41.40	S24°08'41"E
L43	30.30	S03°56'26"E
L44	19.47	S58°09'19"W

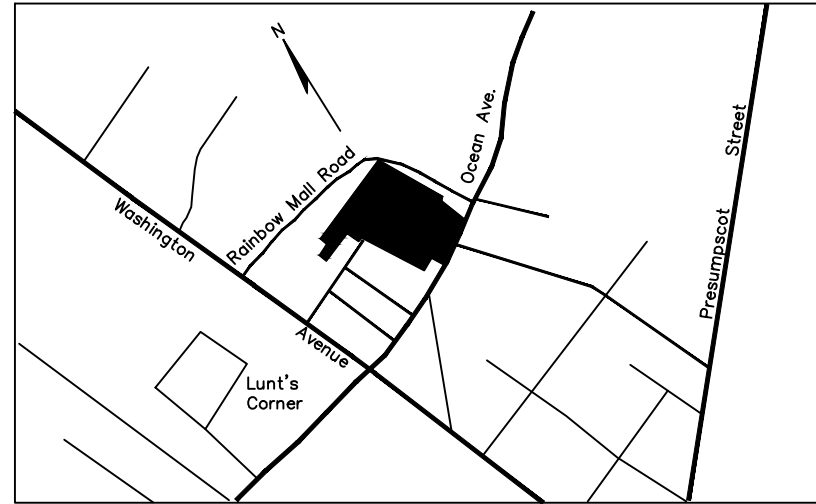


CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

Rex J. Croteau, P.L.S. #2273

LOCUS PLAN



NOTES

- Book and Page references are to the Cumberland County Registry of Deeds, unless otherwise specified.
- Bearings are referenced to magnetic north 1924.
- All utility locations shown on this plan are approximate, based on location of visible features and information provided by others. Dig Safe and/or the appropriate utilities should be contacted prior to any construction.
- According to the Flood Insurance Rate Map for the City of Portland (FIRM Panel 230051 0007 B, effective date July 17, 1986), this parcel is not located within a flood hazard area.
- Coordinate values shown are based on based on the Morse and Kidder Street CSO project provided to the City of Portland by Titcomb Associates.
- Elevations are based on the City of Portland datum.
- Simons Road is an unaccepted, continued street.
- Wetlands delineated by others, field located by Titcomb Associates.

AREA

TOTAL PROJECT AREA = 460,350 square feet / 10.57 acres

PLAN REFERENCES

- Plan of Lots Number 3 & 4 made for the Estate of Mary S. Lunt by Edwin C. Townsend dated March 8, 1877 recorded in Plan Book 4, Page 4.
- Plan of Land made for Dorothy S. True and Heirs of F.W.H. Smith dated October 1929, recorded in Plan Book 25, Page 50.
- Revised Final Plan of Ledgewood Subdivision made for the Dartmouth Company by Land Use Consultants dated April 27, 1979, recorded in Plan Book 123, Page 61.
- Plan of Property made for Jewish Home for the Aged made by H.I. and E.C. Jordan dated July 17, 1987.
- Plan of Property/Land Title Survey of the Cedars made by H.I. and E.C. Jordan dated March 29, 1990, recorded in Plan Book 186, Page 14.
- Record Drawing of Cedars Nursing Care Center, Inc. made by Owen Haskell, Inc. dated August 23, 1991.
- Layout and Utilities Plan of the Atrium at Cedars (drawing number 2202) made by Tsomides Associates dated May 27, 1997.
- Topographic Site Survey made for JHA Properties, Inc. by Daniel J. Dalphonso dated February 28, 1997.
- Plan Showing Proposed Property Lines made for JHA Properties, Inc. by Daniel J. Dalphonso dated November 4, 1997.
- Plan of Cedars Phase 3-Wetland Mitigation Areas made by Land Use Consultants dated August 24, 2004.
- ALTA/ACSM Land Title Survey made for JHA Properties, Inc. & Cedars Nursing Care Center, Inc. dated November 4, 2004, by Titcomb Associates.
- Cedars Condominiums Recording Plat/Condominium Plan ALTA/ACSM Land Title Survey made for JHA Properties, Inc., Cedars Nursing Care Center, Inc. and JHA Assisted Living, Inc. by Titcomb Associates dated September 8, 2005 and revised through April 5, 2006, recorded in the Cumberland County Registry of Deeds in Plan book 206, Page 430.

OWNERS OF RECORD

- Unit 1 Cedars Nursing Care Center, Inc.; Book 24129, Page 276
- Unit 2 JHA Assisted Living, Inc.; Book 24446, Page 225 and Book 24155, Page 29
- Unit 3 JHA Assisted Living, Inc.; Book 31484, Page 147

Rev. 1 | 08/29/16 | Wetlands, building addition | nse

Boundary Survey

630 Ocean Avenue Portland, Maine

MADE FOR

Inn at Cedars, Inc. (JHA Assisted Living, Inc)

630 Ocean Avenue Portland, Maine

JOB# 204089 DATE: August 4, 2016 SCALE: 1"=50'

BOOK# 837

DWG: 204089_2016

FILE# 8847

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207)797-9199 www.titcombsurvey.com

Section 3: Compliance with Conditional Use Standards and Conditions

3.0 Conditional Use Standards

R-3:

Use: Institutional use as a long-term care facility is a conditional use in this zone. The applicant requests that the conditional use be granted for the proposed building on the basis that the use is consistent with the existing site and in compliance with the conditional use standards found in Section 14-474 and Section 14-88 (c) of the ordinance as demonstrated below.

Section 14-474 (c) 2.

- a. The volume of traffic will be very similar to the current levels. The proposed facility will be adding approximately 8 to 9 staff during the daytime shift and there will be 20 additional beds at the facility. This will result in approximately 16 additional trips during the peak hour. The site will continue to be served by the single entrance on Ocean Avenue. Because the small increase in beds for the site we do not anticipate any changes in the deliveries to the site.
- b. The proposed use will not create unsanitary or harmful conditions. The building will have mechanical systems located on the roof of the building and trash will be collected and stored at the dumpsters on the site behind the Hoffmann Building. Please see Section 15 for additional information regarding solid waste.
- c. The orientation of the building is such that operational access to the building is from the main campus access drive which is internal to the site. There will be an activity area for residents along Rainbow Mall Road, but this area will be screened by a retaining wall, fence and landscaping. The parking lot will be screened from Rainbow Mall Road by landscaping. The portion of the building facing Ocean Avenue will be landscaped.

Section 14-88 (c)

- b. The proposed use will displace a residential structure, the “White House” that has been used as offices by the Cedars since approximately 1991. It is not clear when it was last used as a residence. The proposed building cannot be located elsewhere on the Cedars campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas are subject to mitigation easements for prior wetland impacts, and they will not be impacted by the proposed redevelopment.

Section 14-91 (a) off street parking: Parking shall be provided as required by Division 20. There will be an additional 14 spaces to accommodate the increase in staff during the day time shift and the 20 assisted living beds as required in Division 20.

R-5:

Use: Institutional use as a long-term care facility is a conditional use in this zone. The applicant requests that the conditional use be granted for the proposed building on the basis that the use is consistent with the existing site and in compliance with the conditional use standards found in Section 14-474 and Section 14-118 (b) of the ordinance. The following responses

Section 14-474 (c) 2.

- d. The volume of traffic will be very similar to the current levels. The proposed facility will be adding approximately 7 to 8 staff during the daytime shift and there will be 20 additional beds at the facility. This will result in approximately 14 additional trips during the peak hour. The site will be served by the single entrance on Ocean Avenue. Because the small increase in beds for the site we do not anticipate any changes in the deliveries to the site.
- e. The proposed use will not create unsanitary or harmful conditions. The building will have mechanical systems located on the roof of the building and trash will be collected in the garage and stored at the dumpsters on the site.
- f. The orientation of the building is such that operational access to the building is from the main campus access drive which is internal to the site. There will be an activity area for residents along Rainbow Mall Road, but this area will be screened by a retaining wall, fence and landscaping. The parking lot will be screened from Rainbow Mall Road by landscaping. The portion of the building facing Ocean Avenue will be landscaped.

Section 14-118 (b)

- b. The proposed use will displace a residential structure, the “White House” that has been used as offices by the Cedars since 1991. It is not clear when it was last used as a residence. The proposed building cannot be located elsewhere on the Cedars campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas are subject to mitigation easements for prior wetland impacts, and no wetland impacts are proposed as part of the redevelopment.

Section 14-91 (a) off street parking: Parking shall be provided as required by Division 20. There will be an additional 13 spaces to accommodate the increase in staff during the day time shift and the 20 assisted living beds as required in Division 20.

Section 4: Compliance with Applicable Zoning Requirements

4.0 Existing Zones

The site exists within a R-3 and R-5 Zones. Compliance within these zones is indicated below:

R-3:

Use: Institutional use as a long-term care facility is a conditional use in this zone. The applicant requests that the conditional use be granted for the proposed building on the basis that the use is consistent with the existing site and in compliance with the conditional use standards found in Section 14-474 and Section 14-88 (c) of the ordinance as demonstrated below.

Section 14-474 (c) 2.

- a. The volume of traffic will be very similar to the current levels. The proposed facility will be adding approximately 8 to 9 staff during the daytime shift and there will be 20 additional beds at the facility. This will result in approximately 16 additional trips during the peak hour. The site will continue to be served by the single entrance on Ocean Avenue. Because the small increase in beds for the site we do not anticipate any changes in the deliveries to the site.
- b. The proposed use will not create unsanitary or harmful conditions. The building will have mechanical systems located on the roof of the building and trash will be collected and stored at the dumpsters on the site behind the Hoffmann Building. Please see Section 15 for additional information regarding solid waste.
- c. The orientation of the building is such that operational access to the building is from the main campus access drive which is internal to the site. There will be an activity area for residents along Rainbow Mall Road, but this area will be screened by a retaining wall, fence and landscaping. The parking lot will be screened from Rainbow Mall Road by landscaping. The portion of the building facing Ocean Avenue will be landscaped.

Section 14-88 (c)

- b. The proposed use will displace a residential structure, the “White House” that has been used as offices by the Cedars since approximately 1991. It is not clear when it was last used as a residence. The proposed building cannot be located elsewhere on the Cedars campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas are subject to mitigation easements for prior wetland impacts, and they will not be impacted by the proposed redevelopment.

Section 14-91 (a) off street parking: Parking shall be provided as required by Division 20. There will be an additional 14 spaces to accommodate the increase in staff during the day time shift and the 20 assisted living beds as required in Division 20.

R-5:

Use: Institutional use as a long-term care facility is a conditional use in this zone. The applicant requests that the conditional use be granted for the proposed building on the basis that the use is consistent with the existing site and in compliance with the conditional use standards found in Section 14-474 and Section 14-118 (b) of the ordinance. The following responses

Section 14-474 (c) 2.

- d. The volume of traffic will be very similar to the current levels. The proposed facility will be adding approximately 7 to 8 staff during the daytime shift and there will be 20 additional beds at the facility. This will result in approximately 14 additional trips during the peak hour. The site will be served by the single entrance on Ocean Avenue. Because the small increase in beds for the site we do not anticipate any changes in the deliveries to the site.
- e. The proposed use will not create unsanitary or harmful conditions. The building will have mechanical systems located on the roof of the building and trash will be collected in the garage and stored at the dumpsters on the site.
- f. The orientation of the building is such that operational access to the building is from the main campus access drive which is internal to the site. There will be an activity area for residents along Rainbow Mall Road, but this area will be screened by a retaining wall, fence and landscaping. The parking lot will be screened from Rainbow Mall Road by landscaping. The portion of the building facing Ocean Avenue will be landscaped.

Section 14-118 (b)

- b. The proposed use will displace a residential structure, the “White House” that has been used as offices by the Cedars since 1991. It is not clear when it was last used as a residence. The proposed building cannot be located elsewhere on the Cedars campus without causing significant environmental impacts in the remaining undeveloped portions of the site. The wetland areas are subject to mitigation easements for prior wetland impacts, and no wetland impacts are proposed as part of the redevelopment.

Section 14-91 (a) off street parking: Parking shall be provided as required by Division 20. There will be an additional 13 spaces to accommodate the increase in staff during the day time shift and the 20 assisted living beds as required in Division 20.

Cedars Site Plan Dimensional Requirements				
Code	Item	Proposed	Conditions R-5	Conditions R-3
14-87, 14-88(c)2.a.	Permitted Uses	Institutional	Allowed with conditional permit	Allowed with conditional permit
14-90	Dimensions			
a	Lot Size	10.5 acres	2 acres	2 acres
c	Frontage	578 feet	50	50 Feet
d	Front Setback	25	20	25
	Side Setback (Street)	20	20	20
	Side Setback	Variable	14	16
	Rear Setback	No Change		25
e	Max. Lot Cover	20.3%	40%	35%
f	Min Lot Width	Varies; over 400'	90 feet	65 feet
g	Max Str. Height	35'	35 feet	35 feet
h	Units/Building	N/A	12 max	2 max
i-q	N/A	N/A		N/A
14-91	Others			
a	Parking	0	(See Div 20)	(See Div 20)
c	N/A	N/A	N/A	N/A
14-92-6	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
Parking			From Division 20	
Off-Street	Residential Use	N/A	2/Dwelling Unit	
	LT Care	4	4; 1/5 Beds	
	LT Care	9	9; 1/Employee during day shift	
14-526A	Bike Parking	4	2.6; 2/10 new required parking spaces	
	Motor/Scooter	1	1	



September 12, 2017

Ann Machado
Zoning Administrator
Permitting and Inspections Department
City of Portland, Maine
amachado@portlandmaine.gov
(207) 874-8709

RE: The Cedars 630 Ocean Ave; Variance Appeal

Dear Ms. Machado:

The Cedars, located at 630 Ocean Ave, recently submitted a Variance Appeal through the law firm Jensen Baird Gardner & Henry. As explained in a letter written by Natalie Burns as part of the Variance Appeal, The Cedars believes that the Variance Appeal is unnecessary and would like you to review and approve the height of the building based on the mansard roof portion of the definition of height in Section 14-47.

The existing Atrium building, which is 3 stories in height, was previously approved by the City without a variance, because the City determined that the roof fell within the mansard roof definition as described above. The proposed building and roof structure are very similar to the Atrium and would be considered under the same definition.

As proof of our assertion, we have included the definition of a mansard roof and the plans of the proposed building that show the elevation, the roof plan, and building sections to further document the fact that the proposed building has a mansard roof.

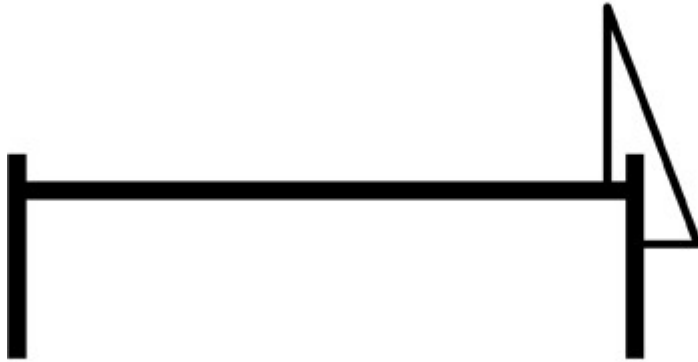
I. CITY CODE

As defined by the City Code, a building's height is defined as: The vertical measurement from grade, or the predevelopment grade on the islands, to the highest point of the roof beams in flat roofs; **to the highest point of the roof beams or the highest point on the deck of mansard roofs;** to a level midway between the level of the eaves and highest point of pitched roofs or hip roofs; or to a level two-thirds of the distance from the level of the eaves to the highest point of gambrel roofs. For this purpose the level of the eaves shall be taken to mean the highest level where the plane of the roof intersects the plane of the outside wall on a side containing the eaves.

As highlighted in yellow above, the building height calculation for a mansard roof is to the highest point of the roof beam or the highest point on the deck of mansard roofs.

II. MANSARD ROOF DEFINITION

There are many different types of mansard roofs. The mansard roof definition that The Cedars proposed building falls under is as follows:



The Gourmet Mansardic roof.

- Structurally, a conventional flat-roofed building with an appended projecting element.
- Formally, the slope projects out from the exterior wall.
- Used as an inexpensive decorative component, as a screen for e.g. roof-top equipment, or for purposes of signage and identification.

III. THE CEDARS ELEVATIONS AND ROOF PLANS

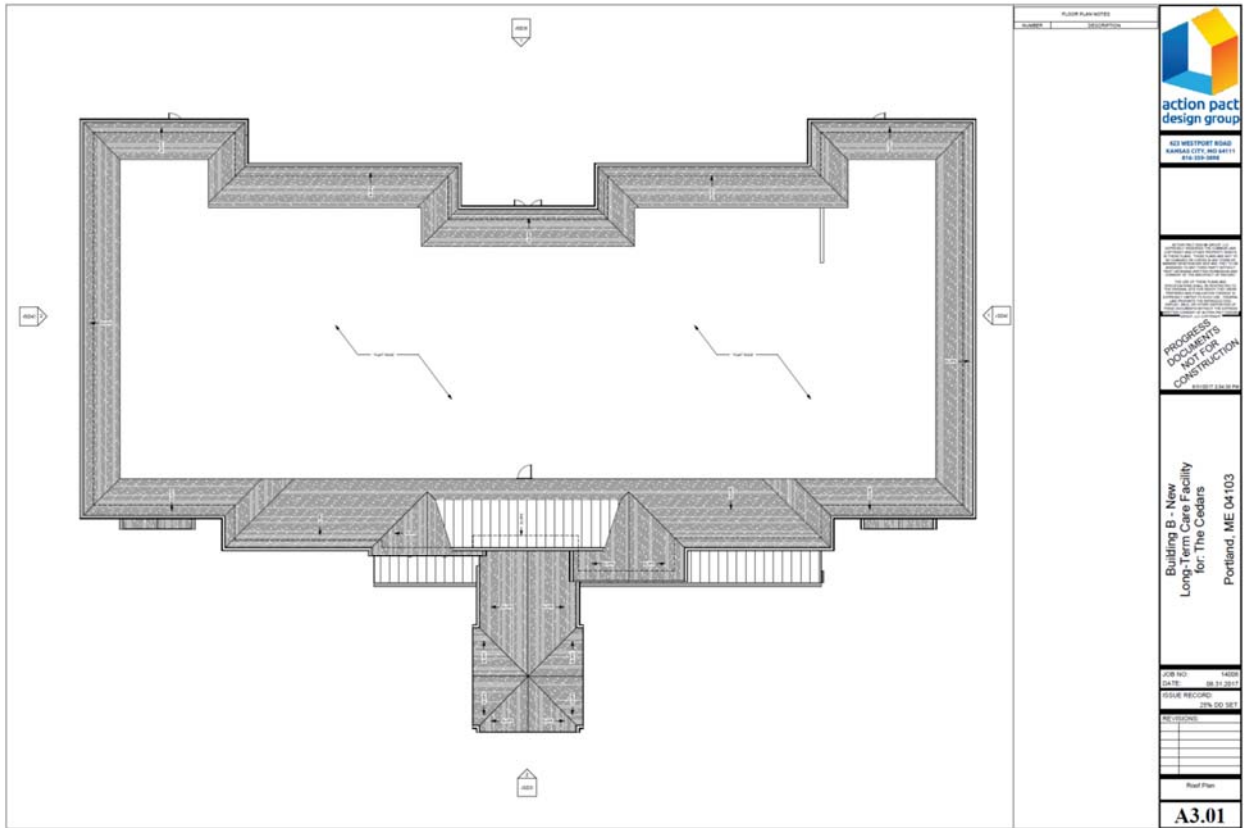
The proposed building elevation is shown below.





From the front building elevation, it is difficult to determine what type of roof is shown. However, from the East and West elevations above, you can see that the mansard roof is a roof element that stops and does not slope to a peak as in a typical pitched roof.

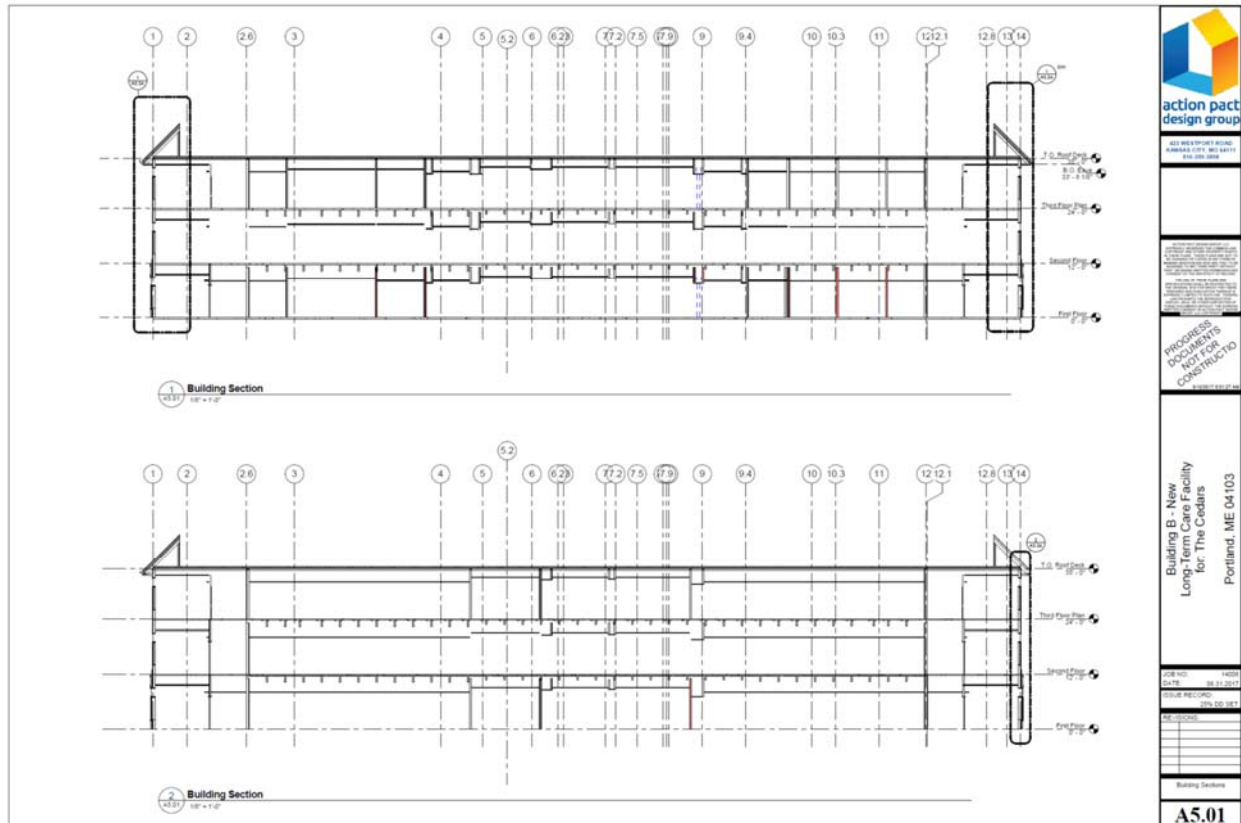
The clearest illustration of the mansard roof can be seen by looking at the roof plan. In the below roof plan, the mansard roof is shown as the gray shaded area that goes around the entire perimeter of the building. The vast majority of the roof, shown as the white area on the roof plan is the flat roof portion. Per the definition above, the proposed roof is a conventional flat roofed building with an appended projecting element used a decorative component and to shield roof top equipment.

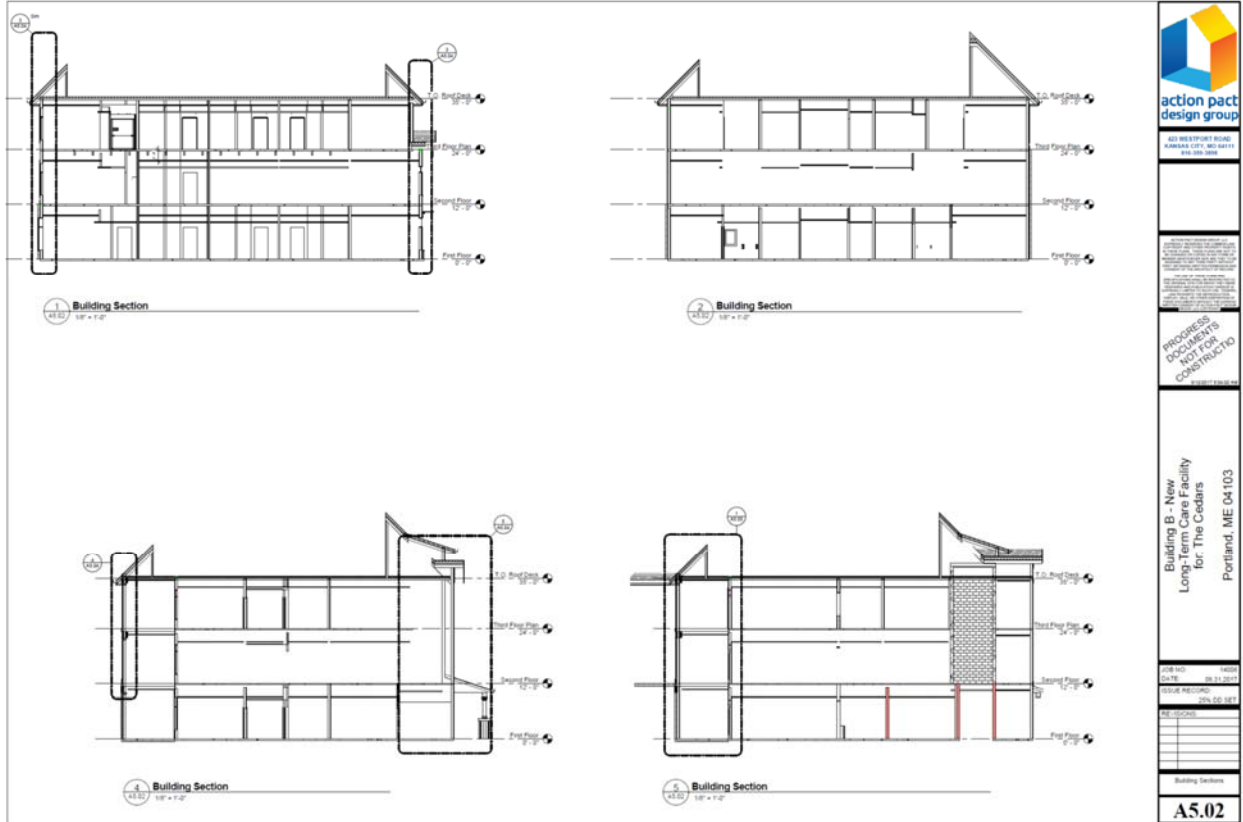


IV. BUILDING HEIGHT CALCULATION

Based on the definition of a mansard roof, the proposed roof plans that illustrate a mansard roof, and the City's definition of height, we have calculated the building height as shown below in the building sections.

The top of the roof deck for the proposed building is shown below at 35' which meets the City's code requirements for building height.





V. CONCLUSION

Due to the following facts and circumstances, we would like you to determine that The Cedars' proposed building meets the building height requirements and does not require a Variance Appeal:

- Existing Atrium building is 3 stories with the same mansard roof structure and was previously approved without a variance
- The proposed roof plan meets the definition of a mansard roof – a mostly flat roof with a decorative element around the exterior perimeter of the building
- Based on meeting the mansard roof definition, building height is calculated as the vertical measurement from grade to the highest point of the roof beams or the highest point on the deck of mansard roofs
- The top of the roof deck as shown in the building sections is 35 feet which meets the current zoning requirements

The Cedars appreciates your prompt attention to this matter so that we can keep the Project moving and, if you determine that the proposal meets the height requirements, cancel the Variance Appeal prior to the City's next meeting on September 21, 2017.

Respectfully Submitted,

Action Pact Holdings, LLC

A handwritten signature in black ink, appearing to read 'M. Dickmann', followed by a long horizontal line extending to the right.

Martin Dickmann
Executive Vice-President

February 8, 2018
W-P Project No. 13682A

Mr. Matthew Grooms
City of Portland
389 Congress Street, 4th Floor
Portland, ME 04101

Subject: The Cedars – Long Term and Assisted Living Memory Care Facility Expansion
Response to Preliminary Plan Comments

Dear Mr. Grooms:

We received comments from you on Monday, February 5, 2018 regarding the preliminary plan for the Cedars project at 630 Ocean Avenue. We have revised plans and building elevations to respond to the comments raised by staff and have prepared the following responses to the comments. Please note that only comments requiring a response have been listed.

1. Comments from Tom Errico regarding traffic:

- a. No response necessary.

2. Comments from Bruce Hyman:

- a. Comment: *An ADA-compliant pedestrian-way/sidewalk, a minimum of 5' in width, is to be provided on the north side of the driveway from the sidewalk on Ocean Avenue to the proposed new building's entrance - this may require moving the bicycle parking to be adjacent to the sidewalk.*

Response: An ADA compliant sidewalk was added into the revised site plans from Ocean Avenue to the front of the proposed building along the North side of the entrance drive.

- b. Comment: *Efforts should be made to improve the ADA-accessibility of the existing sidewalk route on the south side of the driveway - there appears to be no existing curb ramp connecting a crosswalk across the existing driveway (see below) - construction activity is shown in this vicinity on the opposite side of the driveway (in the right foreground of the photo)*

Response: The photo highlights an area of the existing site well outside the project limits. While we agree that the internal sidewalks should be as accessible as possible, this particular sidewalk is not within the scope of the project.

- c. Comment: *The sidewalk is to be extended (to extend past the bench) at the pedestrian crossing along/near the frontage of the existing Assisted Living facility as part of the construction of this sidewalk segment and crosswalk.*

Response: The revised site plans show the internal sidewalk extending beyond the bench in the photo and the cross walk across the driveway being reduced in length as a result.



- d. Comment: *It would be desirable to have more pedestrian connectivity/facilities between the new parking lot and other buildings without walking within parking lots and within the vehicular paths of driveways.*

Response: We anticipate that the turn over in the parking lot to be relatively low with employees as the primary users of the spaces. We have added a cross walk at the parking lot entrance, across the entrance road to a sidewalk on the south side of the entrance road.

- e. Comment: *Detail Sheet C07, Crosswalk Layout: The applicant may want to consider a more visible crosswalk pattern similar to the city's standard: 24" stripes in width, 8' in length with 24" of spacing in between stripes - the detail shows 12" wide stripes rather than 24".*

Response: The detail has been revised to show a 24" wide cross walk stripe as recommended.

- f. Comment: *General Neighborhood pedestrian circulation: The topic of the lack of a pedestrian route/sidewalk on Rainbow Mall Road was raised at the neighborhood meeting. The applicant does not directly own the frontage on the south side of Rainbow Mall Road but it should collaborate to the extent practicable with the Ledgewood Owners Association on planning for a sidewalk along it at least for the portion from Ocean Avenue to connect to the Ledgewood Drive sidewalk. This would potentially benefit some Cedars residents, staff and visitors to increase access and physical activity opportunities.*

Response: We have heard from some neighbors that a sidewalk on Rainbow Mall Road would be desirable. As pointed out in the comment Ledgewood Owners Association owns a strip of land adjacent to both sides of Rainbow Mall Road. We will discuss acquiring rights to construct a sidewalk but do not currently have rights to impact the land on either side of the road, so no sidewalk is shown on the plans.

3. Comments from Robert Thompson, Fire Department

- a. Comment: *Two knox boxes will be required for the building, one at the front entrance, and one at the rear entrance/utility area*

Response: A Knox Box will be located at the front and rear entrance of the building. These will be shown and detailed on the building plans.

4. Comments from Engineering review Lauren Swett.

- a. Comment: *The plans should note a location for snow storage or provide a snow removal plan. The snow storage location should be sited outside of existing and proposed drainage courses.*

Response: Snow storage will occur along the sides of the entrance roads and in the islands within the parking lots. Most of the existing site will not be altered as a result of this plan. The new parking areas will store snow at the north end of the parking lot outside the parking spaces. Snow will not be stored within stormwater treatment measures.

- b. Comment: *The soil filters do not have defined emergency overflow spillways. USF-A could overflow internal to the site; however, it appears that USF-B may overflow into Ocean Avenue. In the 25-year storm, the peak elevation calculated in the HydroCAD model indicates, that water levels may be higher than the soil filter berm and the elevation of the adjacent section of Ocean Avenue. The Applicant should address peak flow elevations, and*



provide for adequate emergency overflow to prevent the soil filter from draining into Ocean Avenue. (Note, this comment was not discussed at the January 30 meeting.)

Response: An emergency overflow spillway from the USF-B to the detention basin along the entrance drive has been added to the revised plans. This revision will address the concern over overflow water from impacting to Ocean Avenue.

- c. Comment: *The Applicant should provide ability to serve letters for the project upon receipt from the utilities.*

Response: We have been pursuing ability to serve letters from the utilities and will submit the confirmation once received.

- d. Comment: *The proposed disturbance exceeds one acre; therefore, a Maine Construction General Permit is required for this project.*

Response: A Maine Construction General Permit will be filed prior to the start of construction.

- e. Comment: *A retaining wall is proposed around the site. Please note that a geotechnical evaluation including soil types and soil bearing capacities is required for retaining walls over three feet in height.*

Response: A geotechnical report addressing subsurface site conditions and design parameters for the retaining wall was recently completed and is attached.

- f. Comment: *Please indicate the location of the 4" underdrain outlet behind the retaining wall, as shown on the Stoneterra Block Wall detail on Sheet C-9.*

Response: The underdrain behind the retaining wall will be connected to the stormdrain system within the site as shown on the revised plans.

- g. Comment: *The Applicant should review for potential utility conflicts between underground electrical and proposed stormdrain infrastructure. In particular, note the location of CB4.*

Response: The utility lines have been relocated and the conflicts with the storm lines have been checked. The storm line has also been revised through this area.

5. Comments from Matthew Grooms, Planning Department:

- a. Comment: *Please provide renderings of the proposed building as it will be seen from on-street locations, specifically the intersection of Ocean Avenue and Rainbow Mall Road.*

Response: Two building sections have been developed and included with the response submission that show sections through Rainbow Mall Road and through Ocean Ave.

- b. Comment: *As part of this expansion project, a private internal pathway should be provided with direct connection to the existing public sidewalk located along the property's Ocean Avenue frontage.*

Response: A sidewalk has been added to the northern side of the entrance drive connecting Ocean Ave sidewalk with the front entrance of the building.

- c. Comment: *Please provide a geotechnical report detailing the necessity for blasting work as part of this project. Please note, if blasting is to occur, the project shall adhere to the standards of Article VIII of the land-use code and Section 3.7 of the City's Technical Manual.*

Response: A geotechnical report addressing subsurface site conditions and design parameters for the retaining wall was recently completed and is attached. If blasting is required to complete the site work the blasting operations will adhere to City and State standards governing blasting and a blasting plan prepared.



- d. Comment: *All proposed site lighting shall be illustrated on the site plan.*
Response: Site lighting is shown on the revised site plans.
- e. Comment: *On the site plan, identify any improvements proposed within the areas labeled as 'recreation areas'. Please provide applicable details for proposed fencing as well.*
Response: The recreation areas are to be passive recreation areas that allow for the residents to access space outside. The space behind the building is designated for residents of the Memory Care household and will be a fenced area. The space behind the building will be grassed and in the future may include some gardening beds to allow for gardening activities for the residents.
The recreation space at the front of the building will be for the long term care patients and will have a patio area where residents may congregate outside. The space will have some landscaping around the perimeter of the patio to define the space.
A fence detail for the space behind the building has been shown on the revised plans.
- f. Comment: *The City has reverted to cast-iron set-in-place detectable warning panels as opposed to replaceable panels. As the proposed panels are not located within the public right-of-way, please note that this is not a site plan review requirement.*
Response: The detail for the detectable warning devices at cross walks has been revised to show cast iron plates with the tactile warning surface.
- g. Comment: *Utility capacity letters shall be provided when available. In the event that these are not available prior to the public hearing, their submission shall be made a condition of approval.*
Response: We are continuing to work with the utilities to obtain the ability to serve letters and will forward the letters to the planning staff once we receive them.

6. Comments from Urban Designer Catlin Cameron :

- a. Comment: *Please provide renderings/views from the street*
Response: Included with this submission are sections through the site showing the building from Ocean Avenue and from Rainbow Mall Road.
- b. Comment: *The project references historical styles not found in this context and also includes a mix of styles within one building.*
Response: The current Cedars campus is a mixture of architectural design elements located over 3 separate additions connected to each other. Heights vary from 2 to 3 stories, The original two-story structure utilizing brick and cast stone with brick quoins, arch fan windows, limited key stone accent and a monumental two story contemporary entry. The other 3 story buildings (Ocher Inn and Atrium) are brick veneer, with cast stone, white siding and trim, porches and standing metal and shingled hip roofing. The atrium structure also has a monumental accent near the main entrance.
- c. Comment:
Staff found that the architectural characteristics of the context are more simple than is found in the proposal. Staff suggest the applicant make revisions to simplify the overall design, for example (also see attached):
 - Use all brick siding rather than introduce clapboard
 - Remove extraneous details such as the quoins, "key stones," fan windows
 - Shutters are more appropriate for a small scale residential building but not



for this large-scale institutional building

-The entrance canopy is quite contemporary compared with the style of the building – staff suggest revising the central balustrade to reflect that contemporary design of the canopy.

Response: Our design inspiration was to keep the base architectural design elements of brick veneer, cast stone, quoins, white siding and trim, white monumental entry and shingled hip roofs. The house hold model for resident care is the basis of design for this structure internally. A Front door off the porch, dining and living room, den, library, spa and outdoor seating are all part of the interior spatial uses. We want the exterior to be complimentary to the existing structures and add some residential design elements to be less institutional on the exterior of the structure.

7. Comments from Jeff Tarling:

- a. Comment: *Entrance-way landscape - how does the existing landscape blend into the new project. The final approval should show the details of the more formal ornamental landscape beds and limit of work.*

Response: The entrance way landscaping will be refined at the time of final design.

- b. Comment: *Parking lot landscape - 'should meet parking lot landscape standards', the parking lot island appears to have a stormwater feature which is good, additional trees and shrubs could be used to meet parking lot standards. There appears to be room for a few trees, recommend Tupelo & or Red Maple 2" caliper size, (Tupelo is a slow growing native tree that tolerates wet conditions) and for shrubs Winterberry, Sweetern for examples. Ideally the island below would contain taller trees mentioned.*

Response: The landscape plan will be revised with the final design to include additional plantings as suggested.

- c. Comment: *Rainbow Mall Road edge - The Rainbow Mall Road edge has been an important feature for the Cedar's since the original approval. The goal is to maintain a tree and vegetated edge that allows window views into to site for safety / security but maintains the wooded feel of the residential properties nearby.*

From a quick review, it would be important to establish a limit of work and 'tree save' protection for the vegetation between the proposed project and Rainbow Mall, this should be a condition. The proposed tree and landscape treatment may need to be enhanced with additional trees and shrubs. A condition could be that if existing trees and vegetation is lost that additional plants be added. 'Tree Save' areas should be defined on site and part of the Pre-Construction meeting. This would included the usual requirements of not storing equipment or materials in or near the root zone of the tree save areas. Projection should include temporary construction fencing. The parking lot edge along Rainbow Mall Road could include low wooden guardrail along the edge to reduce vehicle encroachment into the buffer area. The Tree Protection web links below may be useful

Response: The site plan has been revised to move the building and retaining wall forward 2' additional feet to allow for more distance between the development and the 8'-10' wide strip of land controlled by Ledgewood Condominiums and aid in the preservation of the trees in this strip.



Please find attached revised plans as noted in the responses above.

Sincerely,
WRIGHT-PIERCE

A handwritten signature in black ink, appearing to read 'Jan Wiegman', with a large, sweeping flourish extending to the right.

Jan Wiegman, PE
Project Manager
jwiegman@wright-pierce.com
Enclosures

cc: *Alex Toye*
Kathy Callnan

REPORT

15-1202 S

February 7, 2018

Explorations and Geotechnical Engineering Services

Proposed Long-Term Care Facility
The Cedars
630 Ocean Avenue
Portland, Maine 04103

Prepared For:
The Cedars
Attention: Kathryn Callnan
630 Ocean Avenue
Portland, Maine 04103

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866



- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

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15-1202 S

February 7, 2018

The Cedars
Attention: Kathryn Callnan
630 Ocean Avenue
Portland, Maine 04103

Subject: Explorations and Geotechnical Engineering Services
Proposed Long Term Care Building
630 Ocean Avenue
Portland, Maine 04103

Dear Kathryn:

In accordance with our revised Agreement, dated November 28, 2017, 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 test boring and test 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 The Cedars facility on Ocean Avenue in Portland, Maine. We understand development plans call for a new long-term care building in the northeast corner of The Cedars campus, adjacent to the intersection of Rainbow Mall Road and Ocean Avenue. We understand the building will be three-story, on-grade, and will occupy a plan footprint of approximately 15,100 SF. A finish floor elevation of 73.8 feet (project

datum) is proposed, requiring tapered cuts approaching 8 feet to achieve slab grade based on the existing and proposed topographic information provided. We understand retaining walls are proposed along the northerly and westerly sides of the building to support up to about 7 feet of grade change. A paved parking area extension is proposed on the westerly side of the existing paved parking area requiring tapered cuts of up to about 6 feet to achieve pavement grades. New under-drained soil filters are proposed on the southerly side of the proposed paved area and on the easterly side of the proposed building requiring several feet of cut to achieve grades.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Six test borings (B-101 through B-106) and nine auger probes (P-101 through P-109) were made at the site on January 19, 2018 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 a plan provided by others and GPS equipment. Available locations for the explorations were somewhat limited by existing underground utilities as well as site structures and features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the test boring explorations 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 the topographic information shown on the "Exploration Location Plan". A table showing the approximate depths to refusal is shown below.

2.2 Field Testing

The explorations were drilled using a combination of hollow-stem and solid stem auger-boring techniques. The soils at the test borings were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. SPT blow counts are shown on the test boring logs. Soil sampling was not performed at the auger probes.

2.3 Laboratory Testing

Soil samples obtained from the test boring explorations were returned to our laboratory for further classification and testing. Moisture content test results are noted on the logs. The results of two laboratory soil gradation tests are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

The ground surface was snow covered and frozen to variable depths at the time of exploration work. Thus, it was difficult to observe bedrock outcrops and to determine the surficial forest duff and topsoil thicknesses. We were able to observe what appears to be bedrock outcrops in a few areas, as noted approximately on the Exploration Location Plan. We also observed bedrock within the basement of the existing office building at the corner of Rainbow Mall Road and Ocean Avenue. It appears the bedrock surface varies from about 4 to 5 feet below the ground surface surrounding the building.

Test borings B-101 through B-103 and auger probes P-101 through P-108 were made in the area of the proposed building. Borings B-101 through B-103 encountered a soils profile generally consisting of forest duff and topsoil overlying brown silty gravelly sand (fill) with some pieces of brick at boring B-101 overlying loose to medium dense brown silty sand with varying amounts of gravel overlying refusal surfaces (probable bedrock). These test borings and auger probes encountered refusal surfaces at depths varying from about 1 to 5.5 feet below the existing ground surface.

Test borings B-104 through B-106 and auger probe P-109 were made in the proposed parking lot expansion area west of the existing paved parking lot. These explorations encountered forest duff and topsoil overlying loose to dense brown silty sand with varying amounts of gravel overlying refusal surfaces (probable bedrock) varying from about 2.5 to 7 feet below the existing ground surface.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

Approximate depths and elevations to probable bedrock at the explorations are presented below.

Exploration Refusal Depth/Elevation Information			
Exploration No.	Approx. Ground/Surface Elevation (ft)	Approx. Depth to Probable Bedrock (ft)	Approx. Elevation Probable Bedrock (ft)
B-101	75	5.0	70.0
B-102	75	4.0	71.0
B-103	75	5.6	69.5
B-104	78	6.0	72.0
B-105	82.5	3.0	79.5
B-106	84	2.0	82.0
P-101	75	1.0	74.0
P-102	76	2.0	74.0
P-103	77	2.4	74.5
P-104	76	3.0	73.0
P-105	77.5	2.5	75.0
P-106	78.5	2.5	76.0
P-107	77.5	3.4	74.0
P-108	76	2.5	73.5
P-109	80	2.5	77.5

3.2 Groundwater

The soils encountered at the test borings were frozen to a depth of about 12 inches and were generally moist below the frozen soil. Groundwater likely becomes perched on the relatively impervious bedrock beneath the site. 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:

- The proposed building and parking lot expansion areas are underlain by shallow bedrock. We recommend all overburden soils be removed to expose bedrock

across the proposed building pad and entrances. Blasting to remove bedrock to achieve subgrade elevation will be needed. Loose, weathered and over-blasted bedrock should be removed to expose sound intact bedrock. Care must be taken to limit over-blasting subgrades to help reduce the removal and replacement of loose blast rock. It was reported that blasting was performed during past construction at the facility; thus, loose and disturbed blast rock and disturbed soil may be encountered within the proposed construction areas.

- Spread footing foundations and slab-on-grade floors bearing on properly prepared subgrades appear suitable for the proposed building. Footings should bear on a compacted Crushed Stone (choke layer) overlying sound, intact bedrock. On-grade floor slabs should bear on at least 12-inches of compacted Structural Fill overlying compacted Crushed Stone (choke layer) overlying sound, intact bedrock.
- We anticipate paved area subgrades will be native silty sands or blasted bedrock. We recommend granular soil subgrades be densified prior to placing new fills. Where subgrades consist of blasted bedrock, we recommend a choke layer (Crushed Stone) be provided overlying sound intact bedrock prior to placing new fills.
- All topsoil and soils containing roots and organics, remnant structures and foundations and any loose over-blast rock must be completely removed from beneath the proposed building and paved areas prior to placing choke layer.

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. All overburden above the bedrock, existing foundations and utilities and loose bedrock should be completely removed from areas of proposed building construction (including entrances) as well as retaining walls. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Building Pad and Footings and Retaining Walls: As discussed, all overburden should be completely removed from beneath the proposed building area, entrances and retaining walls. The extent of removal should extend 1 foot laterally outward from outside edge of

perimeter footings for every 1-foot of excavation depth (1H:1V bearing splay). We recommend a choke stone layer consisting of about 4 inches of well graded crushed aggregate be compacted and worked into the bedrock subgrade with a vibratory roller-compactor to help fill any voids beneath areas of construction prior to placing new fills or concrete.

Paved and Utilities: Based on the findings at the explorations and the proposed finish pavement grades shown on the Exploration Location Plan, we anticipate paved area and utility subgrades will consist of bedrock and existing granular soil. Loose blast rock should be removed to expose sound, intact bedrock. We recommend a choke stone layer consisting of about 4 inches of crushed stone be compacted and worked into the bedrock surface prior to placing pavement base gravel and utility bedding material. Existing granular soil subgrades should be densified with a vibratory roller-compactor prior to placing new fills provided the soils are not wet.

4.3 Excavation and Dewatering

Excavation work will generally encounter uncontrolled fills, existing structures and foundations, existing utilities, silty sand soils and bedrock. Earthwork and grading activities should occur during drier, non-freezing weather of spring, summer and fall.

Based on the subsurface findings, we anticipate blasting and/or mechanical means will be required for bedrock removal. We recommend a licensed blasting contractor be engaged and should provide a detailed blasting plan. Drilling and blasting should be controlled to within about 12 inches of bottom of footings and within about 2 feet of bottom of slabs (or as needed for sub-slab utilities and interior foundations). Pre-blast surveys should be completed on surrounding structures, water supply wells and infrastructure prior to commencing blasting activities. Vibrations due to blasting should be monitored during construction.

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 blasting, 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 compacted choke stone bearing on sound, intact bedrock. 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	4.0 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	B (IBC 2015)
Estimated Total Settlement	½-inch
Differential Settlement	½-inch

4.5 Foundation Drainage

We recommend an underdrain system be installed adjacent to the outside edge of the 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 such as Mirafi 160N. 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 120 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted Structural Fill placed 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 be installed within the Structural Fill layer beneath the slab.

We recommend a sub-slab vapor retarder particularly in areas of the building where the concrete slab will be covered with an impermeable surface treatment or floor covering that may be sensitive to moisture vapors. 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.

4.8 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 landscape areas should be non-organic compactable earth meeting the requirements of 2014 MaineDOT Standard Specification 703.18 Common Borrow.

Granular Borrow: Fill to raise grades beneath interior building slabs and paved areas, as well as to repair soft areas, should be sand or silty sand meeting the following gradation:

Granular Borrow		
Sieve Size	Percent Finer by Weight	
	Below Water	Above Water
6 inch	100	100
Portion Passing 3 inch Sieve		
3 inch	100	--
No. 40	0 to 70	0 to 70
No. 200	0 to 7	0 to 20

In our opinion, 2014 MaineDOT Standard Specification 703.19 Granular Borrow meets the requirements of Granular Borrow.

Structural Fill: Backfill for foundations, slab base material and fill 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
¾ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

Crushed Stone: Crushed Stone, used beneath foundations for a choke layer 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. On-site blast rock may be suitable for re-use provided it is crushed and mixed with a granular soil creating a material meeting the above gradation specifications.

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.

4.9 Segmental Retaining Wall

For the proposed site retaining walls, we recommend wet-cast segmental retaining walls (SRW), such as Redi-Rock. We recommend the facing blocks be founded on a minimum 6-inch thick leveling course of compacted Crushed Stone overlying a choke stone layer overlying sound, intact bedrock. For design of SRW walls, 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 if designed by others. We recommend SRW walls meet the requirements of 2014 MaineDOT Standard Specification 672 or 673.

4.10 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.

4.11 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.

4.12 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.

Paul F. Kohler, P.E.
Senior Geotechnical Engineer

PFK:emw/tjb



APPENDIX A

Limitations

This report has been prepared for the exclusive use of The Cedars for specific application to the proposed Long-Term and Memory Care Facility at 630 Ocean Avenue 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.

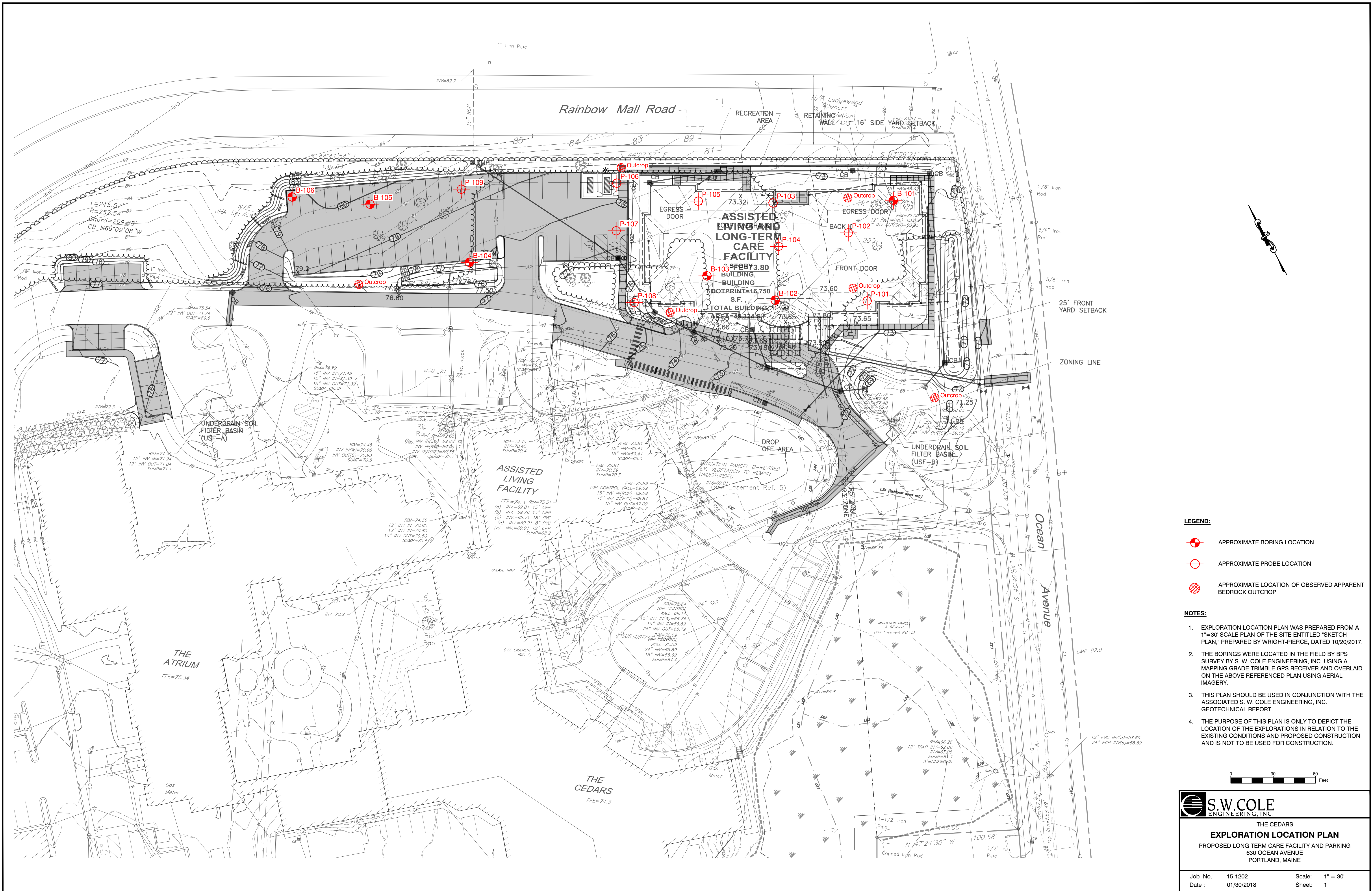
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

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



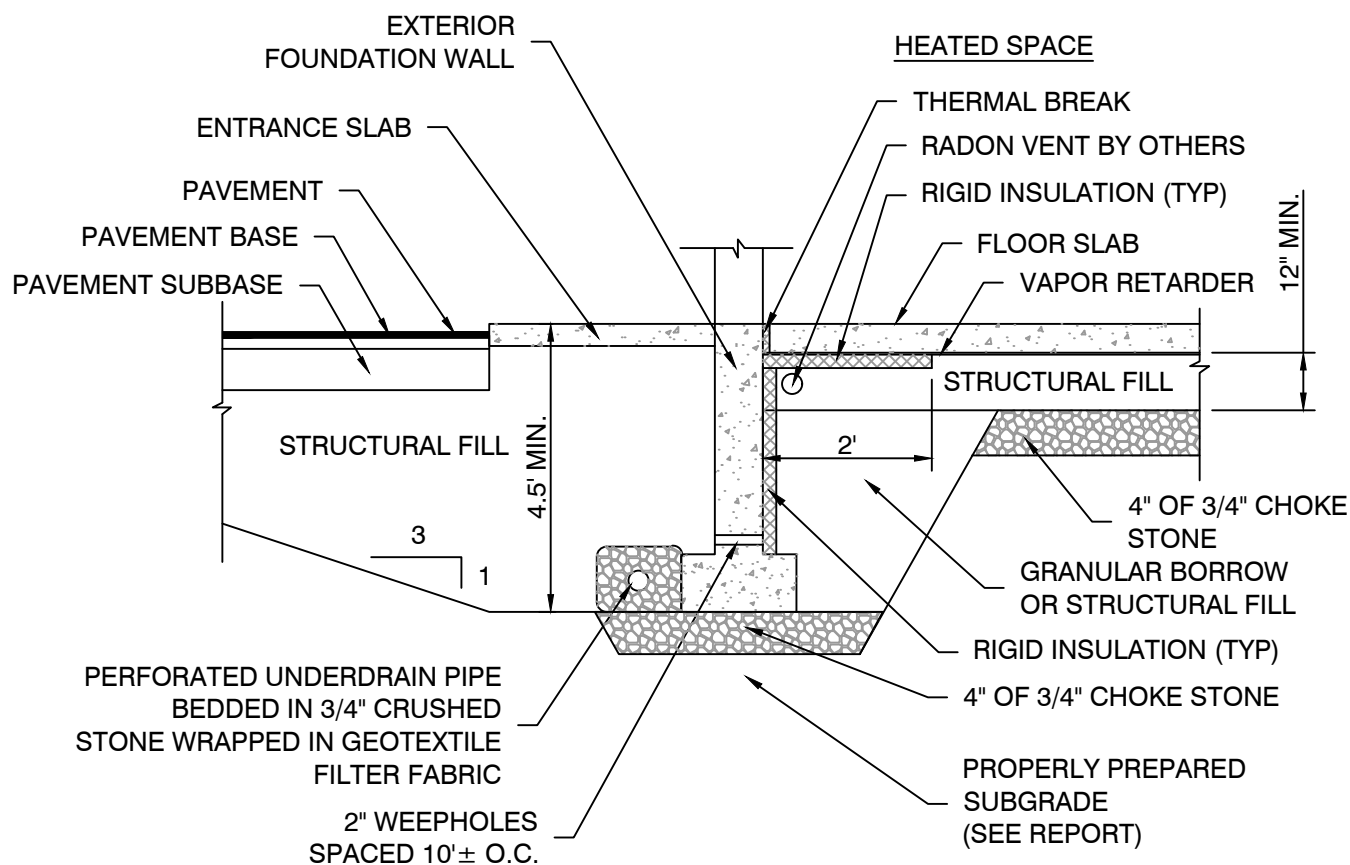
- LEGEND:**
- APPROXIMATE BORING LOCATION
 - APPROXIMATE PROBE LOCATION
 - APPROXIMATE LOCATION OF OBSERVED APPARENT BEDROCK OUTCROP
- NOTES:**
- EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=30' SCALE PLAN OF THE SITE ENTITLED "SKETCH PLAN," PREPARED BY WRIGHT-PIERCE, DATED 10/20/2017.
 - THE BORINGS WERE LOCATED IN THE FIELD BY BPS SURVEY BY S. W. COLE ENGINEERING, INC. USING A MAPPING GRADE TRIMBLE GPS RECEIVER AND OVERLAID ON THE ABOVE REFERENCED PLAN USING AERIAL IMAGERY.
 - THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
 - 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.

S.W. COLE ENGINEERING, INC.

THE CEDARS
EXPLORATION LOCATION PLAN
PROPOSED LONG TERM CARE FACILITY AND PARKING
630 OCEAN AVENUE
PORTLAND, MAINE

Job No.: 15-1202
Date: 01/30/2018

Scale: 1" = 30'
Sheet: 1



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.

THE CEDARS

FOUNDATION DETAIL SKETCH

PROPOSED LONG TERM CARE FACILITY AND PARKING
630 OCEAN AVENUE
PORTLAND, MAINE

Job No.: 15-1202

Date : 01/30/2018

Scale: Not to Scale

Sheet: 2

APPENDIX C

Exploration Logs and Key



BORING LOG

BORING NO.: **B-101**

SHEET: 1 of 1

PROJECT NO. 15-1202

DATE START: 1/19/2018

DATE FINISH: 1/19/2018

CLIENT: The Cedars

PROJECT: Proposed Long-Term Care Facility

LOCATION: 630 Ocean Avenue, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 75' +/- TOTAL DEPTH (FT): 5.0 LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Scott Hollabaugh DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: N/A / 4 1/2 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: 0.87 HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 1/19/2018 No free water observed

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level
✓ At time of Drilling D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods
✓ At Completion of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer
✓ After Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation S_v = Field Vane Shear Strength, kips/sq.ft.
V = Field Vane Shear V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector q_u = Unconfined Compressive Strength, kips/sq.ft.
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			1D		2-3.3	16/9	5-16- 50/4"		Topsoil and organics		
									0.5 Brown silty SAND with some pieces brick (FILL)		
									2.0 Medium dense, brown silty SAND, some gravel		
70	5							5.0	Refusal at 5.0 feet Auger refusal - 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-101**



BORING LOG

CLIENT: The Cedars
PROJECT: Proposed Long-Term Care Facility
LOCATION: 630 Ocean Avenue, Portland, Maine

BORING NO.: B-102
SHEET: 1 of 1
PROJECT NO. 15-1202
DATE START: 1/19/2018
DATE FINISH: 1/19/2018

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 75' +/- TOTAL DEPTH (FT): 4.0 LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Scott Hollabaugh DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: N/A / 4 1/2 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: 0.87 HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 1/19/2018 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.
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			1D		2.5-3.4	11/9	10-50/5"		Topsoil and organics 0.3 Brown silty gravelly SAND (FILL) 2.0 Medium dense, brown SAND, some silt, some gravel		

4.0 Refusal at 4.0 feet
Auger refusal - 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-102



BORING LOG

CLIENT: The Cedars
PROJECT: Proposed Long-Term Care Facility
LOCATION: 630 Ocean Avenue, Portland, Maine

BORING NO.: B-103
SHEET: 1 of 1
PROJECT NO. 15-1202
DATE START: 1/19/2018
DATE FINISH: 1/19/2018

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 75' +/- TOTAL DEPTH (FT): 6.0 LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Scott Hollabaugh DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: N/A / 4 1/2 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: 0.87 HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 1/19/2018 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.
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
70	5		1D		2-4	24/12	3-2-3-2	w =19.7 %		Topsoil and organics	
									0.4	Brown silty gravelly SAND (FILL)	
									2.0	Loose, brown silty SAND, trace gravel with root hairs	
									4.0	Brown silty SAND, some gravel	
			2D		5.5-5.7	2/2	25/2"		5.6	Augured into 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-103

BORING NO.: B-104



BORING LOG

BORING NO.: **B-105**

SHEET: 1 of 1

PROJECT NO. 15-1202

DATE START: 1/19/2018

DATE FINISH: 1/19/2018

CLIENT: The Cedars

PROJECT: Proposed Long-Term Care Facility

LOCATION: 630 Ocean Avenue, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 82.5' +/- TOTAL DEPTH (FT): 3.0 LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Scott Hollabaugh DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: N/A / 4 1/2 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: 0.87 HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 1/19/2018 No free water observed

GENERAL NOTES:

KEY TO NOTES: Water Level
AND SYMBOLS: ☒ At time of Drilling D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods
☒ At Completion of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer
☒ After Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation S_v = Field Vane Shear Strength, kips/sq.ft.
V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector q_u = Unconfined Compressive Strength, kips/sq.ft.
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
80			1D		0-1.4	17/6	3-4- 50/5"		Loose, Forest Duff and topsoil with organics		
									1.0 Probable brown silty gravelly SAND		
									3.0 Refusal at 3.0 feet Auger refusal - 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-105**



BORING LOG

BORING NO.: **B-106**

SHEET: 1 of 1

PROJECT NO. 15-1202

DATE START: 1/19/2018

DATE FINISH: 1/19/2018

CLIENT: The Cedars

PROJECT: Proposed Long-Term Care Facility

LOCATION: 630 Ocean Avenue, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 84' +/- TOTAL DEPTH (FT): 3.0 LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Scott Hollabaugh DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: N/A / 4 1/2 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: 0.87 HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 1/19/2018 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.
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			1D		0-1.5	18/9	2-4-50		Loose, Forest Duff and topsoil with organics		
									1.0 Dense, rust brown-brown SAND and gravel, some silt		
									2.0 Auger into probable bedrock		
									3.0 Refusal at 3.0 feet Auger refusal - 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-106**

KEY TO NOTES & SYMBOLS

Test Boring and Test Pit Explorations

All 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:	1/2" 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

Report of Gradation

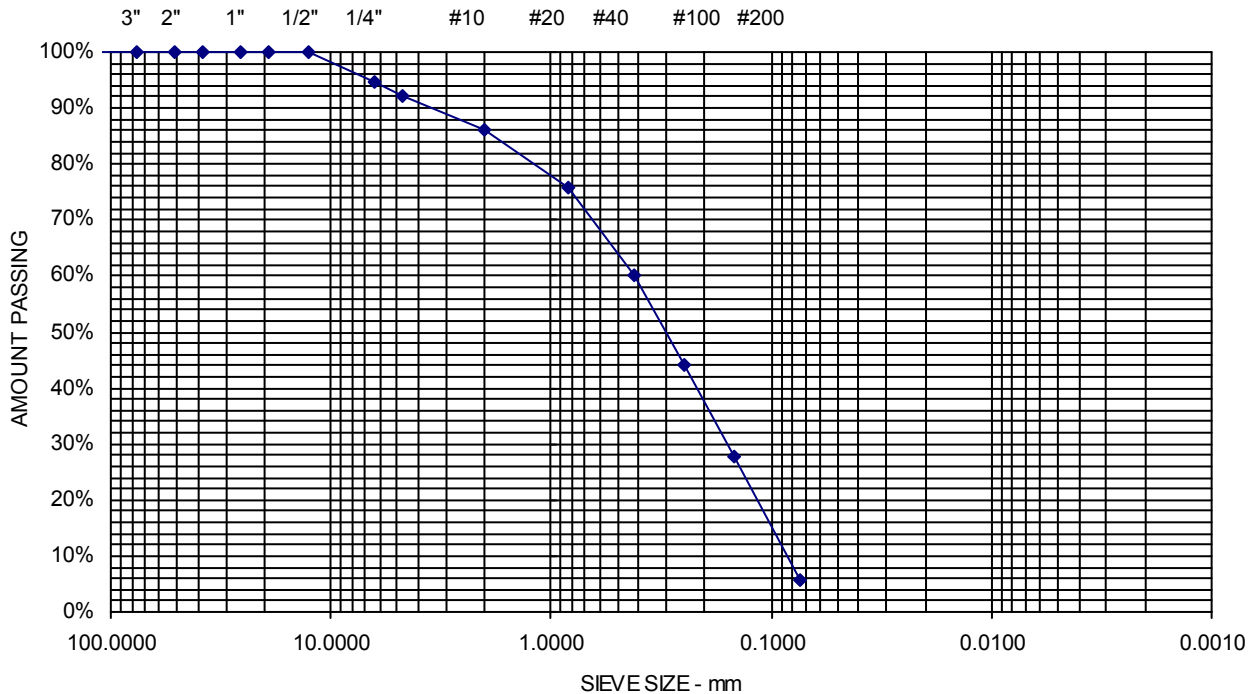
ASTM C-117 & C-136

Project Name PORTLAND ME - LONG-TERM CARE FACILITY - GEOTECHNICAL
ENGINEERING SERVICES
Client THE CEDARS

Project Number 15-1202
Lab ID 23355G
Date Received 1/30/2018
Date Completed 1/31/2018
Tested By PAUL SHAFFER

Material Source **B-102 2D 2.5-3.4**

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
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"	95	
4.75 mm	No. 4	92	8% Gravel
2.00 mm	No. 10	86	
850 μm	No. 20	76	
425 μm	No. 40	60	86.3% Sand
250 μm	No. 60	44	
150 μm	No. 100	28	
75 μm	No. 200	5.7	5.7% Fines



Report of Gradation

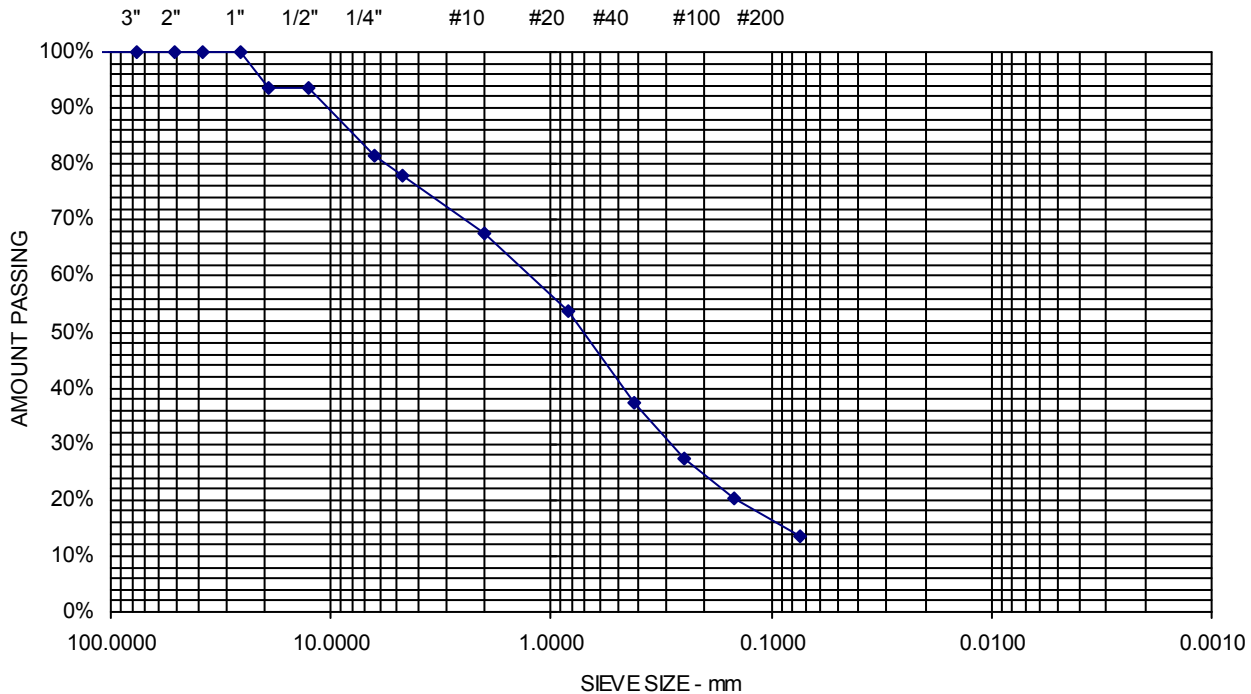
ASTM C-117 & C-136

Project Name PORTLAND ME - LONG-TERM CARE FACILITY - GEOTECHNICAL
ENGINEERING SERVICES
Client THE CEDARS

Project Number 15-1202
Lab ID 23356G
Date Received 1/30/2018
Date Completed 1/31/2018
Tested By PAUL SHAFFER

Material Source **B-104 1D 0-2**

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
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"	94	
12.5 mm	1/2"	94	
6.3 mm	1/4"	81	
4.75 mm	No. 4	78	22.1% Gravel
2.00 mm	No. 10	68	
850 μm	No. 20	54	
425 μm	No. 40	38	64.4% Sand
250 μm	No. 60	27	
150 μm	No. 100	20	
75 μm	No. 200	13.5	13.5% Fines





FRONT ELEVATION

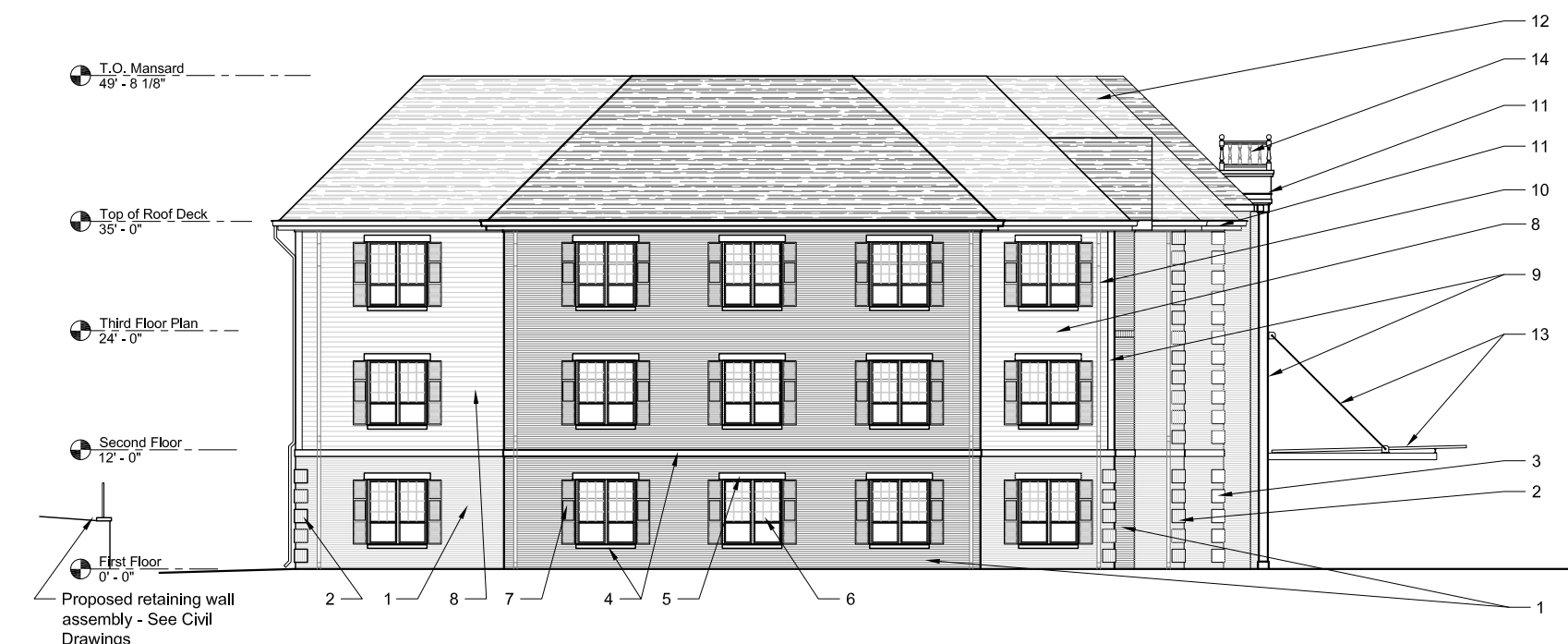
Proposed Material Legend		
1.	Brick Veneer	Deep Red with accents to complement existing campus
2.	Brick Quoining	Deep Red
3.	Cast Stone Quoining	White/beige to complement existing campus
4.	Cast Stone Sill/Trim	White/beige to complement existing campus
5.	Cast Stone Lintel/Keystone	White/beige to complement existing campus
6.	Aluminum Clad Wood Windows	White with grills
7.	Fixed Shutters	Dark Color
8.	Cementitious Lap Siding	White
9.	Cementitious Trim	White or accent color
10.	Pre-finished Metal Downspouts	White or accent color
11.	Pre-finished Soffit/Fascia	White or accent color
12.	Architectural Tab- Shingles	Color to complement existing campus
13.	Glass Port Cochere/Steel supports	White or accent color
14.	Pre-finished Ballustrades	White or accent color
15.	Pre-finished Insulated door	Color to complement brick color



RIGHT SIDE ELEVATION - (facing Ocean Ave,)



REAR ELEVATION - (facing River Mall Road)

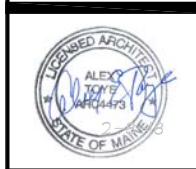


LEFT SIDE ELEVATION - (facing Parking Lot/Atriums)

Proposed Material Legend		
1.	Brick Veneer	Deep Red with accents to complement existing campus
2.	Brick Quoins	Deep Red
3.	Cast Stone Quolnes	White/beige to complement existing campus
4.	Cast Stone Sill/trim	White/beige to complement existing campus
5.	Cast Stone Lintel/Keystone	White/beige to complement existing campus
6.	Aluminum Clad Wood Windows	White with grills
7.	Fixed Shutters	Dark Color
8.	Cementitious Lap Siding	White
9.	Cementitious Trim	White or accent color
10.	Pre-finished Metal Downspouts	White or accent color
11.	Pre-finished Soffit/Fascia	White or accent color
12.	Architectoral Tab- Shingles	Color to complement existing campus
13.	Glass Port Cochere/Steel supports	White or accent color
14.	Pre-finished Ballustrades	White or accent color
15.	Pre-finished Insulated door	Color to complement brick color



423 WESTPORT ROAD
KANSAS CITY, MISSOURI
64111
816.359.3898



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New Standalone Healthcare & Assisted
Living Memory Care Facility for:
The Cedars
630 Ocean Avenue
Portland, Maine 04103

JOB NO 14-006c
DATE: 02.08.2018

ISSUE RECORD:
For P & Z Review

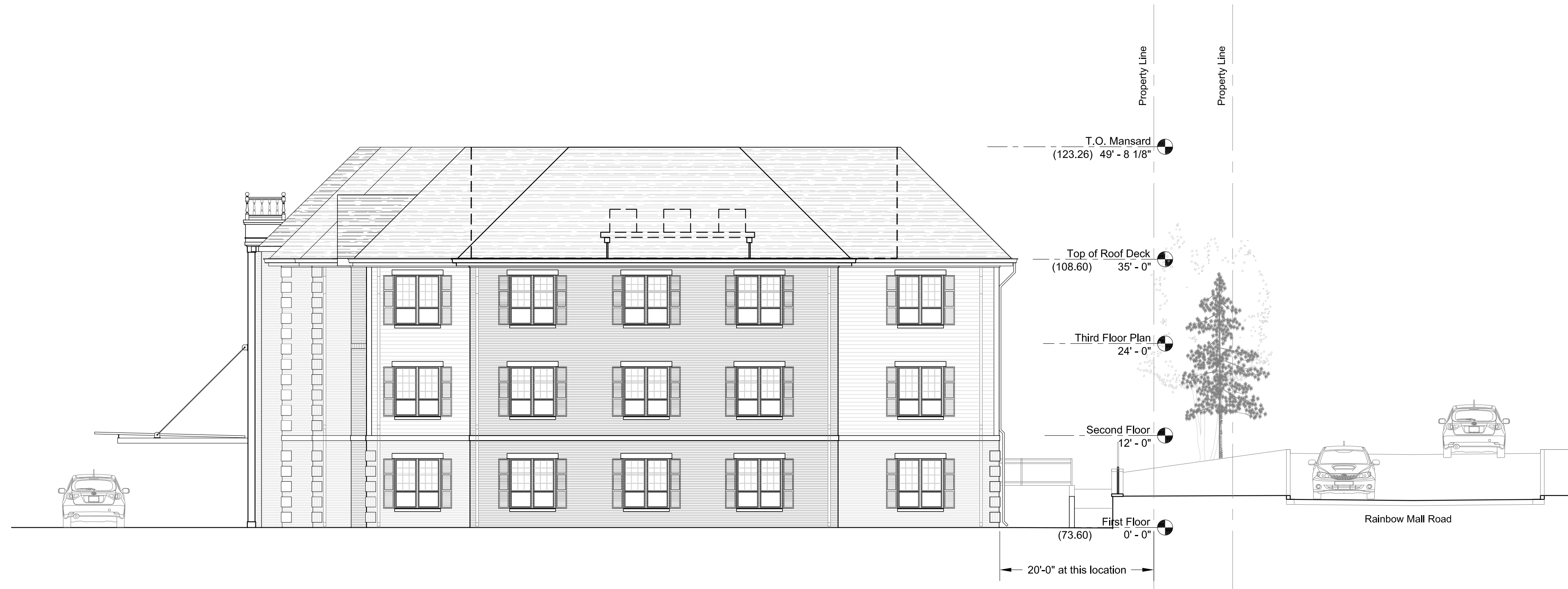
REVISIONS:	

Proposed Building
Elevations

A1.02



FRONT ELEVATION



RIGHT SIDE ELEVATION - (facing Ocean Ave,)



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New Standalone Healthcare & Assisted
Living Memory Care Facility for:
The Cedars
630 Ocean Avenue
Portland, Maine 04103

JOB NO 14-006c
DATE: 02.08.2018

ISSUE RECORD:
For P & Z Review

REVISIONS:

Building and
Street Sections

A1.03



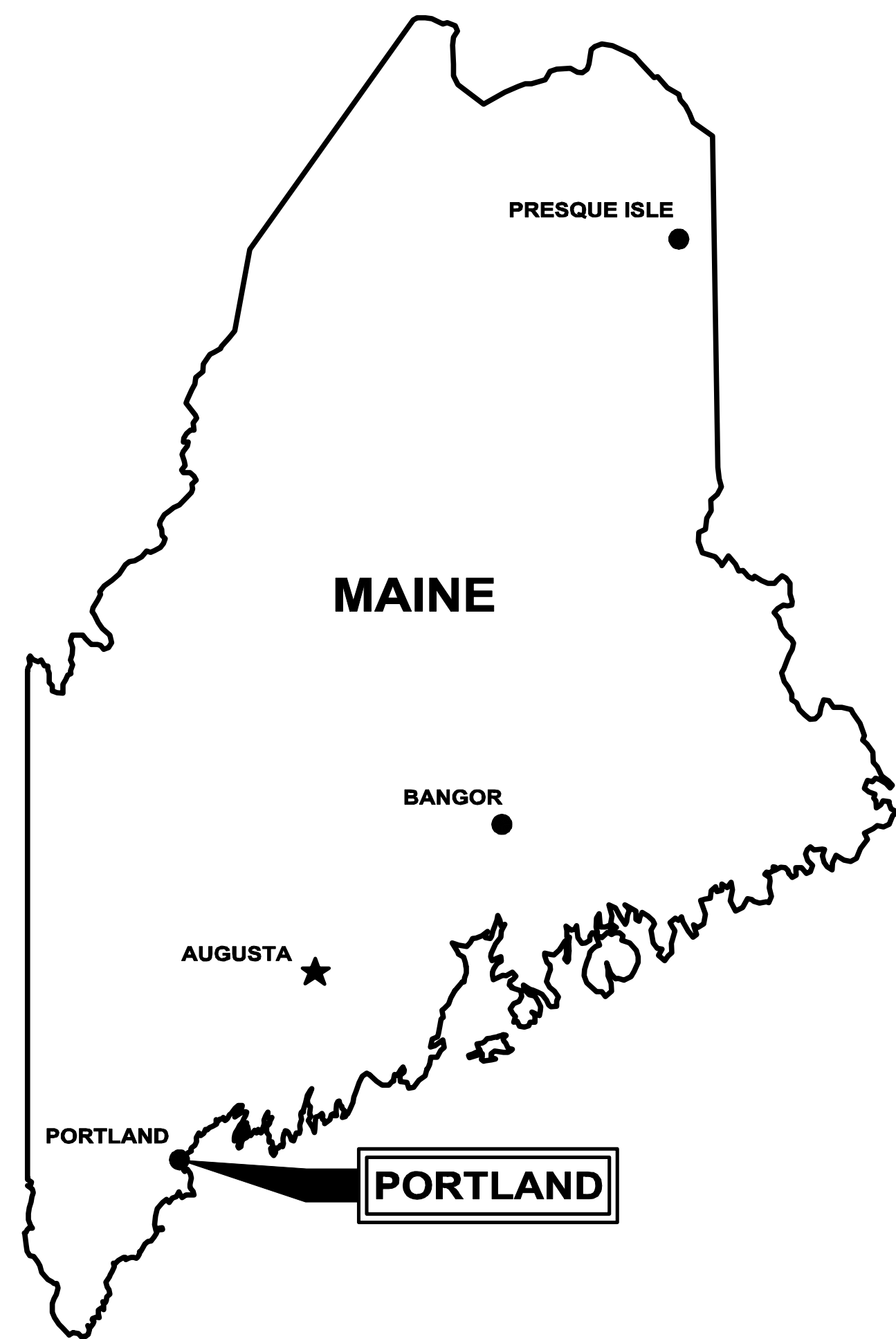
FRONT VIEW RENDERING



RIGHT SIDE/REAR RENDERING

REVISIONS:	

PERMIT DRAWINGS FOR
THE CEDARS
ASSISTED LIVING AND
LONG-TERM CARE FACILITY
PORTLAND, ME
FEBRUARY 2018



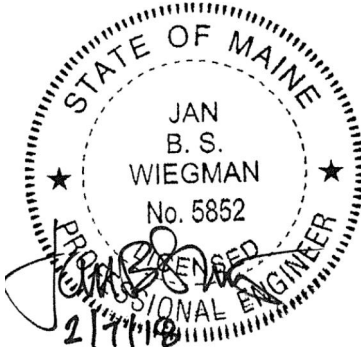
**PRELIMINARY
FOR REVIEW ONLY**

DRAWING INDEX

GENERAL

CIVIL

- C-1 GENERAL NOTES, LEGEND, AND ABBREVIATIONS
- C-2 OVERALL EXISTING CONDITIONS PLAN
- C-3 OVERALL SITE LAYOUT AND DEMOLITION PLAN
- C-4 OVERALL SITE LAYOUT PLAN
- C-5 SITE LAYOUT AND UTILITIES PLAN
- C-6 SITE GRADING AND EROSION CONTROL PLAN
- C-7 DETAILS I
- C-8 DETAILS II
- C-9 DETAILS III
- C-10 DETAILS IV
- C-11 EROSION CONTROL NOTES AND DETAILS
- L-1 LANDSCAPE PLAN
- L-2 LANDSCAPE DETAILS



PROJECT OWNERS
CEDARS NURSING CARE CENTER, INC
JHA ASSISTED LIVING, INC
630 OCEAN AVE
PORTLAND, ME 04103



LOCATION PLAN
SCALE: 1"=2,000'

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FOR REVIEW _____
FOR BIDDING _____
WP PROJECT No. 13682A

GENERAL NOTES

1. THE CONTRACTOR IS REFERRED TO SECTION 01050 OF THE SPECIFICATIONS REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS.
2. BELOW GRADE UTILITY INFORMATION IS BASED ON INFORMATION PROVIDED BY EACH UTILITY. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01050. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

ELECTRIC:	STORM DRAINS:	WATER & SANITARY SEWER:
CENTRAL MAINE POWER CO. 83 EDISON DRIVE AUGUSTA, ME 04336 207-623-3521	CITY OF PORTLAND PUBLIC WORKS 55 PORTLAND ST. PORTLAND, ME 04104 207-874-8801	PORTLAND WATER DISTRICT 225 DOUGLASS STREET PO BOX 3553 PORTLAND, MAINE 04101

TELEPHONE:	DIG SAFE:	GAS:
------------	-----------	------

FAIRPOINT COMMUNICATIONS 5 DAVIS FARM ROAD PORTLAND, ME 04103 207-878-0854	TEL. 1-800-225-4977	UNITIL 1075 FOREST AVE. PORTLAND, ME 04103 207-541-2508
---	---------------------	--

3. ALL EXISTING SEWER, STORM DRAIN, WATER AND NATURAL GAS LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. ANY EXISTING SEWERS, STORM DRAIN LINES OR CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER, EXCEPT WHEN IN DIRECT CONFLICT WITH THE NEW SEWER OR WHEN NOT SHOWN OR INDICATED.
4. THE CONTRACTOR MAY ENCOUNTER ASBESTOS CEMENT PIPE DURING EXECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING, REMOVING AND DISPOSING OF ASBESTOS CEMENT PIPES. A BID ITEM HAS BEEN INCLUDED IN THE BID FORM TO ESTABLISH A UNIT PRICE FOR THE REMOVAL AND DISPOSAL OF ASBESTOS CEMENT PIPE.
5. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURES CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.
6. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO APPROPRIATE UTILITY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES
7. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS AND STATIONING SHALL PREVAIL.
8. CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL SIGNS IN ACCORDANCE WITH MDOT REQUIREMENTS.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER PRIOR TO COMMENCING CONSTRUCTION. THE PORTLAND POLICE DEPARTMENT (874-8479) AND PORTLAND FIRE DEPARTMENT (874-8400) ARE TO BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF ANY STREET CLOSING OR DETOUR. REFER TO SPEC. SECTION 01570.
10. MAINE STATE HIGHWAYS: THE FOLLOWING ROADWAYS FALL WITHIN THE JURISDICTION OF THE MAINE DEPARTMENT OF TRANSPORTATION (MDOT). ALL WORK CONDUCTED WITHIN THESE ROADWAYS MUST CONFORM TO MDOT STANDARDS AND ROAD OPENING PERMIT. MAINE STATE HIGHWAYS WITHIN THE PROJECT AREA ARE AS FOLLOWS:

RTE. 9 OCEAN AVENUE

11. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY OR SPECIAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL BUILDING PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS-OF-WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE OWNER.
13. ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE TO THE PLANS. TEST PITS ARE REQUIRED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. TEST PITS WILL BE DUG PRIOR TO CONNECTING PROPOSED SEWERS TO EXISTING SEWERS. THE RESULTS OF TEST PITS DUG TO DETERMINE EXISTING SEWER ELEVATIONS AND LOCATIONS WILL BE REPORTED TO THE ENGINEER. ADJUSTMENTS TO INVERTS, LENGTHS, AND SLOPES OF PROPOSED SEWER MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED LINES AND STRUCTURES AS SHOWN ON THE DRAWINGS. THE LAYOUT PLAN SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. THE HORIZONTAL ALIGNMENT OF THE NEW SEWERS AND FORCE MAINS MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL BY THE ENGINEER. ALL ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM. ORIENTATION IS GRID NORTH MAINE STATE PLANE COORDINATE SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL ELEVATION REFERENCE INFORMATION PRIOR TO USE IN CONSTRUCTION.
14. CONTRACTOR SHALL MINIMIZE CLEARING OPERATIONS. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. CLEARING LIMITS SHALL BE AS INDICATED ON THE DRAWINGS, BUT AT ALL TIMES WITHIN EXISTING PROPERTY LINES ON STATE OR COUNTY-OWNED PROPERTY OR EASEMENTS. ALL GRUBBINGS AND EXCESS EXCAVATED MATERIAL ARE THE PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF AT A SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE EXCAVATED MATERIAL AT A SITE PROVIDED BY HIM WHICH IS IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS. MATERIALS AND METHODS USED FOR TEMPORARY EROSION CONTROL SHALL BE AS SPECIFIED BY THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PREPARED BY THE MAINE SOIL AND WATER CONSERVATION COMMISSION. REFER TO SPECIFICATION SECTION 02270.
16. COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
17. OPEN TRENCHES MUST BE BACKFILLED AT THE END OF THE WORKDAY.
18. CONTRACTOR SHALL CONTROL DUST TO A TOLERABLE LIMIT AS OUTLINED IN SPECIFICATION SECTION 01562. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH AND DEBRIS ON PUBLIC STREETS OUTSIDE THE PROJECT AREA. STREETS OPENED TO THE PUBLIC SHALL BE KEPT SWEEP AND FREE OF DEBRIS.
19. WHEREVER PROPOSED STRUCTURES ARE LOCATED PARTLY WITHIN A PAVED AREA AND PARTLY IN A NON-PAVED AREA, A BITUMINOUS CONCRETE PAVED APRON 2-FEET WIDE SHALL BE SUPPLIED AROUND THE PROPOSED COVER. PAVEMENT SHALL SLOPE AWAY FROM THE COVER.
20. ALL MANHOLES ARE 4 FOOT DIAMETER, ECCENTRIC CONE TOP, UNLESS OTHERWISE NOTED. THE INVERTS SHOWN ARE AT THE INSIDE FACE OF THE MANHOLE.

21. INSULATE OVER ANY GRAVITY SEWER OR FORCE MAIN PIPE WHEN COVER IS LESS THAN 7.5 FT, OR THERE IS LESS THAN 2 FT BETWEEN THE SEWER OR FORCE MAIN AND A CULVERT.
22. ALL ROAD CROSS SLOPES SHALL PITCH PER DETAIL. ALL PAVED SURFACES SHALL PITCH 1% UNLESS OTHERWISE NOTED. ALL VEGETATED AREAS ABOVE MEAN HIGH WATER ELEVATION THAT ARE EXCAVATED, FILLED OR OTHERWISE DISTURBED BY THE CONTRACTOR AND ARE NOT TO BE PAVED OR FILLED WITH RIPRAP SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED AT NO ADDITIONAL EXPENSE TO THE OWNER.
23. INITIAL PAVING SHALL BE CONDUCTED WITHIN TWO WEEKS OF COMPLETION OF PLACEMENT OF FINAL BACKFILL UNLESS OTHERWISE AUTHORIZED BY ENGINEER. INITIAL PAVEMENT SHALL BE INSTALLED AND MAINTAINED BY CONTRACTOR FOR A MINIMUM PERIOD OF 2 MONTHS BEFORE FINAL PAVEMENT IS PLACED. FINAL PAVEMENT MAY BE PLACED OVER THE INITIAL PAVING PROVIDED INITIAL PAVING COURSE IS IN GOOD REPAIR. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND SHIMMING THE INITIAL PAVEMENT AS NECESSARY TO ACCEPT THE FINAL PAVING COURSE. IF CONDITIONS WARRANT, THE CONTRACTOR MAY BE REQUIRED TO REMOVE AND REPLACE INITIAL PAVING PRIOR TO FINAL PAVING.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTling ALL EXISTING PROPERTY MONUMENTATION THAT IS DISTURBED BY HIS OPERATIONS AT NO EXPENSE TO THE OWNER. THIS WORK IS TO BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF MAINE.
25. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
26. SEE APPENDIX A OF THE SPECIFICATIONS FOR BORING LOGS. THESE ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

27. THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.

CIVIL DEMOLITION NOTES

1. REFER TO THE EXISTING SITE PLAN, DRAWING C-2 AND C-3, FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO DRAWING C-4 FOR LIMITS OF WORK.
2. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION REGARDING DEMOLITION AND REMOVAL. THIS DRAWING IS FOR USE AS GENERAL GUIDANCE ONLY.
3. REFER TO SPECIFICATION SECTION 01010, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.
4. DEMOLISH/REMOVE EXISTING PIPING AS REQUIRED FOR CONSTRUCTION OF NEW FACILITIES. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPING THAT NEEDS TO BE REMOVED TO CONSTRUCT THE NEW FACILITIES, BUT IS TO REMAIN, SHALL BE REINSTALLED/REPLACED AS NEEDED. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH NEW SITE PIPING OR FACILITIES, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED AND THE NEW ENDS OF ABANDONED PIPE CAPPED, OR PLUGGED WITH CONCRETE.
5. ALL EXISTING PIPING AND UTILITIES WHICH ARE BENEATH PROPOSED STRUCTURES, AND ARE TO BE ABANDONED, SHALL BE REMOVED TO A MINIMUM OF 5 FEET OUTSIDE OF THE STRUCTURE. PIPE AND UTILITIES BENEATH PROPOSED STRUCTURES THAT ARE TO REMAIN SHALL BE CONCRETE ENCASED, UNLESS OTHERWISE INDICATED.
6. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION FOR HIS USE. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER.
8. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.
9. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THAT ALL PROCESS FLOWS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY OR PUMPED BYPASSES AND OTHER MEANS OF MAINTAINING FLOW SHALL BE SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES OR BYPASSES WITH THE OWNER AND ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND HIS DEWATERING OPERATIONS.
11. CONTRACTOR IS REFERRED TO SPECIFICATION SECTION 01050 FOR COORDINATION WITH OTHERS.

CIVIL ABBREVIATIONS

&	AND
ø, DIA	DIAMETER
#, NO	NUMBER
APP'D	APPROVED
BLDG	BUILDING
CB	CATCH BASIN
CEN	CENTER
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
COR	CORNER
CY	CUBIC YARD
DEMO	DEMOLITION
DMH	DRAIN MANHOLE
DI	DUCTILE IRON
DR	DRAIN
DWG	DRAWING
EL	ELEVATION
EMH	ELECTRIC MANHOLE
FM	FORCE MAIN
FT	FEET
G	GAS
HYD	HYDRANT
IN	INCH
INF	INFLUENT
INV	INVERT
LBS	POUNDS
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
NW	MONITORING WELL
N	NORTH
NGVD	NATIONAL GEODETIC VERTICAL DATUM
N/A	NOT AVAILABLE/APPLICABLE
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PC	PERFORATED CLAY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PS	PRIMARY SLUDGE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REQ'D	REQUIRED
S	SLOPE, SEWER
SD	STORM DRAIN
SF	SQUARE FEET
SMH	SANITARY SEWER MANHOLE
SQ	SQUARE
STA	STATION
T, XFMR	TRANSFORMER
TBM	TEMPORARY BENCH MARK
THK	THICKNESS
TOS	TOP OF STRUCTURE
TYP	TYPICAL
UD	UNDERDRAIN
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
VC	VITRIFIED CLAY
W/	WITH
W	POTABLE WATER

EXISTING	LEGEND	PROPOSED
	PROPERTY/ROW LINE	
	SETBACK LINE	
	EASEMENT LINE	
	CENTERLINE	
	EDGE OF PAVEMENT	
	CURBING	
	EDGE OF GRAVEL	
	EDGE OF CONCRETE	
	CONTOUR	
	BUILDING	
	STONEWALL	
	TREELINE	
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	BARB WIRE FENCE	
	RETAINING WALL	
	GUARDRAIL	
	SEWER	
	SEWER FORCE MAIN	
	GAS	
	WATER	
	STORM DRAIN	
	UNDERDRAIN	
	CULVERT	
	UNDERGROUND ELECTRIC	
	OVERHEAD ELECTRIC	
	IRON PIPE/REBAR	
	DRILLHOLE	
	MONUMENT	
	SURVEY CONTROL POINT	
	SPOT ELEVATION	
	SEWER MANHOLE	
	DRAINAGE MANHOLE	
	CATCH BASIN	
	ELECTRIC MANHOLE	
	TELEPHONE MANHOLE	
	GATE VALVE	
	CURB STOP	
	YARD HYDRANT	
	HYDRANT	
	UTILITY POLE	
	UTILITY POLE W/ GUY	
	LIGHT POLE	
	BOLLARD	
	FLAGPOLE	
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	SHRUB	
	EDGE OF WATER	
	STREAM	
	EDGE OF WETLANDS	
	FLOODPLAIN	
	WETLANDS	
	DRAINAGE FLOW	
	DRAINAGE SWALE	
	PAVEMENT MARKINGS	
	SIGN	
	MAILBOX	
	TEMPORARY BENCH MARK	
	TEST PIT	
	TEST BORING	
	TEST PROBE	
	MONITORING WELL	
	LIMIT OF WORK	
	SILT FENCE	
	RIPRAP	
	RAILROAD	
	MATCHLINE	
	ROCK OUTCROP	

PRELIMINARY
FOR REVIEW ONLY

THE CEDARS
ASSISTED LIVING AND
LONG-TERM CARE FACILITY
PORTLAND, ME

GENERAL NOTES, LEGEND AND ABBREVIATIONS

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DRAWING
C-1

DATE	2/18
APP'D	JBW
ISSUED FOR	PORTLAND SITE PLAN REVIEW
DATE	11/17
DESIGNED BY	MAG
CAD COORD.	MRL
CHECKED BY	MAG
DATE	2-8-18
APPROVED BY	JBW
DATE	2-8-18
PROJECT NO.	13682A

PRELIMINARY FOR REVIEW ONLY

PLAN REFERENCES

- (1) PLAN OF LOTS NUMBER 3 & 4 MADE FOR THE ESTATE OF MARY S. LUNT BY EDWIN C. TOWNSEND DATED MARCH 8, 1877 RECORDED IN PLAN BOOK 4, PAGE 4.
- (2) PLAN OF LAND MADE FOR DOROTHY S. TRUE AND HEIRS OF F.W.H. SMITH DATED OCTOBER 1929, RECORDED IN PLAN BOOK 25, PAGE 50.
- (3) REVISED FINAL PLAN OF LEDGEWOOD SUBDIVISION MADE FOR THE DARTMOUTH COMPANY BY LAND USE CONSULTANTS DATED APRIL 27, 1979, RECORDED IN PLAN BOOK 123, PAGE 61.
- (4) PLAN OF PROPERTY MADE FOR JEWISH HOME FOR THE AGED MADE BY H.I. AND E.C. JORDAN DATED JULY 17, 1987.
- (5) PLAN OF PROPERTY/LAND TITLE SURVEY OF THE CEDARS MADE BY H.I. AND E.C. JORDAN DATED MARCH 29, 1990, RECORDED IN PLAN BOOK 186, PAGE 14.
- (6) RECORD DRAWING OF CEDARS NURSING CARE CENTER, INC. MADE BY OWEN HASKELL, INC. DATED AUGUST 29, 1991.
- (7) LAYOUT AND UTILITIES PLAN OF THE ATRIUM AT CEDARS (DRAWING NUMBER C202) MADE BY TSONIDES ASSOCIATES DATED MAY 27, 1997.
- (8) TOPOGRAPHIC SITE SURVEY MADE FOR JHA PROPERTIES, INC. BY DANIEL J. DALPHONSO DATED FEBRUARY 28, 1997.
- (9) PLAN SHOWING PROPOSED PROPERTY LINES MADE FOR JHA PROPERTIES, INC. BY DANIEL J. DALPHONSO DATED NOVEMBER 4, 1997.
- (10) PLAN SHOWING STANDARD BOUNDARY SURVEY MADE FOR JHA PROPERTIES, INC. BY DANIEL J. DALPHONSO DATED JULY 14, 1997, RECORDED IN PLAN BOOK 198, PAGE 325.
- (11) PLAN OF CEDARS PHASE 3-WETLAND MITIGATION AREAS MADE BY LAND USE CONSULTANTS DATED AUGUST 24, 2004.
- (12) ALTA/ACSM LAND TITLE SURVEY MADE FOR JHA PROPERTIES, INC. & CEDARS NURSING CARE CENTER, INC. DATED NOVEMBER 4, 2004, BY TITCOMB ASSOCIATES.
- (13) CEDARS CONDOMINIUMS RECORDING PLAT/CONDOMINIUM PLAN ALTA/ACSM LAND TITLE SURVEY MADE FOR JHA PROPERTIES, INC., CEDARS NURSING CARE CENTER, INC. AND JHA ASSISTED LIVING, INC. BY TITCOMB ASSOCIATES DATED SEPTEMBER 8, 2005 AND REVISED THROUGH APRIL 5, 2006, RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 206, PAGE 430.

OWNERS OF RECORD

- UNIT 1 CEDARS NURSING CARE CENTER, INC.; BOOK 24129, PAGE 276
- UNIT 2 JHA ASSISTED LIVING, INC.; BOOK 24446, PAGE 225 AND BOOK 24155, PAGE 29
- UNIT 3 JHA ASSISTED LIVING, INC.; BOOK 31484, PAGE 147

NOTES

- (1) BOOK AND PAGE REFERENCES ARE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS, UNLESS OTHERWISE SPECIFIED.
- (2) BEARINGS ARE REFERENCED TO MAGNETIC NORTH 1924.
- (3) ALL UTILITY LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE, BASED ON LOCATION OF VISIBLE FEATURES AND INFORMATION PROVIDED BY OTHERS. DIG SAFE AND/OR THE APPROPRIATE UTILITIES SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION.
- (5) ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR THE CITY OF PORTLAND (FIRM PANEL 230051 0007 B, EFFECTIVE DATE JULY 17, 1986), THIS PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
- (6) COORDINATE VALUES SHOWN ARE BASED ON THE MORSE AND KIDDER STREET CSO PROJECT PROVIDED TO THE CITY OF PORTLAND BY TITCOMB ASSOCIATES.
- (7) ELEVATIONS ARE BASED ON THE CITY OF PORTLAND DATUM.
- (8) SLEMONS ROAD IS AN UNACCEPTED, CONTINUED STREET.
- (9) WETLANDS DELINEATED BY OTHERS, FIELD LOCATED BY TITCOMB ASSOCIATES.

AREA

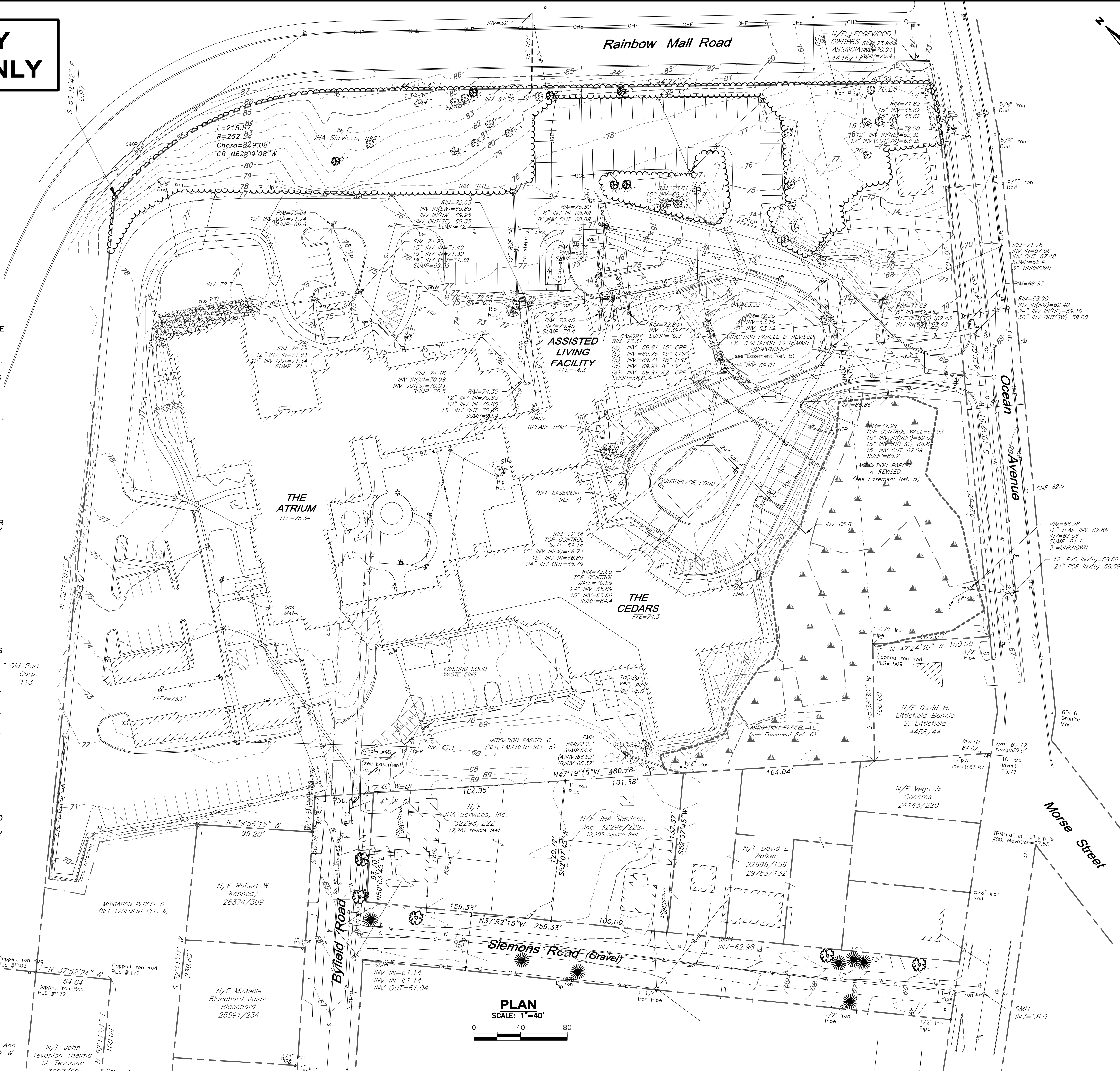
TOTAL PROJECT AREA = 460,350 SQUARE FEET / 10.57 ACRES

PARKING COUNT

- 143 PARKING SPACES
18 GARAGE SPACES
10 HANDICAP PARKING SPACES

N/F Elizabeth Ann
Manduca Mark W.
Manduca
5023/338

N/F John
Tevanian Thelma
M. Tevanian
3627/59



NO.	RESPONSE TO COMMENTS	DATE	ISSUED FOR PORTLAND SITE PLAN REVIEW
1		JWB 2/7/18	
2		JWB 11/17	

DESIGNED BY:	CAD COORD.	CHECKED BY:	DATE:	APPROVED BY:	DATE:	PROJECT NO.:
MRL	MRL	MRL	2-8-18	JWB	2-8-18	13682A

STATE OF MAINE	JAN B.S. WIEGAND	NO. 5852	1/11/18
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THE CEDARS ASSISTED LIVING AND LONG-TERM CARE FACILITY PORTLAND, ME	OVERALL EXISTING CONDITIONS PLAN
--	----------------------------------

DRAWING	C-2
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PRELIMINARY FOR REVIEW ONLY

PLAN REFERENCES

- (1) PLAN OF LOTS NUMBER 3 & 4 MADE FOR THE ESTATE OF MARY S. LUNT BY EDWIN C. TOWNSEND DATED MARCH 8, 1877 RECORDED IN PLAN BOOK 4, PAGE 4.
- (2) PLAN OF LAND MADE FOR DOROTHY S. TRUE AND HEIRS OF F.W.H. SMITH DATED OCTOBER 1929, RECORDED IN PLAN BOOK 25, PAGE 50.
- (3) REVISED FINAL PLAN OF LEDGEWOOD SUBDIVISION MADE FOR THE DARTMOUTH COMPANY BY LAND USE CONSULTANTS DATED APRIL 27, 1979, RECORDED IN PLAN BOOK 123, PAGE 61.
- (4) PLAN OF PROPERTY MADE FOR JEWISH HOME FOR THE AGED MADE BY H.I. AND E.C. JORDAN DATED JULY 17, 1987.
- (5) PLAN OF PROPERTY/LAND TITLE SURVEY OF THE CEDARS MADE BY H.I. AND E.C. JORDAN DATED MARCH 29, 1990, RECORDED IN PLAN BOOK 186, PAGE 14.
- (6) RECORD DRAWING OF CEDARS NURSING CARE CENTER, INC. MADE BY OWEN HASKELL, INC. DATED AUGUST 29, 1991.
- (7) LAYOUT AND UTILITIES PLAN OF THE ATRIUM AT CEDARS (DRAWING NUMBER C202) MADE BY TSONIDES ASSOCIATES DATED MAY 27, 1997.
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OWNERS OF RECORD

- UNIT 1 CEDARS NURSING CARE CENTER, INC.; BOOK 24129, PAGE 276
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- (9) WETLANDS DELINEATED BY OTHERS, FIELD LOCATED BY TITCOMB ASSOCIATES.

AREA

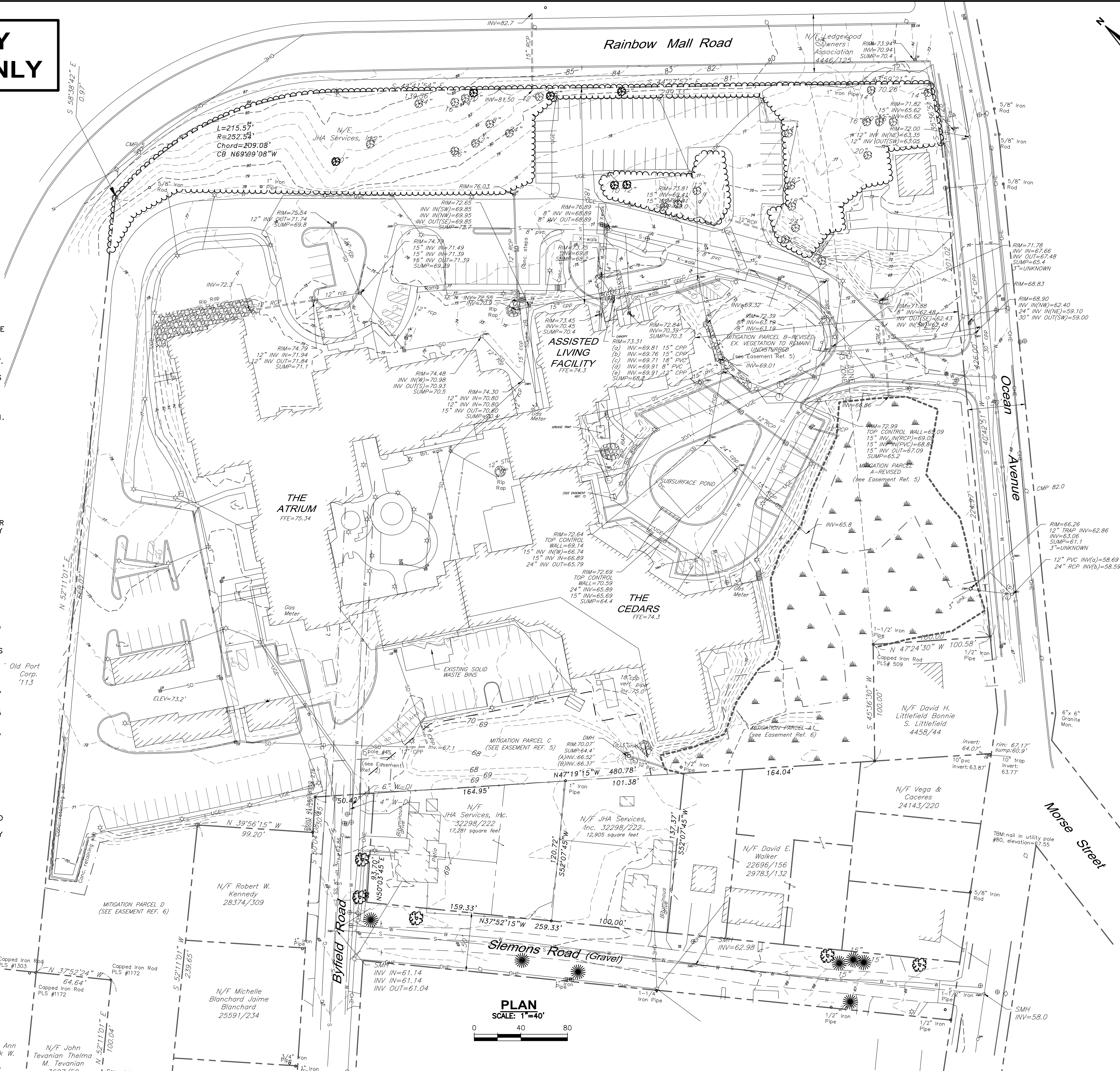
TOTAL PROJECT AREA = 460,350 SQUARE FEET / 10.57 ACRES

PARKING COUNT

- 143 PARKING SPACES
18 GARAGE PARKING
10 HANDICAP PARKING SPACES

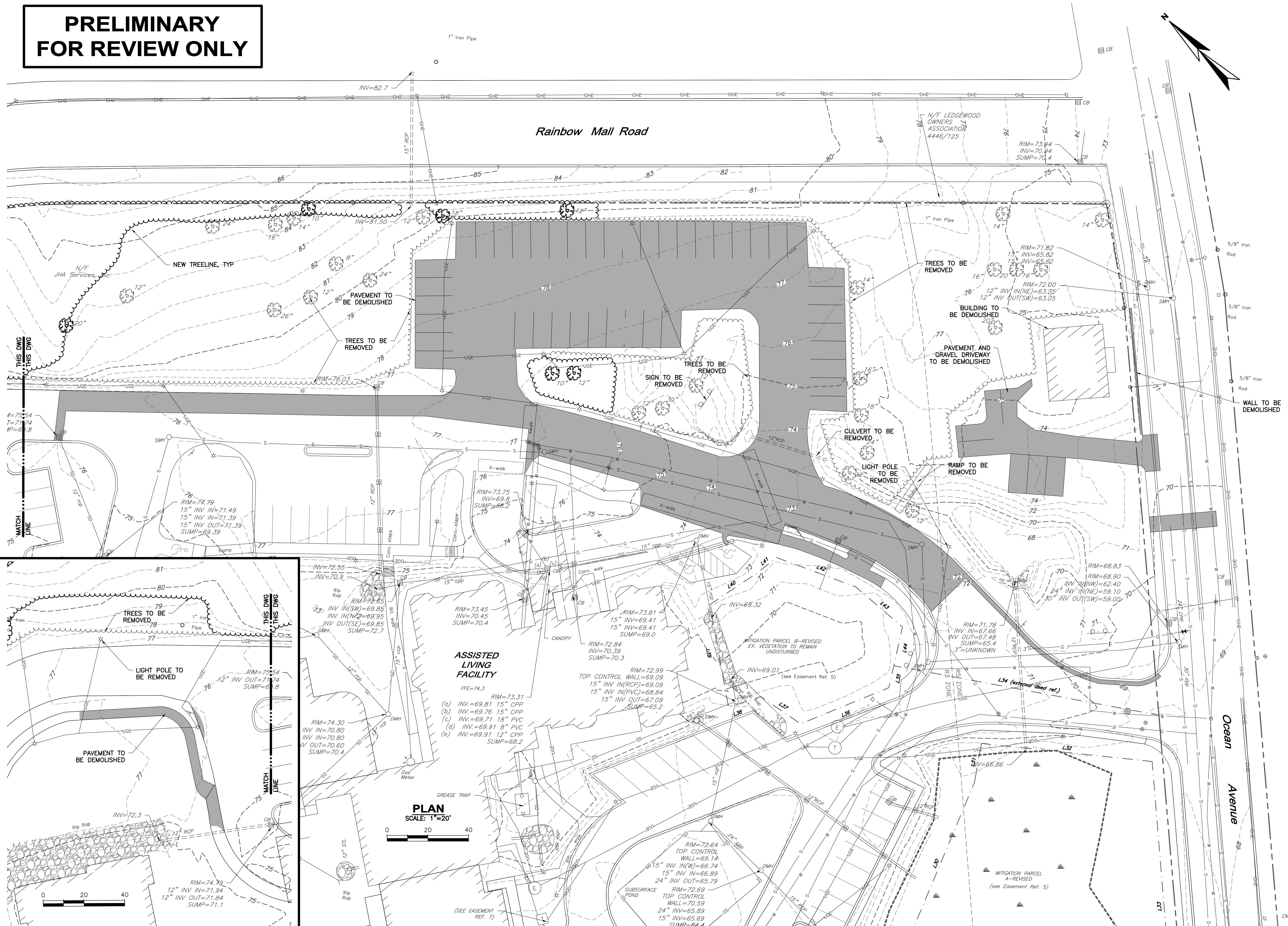
N/F Elizabeth Ann
Manduca Mark W.
Manduca
5023/338

N/F John
Tevanian Thelma
M. Tevanian
3627/59



THE CEDARS ASSISTED LIVING AND LONG-TERM CARE FACILITY PORTLAND, ME	OVERALL EXISTING CONDITIONS PLAN	DRAWING		C-2
		WRIGHT-PIERCE Engineering a Better Environment Offices Throughout New England 888.621.8156 www.wright-pierce.com		
				
		DESIGNED BY: MAG CAD COORD.: MRL CHECKED BY: MAG DATE: 11-15-17 APPROVED BY: JBW DATE: 11-15-17 PROJECT NO: 13682A		
		SUBMITTALS/REVISIONS		
		NO.	ISSUED FOR PORTLAND SITE PLAN REVIEW	

**PRELIMINARY
FOR REVIEW ONLY**



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THE CEDARS
ASSISTED LIVING AND
LONG-TERM CARE FACILITY
PORTLAND, ME

EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING

C-3

2/17/16

DESIGNED BY: **WAG**

CAD COORD.: **MRL**

CAD: **MRL**

CHECKED BY: **WAG**

DATE: **2-8-18**

APPROVED BY: **JBW**

DATE: **2-8-18**

PROJECT NO.: **13682A**

NO. _____

RESPONSE TO COMMENTS _____

ISSUED FOR: **PORTLAND SITE PLAN REVIEW**

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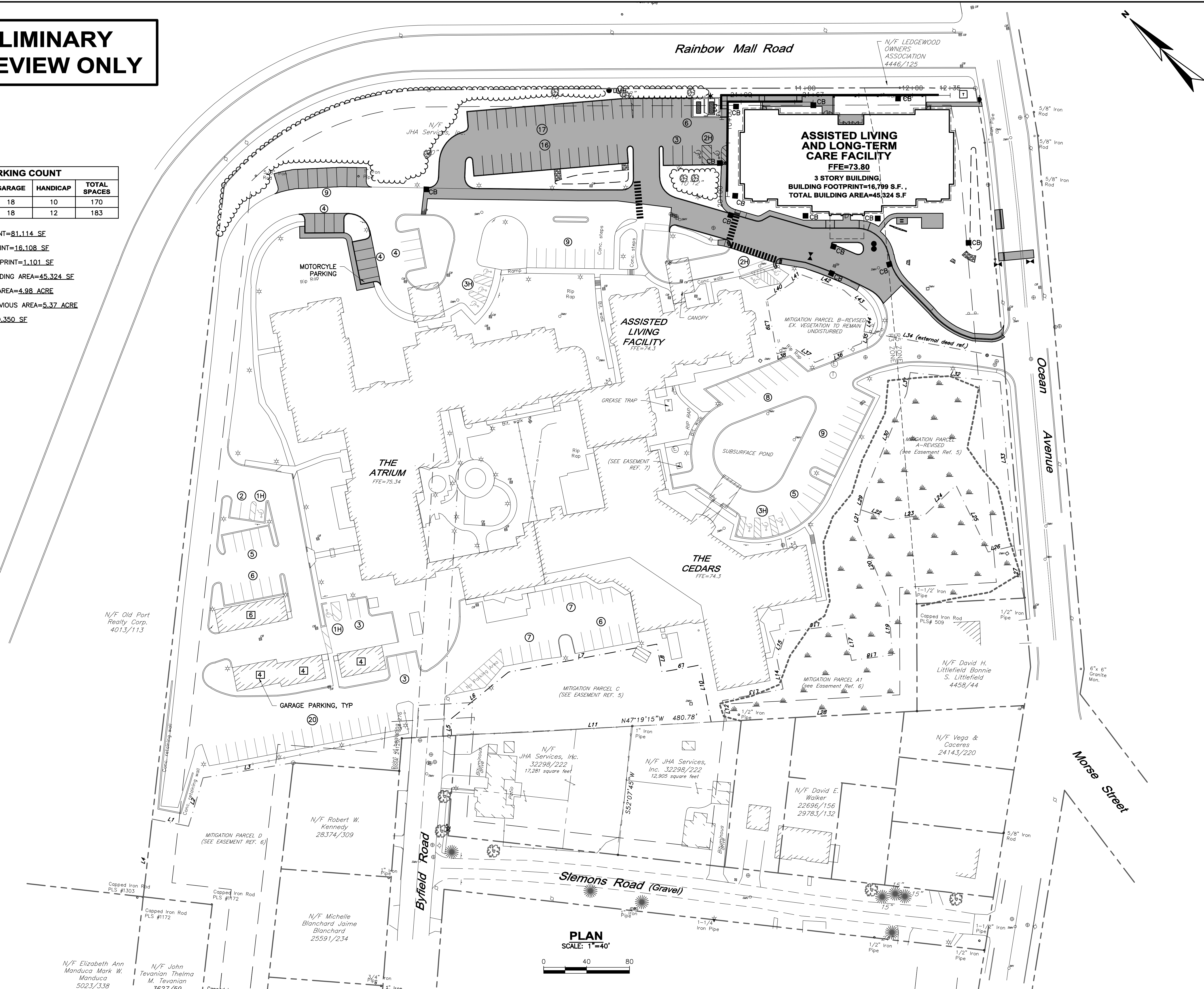
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**PRELIMINARY
FOR REVIEW ONLY**

SITE PARKING COUNT				
	SPACES	GARAGE	HANDICAP	TOTAL SPACES
EXISTING	142	18	10	170
PROPOSED	153	18	12	183

EXISTING BUILDING FOOTPRINT=81,114 SF
PROPOSED FACILITY FOOTPRINT=16,108 SF
DEMOLISHED BUILDING FOOTPRINT=1,101 SF
PROPOSED TOTAL NEW BUILDING AREA=45,324 SF
EXISTING SITE IMPERVIOUS AREA=4.98 ACRE
PROPOSED SITE NEW IMPERVIOUS AREA=5.37 ACRE
TOTAL SITE LAND AREA=460,350 SF



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THE CEDARS
ASSISTED LIVING AND
LONG-TERM CARE FACILITY
PORTLAND, ME

OVERALL SITE LAYOUT PLAN

DRAWING

C-4

2/17/16

DESIGNED BY: MAG
O&D COORD: MRL
O&D: MRL
CHECKED BY: MAG
DATE: 2-8-18
APPROVED BY: JWB
DATE: 2-8-18
PROJECT NO: 13682A

2/17/16

NO RESPONSE TO COMMENTS

ISSUED FOR PORTLAND SITE PLAN REVIEW

2/17/16

DESIGNED BY: MAG
O&D COORD: MRL
O&D: MRL
CHECKED BY: MAG
DATE: 2-8-18
APPROVED BY: JWB
DATE: 2-8-18
PROJECT NO: 13682A

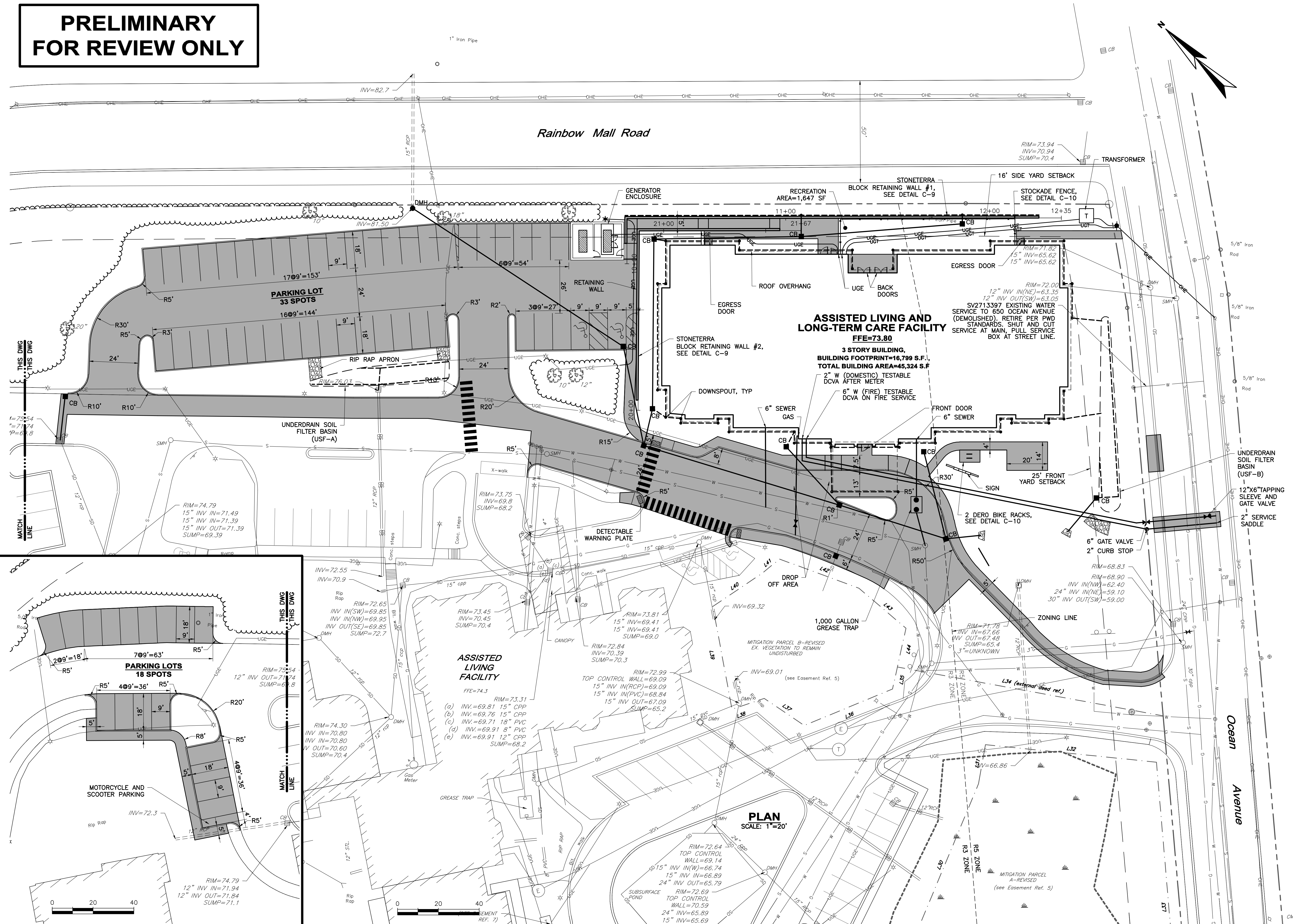
2/17/16

NO RESPONSE TO COMMENTS

ISSUED FOR PORTLAND SITE PLAN REVIEW

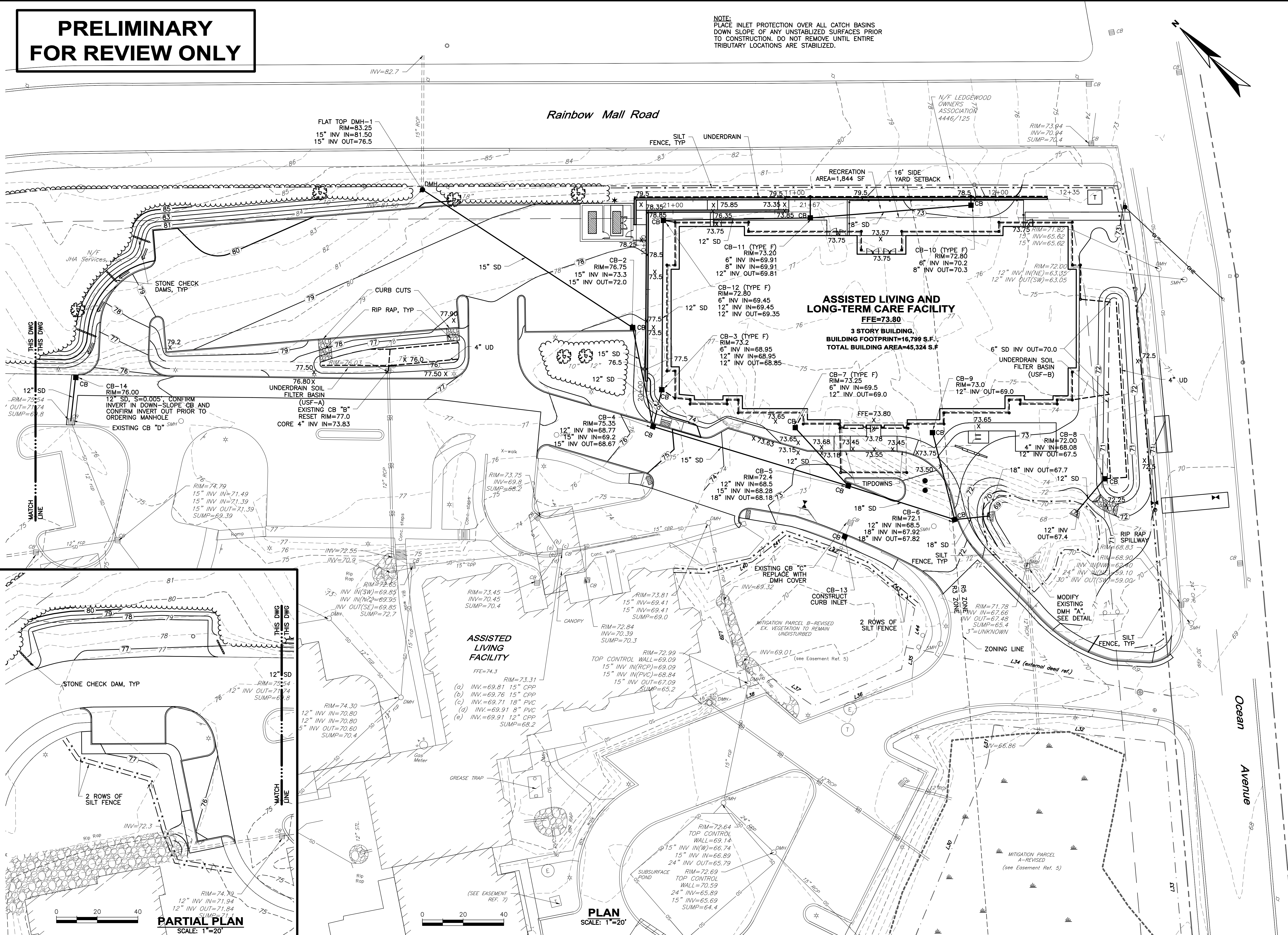
2/17/16

PRELIMINARY
FOR REVIEW ONLY



THE CEDARS ASSISTED LIVING AND LONG-TERM CARE FACILITY PORTLAND, ME		 WRIGHT-PIERCE Engineering a Better Environment Offices Throughout New England 888.621.8156 www.wright-pierce.com		SUBMISSIONS/REVISIONS		DATE
				NO.	RESPONSE TO COMMENTS	
SITE LAYOUT AND UTILITIES PLAN			DESIGNED BY: MAG			
			CAD COORD.: MRL			
			CAD: MRL			
			CHECKED BY: MAG			
			DATE: 2-8-18			
			APPROVED BY: JWB			
			DATE: 2-8-18			
			PROJECT NO: 13682A			
DRAWING						
C-5						

PRELIMINARY
FOR REVIEW ONLY



NOTE:
PLACE INLET PROTECTION OVER ALL CATCH BASINS
DOWN SLOPE OF ANY UNSTABILIZED SURFACES PRIOR
TO CONSTRUCTION. DO NOT REMOVE UNTIL ENTIRE
TRIBUTARY LOCATIONS ARE STABILIZED.

DRAWING	THE CEDARS ASSISTED LIVING AND LONG-TERM CARE FACILITY PORTLAND, ME	
	SITE GRADING AND EROSION CONTROL PLAN	



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NO.

DESIGNED BY: MAG

RESPONSE TO COMMENTS

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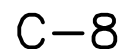
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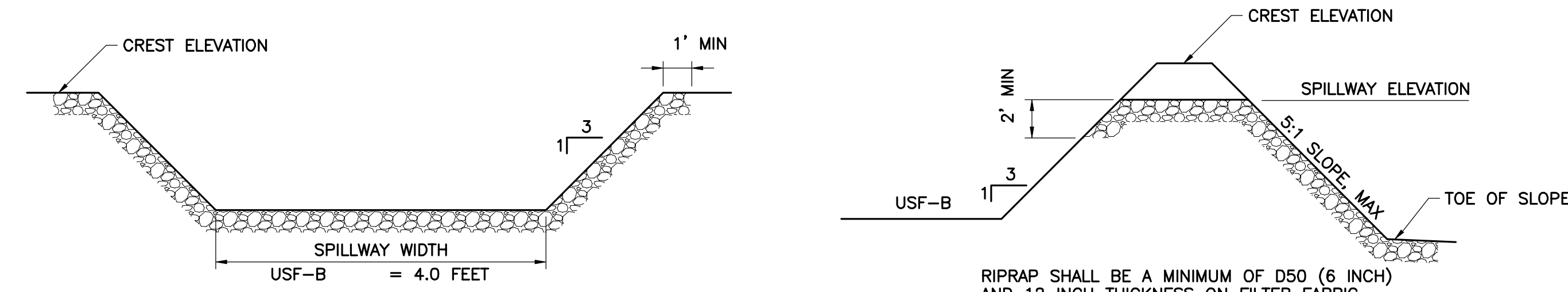
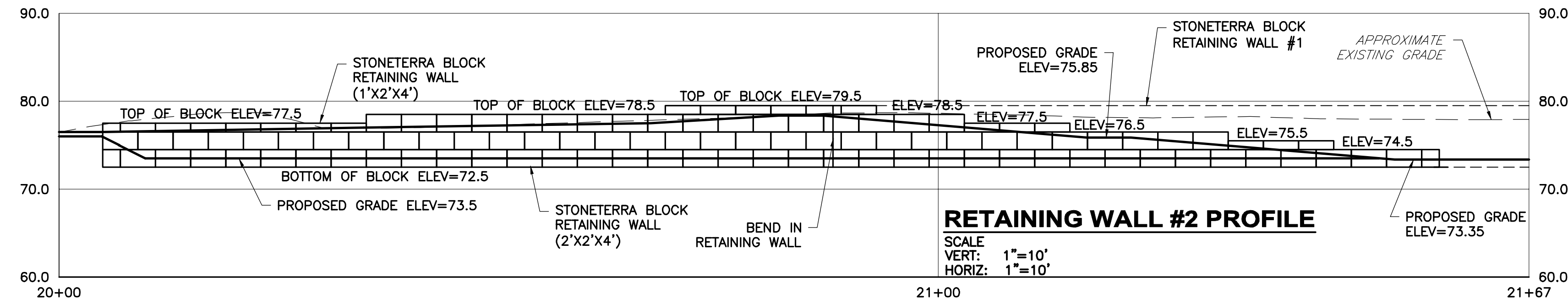
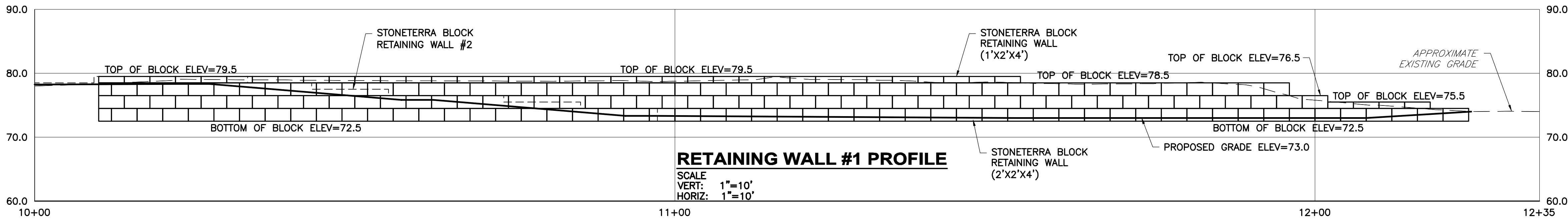
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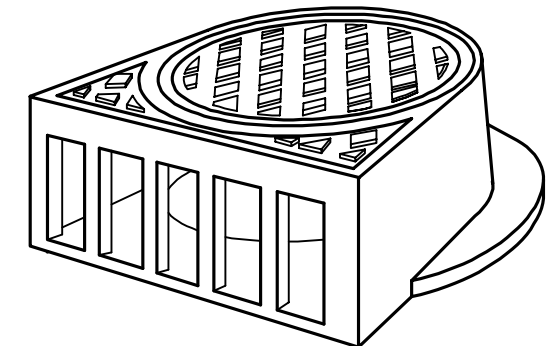
TYPICAL PIPE INSTALLATION - NOTES

SCALE: NTS

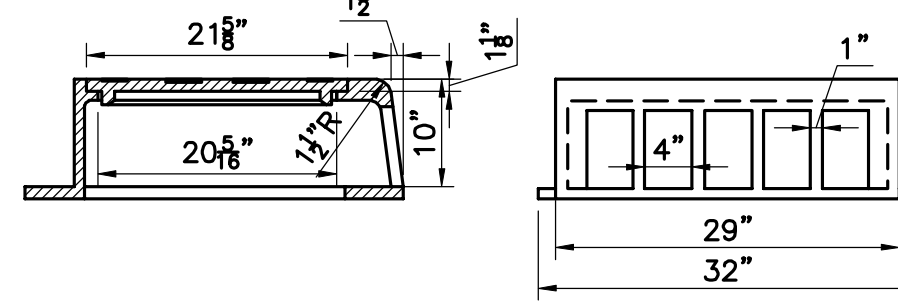




UNDERDRAIN SOIL FILTER SPILLWAY
SCALE: NTS



ISOMETRIC VIEW



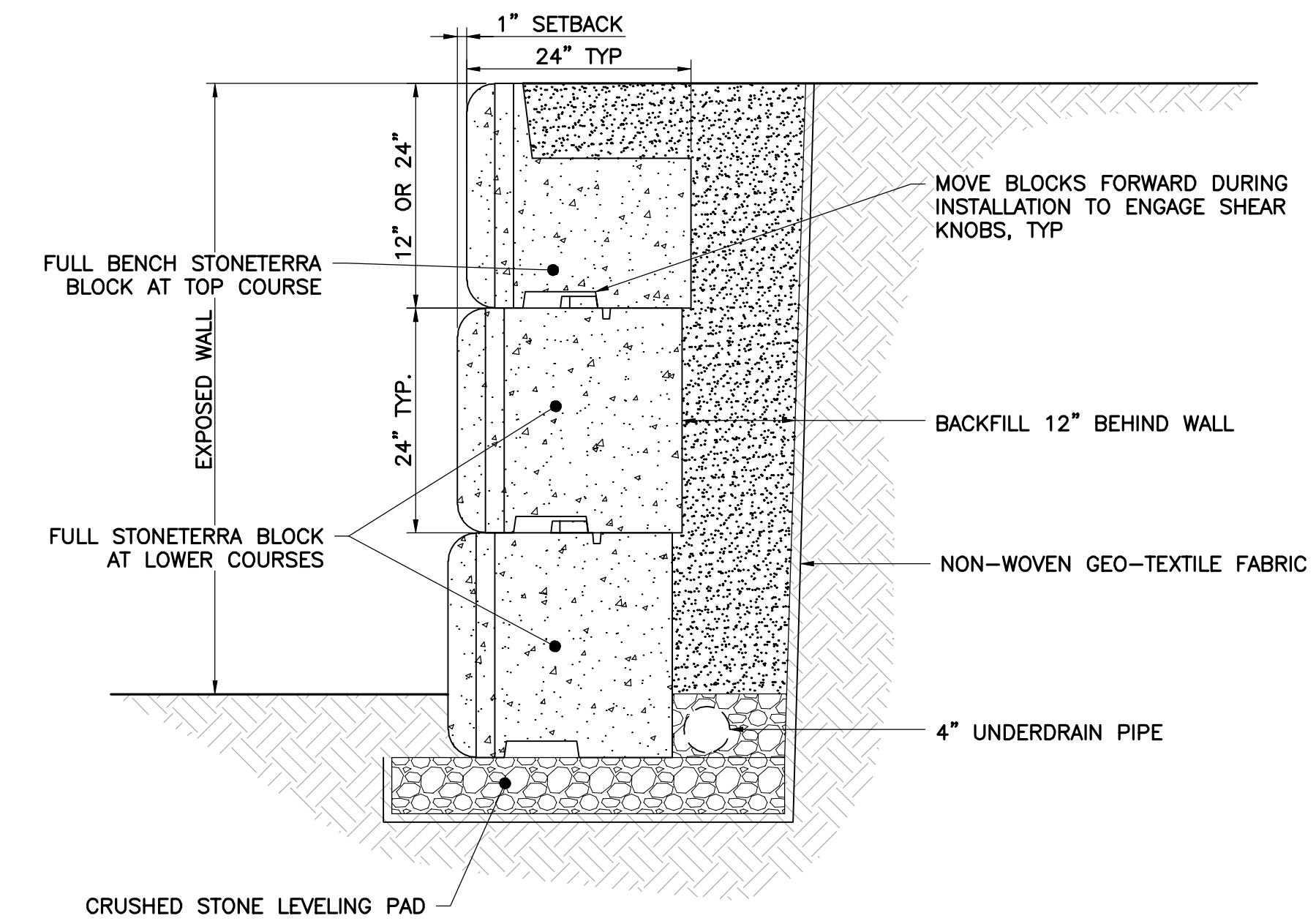
SECTION

ELEVATION

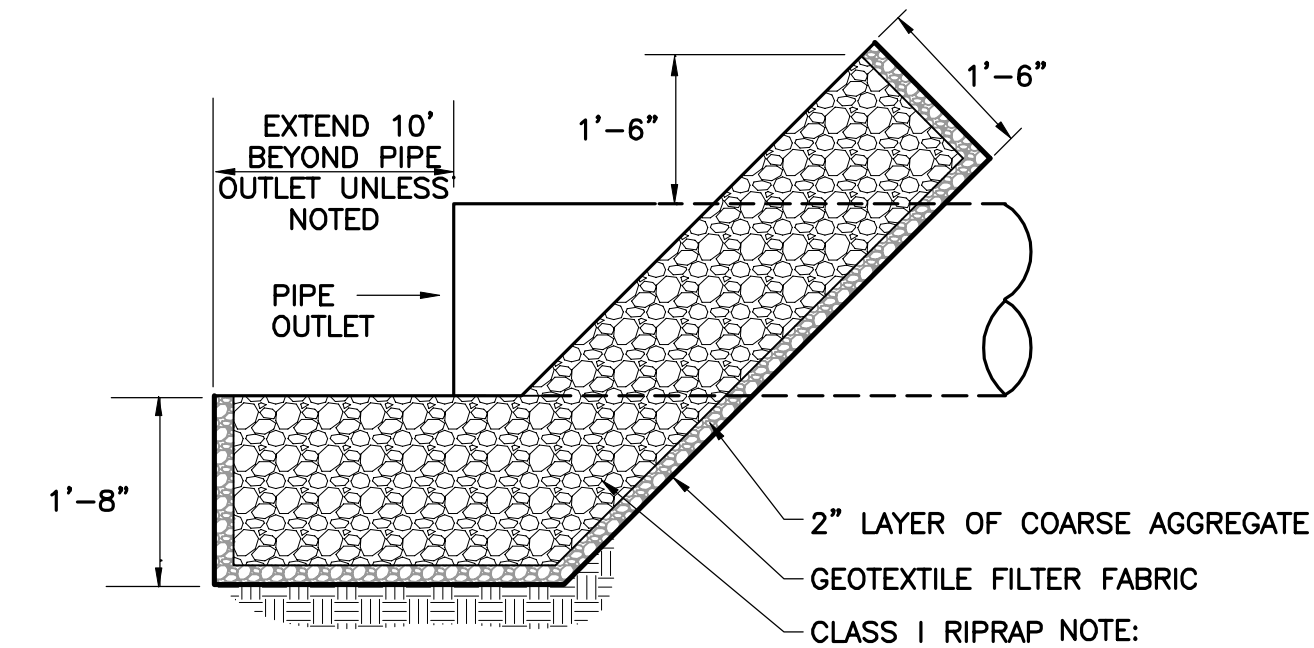
CURB INLET
SCALE: "NTS"

NOTE:

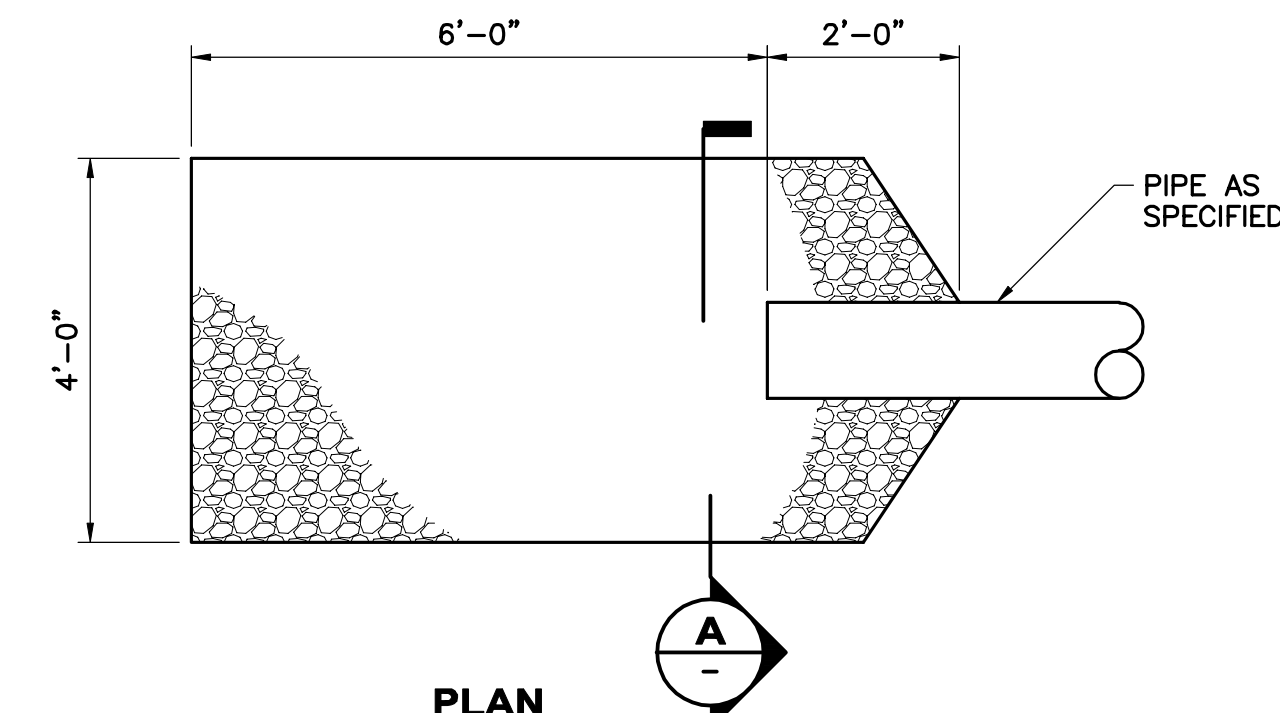
1. USE NEENAH FOUNDRY CURB INLET R-3305
- OR EQUAL AS APPROVED BY ENGINEER



STONETERRA BLOCK WALL
SCALE: NTS

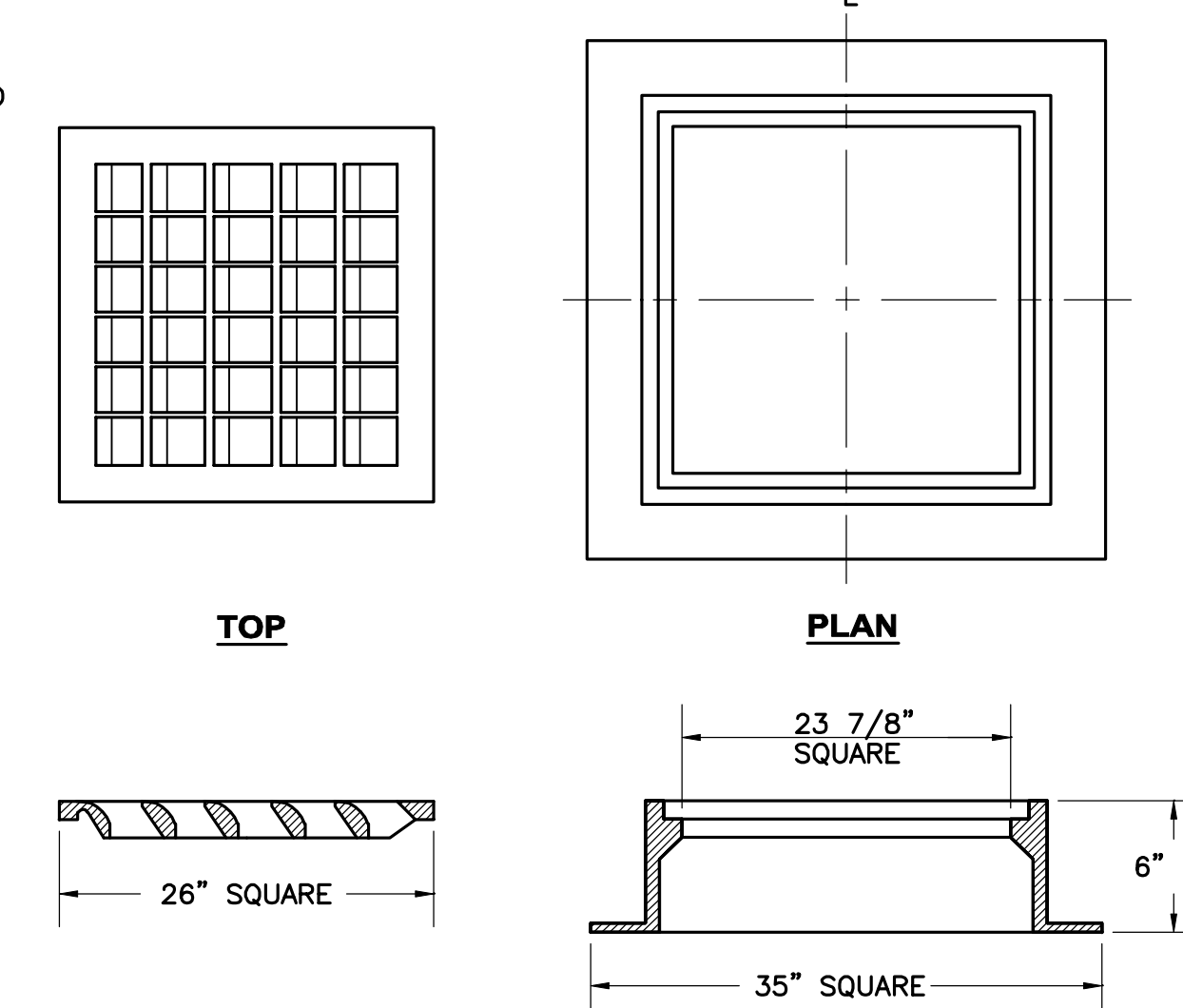


PIPE OUTLET RIPRAP
SCALE: NTS



SECTION A

STONE INLET APRON
SCALE: NTS



SECTION

SECTION

CASCADE GRATE AND FRAME
SCALE: NTS

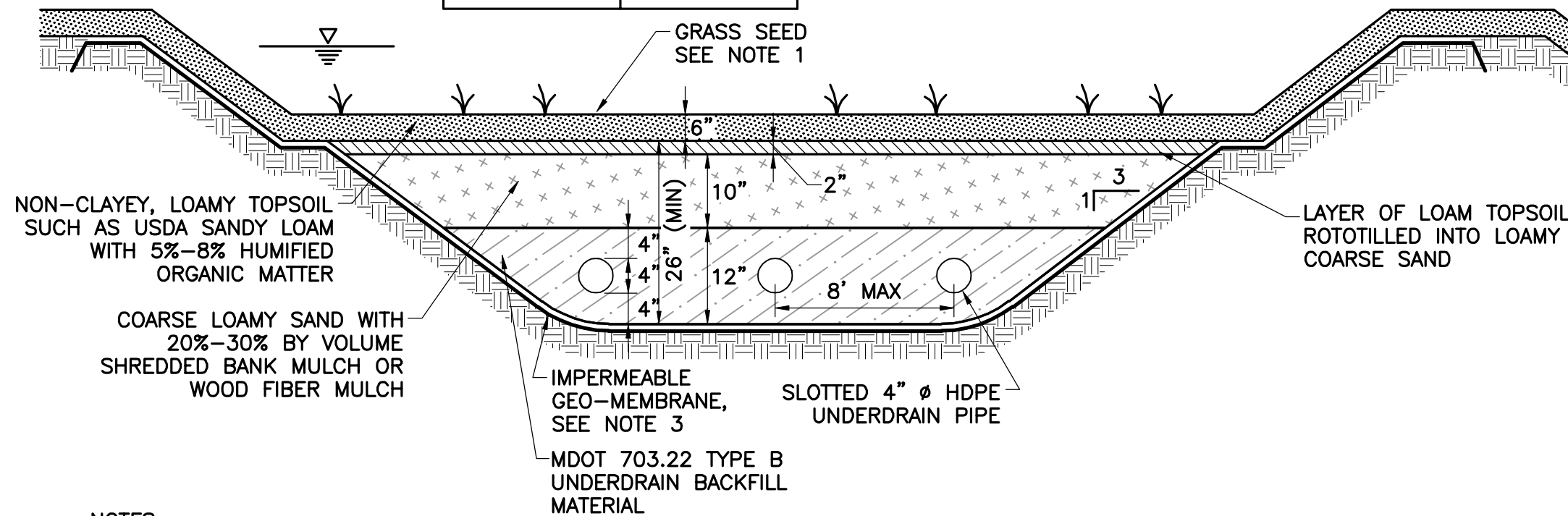
TABLE I SPECIFICATIONS FOR LOAMY COARSE SAND	
SEIVE #	% PASSING BY WEIGHT
10	85-100
20	70-100
60	15-40
200	8-15
200 CLAY SIZE	<2.0

TABLE II MDOT 703.22 TYPE B UNDERDRAIN BACKFILL	
SEIVE #	% PASSING BY WEIGHT
1"	95-100
0.5"	75-100
4	50-100
20	15-80
50	0-15
200	0-5.0

TABLE III SEED MIXTURE	
CREEPING RED FESUCE	20 LBS/ACRE (0.5 LBS/1,000 S.F.)
TALL FESCUE	20 LBS/ACRE (0.5 LBS/1,000 S.F.)
BIRDSFOOT TREFOIL	8 LBS/ACRE (0.2 LBS/1,000 S.F.)

UNDERDRAIN SOIL FILTER TABLE					
(A) SOIL FILTER REFERENCE	(B) ELEVATION OF SOIL FILTER	(C) OVERFLOW STRUCTURE (OS)	(D) RIM ELEVATION OUTLET STRUCTURE	(E) UNDERDRAIN INVERT ELVATION	MIN SURFACE AREA AT SOIL FILTER ELEVATION (SF)
USF A	76.00	YES	77.00	73.83	580
USF B	70.25	YES	72.00	68.08	715

- UNDERDRAIN CONSTRUCTION, TESTING AND SUBMITTAL NOTES:
1. CONSTRUCTION OVERSIGHT: INSPECTION OF THE FILTER BASIN MUST BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER WITH REQUIRED REPORTING TO THE DEP. ALL MATERIAL INTENDED FOR THE FILTER BASIN MUST BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THE MATERIAL CONFORMS TO ALL DEP SPECIFICATIONS. AT A MINIMUM, INSPECTIONS WILL OCCUR:
 - 1.1. AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED (NOT BACKFILLED);
 - 1.2. AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE SOIL FILTER MEDIA;
 - 1.3. AFTER THE SOIL FILTER MEDIA HAS BEEN INSTALLED, SEEDED AND MULCHED; AND
 - 1.4. AFTER ONE YEAR, TO INSPECT VEGETATION AND MAKE CORRECTIONS.
 2. TESTING AND SUBMITTALS: THE SOURCE OF EACH COMPONENT OF THE SOIL FILTER MEDIA NEEDS TO BE IDENTIFIED PRIOR TO CONSTRUCTION. ALL RESULTS OF FIELD AND LABORATORY TESTING MUST BE SUBMITTED TO THE DEP FOR APPROVAL.
 - 2.1. MEDIA SOURCE: SAMPLES OF EACH TYPE OF MATERIAL SHOULD BE BLENDED FOR THE MIXED FILTER MEDIA AND
 - 2.2. UNDERDRAIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM
 - 2.3. THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIREMENTS WILL BE DETERMINED BY THE TESTING LABORATORY.
 - 2.4. SIEVE ANALYSIS: A SIEVE ANALYSIS CONFORMING TO ASTM C136 SHOULD BE PERFORMED ON EACH TYPE OF THE SAMPLE MATERIAL.
 - 2.5. PERMEABILITY TESTING: TESTING THE PERMEABILITY OF THE SOIL FILTER MEDIA MIXTURE IS RECOMMENDED WITH THE MIXTURE AT A MEASURED BULK DRY DENSITY OF 90-92% BASED ON ASTM D698."

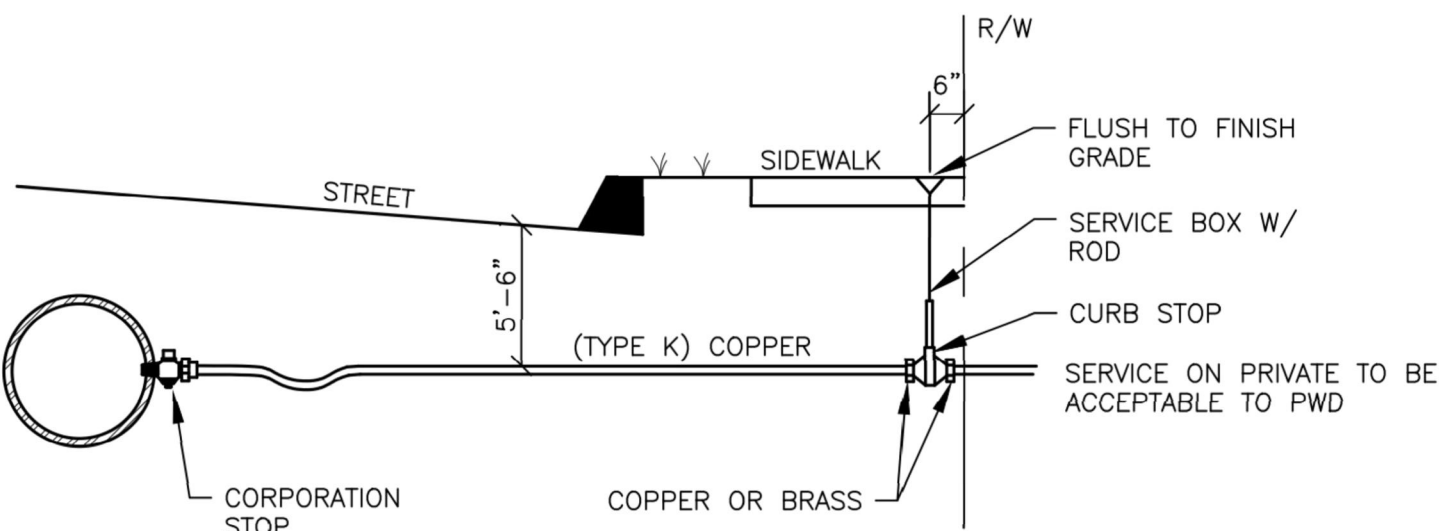
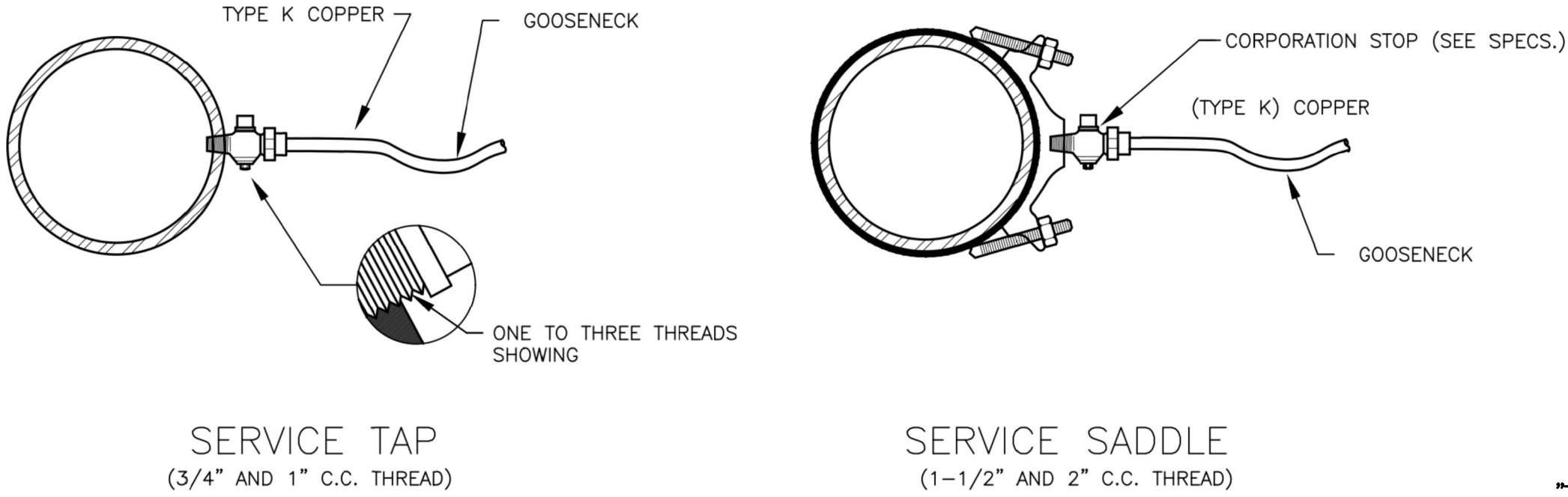


UNDERDRAIN SOIL FILTER CONSTRUCTION
NTS

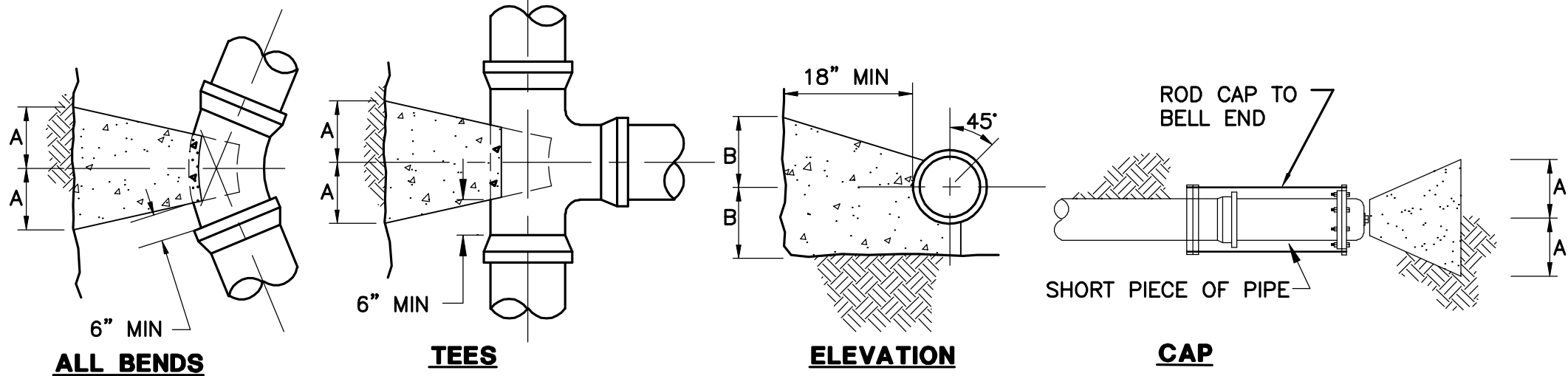
- NOTES:
1. GRASS SEED MIXTURE SHALL BE DROUGHT TOLERANT CONSERVATION MIX.
 2. PLACE FILTER MEDIA AND LOAM TOPSOIL ONLY AFTER SITE HAS BEEN STABILIZED.
 3. IMPERMEABLE GEO-MEMBRANE SHALL BE 4 LDRE OR HDPE IMPERMEABLE LINER OF AT LEAST 20 MIL. THICKNESS.
 4. UNDERDRAIN PIPE SHALL SLOPE AT 0.0050 MIN. (SEE DRAWING C-6)

PRELIMINARY
FOR REVIEW ONLY

REPORT NO.	DATE	ISSUED FOR	DATE
JBW	2/18	FOR PORTLAND SITE PLAN REVIEW	11/17
SUBMISSIONS/REVISIONS			
NO	RESPONSE TO COMMENTS	DATE	BY
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TYPICAL SERVICE CONNECTION

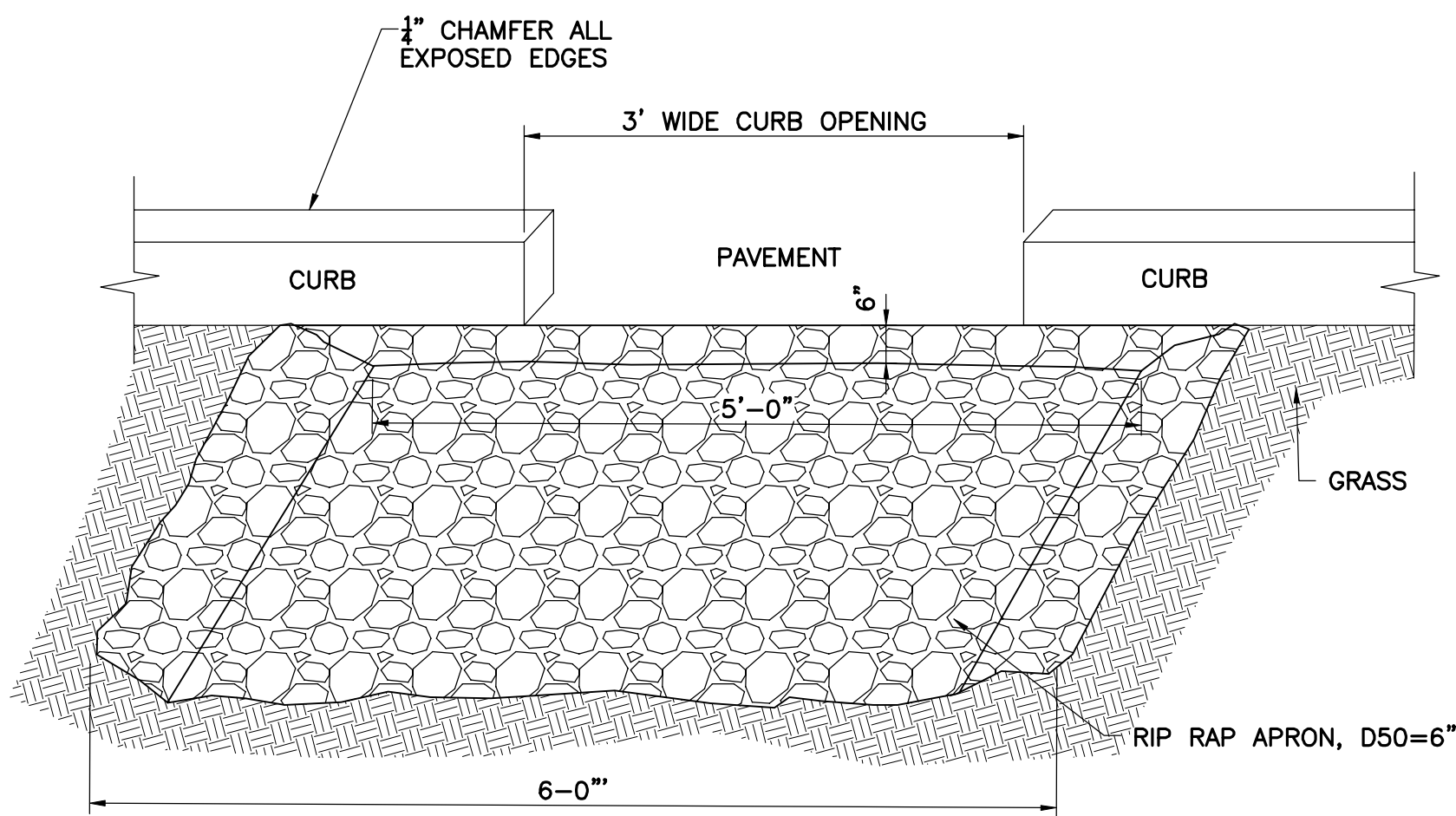


NOTES

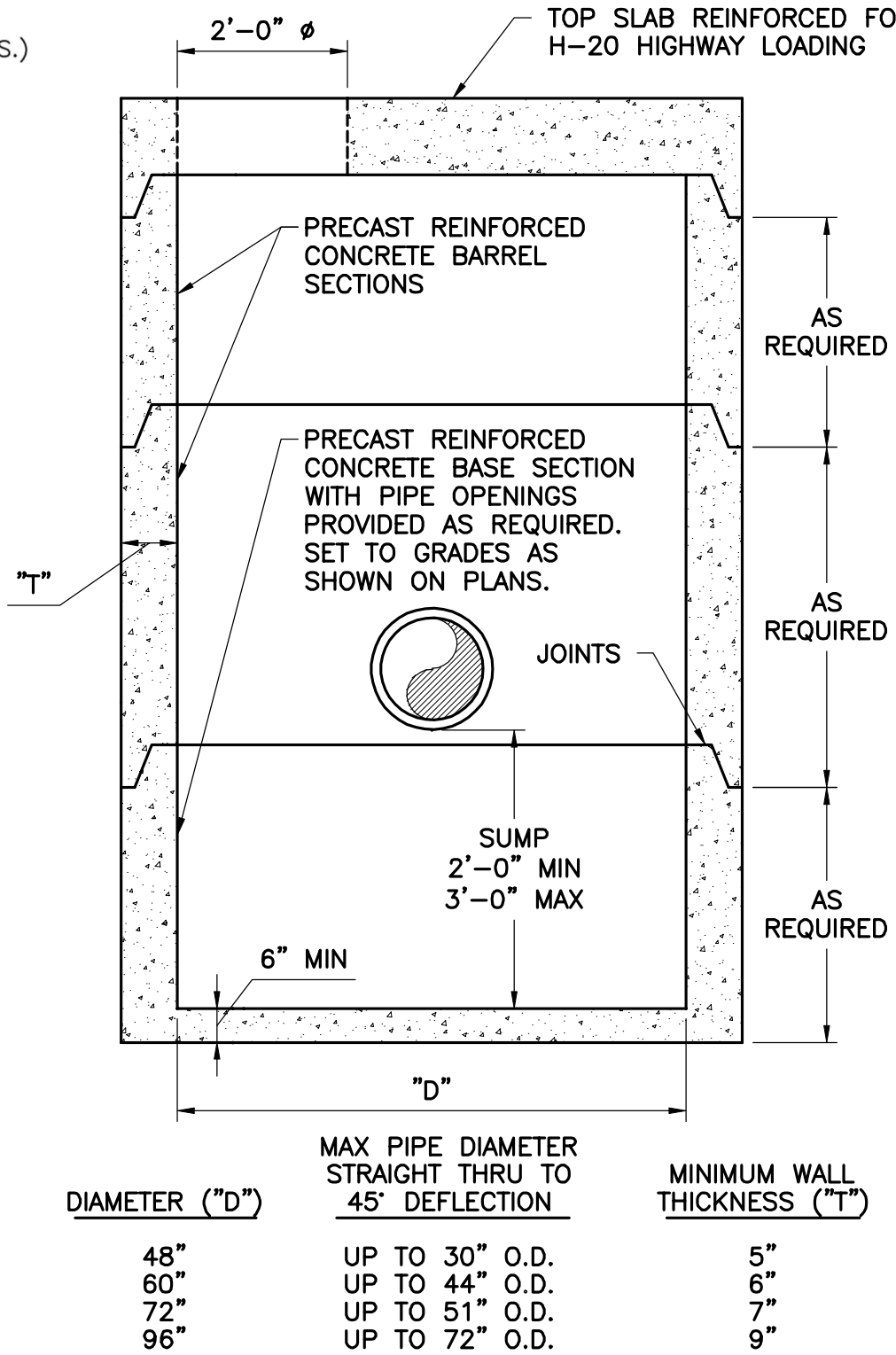
1. THRUST BLOCK SIZES SHOWN ARE BASED ON A SOIL BEARING CAPACITY OF 2000 PSF AND TEST PRESSURES OF 180 PSI.
2. ALL BENDS, TEES, WYES, HYDS. & DEAD ENDS SHALL BE BRACED WITH CONCRETE THRUST BLOCKS.
3. RODDING MAY BE REQUIRED

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		VERTICAL BEND (DOWN)		PLUG		REDUCER	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
6"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
8"	20"	15"	14"	12"	9"	9"	9"	6"	18"	12"	33"	24"	14"	14"	18"	12"
10"	21"	21"	18"	15"	15"	9"	9"	9"	20"	18"	40"	27"	16"	16"	20"	18"
12"	27"	24"	23"	15"	15"	12"	12"	9"	25"	18"	48"	30"	18"	18"	25"	18"
16"	37"	30"	30"	21"	21"	15"	13"	12"	32"	24"	57"	36"	22"	22"	32"	24"

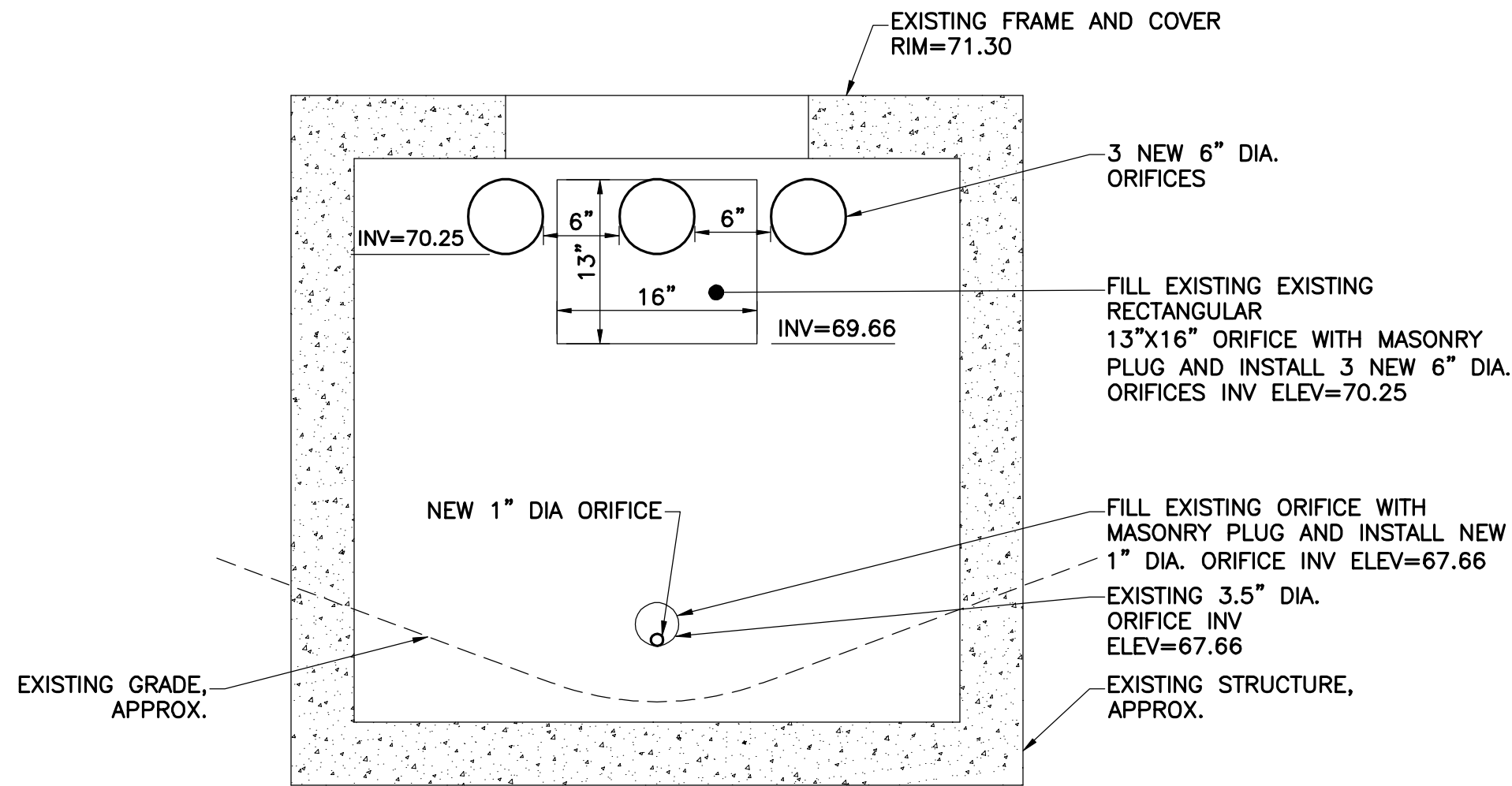
THRUST BLOCKS
NTS



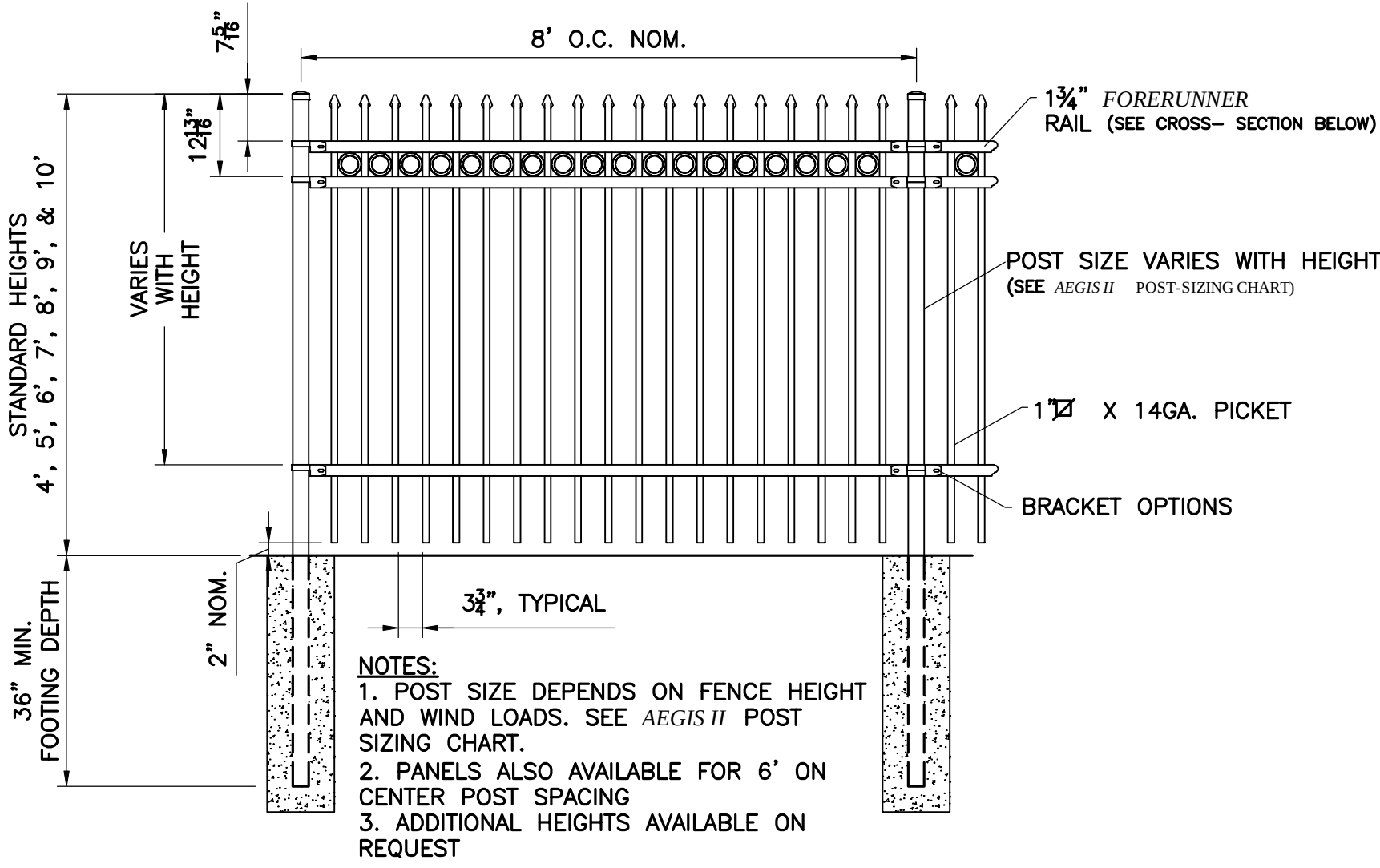
CURB CUT DETAIL
NOT TO SCALE



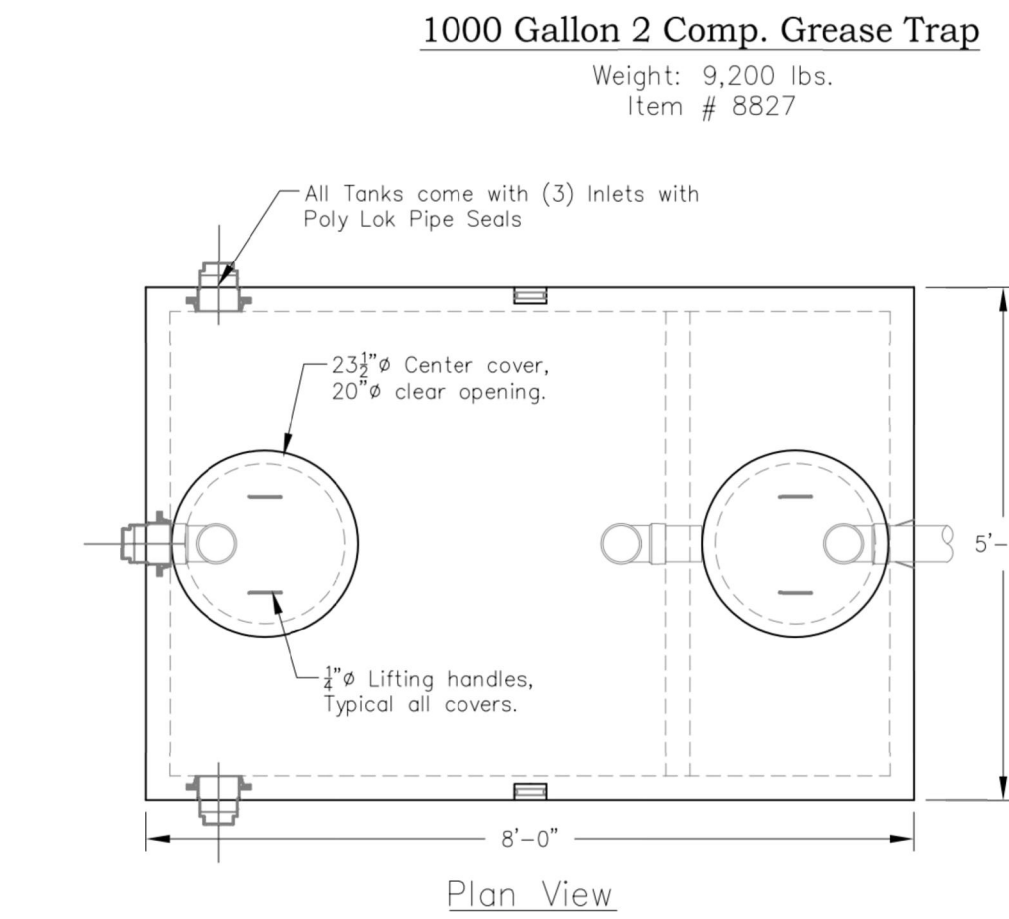
FLAT SLAB TOP CATCH BASIN
SCALE: "NTS"



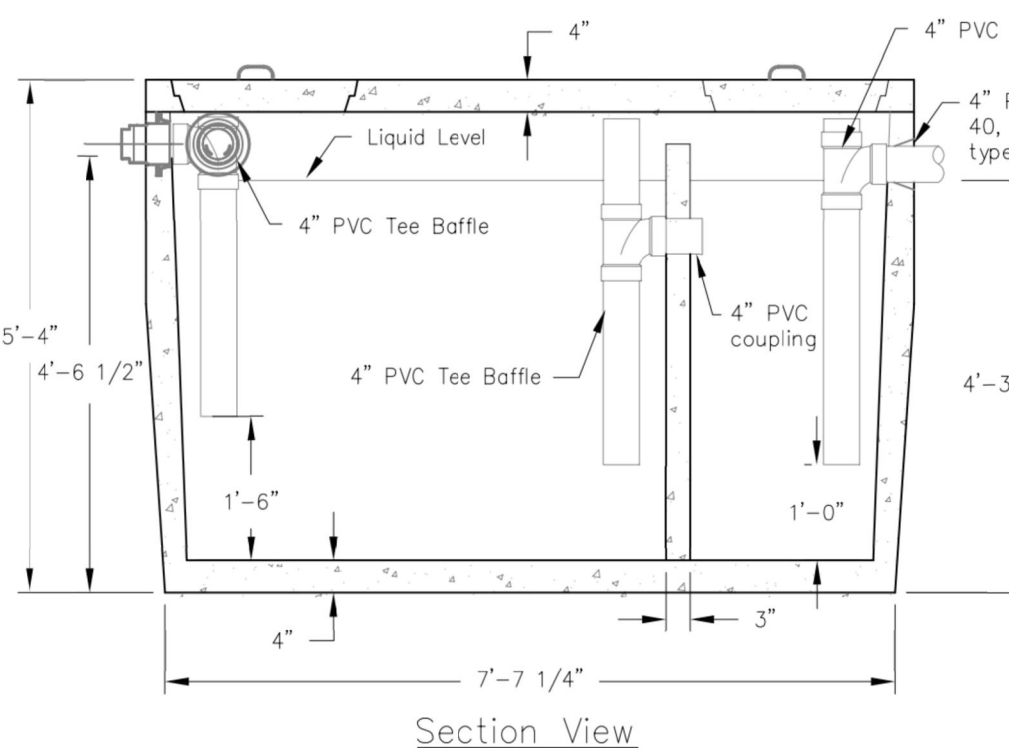
MODIFICATIONS TO EXISTING STRUCTURE "A" DETAIL
SCALE: "NTS"



AEGIS II CLASSIC 3-RAIL W/RINGS DETAIL
SCALE: "NTS"



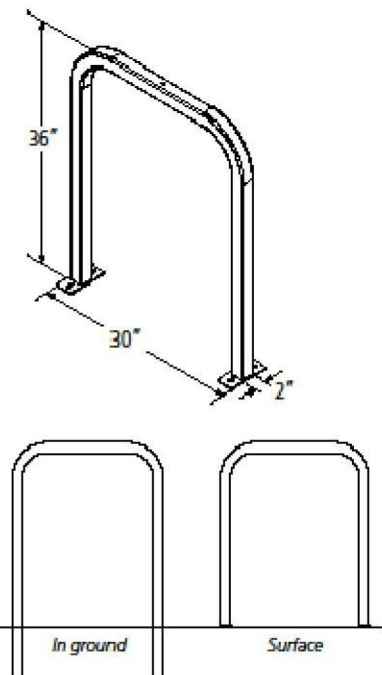
GREASE TRAP DETAIL
SCALE: NTS



General Notes:

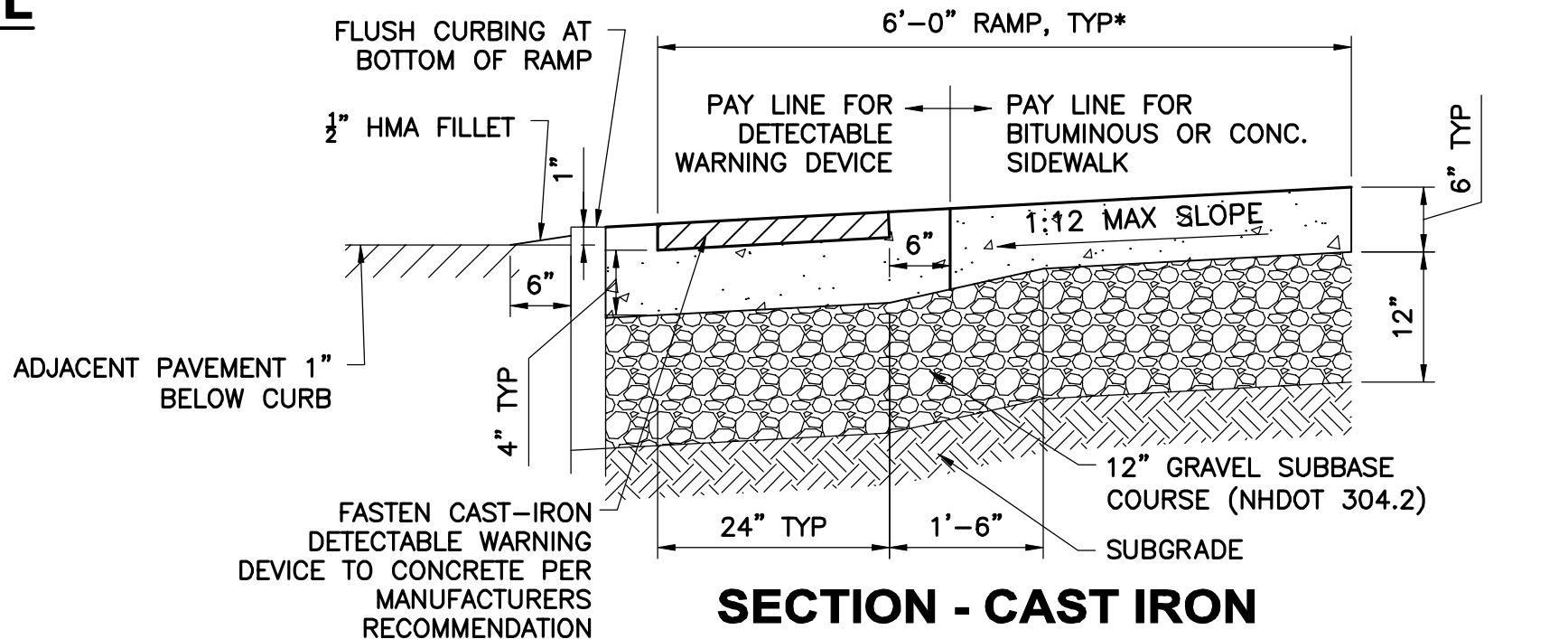
- Concrete Specifications:
- 1) 4000 psi @ 28 Days
 - 2) 4%-6% Entrained Air
 - 3) Tank Penetrations are integrally cast
 - 4) All joints sealed with butyl rubber joint sealant

- Grease Trap Information:
- 1) Tanks Should be pumped as needed
 - 2) Access covers should have risers to bring cover access to grade.
 - 3) Tanks can be vacuum tested at an additional cost

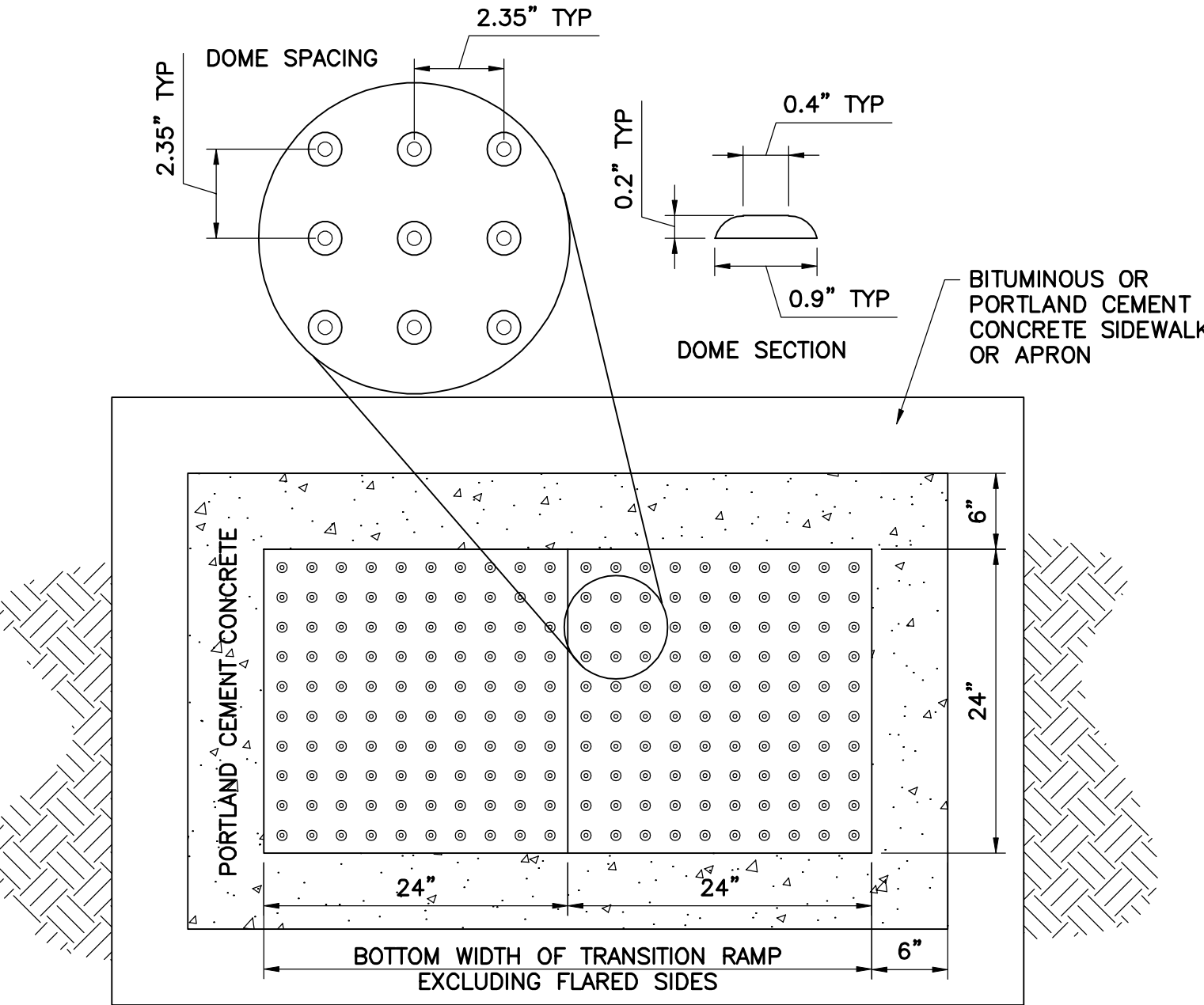


DERO BIKE RACK DETAIL
NOT TO SCALE

PRELIMINARY
FOR REVIEW ONLY



SECTION - CAST IRON



- NOTE:
1. ALL DETECTABLE WARNING DEVICES SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). 2'x2', 2'x4' and RADIUS DEVICES ARE ACCEPTABLE.
 2. INSTALL DETECTABLE WARNING DEVICES AT ALL ROADWAYS, HIGH USE ACCESS WAYS, OR AT THE DIRECTION OF THE ENGINEER.
 3. ALL DEVICES SHALL HAVE A MIN. 6" WIDTH PORTLAND CEMENT CONCRETE SURROUND REGARDLESS OF THE SURROUNDING WALK OR APRON MATERIAL.

RECTANGULAR CAST IRON HANDICAP
DETECTABLE WARNING DEVICE DETAIL

SCALE: NTS

NO.	DATE	REVISIONS	DATE	REVISIONS
1	12/18	ISSUED FOR PORTLAND SITE PLAN REVIEW	12/18	
2	11/17		11/17	

DESIGNED BY: MAG	CAD COORD: MRL	CHECKED BY: MAG	DATE: 2-8-18	APPROVED BY: JWB	DATE: 2-8-18	PROJECT NO: 13682A
STATE OF MAINE JAN B.S. WIEGMAN NO. 6862 REGISTERED PROFESSIONAL ENGINEER 2/1/19						

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THE CEDARS ASSISTED LIVING AND LONG-TERM CARE FACILITY PORTLAND, ME	DETAILS IV
--	------------

DRAWING
C-10

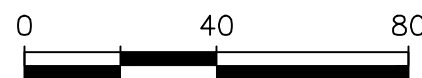
**PRELIMINARY
FOR REVIEW ONLY**

C-11

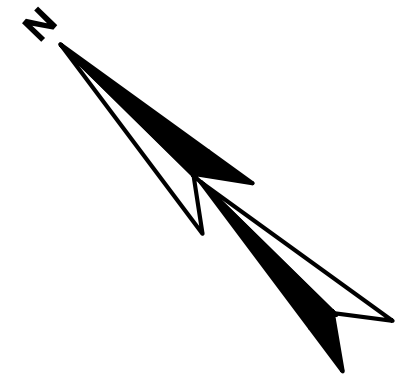
PRELIMINARY
FOR REVIEW ONLY

LEGEND

- WATERSHED
---> TC FLOW PATH
---> FLOW ARROW
1SP ● STUDY POINT
1S WATERSHED
--- SOIL BOUNDARY
2P POND



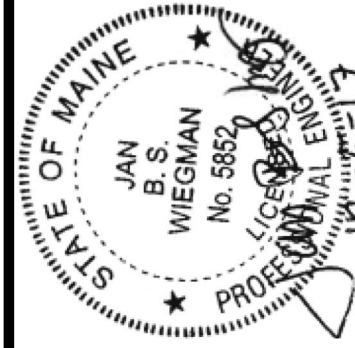
PLAN
SCALE: 1"=40'



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THE CEDARS
ASSISTED LIVING AND
LONG-TERM CARE FACILITY
PORTLAND, ME
PRE-DEVELOPMENT PLAN

DRAWING
PRE



DESIGNED BY: MAG
CAD COORD.: MRL
CHECKED BY: MAG
DATE: 11-15-17
APPROVED BY: JBW
DATE: 11-15-17
PROJECT NO: 13682A

NO. ISSUED FOR PORTLAND SITE PLAN REVIEW

DATE
JWB 11/17

C:\DWG\ME\PORTLAND\13682A-CEDARS\NURSING\FACILITY\CIV\13682APOST.DWG | 1:4.56 | 11/22/2017 10:17:37 AM | MATT LAPIERRE
LAST SAVED BY: MATT LAPIERRE 11/15/2017 11:16 AM

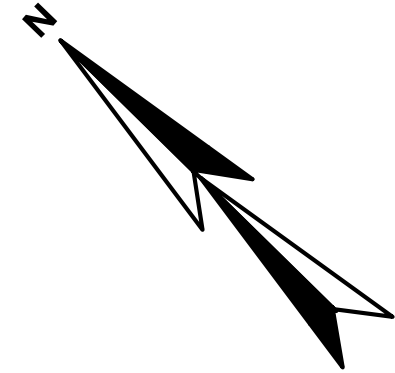
PRELIMINARY
FOR REVIEW ONLY

LEGEND

- WATERSHED
---> TC FLOW PATH
--> FLOW ARROW
1SP ● STUDY POINT
1S WATERSHED
--- SOIL BOUNDARY
△ 2P POND

	USF-A	USF-B
IMPERVIOUS (S.F.)	5,794	11,919
DEVELOPED (S.F.)	2,748	2,199
TOTAL (S.F.)	8,542	14,118

PLAN
SCALE: 1"=40'
0 40 80

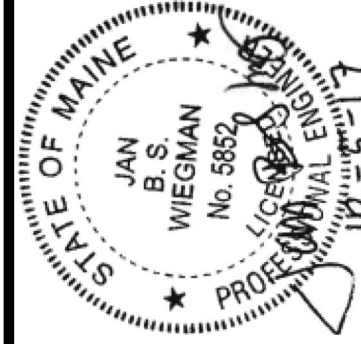


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THE CEDARS
ASSISTED LIVING AND
LONG-TERM CARE FACILITY
PORTLAND, ME

POST-DEVELOPMENT PLAN

DRAWING
POST

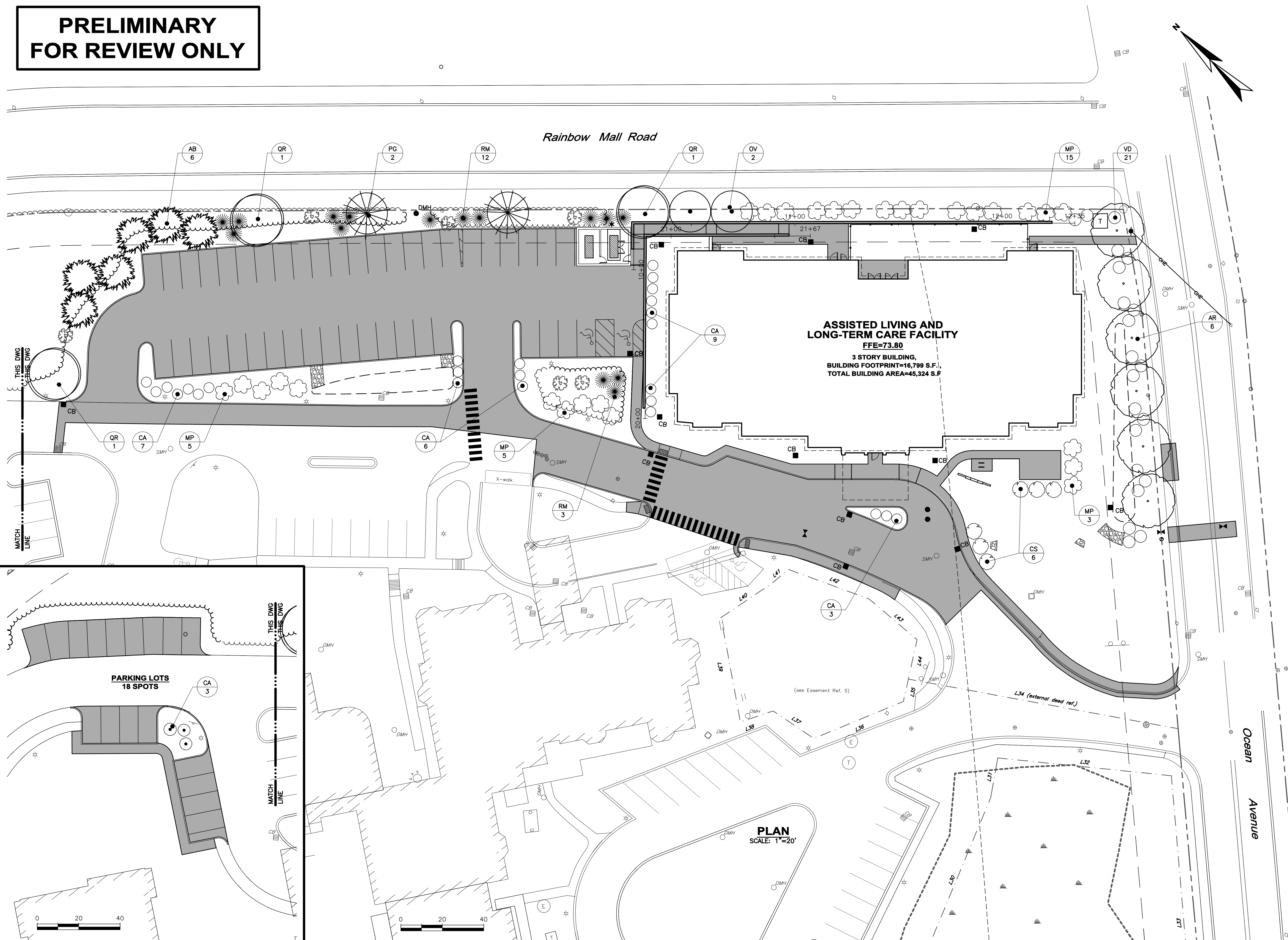


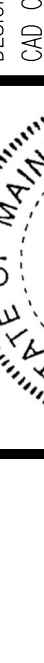
DESIGNED BY: MAG
CAD COORD.: MRL
CHECKED BY: MAG
DATE: 11-15-17
APPROVED BY: JBW
DATE: 11-15-17
PROJECT NO: 13682A

NO. ISSUED FOR PORTLAND SITE PLAN REVIEW

DATE
JBW 11/17

**PRELIMINARY
FOR REVIEW ONLY**



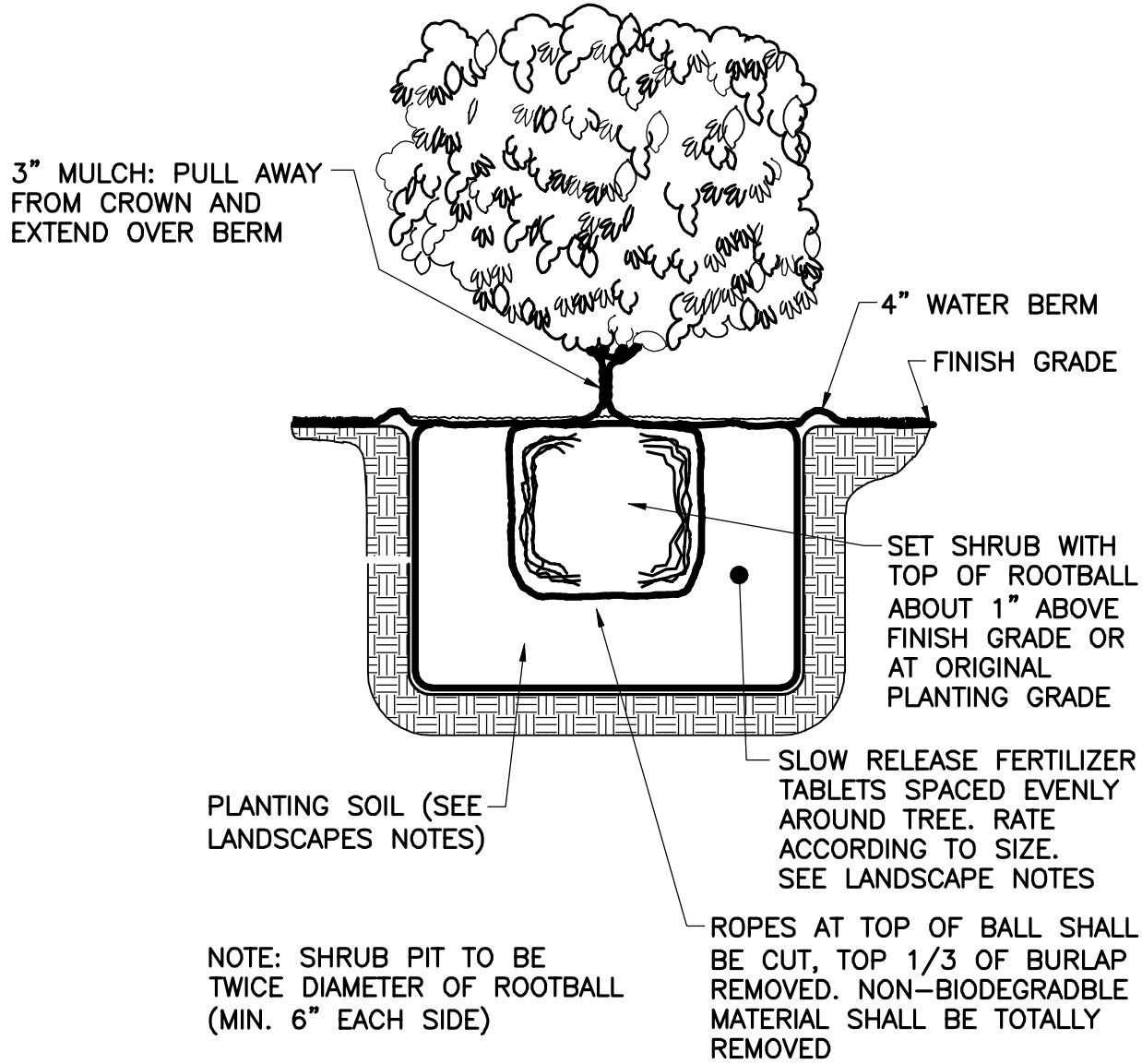
DRAWING	THE CEDARS ASSISTED LIVING AND LONG-TERM CARE FACILITY PORTLAND, ME LANDSCAPE PLAN	 WRIGHT-PIERCE Engineering a Better Environment Offices Throughout New England 888.621.8156 www.wright-pierce.com		DESIGNED BY: MAG CAD: MRL CHECKED BY: MAG DATE: 2-8-18 APPROVED BY: JRW DATE: 2-8-18 PROJECT NO: 13682A	NO. _____	SUBMISSIONS/REVISIONS	APP'D. DATE
					RESPONSE TO COMMENTS	ISSUED FOR PORTLAND SITE PLAN REVIEW	JWB 2/18 JWB 11/17

PLANT LIST

KEY	QTY	SCIENTIFIC NAME COMMON NAME	SIZE	SPACING	ROOTING	NOTES
TREES						
AB	6	ABIES BALSAMEA BALSAM FIR	5'-6" HT	15' O.C.	B&B	SPACING PER PLANS
AR	6	ACER RUBRUM 'KARPICK' KARPICK RED MAPLE	2" CAL	25' MIN.	B&B	SPACING PER PLANS
OV	2	OSTRYA VIRGINIANA AMERICAN HOPHORNBEAM	1.5" CAL	30' O.C.	B&B	AS SHOWN ON PLANS
PG	2	PICEA GLAUCA WHITE SPRUCE	5-6' HT	15' O.C.	B&B	SPACING PER PLANS
QR	3	QUERCUS RUBRA RED OAK	2" CAL	PER PLANS	B&B	AS SHOWN ON PLANS
SHRUBS						
CA	28	CLETHRA ALNIFOLIA 'RUBY SPICE' RUBY SPICE CLETHRA	15-18" HT	PER PLANS	B&B/CONT	SEE PLANS
CS	6	CORNUS ALBA 'SIBIRICA' REDTIG DOGWOOD	15-18" HT	PER PLANS	B&B/CONT	SEE PLANS
MP	28	MYRICA PENNSYLVANICA NORTHERN BAYBERRY	15-18" HT	PER PLANS	B&B/CONT	SEE PLANS
RM	18	RHODODENDRON MAXIMUM ROSEBAY RHODODENDRON	15-18" HT	PER PLANS	B&B/CONT	SEE PLANS
VD	21	VIBURNUM DENTATUM ARROWWOOD VIBURNUM	15-18" HT	PER PLANS	B&B/CONT	SEE PLANS
OTHER						
		MULCH				3" MIN DEPTH ALL PLANT BEDS

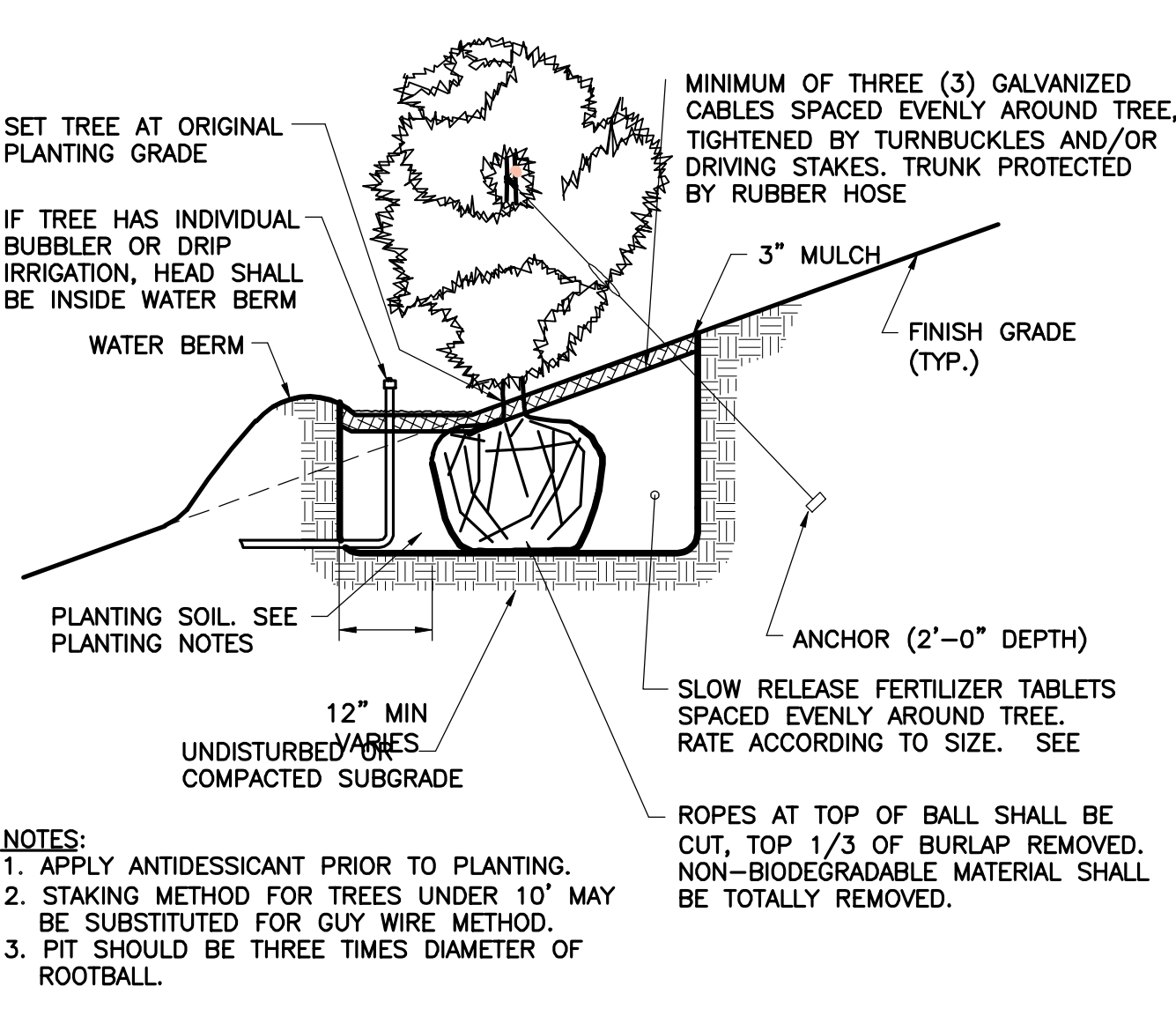
PLANTING NOTES

- ALL NEW PLANTING MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN ADDITION ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF THE HIGHEST SPECIMEN QUALITY.
- ALL NEW PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN UNLESS OTHERWISE NOTED ON THE PLANT LIST.
- THE GENERAL CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
- THE GENERAL CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE ENGINEER.
- NO TREES SHALL BE PLANTED BEFORE ACCEPTANCE OF ROUGH GRADING. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS THEY BORE TO PREVIOUS GRADE.
- STAKE LOCATION OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT/ENGINEER PRIOR TO COMMENCEMENT OF PLANTING.
- ALL EXISTING TREES TO REMAIN SHALL BE PROPERLY PROTECTED, PRUNED AND FERTILIZED PER THE SPECIFICATIONS.
- ALL LAWN AREAS DISTURBED BY CONSTRUCTION OPERATIONS INSIDE AND OUTSIDE THE LIMIT OF WORK SHALL BE LOAMED AND SEEDED AS SPECIFIED.
- ALL PLANT BEDS ARE TO RECEIVE THREE INCHES (3") OF SHREDDED BARK MULCH AS SPECIFIED.
- ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE ONLY AS APPROVED BY THE LANDSCAPE ARCHITECT/ENGINEER.
- ALL AREAS TO BE SEEDED SHALL RECEIVE SOIL PREPARATION AS SPECIFIED PRIOR TO SEEDING, UNLESS OTHERWISE NOTED ON PLAN.
- PREPARE ALL TREE PITS WITH PLANTING SOIL TO A MINIMUM DEPTH MATCHING THE DEPTH OF TREE ROOT BALLS.
- ALL AREAS TO BE SEEDED WITH LAWN MIX AND THE ROADSIDE MIX SHALL RECEIVE 6" TOPSOIL PRIOR TO SEEDING.



SHRUB INSTALLATION DETAIL

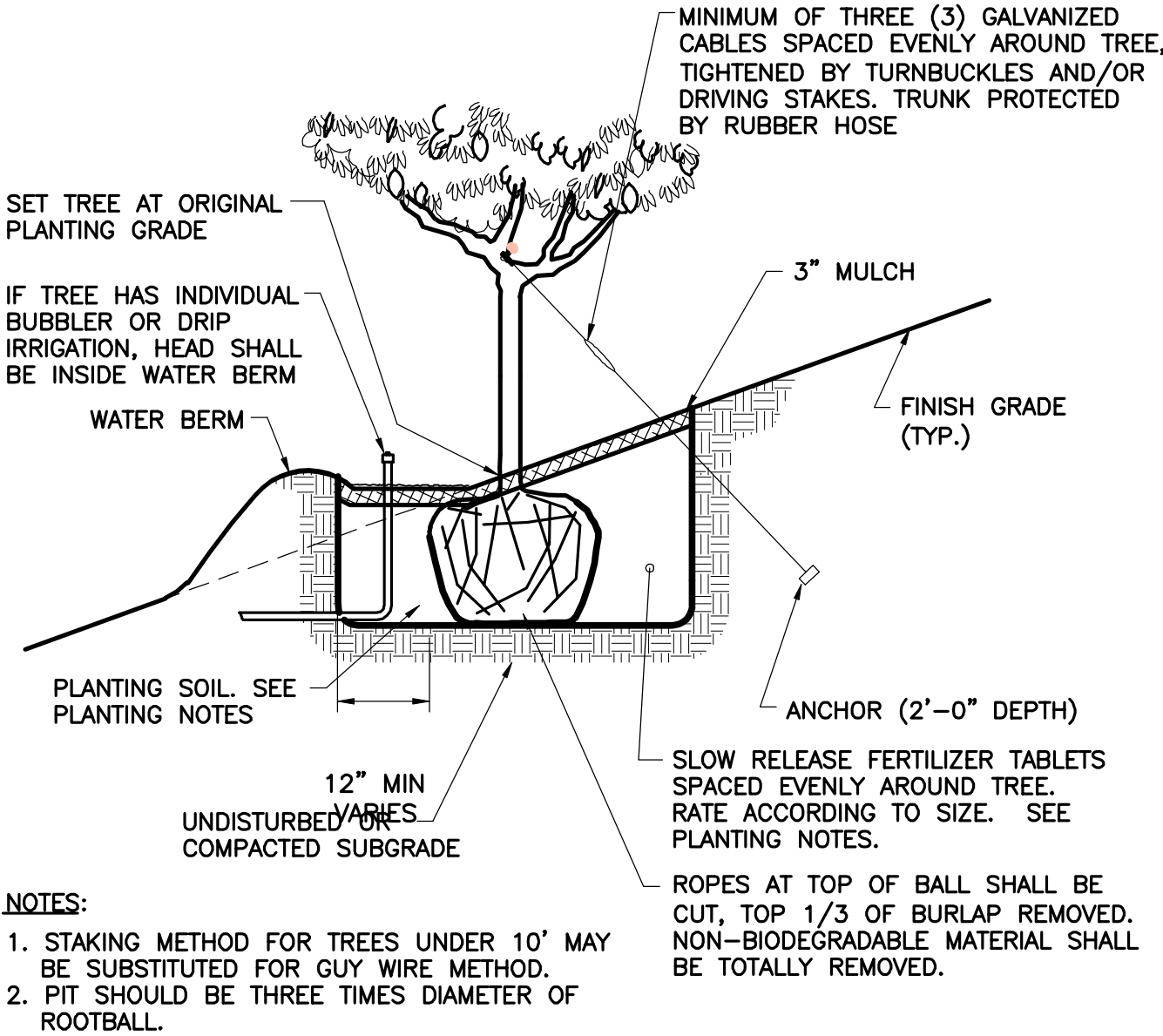
NTS



TREE INSTALLATION ON SLOPE: CONIFER

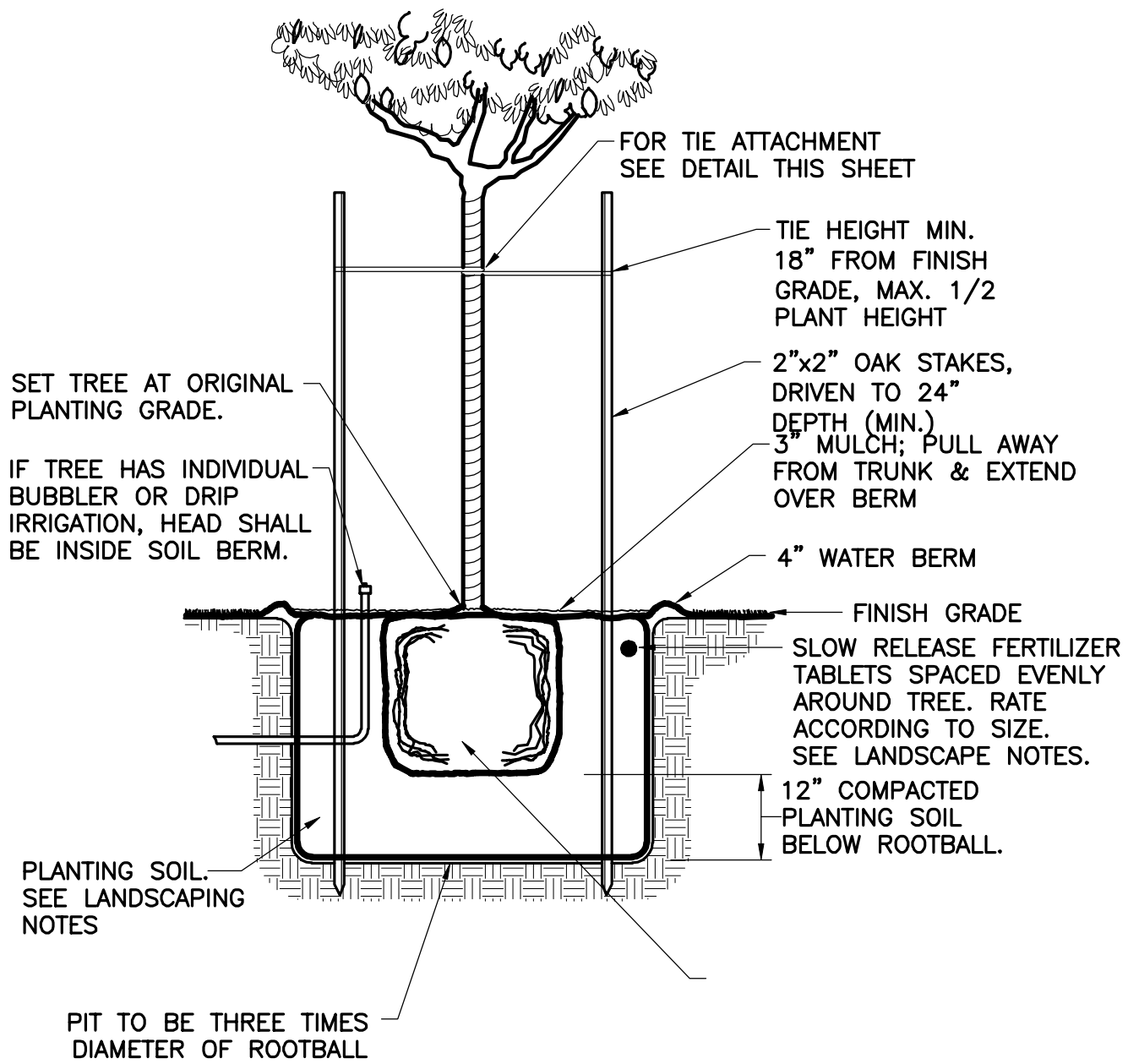
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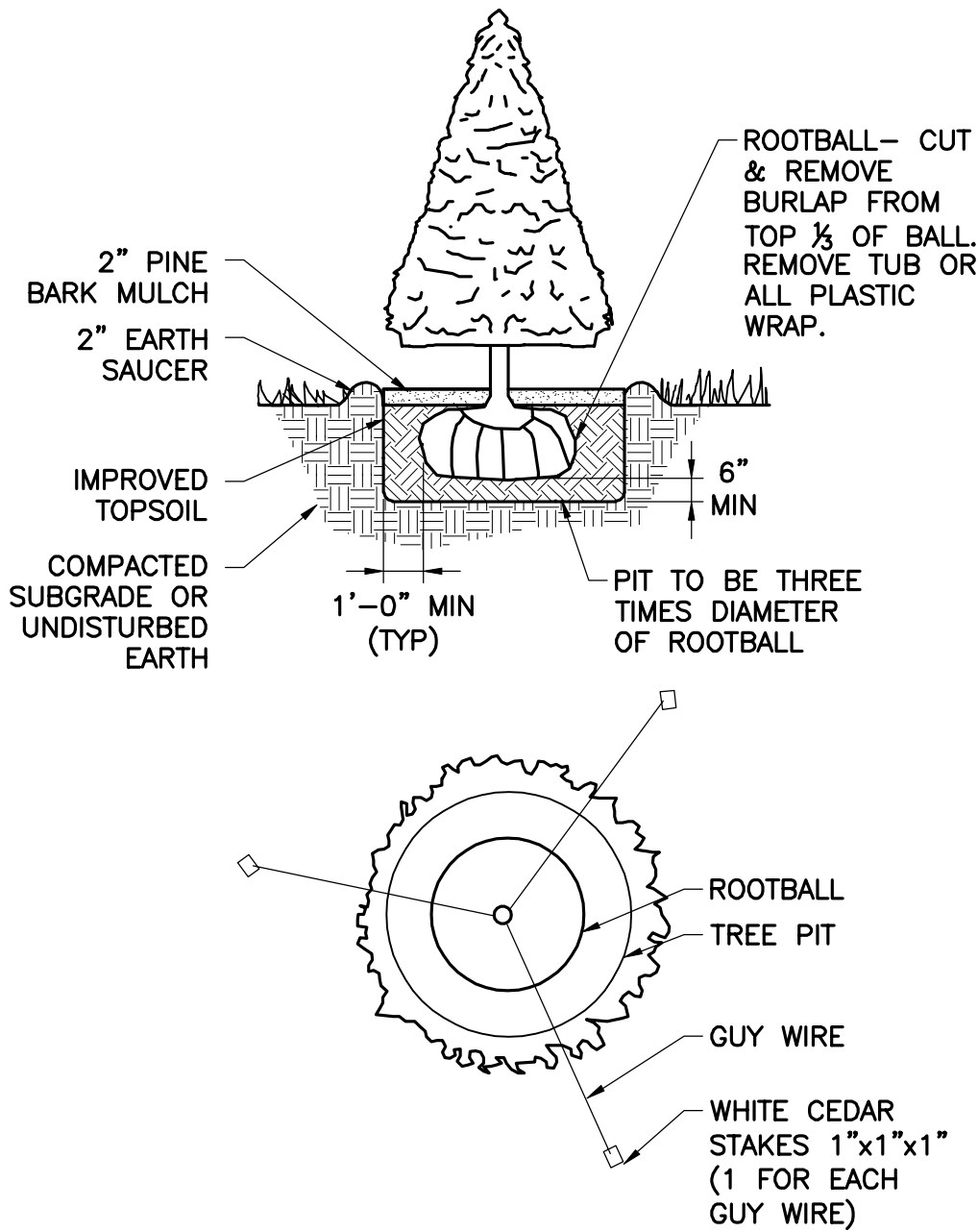
TREE INSTALLATION ON SLOPE: DECIDUOUS

NTS



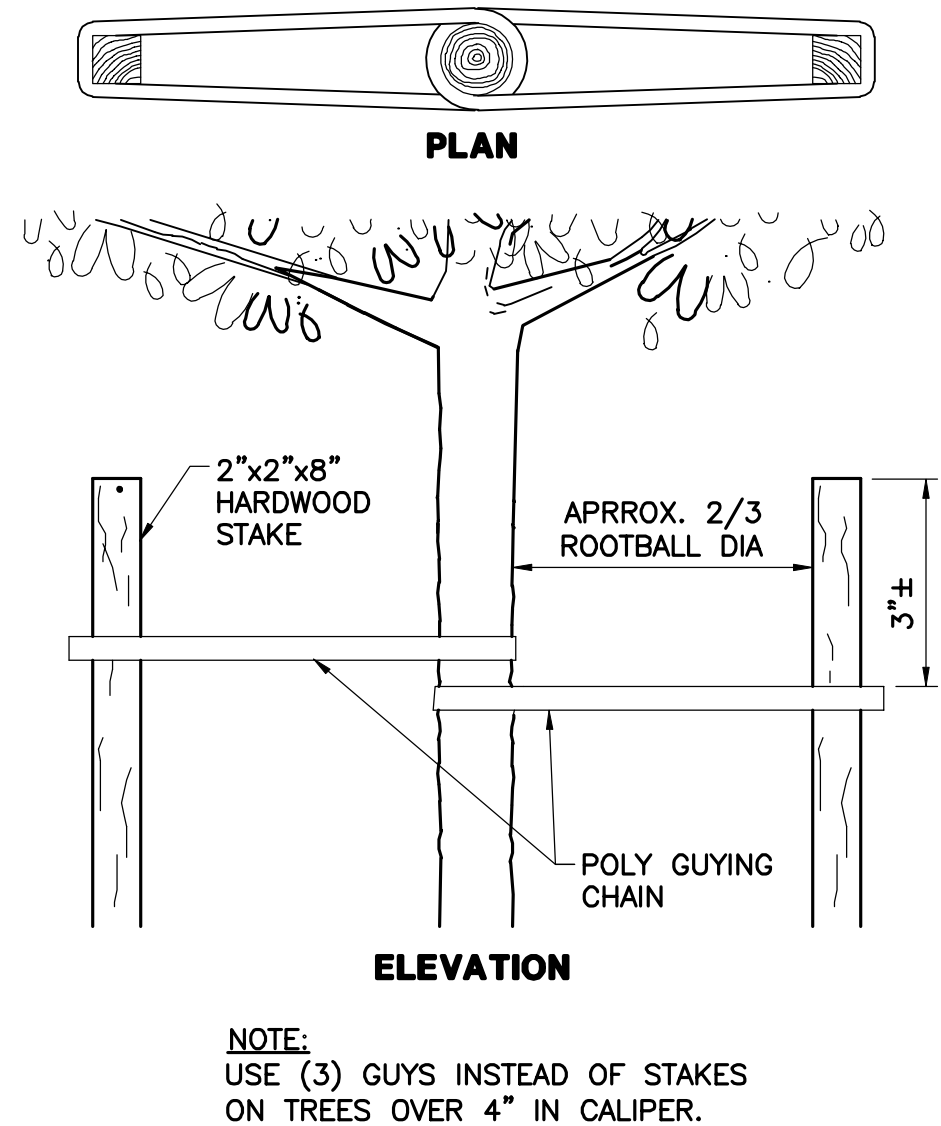
TREE INSTALLATION: UNDER 10'

NTS



TREE PLANTING ON EVEN GRADE: CONIFER

NTS



POLY GUYING

NTS

DESIGNED BY: MAG CAD COORD: MRL CHECKED BY: MAG DATE: 2-8-18 APPROVED BY: JBW DATE: 2-8-18 PROJECT NO: 13682A	SUBMISSIONS/REVISIONS	RESPONSE TO COMMENTS	DATE
		JBW	2/7/18
STATE OF MAINE JAN B. S. JAWORSKI REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT NO. 8882 EXPIRATION DATE: 12/31/18	ISSUED FOR PORTLAND SITE PLAN REVIEW	DATE	
		JBW	11/17
DRAWING	LANDSCAPE DETAILS	DATE	
		JBW	
L-2		DATE	
		JBW	

Memorandum
Planning and Urban Development Department
Planning Division



To: Sean Dundon, Chair and Members of the Portland Planning Board

From: Barbara Barhydt, Development Review Services Manager

Date: February 9, 2018

Re: Division 30: Affordable Housing Amendments

Meeting Date: February 13, 2018

I. INTRODUCTION:

The Housing Committee and Mayor Strimling are asking the Planning Board to consider proposed amendments to Division 30. Affordable Housing of the Land Use Code and to make a recommendation to the City Council regarding the proposals. The proposed substantive changes to the ordinance include the following proposals:

- Amend the Inclusionary Zoning Ordinance to include a fractional fee-in-lieu payment when units are provided on site.
- Amend the Inclusionary Zoning Ordinance to remove the sunset clause.
- Amend the Inclusionary Zoning Ordinance to increase the percentage of mandatory affordable units.
- Amend the Inclusionary Zoning Ordinance to lower the affordability income level.

In addition, the staff have proposed clarifying or housekeeping amendments. The amendments are outlined in Section III below and are contained in [Attachment 1](#). The November 29, 2017 memo from Mayor Strimling is [Attachment 2](#) to this memo. The memos prepared by Victoria Volent, Housing Program Manager, for the Housing Committee on November 3, 2017 and November 21, 2017 are included as [Attachments 3 and 4](#), respectively.

The legal ad appeared on February 5 and 6th in the Portland Press Herald and notices posted through the web page. No public comment at the time of writing this report.

II. HISTORY OF DIVISION 30: AFFORDABLE HOUSING

Division 30 was first adopted in 2006 and has been modified over the past 11 years. Following is a brief chronology of Division 30.

- A. December 2006: Division 30 was adopted by the City Council in 2006 and it was called Incentives for Affordable Housing. The new division of the Land Use code included definitions for affordable housing and provided incentives for affordable housing, such as reduced development review fees, reduced parking requirements, density bonuses between 5 and 25%, and an expedited review. Those incentives were used

during the review of affordable housing projects; however, only a few units of affordable units were created within market-rate projects.

- B. October 2015: A significant update of Division 30 was proposed and adopted in 2015, which changed the name to Affordable Housing. The incentives for affordable housing were retained and the inclusionary zoning requirements (14-487. Ensuring Workforce Housing) were created. In summary, the amendments include:
- a) A definition of affordable;
 - b) Updated definitions of low income housing (affordable to a household earning 80% or less of Area Median Income (AMI)) and workforce housing units (affordable to a household earning 100% or less of AMI for rentals and 120% for home ownership);
 - c) Required 10% of all residential projects with 10 or more units to provide affordable housing units as defined;
 - d) Set a six-year sunset provision from passage;
 - e) Established the minimum standards for meeting the Workforce Housing requirements; and
 - f) Authorized regulations to further specify details for implementation.
- C. March 2016: Amendments were adopted to clarify that projects that are subject to the inclusionary zoning provisions are also eligible for the affordable housing incentives.
- D. September 2017: The amendments adopted in 2017 focused on strengthening the incentives for affordable housing in designated growth areas. Density bonuses were adjusted according to the percentage of low income housing and workforce housing units with the density bonuses ranging from 1.1 times the base allowed density to 2.5 within Business Zones, R-7 and Residence Professional Zones. Height bonuses between 10 and 25 feet and setback reductions are offered according to the percentages of low income and workforce units. Similarly, dimensional standards may be modified for Planned Residential Unit Development that provide at least 50% of the units as affordable housing. A neighborhood meeting is required prior to the submission of an application that intends to take advantage of the proposed incentives.

III. INCLUSIONARY ZONING DEVELOPMENT PROJECTS TO DATE

Since the adoption of the inclusionary zoning (IZ) provisions, the Planning Board has approved the development plans and conditional use IZ applications for sixteen projects (refer to chart on following page). The total number of units approved is 652 of which 184 are workforce units. The Portland Housing project on Boyd Street, Avesta's project on Cumberland Avenue, and Seacoast's phased project on Stevens Avenue, exceed the minimum percentage for affordable units and thus all of the affordable units (a combined total of 156) are located on site. Five projects were approved with the remaining 26 on-site units and one project provided 2 off-site units. Six approved projects have opted to pay the fee in lieu prior to the issuance of a certificate of occupancy for an anticipated total of \$1,266,250.

Currently, there are seven projects pending for Planning Board review that trigger the Inclusionary Zoning requirements (see chart). Those projects are proposed to generate 304 residential units with 125 workforce units on-site. The commitments from the other projects are yet to be determined.

Inclusionary Zoning Development Projects: December 2015 – February 2018

Address	Status	# of Units	Type	Workforce Units	On-Site	Off-Site	Fee-in-lieu
169 Newbury St (Luminato)	Completed	26	Condo	2	0	2	\$0
65 Munjoy St (City Owned)	Completed	6	Condo	6	6	0	\$0
62 India Street	Under Construction	29	Condo	0	0	0	\$290,000
443 Congress St	Under Construction	28	Apt	0	0	0	\$280,000 *
20 Thames St	Under Construction	28	Condo	0	0	0	\$280,000
70 Anderson St	Approved (2016)	10	Town House	1	1	0	\$0
75 Chestnut St (Westerlea View)	Approved (2016)	54	Apt	5	5	0	\$0
161 York St	Approved (2017)	11	Condo	0	0	0	\$110,000
221 Congress St	Approved (2017)	17	Condo	0	0	0	\$170,000
153-165 Sheridan St	Approved (2017)	19	Condo	1	1	0	\$0
1 Joy Place	Approved (2017)	12	Condo	1	1	0	\$0
1700 Westbrook St (Stroudwater)	Approved (2017)	123	SF/Townhouse	12	12	0	\$0
218-220 Washington St	Approved (2017)	45	Condo	0	0	0	\$416,250
510 Cumberland (Avesta)	Approved (2017)	80	Rental	46	46	0	\$0
58 Boyd St (PHA)	Approved (2017)	55	Rental	44	44	0	\$0
583-605 Stevens Avenue **	Approved (2018)	109**	Rental	66	66	0	\$0
Subtotals		652		184	182	2	\$1,266,250

Pending Projects- 2018

22 Hope Ave Subdivision (Brandy Ln)	Under Review	16	SF Home	1	1 TB	0	\$0
383 Commercial St	Under Review	82	Condo	9	D	TBD	TBD
56-60 Parris St (Parris Terrace)	Under Review	23	Condo	2	2 TB	0	\$0
1844 Forest Ave	Under Review	16	Apt.	TBD	D	TBD	TBD
37 Front St (PHA)	Under Review	99	Rental	79	79 TB	0	\$0
56 Hampshire St	Under Review	28	Condo	TBD	D	TBD	TBD
977 Brighton Avenue	Under Review	40	Rental	34	34	0	\$0
Subtotal		304					

* Fee-in-lieu collected on 12-19-2017

** Master Development Plan approved for and the 88 rental units are under construction. The first 21 condos have been approved. 40 units target households earning 50% AMI, 26 units target households earning 60% AMI. \$625,000 in City HOME funds subsidized this project to increase affordability by lowering the income affordability from 100% AMI

IV. PROPOSED AMENDMENTS AND POLICY DISCUSSION

The Housing Committee considered a range of potential amendments to Division 30, which were offered by Mayor Strimling and the planning staff. On November 29, 2017, the Committee voted (2-0) to forward to the planning board the committee's support to amend fractional fee payment when units are provided on site and to move other planning staff proposed changes, except for the sunset clause. The Housing Committee voted (2-0) to forward to the planning board a summary of the items considered by the committee but not recommended for planning board consideration by the committee. The ordinance as forwarded by the Committee is included as Attachment 1 with the Mayor's recommendations in red and the staff suggestions in blue. The proposed amendments are summarized below and follow in sequence the sections of the ordinance.

A. Sec. 14-485. Definitions

- **Affordable:** The definition of affordable is proposed to be amended to clarify that condominium/HOA fees, mortgage insurance, other insurance and real estate taxes are included in the calculations for determining monthly housing expenses. The current language is vague and simply states that insurance and taxes will be taken into consideration. This is considered a housekeeping amendment to specify the eligible monthly housing expenses.

Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

- **Low Income housing unit for rent:** The proposal modifies the requirement that the annual rent increases for the unit are limited by deed restriction to be consistent with the rest of the ordinance.

Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

- **Low Income housing unit for sale:** The proposed text amendment raises the sale price that is affordable for a household from 80% to 100% or less of the HUD AMI. Amendments include eliminating the restriction on resale price for "all" future sales to an amount that is affordable for a household earning either 100% or 80% of the AMI.

Recommendation: Mayor Strimling proposes that future sales be affordable to those earning 100% of the AMI. The staff proposal is to eliminate the term "all" in future sales and proposes the figure of 80% AMI. The Housing Committee voted to forward this change to the Planning Board but did not vote in support of it.

- **Eligible project:** The language is modified to allow either a low-income or workforce housing unit for rent or for sale to qualify under the eligible projects. This is offered as a housekeeping amendment to clarify the language, which currently, specifies a low-income unit for rent or a workforce unit for sale.

Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

- **Workforce housing unit for rent:** This amendment (housekeeping revision) is intended to clarify that the unit rent is considered affordable for households earning 100% or less of the AMI. Currently the language says less than 100%.

Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

- ***Workforce housing for sale:*** The housekeeping amendment to this definition is modified to state that the unit cost is affordable to households earning 120% or less of the HUD AM, correcting a scrivener's error.

Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

B. Sec. 14-487. Ensuring Workforce Housing (Attachment 1)

- ***(b) Applicability/Conditional Use Requirement/Sunset.*** The proposal is to modify this section to allow an administrative review of the inclusionary zoning requirements for projects within the India Street Form Based Code District. The overall intent of the Form Based Code was to provide an efficient and streamlined review process, thus this amendment is proposed. Projects within other zoning districts would continue to be reviewed by the Planning Board as an Inclusionary Zoning Conditional Use.
- Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.
- ***(b) Applicability/Conditional Use Requirement/Sunset.*** The second amendment within this section is a substantive proposal to eliminate the six-year sunset provision, which would occur in 2021. When the inclusionary zoning was adopted in 2015, the sunset clause was included. The intent was to evaluate the effectiveness of the ordinance prior to the sunset date and then, the expiration date would be deleted or the entire section removed from this section. It is the Department's position that this provision creates uncertainty in the market as the date approaches and may influence developers to delay projects. The Council has the authority to revise or rescind ordinances at any time and this is the only section of City Code that has such a provision. As noted in Section III above, the Inclusionary Zoning requirements have not stifled housing development in Portland and has provided affordable units and funding. Victoria Volent's memos in Attachments 3 and 4 for further analysis.

Recommendation: The Housing Committee voted to forward this change to the Planning Board but did not vote in support of it.

- ***(d) Workforce Housing Minimum.*** The proposal from the Mayor is to change this from workforce housing to low-income housing and set a minimum percentage of 20% of the units must be low income. Low-income housing is substituted for workforce housing throughout this section.

Recommendation: The Housing Committee voted to forward this change to the Planning Board but did not vote in support of it.

- **(d) Workforce Housing Minimum.** One of the four substantive changes proposed to the inclusionary zoning is to eliminate the ability to round down for on-site units and instead include provisions for fractional payments for IZ units. The current minimum requires 10% of the units to be Workforce housing units. If the units are proposed on-site, then the calculation of the required number of units can be rounded down. If a fee-in-lieu is chosen, the fee may not be rounded down and must account for the fractional cost of the 10% of all units. For example, a 19-unit project can meet the requirements by providing one unit on-site or paying the fee-in-lieu for 1.9 units. The proposal is to eliminate the option to round down, so a developer would have three options in the above example: 1) provide the additional unit for a total of 2 units; 2) create one unit and pay the fractional difference in a partial fee-in-lieu; or 3) pay the fee-in-lieu. Victoria Volent's memos in Attachments 3 and 4 for further analysis, specifically on the financial implications of this policy and research outlining approaches in other communities.

Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

- **(d) Workforce Housing Minimum:** Mayor Strimling's proposal is to change this section from Workforce Housing Minimum to Low-Income Housing Minimum and requiring that the inclusionary zoning requirement be increased from 10% to 20%. This revision is carried through this section and the following section (e) Standards.

Recommendation: The Housing Committee voted to forward this change to the Planning Board but did not vote in support of it.

- **(e) Standards:** Under the standards for review for compliance with IZ, the staff proposes changes to the manner in which the bedroom count is calculated. It allows the staff to consider the actual number of bedrooms proposed or use every 400 square feet of each unit to determine the bedroom count. The present wording determines the number of bedrooms by counting every 400 square feet of floor space in a market unit. The proposed change would state that for the purposes of calculating the number of bedrooms in a development, every 400 feet in each unit will count as a bedroom, if the Planning Authority determines this method is appropriate in lieu of counting actual bedrooms.
- Recommendation: The Housing Committee voted to forward this change to the Planning Board with a positive recommendation.

V. NEXT STEPS

The background material provided to the Housing Committee is attached to this memo and the memos provide the background information and policy positions for bringing these amendments to the Planning Board for consideration. The Planning and Housing and Community Development staff are seeking the Board's guidance on further developing the amendments into a final draft for consideration at a public hearing. Jeff Levine, Director, Department of Planning and Urban Development, and Victoria Volent, Housing Program Manager, Housing and Community Development, will be available at the workshop to respond to questions.

Attachments:

1. Proposed Text Amendments, Division, 30
2. Memorandum, Mayor Strimling, November 29, 2017
3. Memorandum, Victoria Volent, Housing Program Manager, November 3, 2017
4. Memorandum, Victoria Volent, Housing Program Manager, November 21, 2017

DIVISION 30. AFFORDABLE HOUSING

Sec. 14-484. Purpose.

It is in the public interest to promote an adequate supply of affordable housing for the city's residents. The purpose of this division therefore is to offer incentives to developers to include units of affordable housing within development projects, thereby mitigating the impact of market rate housing construction on the limited supply of available land for suitable housing, and helping to meet the housing needs of all economic groups within the city. The city believes that this division will assist in meeting the city's comprehensive goals for affordable housing, in the prevention of overcrowding and deterioration of the limited supply of affordable housing, and by doing so promote the health, safety and welfare of its citizens.

(Ord. No. 98-06/07, 12-4-06; Ord. 82-15/16, 10-19-2015)

Sec. 14-485. Definitions.

Affordable means that the percentage of income a household is charged in rent and other housing expenses, or must pay in monthly mortgage payments (including condominium/HOA fees, mortgage insurance, other insurance and real estate taxes), does not exceed 30% of a household's income, or other amount established in city regulations that does not vary significantly from this amount.

Low-income housing unit for rent means a dwelling unit for which:

- (a) The rent is affordable to a household earning 80% or less of Area Median Income (AMI) as defined by the United States Department of Housing and Urban Development (HUD); and
- (b) Annual rent increases for that unit are limited ~~in perpetuity~~ by deed restriction or other legally binding agreement to the percentage increase in the U.S. Department of Housing and Urban Development moderate-income figure for metropolitan Cumberland county Maine for a household of that size.

Low-income housing unit for sale means a dwelling unit for which:

Red Changes are Mayor's proposals

Blue Changes are City staff proposals

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- (a) The sale price is affordable to a household earning ~~80~~100% or less of the HUD AMI; and
- (b) The resale price is limited by deed restriction or other legally binding agreement for ~~all~~ future sales of the unit to an amount that is affordable to a household earning ~~120~~100 80% of the U.S. Department of Housing and Urban Development moderate-income figure for metropolitan Cumberland county Maine for a household of that size, as calculated for the year in which the sale takes place.

Development fees means:

- (a) The following fees, as described in this chapter: site plan review and inspection fees; subdivision review and inspection fees; and administrative fees; and
- (b) Construction and permit fees as described in chapter 6. "Development fees" does not include any fees charged for reviews conducted by a party other than the city.

Dwelling unit has the same meaning as that term is defined in section 14-47.

Eligible project means a development project:

- (a) That is permissible under the provisions of this chapter in the zone in which it is proposed;
- (b) That will be a multi-family dwelling ,as defined in section 14-47, and will not be located in an R-1 or R-2 zone;
- (c) That creates new dwelling units, among which is at least one low-income or workforce housing unit for rent or ~~workforce housing for~~ sale, through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. Affordable housing units for sale or rent may not differ in exterior design from other units within an eligible project; and
- (d) Projects shall not be considered "eligible projects" solely because they are subject to Section 14-487

(“Ensuring Workforce Housing”).

Workforce housing unit for rent means a dwelling unit which:

- (a) Is affordable to a household earning 100% or less ~~than 100%~~ of HUD AMI; and
- (b) Annual rent increases for that unit are limited by deed restriction or other legally binding agreement to the percentage increase in the HUD Greater Portland Metropolitan Statistical Area median income figures for a household of that size.

Workforce housing unit for sale means a dwelling unit for which:

- (a) The purchase price is affordable to a household earning at 120% or less of HUD AMI; and
- (b) The resale price is limited by deed restriction or other legally binding agreement for all future sales of the unit, or a lesser term as permitted in regulations, to the percentage increase in the HUD Greater Portland Metropolitan Statistical Area median income figures for a household of that size.

(Ord. No. 98-06/07, 12-4-06; Ord. No. 84-08/09, 10-20-08; Ord. 82-15/16, 10-19-2015; Ord. No. 196-15/16, 3-21-2016)

Sec. 14-486. Reduction of fees.

...

Sec. 14-487. Ensuring Workforce Housing.

a) *Purpose.* Based on the city's Comprehensive Plan and the housing study completed in 2015, it is in the public interest to promote an adequate supply of housing that is affordable to a range of households at different income levels. The purpose of this section is to ensure that housing developments over a certain size provide a portion of workforce housing units and, by doing so, promote the health, safety, and welfare of Portland citizens.

b) *Applicability* ~~/Conditional Use Requirement/Sunset~~. This division shall apply to development projects that create ten or more new dwelling units for rent or for sale through new

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Blue Changes are City staff proposals

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construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. This division shall not apply to projects that have submitted complete Master Development Plan, Level III Site Plan, or comparable applications to move forward prior to its effective date.

c) *All Developments of Ten Units or More Conditional Uses.*

Notwithstanding any language to the contrary in Chapter 14, all developments of ten units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements of this section, 14-487 unless they are within the India Street Form Based Code district, in which case staff shall determine compliance with this section.

~~This section 14-487 shall be in effect for six years following its passage, at which time the overall effectiveness of this section shall be assessed by city planning staff or their agent and either this expiration date shall be deleted or the entire section shall be removed from the Code of Ordinances.~~

d) ~~Workforce~~Low-Income Housing Minimum. At least ~~ten~~ twenty percent (~~12~~20%) of the units in the project shall meet the definition of workforce low-income housing unit for sale or for rent. ~~The number of units required is rounded down to a whole number if providing units as per (e)2. below, or shall include a fractional value in cases where a project prefers to pay a fee-in-lieu as per (e)3. below.~~The project shall have the option of paying a partial fee-in-lieu as per (c)3 below for the fractional value, or providing an additional unit on site.

e) Standards.

a. Projects shall not be segmented or phased to avoid compliance with these provisions. In cases where projects are completed in phases, affordable units shall be provided in proportion to the development of market rate units unless otherwise permitted through regulations.

b. Workforce Low-income housing units are encouraged to be integrated with the rest of the development, should use a common entrance and should provide no indications from common areas that these units are workforce housing units.

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- c. ~~Workforce Low-income~~ units need not be the same size as other units in the development but the number of bedrooms in such units, either on- or off-site, shall be ~~120~~ percent of the total number of bedrooms in the development. For the purposes of calculating the number of bedrooms in a development~~this section~~, ~~for every 400 square feet in each~~ market rate unit will count as a bedroom if the Planning Authority determines this method is appropriate in lieu of counting actual bedrooms. if the actual number of bedrooms in the unit is lower.
- d. As an alternative to providing ~~workforce low-income~~ housing units, projects may pay a fee in lieu of some or all of the units. In-lieu fees shall be paid into the Housing Trust Fund as defined in Sec. 14-489. The fee for affordable units not provided shall be ~~\$100,000~~ 102,500 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement.
- e. ~~Workforce Low-income~~ housing units for sale, if converted to ~~workforce low-income~~ housing units for rent, shall become subject to the income limits and other requirements of such units.
- f. If at least 33 percent of the units in a development are workforce or low-income housing units, the development is eligible for subsidy through an Affordable Housing TIF, subject to City Council approval.
- g. The term of affordability for the required ~~120~~ percent ~~workforce low-income housing~~ units provided shall be defined as follows:

Percentage of Workforce Units Provided	Minimum Term of Affordability for Required Workforce Units
10%	Longest term permitted under federal, state and local laws and ordinances
25%	30 years
50%	20 years
100%	10 ears

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f) Implementing Regulations. Regulations to further specify the details of this section shall be developed, including, but not limited to:

- h. Specific methodology for income verification;
- i. Situations where less than permanent affordability might be considered; and
- j. Guidelines for meeting the requirement that off-site units be "in the same neighborhood".

g) Reporting to City Council. In conjunction with the annual report on the Housing Trust, city planning staff shall annually report on developments subject to this section, the number of units produced, the amount of fee-in-lieu collected, and the overall effectiveness of this section in achieving its stated purpose.


 Portland, Maine

Yes. Life's good here.

Office of the Mayor, Ethan K. Strimling

TO: Housing Committee, Councilor, Jill Duson, Chair; Councilors David Brenerman and Brian Batson
FROM: Ethan Strimling, Mayor
DATE: November 29, 2017

Inclusionary Zoning Changes

- Increase the percentage of units required from 10% to 20%
- Drop income eligibility levels from 120 to 100% AMI for home ownership and from 100 to 80% for rental
- Change AMI to Portland Median Income

The Lincoln Institute described the need for inclusionary zoning well: “skyrocketing housing prices push middle class and low-income residents far away from well-paying jobs, reliable transportation, good schools, and safe neighborhoods. Inclusionary housing alone will not solve our housing crisis, but it is one of the few bulwarks we have against the effects of gentrification.” Indeed, more than 500 communities nationwide have adopted such ordinances.

And despite strong concerns expressed when this passed the council 7-2 in 2015, – “You’re going to get less housing” and “Small developers will say, ‘if the limit is 10, I’ll do nine” – nothing could be further from the truth of what actually happened. In reality, Housing construction has continued at a solid pace with 195 units permitted in 2016 and 296 in 2017. Both years after the IZ was put in place, compared to 136 in 2014 (2015 is an odd year as it has a few huge projects permitted, like Federated, that have yet to be built).

However, despite the adoption of our own IZ ordinance two years ago, there is, as this committee is well aware, still an affordable housing crisis in Portland. And while the IZ ordinance has certainly not had a detrimental impact on housing development, it also has not seen the impact it could. Raising the percentage of low-income units required from the current 10% to 20% will better utilize this existing tool, and aggressively targeting lower-income percentages for homeownership and rentals will follow “best practices” from other communities, according to staff, to target those who benefit most.

A few quick facts on how our IZ compares to other communities:

- In a 2014 study of communities around the country with inclusionary zoning ordinances, about 77% used greater than 10% as the required set-aside, with 73% of municipalities at 15% or higher. Over half are at 20% or higher, the level I am requesting the committee consider today.
- Additionally, according to our planning staff, 80% and 100% affordability are considered “best practice.”

A few quick facts on the affordability crisis:

- As we heard two weeks ago, 1200 people in Portland have applied to Avesta for housing, and they have only been able to help 100. Additionally, this morning I went to the new Avesta Project on Carleton Street, where they have brand new affordable units ranging from \$500-\$1000 a month. They already have 65 applications for the 37 units, and they aren't even open. They have closed the process.
- A third of all Portland owner-occupied households pay 30% or more of their income on housing and about half of rental households pay 30% or more.
- 74% of households are unable to afford the median home price in the city and 62% of renter households cannot afford the average two-bedroom apartment.
- For a house to be affordable at the median household income, the cost would need to be about \$143,479. However, the median home price in Portland last year was \$262,250, which requires an annual income of \$80,110.
- Of the 976 homes sold in Portland in 2016, only 34 were considered affordable.
- About 43% of Portland renters and 29% of homeowners are considered to be living in poverty.
- The median renter household earns \$31,028, meaning that affordable median rent is \$776 a month. Unfortunately, the median rent for a two bedroom is almost \$300 higher (\$1,052). Nearly 62% of renter households cannot afford this.
- Median rents citywide averaged an increase of 7.2% from last year to this year, with vast differences between neighborhoods.



To: Councilor Duson, Chair Housing Committee
Members of the Housing Committee

From: Victoria Volent, Housing Program Manager
Housing & Community Development Division

Date: November 3, 2017

Subject: Proposed Amendments to the Inclusionary Zoning Ordinance and Review of
Fee-in-lieu Payment

Summary:

This memo contains two topics for review in regards to the City's Inclusionary Zoning Ordinance. The first topic item outlines two proposed staff amendments to the Inclusionary Zoning Ordinance. The second topic item is a review of the fee-in-lieu payment.

Topic One: Staff Amendments to the Inclusionary Zoning Ordinance

Amend the Inclusionary Zoning Ordinance to include a fractional fee-in-lieu payment when units are provided on-site.

A fractional fee-in-lieu would result when the calculation of a project's inclusionary obligation results in a fractional unit. The fractional unit obligation would be provided in the form of a proportional fee-in-lieu that is related to the cost of providing an affordable housing unit within the development project. The amendment would apply to on-site projects as the current ordinance allows developers to round the number of units down. This would address the concern that the requirement, while listed at 10%, can be as low as 5.25%.

For example, currently a 10-unit project and a 19-unit project may both meet their workforce housing requirements by providing one workforce unit on-site. No change is recommend for the 10-unit project (it would continue to meet the requirement by



providing one unit on site;) however, the 19-unit project would have to provide the unit on-site and also pay 90% of the fee-in-lieu (currently \$92,250.) This is consistent with how many other communities handle proportional units.

OVERALL ESTIMATED COST/REVENUE: Approximately \$10,250 per 10% of each fractional unit obligation.

Amend the Inclusionary Zoning Ordinance to remove the sunset clause.

Removing the sunset clause from the Inclusionary Zoning Ordinance would address the concern that this clause may result in land banking, especially as 2021 approaches. Given the need for housing production, staff recommends that the sunset clause be removed, and that the City Council make any decision to amend or repeal the ordinance as they please without a set timeframe.

The Mayor has two additional recommendations which are outlined in the attached July 18th Council Memo.

Topic Two: Review of the fee-in-lieu payment

Last month, staff presented the 2017 Housing Report to the Housing Committee. Section II. b. of the report presented the accomplishments of current City policies and initiatives in place to address issues of housing affordability and availability. While discussing the accomplishments of the Inclusionary Zoning Ordinance, the Housing Committee requested staff to prepare a separate report regarding how Portland and other municipalities determine an appropriate fee-in-lieu payment.

Background

In October 2015, the City Council approved amendments to the City's zoning ordinance mandating inclusionary zoning within all residential development projects of ten or more units. Section 14-487, Ensure Workforce Housing, requires all projects to make available a minimum of 10% of their units as workforce housing to eligible households. Developers also have the option of building units off-site within the same census block or paying a fee-in-lieu of some or all units into the City's Housing Trust Fund.



The fee for affordable units not provided was set at \$100,000 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement. The 2017 fee-in-lieu is \$102,500 per unit.

Since adoption of Inclusionary Zoning, eleven qualifying residential or mixed-use projects proposed by private developers have been approved by the Planning Board as of October, 2017. From those eleven projects, 14 units of workforce housing are proposed, and five out of eleven developers chose to pay the fee-in-lieu into the City's Housing Trust Fund for a total of \$1,266,250 (the actual funds will be deposited when the certificate of occupancy is requested).

Establishing a Fee-in-lieu Payment Amount

A March 5, 2015 staff memorandum to the Housing and Community Development entitled "*Proposed Inclusionary Zoning Ordinance- Next Steps*" noted:

It is important to keep in mind that the fee-in-lieu is theoretically supposed to cover the cost of creating an affordable unit at the target income levels. While it is hard to find a specific number that meets that goal, we generally find that the cost of producing an affordable unit is about \$125,000.

In Massachusetts the state's Department of Housing and Community Development recommends a fee-in-lieu "be determined as a per-unit cost as calculated from regional construction and sales report".

New Jersey and California also have state-wide inclusionary zoning policies. According to the National Housing Council, these two states and Massachusetts account for nearly 80% of all inclusionary zoning programs in the United States. New Jersey's fee-in-lieu requirement is \$180,000 per unit, while California requires an "in-lieu fee that is reasonably related to the cost of providing the affordable unit forgone by the developer's election to pay the fee".

Examples from Other Communities

Some communities are moving away from the option of offering a fee-in-lieu option. Others are increasing their fee-in-lieu in recognition of their preference for on-site units.



Many use a formula to determine the fee-in-lieu based on factors such as the size of the market rate units, the size of the project, and even the location of the project within the municipality.

Some examples of fees-in-lieu from other municipalities are in the table below.

<u>Municipality</u>	<u>Fee-in-Lieu</u>
Boston, MA	\$200,000- \$380,000 per unit depending on location
Brookline, MA	Based on sales price (\$175,000 for a typical 8-unit project, \$341,250 for a typical 15-unit project)
Burlington VT	\$100,000 in 2007, no longer permitted
Cambridge, MA	No longer permits fee-in-lieu
Chapel Hill, NC	\$85,000
San Francisco, CA	\$148,506-\$521,431 per unit depending on the size of the market units (\$366,369 for 2 BR)
Somerville, MA	Uses a complex formula based on location and unit types
Tirburon, CA	\$275,000
Watertown, MA	\$259,000-\$399,000 depending on the size of the market rate

Development Costs Analysis

Housing and Community Development Division Staff analyzed development costs associated with sixteen affordable housing projects in Portland which received some type of subsidy from the City (HOME, CDBG, TIF, etc.) from 2000 to 2013. The analysis revealed the average development cost per unit was \$192,664.

Conclusion

Portland, California, and Massachusetts each consider the per unit cost of producing a unit of affordable housing, given unique local circumstances (cost of land, need for infrastructure, current construction costs, etc.), when determining the fee-in-lieu. Staff recommends the fee-in-lieu continue to be related to the cost of providing an affordable housing unit within the development project.

However, staff recommends consideration be given to requiring that in cases where units are provided on-site – where the developer can round the number of units down –

Portland, Maine



Yes. Life's good here.

Planning & Urban Development Department

the City consider adopting a best practice that the "fractional" unit be provided in the form of a proportional fee-in-lieu.

MEMORANDUM
City Council Agenda Item

DISTRIBUTE TO: City Manager, Mayor, Anita LaChance, Sonia Bean, Danielle West-Chuhta, Nancy English, Julianne Sullivan

FROM: Ethan Strimling, Mayor

DATE: July 18, 2017

SUBJECT: Amendments to Inclusionary Zoning Ordinance

SPONSOR: Ethan Strimling, Mayor
(If sponsored by a Council committee, include the date the committee met and the results of the vote.)

COUNCIL MEETING DATE ACTION IS REQUESTED:

1st reading 7/24/17 Final Action TBD

Can action be taken at a later date: x Yes No (If no why not?)

PRESENTATION: (List the presenter(s), type and length of presentation)

I. ONE SENTENCE SUMMARY

Amendments are being proposed to Division 30 related to the Inclusionary Zoning ordinance, including proposals to increase the percentage required to 20% and lower the income maximums.

II. AGENDA DESCRIPTION

Submission of proposed changes to the Inclusionary Zoning ordinance in Chapter 14 Division 30, for referral to the Housing Committee. This submission includes changes proposed by the Mayor and other changes proposed by City Staff.

III. BACKGROUND

In October 2015, the City Council passed the City's inclusionary zoning ordinance in section 14-387. That ordinance was part of a package known as "Encourage and Ensure" that included significant density bonuses for housing production, and also the inclusionary requirement for larger developments. In summary, the current ordinance requires that all developments of 10 units or more include 10% of their units as affordable at 100% of Area Median Income (about \$80,000 for a family of 4) if they are rentals, or at 120% of Area Median Income (about \$96,000 for a family of 4) if they are for sale. The number of units is rounded down, so a development of between 10 and 19 units has to provide 1 affordable unit. Alternatively, a developer can pay a fee-in-lieu to the City's Housing Trust of \$100,000 a unit (adjusted annually, currently \$102,500.) That amount is not rounded down, so a 19-unit building would have to pay a fee-in-lieu of \$194,750.

Since the ordinance went into effect, housing developments proposals have continued at a similar pace as prior to the ordinance. Attached is a list of projects that are subject to the ordinance and their proposed method of meeting its requirements. Developers have generally been cooperative with staff in thinking through how to meet its requirements, and have noted the flexibility of the ordinance as an asset. Note that some projects that opened after October 2015, such as the Hiawatha on Congress Street, were not subject to the ordinance as they applied for site plan approval prior to its effective date.

This item proposes to forward to the Housing Committee two sets of amendments. One set, proposed by the Mayor, would increase the percentage requirement in the ordinance to 20%, and also require that the units be affordable at low-income (80% of Area Median Income, or about \$65,000 for a family of 4, if for rent; or 100% of Area Median income if for sale.)

The second set of amendments, proposed by staff, are primarily designed to fine tune the ordinance. They include some clarifications of definitions and corrections of scrivener's errors. Staff is also proposing that when units are provided on-site, a developer will have to pay a fee-in-lieu for a fractional unit as per the size of the project. In the 19-unit example above, if the 1 unit were provided on-site, the developer would also have to pay \$90,250 into the Housing Trust. This would address the concern that the requirement, while listed as 10%, can be as low as 5.25%.

Finally, the existing ordinance includes a sunset clause that requires that it automatically expire in 2021. Staff has raised the concern that this clause may result in land banking, especially as 2021 approaches, by land owners hoping to sell their property with an inclusionary zoning requirement. Given the need for housing production, staff recommends that sunset clause be removed, and that the City Council make any decision to amend or repeal the ordinance as they please without a set timeframe.

IV. INTENDED RESULT AND OR COUNCIL GOAL ADDRESSED

The goal is to increase production of low-income affordable housing and to implement the Council goal to: "Implement policies to capitalize the Housing Fund."

V. FINANCIAL IMPACT

None currently anticipated, but would be studied as part of the Housing Committee and Planning Board processes.

VI. STAFF ANALYSIS AND BACKGROUND THAT WILL NOT APPEAR IN THE AGENDA DESCRIPTION

Staff has been monitoring the Inclusionary Zoning ordinance to determine its effectiveness to date. Generally, it has been working very well for what it was intended to accomplish. However, there are some relatively minor changes staff is recommending at this time to fine tune the ordinance. The Mayor's recommended changes would make the ordinance similar to those in Cambridge and Somerville, Massachusetts, which both recently increased their inclusionary requirement to 20%. The income levels recommended in the Mayor's changes are not unusual for Inclusionary Zoning ordinances nationally. At this point, staff recommends forwarding these proposed changes to the Housing Committee for further discussion.

VII. RECOMMENDATION

Referral to the Housing Committee and potentially Planning Board for recommendations to the full Council.

VIII. LIST ATTACHMENTS

Draft text amendments to Division 30

Income limits for 2017

Projects subject to Inclusionary Zoning to date

Prepared by: Jeff Levine

Date: July 18, 2017

Bean/agendarequestmemo/rev 1/23/2017

Order 14-17/18

Passage: 6-3 (Batson, Duson, and Ray) on 7/24/2017

Effective 8/3/2017

ETHAN K. STRIMLING (MAYOR)
BELINDA S. RAY (1)
SPENCER R. THIBODEAU (2)
BRIAN E. BATSON (3)
JUSTIN COSTA (4)

CITY OF PORTLAND
IN THE CITY COUNCIL

DAVID H. BRENERMAN (5)
JILL C. DUSON (A/L)
PIOUS ALI (A/L)
NICHOLAS M. MAVODONES, JR (A/L)

ORDER REFERRING
THE INCLUSIONARY ZONING AMENDMENTS
TO THE HOUSING COMMITTEE

ORDERED, that the City Council hereby refers the proposed inclusionary zoning amendments, attached hereto, to the Housing Committee; and

BE IT FURTHER ORDERED, that the Housing Committee review the proposed ordinance and provide its final recommendation on this issue to the City Council.

DIVISION 30. AFFORDABLE HOUSING

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Sec. 14-485. Definitions.

Affordable means that the percentage of income a household is charged in rent and other housing expenses, or must pay in monthly mortgage payments (including condominium/HOA fees, mortgage insurance, other insurance and real estate taxes), does not exceed 30% of a household's income, or other amount established in city regulations that does not vary significantly from this amount.

Low-income housing unit for rent means a dwelling unit for which:

- (a) The rent is affordable to a household earning 80% or less of Area Median Income (AMI) as defined by the United States Department of Housing and Urban Development (HUD); and
- (b) Annual rent increases for that unit are limited ~~in perpetuity~~ by deed restriction or other legally binding agreement to the percentage increase in the U.S. Department of Housing and Urban Development moderate-income figure for metropolitan Cumberland county Maine for a household of that size.

Low-income housing unit for sale means a dwelling unit for which:

- (a) The sale price is affordable to a household earning ~~80~~100% or less of the HUD AMI; and
- (b) The resale price is limited by deed restriction or other legally binding agreement for ~~all~~ future sales of the unit to an amount that is affordable to a household earning ~~120~~100 80% of the U.S. Department of Housing and Urban Development moderate-income figure for metropolitan Cumberland county Maine for a household of that size, as calculated for the year in which the sale takes place.

Development fees means:

- (a) The following fees, as described in this chapter: site plan review and inspection fees; subdivision review and inspection fees; and administrative fees; and
- (b) Construction and permit fees as described in chapter 6. "Development fees" does not include any fees charged for reviews conducted by a party other than the city.

Dwelling unit has the same meaning as that term is defined in section 14-47.

Eligible project means a development project:

- (a) That is permissible under the provisions of this chapter in the zone in which it is proposed;
- (b) That will be a multi-family dwelling ,as defined in section 14-47, and will not be located in an R-1 or R-2 zone;
- (c) That creates new dwelling units, among which is at least one low-income or workforce housing unit for rent or ~~workforce housing for sale~~, through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. Affordable housing units for sale or rent may not differ in exterior design from other units within an eligible project; and
- (d) Projects shall not be considered "eligible projects" solely because they are subject to Section 14-487 ("Ensuring Workforce Housing").

Workforce housing unit for rent means a dwelling unit which:

- (a) Is affordable to a household earning 100% or less ~~than 100%~~ of HUD AMI; and

- (b) Annual rent increases for that unit are limited by deed restriction or other legally binding agreement to the percentage increase in the HUD Greater Portland Metropolitan Statistical Area median income figures for a household of that size.

Workforce housing unit for sale means a dwelling unit for which:

- (a) The purchase price is affordable to a household earning at 120% or less of HUD AMI; and
- (b) The resale price is limited by deed restriction or other legally binding agreement for ~~all~~ future sales of the unit, or a lesser term as permitted in regulations, to the percentage increase in the HUD Greater Portland Metropolitan Statistical Area median income figures for a household of that size.

...

Sec. 14-487. Ensuring Workforce Housing.

a) *Purpose.* Based on the city's Comprehensive Plan and the housing study completed in 2015, it is in the public interest to promote an adequate supply of housing that is affordable to a range of households at different income levels. The purpose of this section is to ensure that housing developments over a certain size provide a portion of workforce housing units and, by doing so, promote the health, safety, and welfare of Portland citizens.

b) *Applicability* ~~/Conditional Use Requirement/Sunset~~. This division shall apply to development projects that create ten or more new dwelling units for rent or for sale through new construction, substantial rehabilitation of existing structures, adaptive reuse or conversion of a non-residential use to residential use, or any combination of these elements. This division shall not apply to projects that have submitted complete Master Development Plan, Level III Site Plan, or comparable applications to move forward prior to its effective date.

c) *All Developments of Ten Units or More Conditional Uses.* Notwithstanding any language to the contrary in Chapter

14, all developments of ten units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements of this section, 14-487 unless they are within the India Street Form Based Code district, in which case staff shall determine compliance with this section.

~~This section 14-487 shall be in effect for six years following its passage, at which time the overall effectiveness of this section shall be assessed by city planning staff or their agent and either this expiration date shall be deleted or the entire section shall be removed from the Code of Ordinances.~~

d) ~~Workforce~~Low-Income Housing Minimum. At least ~~ten~~ twenty percent (~~12~~20%) of the units in the project shall meet the definition of ~~workforce~~ low-income housing unit for sale or for rent. ~~The number of units required is rounded down to a whole number if providing units as per (c)2. below, or shall include a fractional value in cases where a project prefers to pay a fee-in-lieu as per (c)3. below.~~The project shall have the option of paying a partial fee-in-lieu as per (c)3 below for the fractional value, or providing an additional unit on site.

e) Standards.

1. Projects shall not be segmented or phased to avoid compliance with these provisions. In cases where projects are completed in phases, affordable units shall be provided in proportion to the development of market rate units unless otherwise permitted through regulations.

~~2.~~ Workforce Low-income housing units are encouraged to be integrated with the rest of the development, should use a common entrance and should provide no indications from common areas that these units are workforce housing units.

~~3.~~ Workforce Low-income units need not be the same size as other units in the development but the number of bedrooms in such units, either on- or off-site, shall be ~~12~~20 percent of the total number of bedrooms in the development. For the purposes of calculating the number of bedrooms in a development~~this section,~~ for every 400 square feet in ~~each~~ market rate unit will count as a bedroom if the Planning Authority determines this method is appropriate in lieu of counting actual bedrooms.~~if the actual number of~~

~~bedrooms in the unit is lower.~~

4. As an alternative to providing ~~workforce~~ low-income housing units, projects may pay a fee in lieu of some or all of the units. In-lieu fees shall be paid into the Housing Trust Fund as defined in Sec. 14-489. The fee for affordable units not provided shall be ~~\$100,000~~ 102,500 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement.

- ~~5.~~ ~~Workforce~~ Low-income housing units for sale, if converted to ~~workforce~~ low-income housing units for rent, shall become subject to the income limits and other requirements of such units.

6. If at least 33 percent of the units in a development are workforce or low-income housing units, the development is eligible for subsidy through an Affordable Housing TIF, subject to City Council approval.

7. The term of affordability for the required ~~±~~20 percent ~~workforce~~ low-income housing units provided shall be defined as follows:

Percentage of Workforce Units Provided	Minimum Term of Affordability for Required Workforce Units
10%	Longest term permitted under federal, state and local laws and ordinances
25%	30 years
50%	20 years
100%	10 ears

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To: Councilor Duson, Chair Housing Committee
Members of the Housing Committee

From: Victoria Volent, Housing Program Manager
Housing & Community Development Division

Date: November 21, 2017

Subject: Inclusionary Zoning Review

The attached packet of information contains an outline of the four Inclusionary Zoning Housing Policy proposals for the Housing Committee's consideration. The proposals are:

- Amend the Inclusionary Zoning Ordinance to include a fractional fee-in-lieu payment when units are provided on site.
- Amend the Inclusionary Zoning Ordinance to remove the sunset clause.
- Amend the Inclusionary Zoning Ordinance to increase the percentage of mandatory affordable units.
- Amend the Inclusionary Zoning Ordinance to lower the affordability income level.

Also included is a memo titled Inclusionary Zoning Review which assesses Inclusionary Zoning provisions for the Housing Committee's evaluation. The provisions for review are:

- Approach for setting Fees
- Affordability Terms
- Income Targeting
- Inclusionary Set Aside Percentages



To: Councilor Duson, Chair Housing Committee
Members of the Housing Committee

From: Victoria Volent, Housing Program Manager
Housing & Community Development Division

Date: November 21, 2017

Subject: Inclusionary Zoning Review

Introduction

On November 9, the Housing Committee received a memo from staff reviewing the City's fee-in-lieu payment option. The fee-in-lieu is theoretically meant to cover the cost of creating an affordable unit at the target income levels. Portland's fee-in-lieu is set at \$100,000 per unit, adjusted annually in the same way as the fee under Division 29 for Housing Replacement. The 2017 fee-in-lieu is \$102,500 per unit. In the November 9 memo, staff recommended the fee-in-lieu continue to be related to the cost of providing an affordable housing unit within the development project. Per the request of Mayor Strimling, staff has prepared this memo to review the fee-in-lieu policy in other communities as well as a review as to why some communities are eliminating the fee-in-lieu option from their Inclusionary Zoning requirement.

Approaches for Setting Fees

By the end of 2016, of the 886 municipalities across 25 states and Washington D.C. that have adopted Inclusionary Zoning, generally one of four approaches is chosen when setting the fee-in-lieu option. Those options are as follows:

- *The funding gap or existing production cost method* - The in-lieu fee is based on the average amount that the public has historically invested to actually produce each additional off-site affordable unit. For example, if it generally costs \$250,000 to build a new unit and qualified low-income buyers could generally afford \$200,000, then the fee would be \$50,000



- *The affordability gap or developer's opportunity cost method* - The in-lieu fee is based on the typical difference in price (or rent) between market rate and affordable units. For example, if a typical market rate home sold for \$300,000 and the affordable price was \$200,000 the fee would be \$100,000.
- *Percent of overall development costs* – The in-lieu fee is set as a fixed percentage of estimated development costs calculated on a per square foot basis rather than by unit.
- *Full cost of unit development* – The in-lieu fee equals the most current total development cost.

Portland's Inclusionary Zoning ordinance incorporates the "affordability gap or developer's opportunity cost fee-in-lieu method.

Communities that adopted the "funding gap or existing production cost method" did not successfully attain the goal of creating affordable housing units. This method set fees so low that when they were collected, the total dollar amount was often insufficient to produce the same number of affordable units that would have been produced had developers opted to build the affordable units themselves. Additionally, with a low fee-in-lieu payment, developers were more inclined to select the fee-in-lieu option rather than build the unit as paying the fee was in their financial best interest.

The "affordability gap or developer's opportunity cost method" requires the determination of the developer's opportunity cost (i.e. what the developer gives up by selling or renting for less than market value). Once determined, communities can set the fee-in-lieu at a level that encourages either the creation of affordable on-site units, or encourages payment of the fee-in-lieu depending upon the communities' preference. When all other things being equal, the higher the fee above the developer's opportunity cost, the higher the chance the developer will choose to build units on-site. Developers of luxury units have a higher opportunity cost and thus a strong incentive to pay the fee-in-lieu because they stand to lose more by constructing affordable units on site (Massachusetts Association of Community Development Corporations, 2006)

The "percent of development costs method" equally impact smaller homes and larger, luxury homes. Municipalities set fees as a fixed percentage of estimated development



costs based on assumptions of profitability and prices. Subsequently, developers marketing their units at \$1 million are proportionally impacted as the developer marketing their units at \$250,000.

The “full cost of development method” is determined as a per-unit cost of development as calculated from regional construction and sales reports. The fee-in-lieu is indexed annually for accuracy.

Examples from Other Communities

Communities are moving away from offering a fee-in-lieu option. The report *Inclusionary Housing in the United States: Prevalence, Impact, and Practices* (2017) found of 886 jurisdictions studied, newer (2007 to 2017) Inclusionary Zoning ordinances were “less likely to use in-lieu fees as an option for developers to fulfill the program.” Instead communities adopted or amended their ordinance eliminating the in-lieu option thus requiring developers to provide affordable housing on-site. At the same time other communities increased their fee-in-lieu in recognition of their preference for on-site units. And many now use a formula to determine the fee-in-lieu based on factors such as the size of the market rate units, the size of the project, and even the location of the project within the municipality.

New York City, Chicago, and San Diego do not permit a fee-in-lieu option to ensure developers actually create the affordable units rather than paying to get out of the obligation. San Francisco set a high fee designed to make creating the affordable unit on-site more attractive to developers.

Examples of fees-in-lieu from other municipalities are in the table below. As the vast majority of Inclusionary Zoning jurisdictions are located in New Jersey (45%) which has a fixed fee in-lieu of \$180,000 per unit, Massachusetts (27%), and California (17%), many of the examples provided do include comparable communities located in Massachusetts.



Municipality	Fee-in-lieu
Boston, MA	\$200,000- \$380,000 per unit depending on location
Boulder, CO	Complex formula based on rental/ownership, size of the project, and percent of development cost
Brookline, MA	Based on sales price (\$175,000 for a typical 8-unit project, \$341,250 for a typical 15-unit project)
Burlington, VT	\$100,000 in 2007, no longer permitted
Cambridge, MA	No longer permits fee-in-lieu
Chapel Hill, NC	\$85,000
Framingham, MA	No longer permits fee-in-lieu
Haverhill, MA	15% of average fair market value of proposed dwelling units
Nashua, NH	Fee equivalent to the cost of constructing the dwelling unit
Newton, MA	12% on sale price for developments of 6 or less units
San Francisco, CA	\$148,506-\$521,431 per unit depending on the size of the market units (\$366,369 for 2 BR)
Somerville, MA	Uses a complex formula based on location and unit types
Watertown, MA	\$259,000-\$399,000 depending on the size of the market rate
Waltham, MA	10% of the development cost

According to a 2013 study conducted by HUD (*Inclusionary Zoning and its Effect on Affordable Housing: Lessons from Two Counties*), examining the Inclusionary Zoning programs in the two “seasoned” counties of Montgomery County, Maryland and Fairfax County, Virginia, developers “considered clear requirements and consistent administration necessary. Developers who were interviewed stressed the importance of being able to plan, estimate costs, and accurately calculate their profit”. The study also found that Inclusionary Zoning ordinances are “dynamic, rather than static, and change markedly over time.”

Affordability Term

A recent national study found that more than 80 percent of inclusionary housing programs require units to remain affordable for at least 30 years, and one-third of those require 99-year or perpetual affordability (Hickey, Sturtevant, and Thaden 2014). The



Lincoln Institute of Land Policy noted “the overwhelming trend has been for inclusionary housing programs to adopt very long-term affordability periods, even programs with 30-year affordability restrictions frequently aim to preserve affordability in perpetuity by “resetting the clock” on each transaction and by maintaining the preemptive option to buy back the unit upon transfer. It is not entirely clear who benefits from shorter-term restrictions. For homeownership projects, a developer forced to sell units with 15-year restrictions faces the same economic cost as selling units with 99-year restrictions. For rental properties, the economics are a bit more complex. An investor might pay more for a property with rent restrictions that expire after 15 years than for one with 99-year restrictions, but the difference might be slight. In other words, the length of affordability makes a big difference to the long-term impact of the program but only a small difference on the front end” (Jacobus *Inclusionary Housing* 2015). Portland’s affordability term is based on a sliding scale beginning with the longest term permitted under federal, state, local laws, and ordinances for the lowest percentage of workforce units provided, to a ten-year term for the highest percentage (100%) of workforce units provided.

Income Targeting

Income targeting is the term used to identify the population that will be served by Inclusionary Zoning. Inclusionary housing programs often target higher income levels than those targeted by federal housing programs (such as HUD’s HOME program). Federal Housing programs are only eligible to fund the creation of low and very low-income housing. HOME funds must benefit rental households with income levels at or below 60% AMI, and homeownership households with income levels at or below 80% AMI. Portland has used its HOME funding to develop approximately 813 units of low-income housing through the allocation of approximately \$7.1 million in funds since 2000. Funding aimed exclusively towards the creation of rental and ownership housing above HUD HOME guidelines does not exist. Portland’s Inclusionary Zoning Ordinance targets those excluded households.

Successful Inclusionary Zoning policies target income groups that cannot find housing in the local market. To determine housing needs based on income, a comparison of Household Income (as reported by the U.S. Census) in Portland during 2010 and 2015



was conducted to determine which income group population has declined (i.e. a decline indicated an income group that cannot find housing) to which income group population has increased (i.e. an increase indicates an income group that can find housing).

For rental households, the income group with the greatest percentage decrease, at 3.0%, is households earning \$5,000 to \$9,999 per year. This income range falls within the poverty income level (defined by HUD), as do all but one other income group that experienced a percentage decrease in population. Rental households defined as low-income (80% AMI) to workforce-income (100%) also experienced a population decrease. Portland's Inclusionary Zoning targets rental households earning income levels at or below 100% AMI. The income group with the greatest percentage population increase is rental households earning \$100,000 to \$149,999 which increased by 2.6% from 2010 to 2015.

Renter Occupied Units

2010	(16,596)	
Income Level	Population	Percentage
Less than \$5,000	800	4.9%
\$5,000 to \$9,999	2,094	12.6%
\$10,000 to \$14,999	1,887	11.3%
\$15,000 to \$19,999	1,404	8.5%
\$20,000 to \$24,999	1,406	8.5%
\$25,000 to \$34,999	2,217	13.4%
\$35,000 to \$49,999	2,758	16.6%
\$50,000 to \$74,999	2,416	14.6%
\$75,000 to \$99,999	1,074	6.5%
\$100,000 to \$149,999	400	2.4%
\$150,000 or more	140	.8%

2015		(17,050)	Percentage
Income Level	Population	Percentage	Change
Less than \$5,000	1,256	7.4%	2.5% increase
\$5,000 to \$9,999	1,641	9.6%	3.0% decrease
\$10,000 to \$14,999	1,958	11.5%	.2% increase
\$15,000 to \$19,999	1,245	7.3%	1.2% decrease
\$20,000 to \$24,999	1,228	7.2%	1.3% decrease
\$25,000 to \$34,999	2,321	13.6%	.2% increase
\$35,000 to \$49,999	2,510	14.7%	1.9% decrease
\$50,000 to \$74,999	2,281	13.4%	1.2% decrease
\$75,000 to \$99,999	1,378	8.1%	1.6% increase
\$100,000 to \$149,999	860	5.0%	2.6% increase
\$150,000 or more	372	2.2%	1.4% increase



For owner-occupied households, the income group with the greatest percentage decrease, at 2.1% is households earning \$75,000 to \$99,999 per year. This range falls within the upper end of households earning 100% AMI, and the lower end of households earning 120% AMI. Portland's Inclusionary Zoning targets owner-occupied households earning income levels at or below 120% AMI. The income group with the greatest percentage population growth is owner-occupied households earning \$150,000 or more which grew by 4.4% from 2010 to 2015.

Owner Occupied Units

2010	(14,090)	
Income Level	Population	Percentage
Less than \$5,000	178	1.3%
\$5,000 to \$9,999	155	1.1%
\$10,000 to \$14,999	374	2.7%
\$15,000 to \$19,999	290	2.1%
\$20,000 to \$24,999	495	3.5%
\$25,000 to \$34,999	1,049	7.4%
\$35,000 to \$49,999	1,674	11.9%
\$50,000 to \$74,999	3,022	21.4%
\$75,000 to \$99,999	2,813	19.9%
\$100,000 to \$149,999	2,627	18.7%
\$150,000 or more	1,413	10%

2015		(13,069)	Percentage
Income Level	Population	Percentage	Change
Less than \$5,000	272	2.1%	2.7% increase
\$5,000 to \$9,999	130	1.0%	.1% decrease
\$10,000 to \$14,999	344	2.6%	.1% decrease
\$15,000 to \$19,999	375	2.9%	.8% increase
\$20,000 to \$24,999	427	3.3%	.2% decrease
\$25,000 to \$34,999	722	5.5%	1.9% decrease
\$35,000 to \$49,999	1,585	12.1%	.2% increase
\$50,000 to \$74,999	2,572	19.7%	.7% decrease
\$75,000 to \$99,999	2,325	17.8%	2.1% decrease
\$100,000 to \$149,999	2,439	18.7%	stable
\$150,000 or more	1,878	14.4%	4.4% increase

"Ownership units typically cost developers relatively more to produce. While it would be possible to require that developers price ownership units so that they serve the same income group that is being served in rental housing, this would have a greater impact



on financial feasibility for ownership projects. Many cities have determined that allowing developers of ownership units to serve a higher-income group can reduce the burden of the program on ownership projects while still serving a real affordable-housing need" (2017 InclusionaryHousing.Org "The Set-Aside Requirement.") "The challenge presented by Homeownership Association dues is one reason many cities allow ownership units to serve a higher income group compared to rental units" (Cambridge Inclusionary Housing Study, 2016). Portland's income target for rental housing is 100% AMI and 120% AMI for ownership households.

Inclusionary Set Aside Percentage

The inclusionary set aside identifies the percentage of units that must meet affordable requirements in new developments. The percentage varies widely by locality but some communities allow developers to build fewer units if they serve a higher need population (i.e. households at the lower end of the income spectrum) conversely, higher set-asides percentages are associated with higher income targets. Aggressive inclusionary zoning has a high set aside percentage with low income level targets. Burlington, VT directs the highest percentage of set asides (up to 25%) on the most expensive developments. Portland's set aside is 10% of all developments of ten units or more.

Conclusion

The integrity of the fee-in-lieu option rests upon the assumption that the value of the fee is at least equal to the value of the subsidy required to build the forgone unit elsewhere. This logic asserts that the subsidy a developer pays for building an affordable unit is the financial loss the developer stands to bear from selling or renting the unit below its natural market rate (*Building Better: Recommendations for Boston's Inclusionary Development Policy*, 2006). Portland's Inclusionary Zoning ordinance incorporates the "affordability gap or developer's opportunity cost fee-in-lieu method which is based upon this assumption.



Staff reiterates the recommendation to the Housing Committee from November 9 that the fee-in-lieu continue to be related to the cost of providing an affordable housing unit within the development project. Additionally, staff recommends consideration be given to requiring that in cases where units are provided on-site – where the developer can round the number of units down – the City consider adopting a best practice that the “fractional” unit be provided in the form of a proportional fee-in-lieu.

Staff is not recommending any changes at this time to the affordability term sliding scale, the income targeting levels, or the inclusionary set aside percentage. The current scales, levels, and percentages provide developer incentives to increase the creation of affordable housing while striking a balance between aggressive affordable housing parameters and providing developers with flexibility on meeting the Inclusionary Zoning requirements.



PLANNING BOARD REPORT PORTLAND, MAINE

Division 9. B-1 and B-1b Neighborhood Business Zones Text Amendment
City of Portland, Applicant

Submitted to: Portland Planning Board Public Hearing Date: February 13, 2018	Prepared by: Matthew Grooms, Planner Date: February 9, 2018
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I. INTRODUCTION

The B-1b Neighborhood Business zone as currently written is intended to foster mixed-use development in its traditional form in off-peninsula locations, with residential uses located over ground-floor commercial spaces. Being the most restrictive of Portland's business zones, it is typically used as a transitional zone between commercial districts and residential neighborhoods and can be found within a few key neighborhood nodes across the city, notably along Stevens Avenue in Deering Center and at the intersection of Hawthorne Street and Veranda Street in East Deering. Given the transitional nature of this zone, dimensional standards and design guidelines for the B-1 and B-1b zones are derived from the adjacent or nearest residential zone to ensure greater contextuality. Similarly, permitted commercial uses are intended to have minimal impact on surrounding residential areas and feature limits on hours of operation and trip generation.

In December of 2017 it was brought to the attention of city staff that two previously approved and partially constructed projects, 502 Stevens Avenue and 23 Ocean Avenue, were in non-compliance with Federal and State Fair Housing regulations. These projects are small-scale mixed-use developments in line with the purpose statement of this district, that met all applicable local standards for development, including those of the B-1b zone. During discussions with both applicants, it was determined that site conditions and standards of the B-1b district, notably restrictions placed on ground-floor residential units, made it very difficult to complete a mixed-use project of the scale permitted within the B-1b zone that was in compliance with fair housing standards and financially feasible.

In response to this identified concern, the City is proposing a text amendment to the B-1b zone which further clarifies the purpose of the district, establishes residential uses as a permitted ground-floor use under set circumstances where active commercial street frontages are maintained, allows live-work spaces on the first floor, and increases permissible residential density for mixed-use projects.

Notice of this hearing appeared in the Portland Press Herald on February 5th and 6th 2018, and notices

were distributed electronically to the interested citizen list. At the time of the writing of this memo, no public comments were received.

II. BACKGROUND

The projects listed below were approved under the standards of the B-1 and B-1b Neighborhood Business zones respectively, and were similarly reviewed for ADA compliance. Neither project was required to provide an elevator as under ADA standards, buildings with floorplates of 3,000 square feet or less are exempt from meeting ADA requirements. In looking at the overall site, both projects provide adequate ADA access between public sidewalks, parking areas and the proposed buildings.

In regards to Fair Housing requirements, all residential buildings constructed after 1991, with four or more residential units, are required to provide at least one accessible unit. In circumstances where an elevator is provided, then all units shall be accessible or able to be retrofitted so as to be accessible. Where no elevator is provided or required under ADA, then ground-floor residential units shall be made accessible.

23 Ocean Avenue – The Planning Board unanimously approved the Level III site plan application for the mixed-use project at 23 Ocean Avenue on October 25, 2016. The project consists of 2,400 square feet of basement and ground-floor office space, with four two-bedroom units on the second and third floors. The project is located in the B-1 zone and triggers fair housing requirements as a result of there being four or more residential units.

502 Stevens Avenue - The Planning Board unanimously approved the Level III site plan application for the mixed-use project at 502 Stevens Avenue on March 28, 2017. The project consists of 1,906 square feet of ground-floor commercial space, with six residential units, two three-bedroom and four one-bedroom units on the second and third floors. The project is located in the B-1b zone in Deering Center and triggers fair housing requirements as a result of there being four or more residential units.

Discussion of Approved Projects – City staff have been in discussions with each respective applicant seeking a resolution to meet the FHA requirements. The difficulty in both situations is that these projects were largely constructed before non-compliance with FHA standards was identified. The architects for both projects relied on the ADA exception for projects with a footprint of less than 3,000 square feet to comply with ADA requirements and the noncompliance was not identified during the building permit review. As a result, retrofitting the buildings at this time to include an elevator to be FHA compliant would be cost prohibitive. Several alternative options were explored, including installation of a chairlift, a reduction in the number of residential units and retrofitting of one of the ground floor commercial spaces to be a residential unit or live-work unit. Based upon our discussions, it was determined that the first two options were not feasible due to building and fire codes and the applicant's proforma. (Please note, in the event that either project changes its residential unit count, those projects will be required to come back before the Planning Board to amend their recording plat.)

Regarding FHA compliance, the City reached out to Josh Safdie, AIA, with Kessler McGuiness & Associates, a consulting firm on retainer with the City of Portland, who manages accessibility and universal design-related consulting projects. Mr. Safdie has assessed ADA and FHA compliance for a

variety of mixed-use and multi-family residential projects and specializes in residential and commercial renovations utilizing universal design and aging-in-place principles. In our discussion, we confirmed that ADA exemptions do not apply to FHA requirements, and that a live-work unit qualifies as a dwelling unit under FHA. Based upon our conversation, it was determined that a workable solution for both projects, and for future infill developments, would be to a ground-floor residential unit in mixed use projects.

The ground-floor unit option, while the most appealing and technically feasible, does not work under current zoning given the density requirement for ground-floor residential units, which are tied to the surrounding residential zones. For example, the project at 502 Stevens Avenue, requires a lot area per dwelling unit of 6,000 square feet (based upon the multi-family requirements of the R-5 zone) for the ground floor unit and 1,000 square feet for the units on the upper floors, for a combined total lot size requirement of 12,000 square feet for the seven units. The lot is in fact 9,562 square feet, typical of many infill project sites appropriate for development under the standards of the B-1 and B-1b zones. This standard was intended to apply to 100% residential projects. The increased density for housing units above commercial uses was an incentive for mixed-use project that offer active first floor commercial uses. It has become clear that this policy objective precludes infill mixed-use projects located on small lots from feasibly meeting fair housing requirements.

III. PROPOSED TEXT AMENDMENTS

The B-1 and B-1b Neighborhood Business zoning ordinance is intended to facilitate a certain development pattern with ground floor commercial uses and upper floor multi-family residential uses. This is achieved through preserving the first floor for commercial uses and offering a density bonus for upper floor units. Applying the dimensional standards for ground-floor residential uses derived from the adjacent or nearest residential zone is a disincentive for first floor residential units. In the example provided above for 502 Stevens Avenue, one ground floor residential unit requires the same lot area as six units located on the upper floors, no matter the size of unit. Parcels located within the B-1 and B-1b zones are typically smaller lots located within minor commercial nodes poised for either infill development or redevelopment. A critical component of this district is its mixed-use character, where residential units are permitted at an increased density on upper floors when compared with surrounding residential zones in off-peninsula locations. This development pattern is further supported by the recently adopted comprehensive plan, which seeks to 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. The current zoning is inconsistent with the city's new comprehensive plan and FHA requirements, given that it penalizes appropriately scaled projects by either requiring the installation of an elevator, which is costly, or development of a ground-floor residential unit, which significantly impacts allowable unit density.

The proposed changes, as described below, represent a more thoughtful approach to this challenge. In a mixed-use project, we recognize that the commercial component is crucial and that those uses represent a more visible interface with the streetscape. It would be detrimental to the character of those communities and neighborhood business districts to permit residential units to be located along an active commercial streetscape at ground level. Given that the city's zoning does not supersede state and federal fair housing requirements, the approach we have taken is to offer acceptable outlets for providing ground-floor units and live work units while still maintaining activated street frontages.

A. Section 14-161. Purpose

To ensure congruity between proposed substantive changes and the purpose statement of the B-1b zone, staff are proposing the following amendments which reinforce the mixed-use character of the district while explicitly supporting ground-floor residential uses under set circumstances. The proposed text amendments are found under Attachment 1.

(b) B-1b Neighborhood Business Zone

The purpose of the B-1b neighborhood business zone is to provide appropriate opportunities for the establishment of small-scale ground floor commercial uses to serve a local market, while supporting mixed-use buildings with residential uses above ground floor commercial space and on the ground floor where the principal street frontage is maintained for active commercial uses. ~~Preserving residential uses and character above the ground floor of structures.~~ The zone also provides the opportunity for mixed use and high residential density in on-peninsula locations. Building additions are encouraged but not required to meet the maximum setbacks of 14-165(c)(3).

Suitable locations for this zone may include street intersections, arterial streets, and sites with existing or traditional neighborhood retail and service uses.

B. Section 14-162(a). Permitted Uses

The proposed changes to the permitted use section offer two separate outlets for achieving FHA compliance by permitting ground-floor residential units located toward the rear of a project site and along principal street frontages where the unit is established as a combined living/working space. The proposed amendment reads as follows:

(a) The following uses are permitted in the B-1 zone and on the ground floor level of buildings in the B-1b zone. For permitted uses in the upper stories of buildings in the B-1b zone, refer to subsection (5) below: in existence on November 15, 1993:

1. Residential

- a. Any residential use permitted in the residential zone abutting the lot is permitted. If there is no abutting residential zone, any residential use permitted in the nearest residential zone to the lot is permitted. In the case of two (2) or more abutting residential zones, any residential use permitted in the most restrictive such zone is permitted.*
- b. In any structure with commercial use on the first floor, multifamily dwellings are permitted ~~above the first floor;~~*

i . Above the first floor; and

ii . On the first floor where a minimum building depth of 25 feet along the

principal street frontage is maintained for commercial uses.

- c. Combined living/working spaces including, but not limited to, artist residences with studio space are permitted on the first floor and within the commercial space along the principal street frontage.

C. Section 14-165. Dimensional Requirements

Aside from substantive changes to the permitted use section, staff are also proposing to reduce density requirements for ground-floor residential units and clarify descriptive language in the introductory paragraph that either no longer applies, or does not encapsulate all applicable development scenarios. The proposed amendment reads as follows:

In addition to the provisions of division 25 (space and bulk regulations and exceptions) of this article, residential uses in off-peninsula locations, permitted under section 14-162(a)(1)(a), shall meet the requirements of such abutting or nearest residential zone. ~~except minimum lot area per dwelling unit.~~ Residential uses in on-peninsula locations, as defined in Section 14-47, residential uses in mixed-use buildings in off-peninsula locations, as defined in Section 14-47 and nonresidential uses in the B-1 and B1-b zones shall meet the following minimum requirements:

Min. Lot Area per D.U.	<i>On-peninsula: 435 SF</i> <i>Off-peninsula: min. lot area of nearest residential zone, <u>except 1,000 SF in a mixed-use building for multifamily dwellings above first floor.</u></i>
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IV. COMPREHENSIVE PLAN

As currently written, the B-1 and B-1b zones encourage traditional mixed-use commercial and residential development within minor commercial nodes and corridors across the city. These areas are ideally situated for increased residential density, given their proximity to public transit, services and amenities, all of which are goals identified within the comprehensive plan. However, with FHA requirements taken into account, the current zoning proves to be largely incompatible with the comprehensive plan, as any development with four or more residential units is required to meet FHA standards, which requires either an accessible unit on the ground floor or an elevator with access to all upper-floor units. The current zoning essentially penalizes projects with ground-floor residential units and reduces the allowable density of the project considerably.

The proposed amendment explicitly permits ground-floor residential units and establishes a new density standard for mixed-use projects located off-peninsula. The amendment also includes new standards to maintain active commercial uses along principal street frontages and is supportive of and supported by many goals found in Portland's Comprehensive Plan.

Development Goals:

- Increase, preserve, and modify the overall supply of housing City-wide to meet the needs, preferences and financial capabilities of all Portland households.
- 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.

The approach taken by the staff in revising the city’s land use code to address this identified concern is similarly supported under the strategies section of the Housing Chapter in Portland’s Comprehensive Plan. For example, under the strategy, “Removing Housing Barriers”, it encourages the evaluation of whether current zoning allows for new development that is consistent with historic patterns of form, density and use. The current zoning in fact limits historic development patterns by significantly reducing the allowable density of residential units, a characteristic that is vital to maintaining vibrant neighborhood centers. Similarly, under the strategy, “Support Age-Friendly Housing Options”, it encourages that we create, promote and facilitate safe, affordable and practical housing solutions that will meet the evolving need of Portland residents as they age. The B-1 and B-1b zones and the uses found therein are ideally situated within the heart of Portland’s neighborhood centers, and are well-positioned to take advantage of the amenities and services located in the city. Projects such as those at 502 Stevens Avenue and 23 Ocean Avenue provide alternative housing options within their respective neighborhoods and are positioned to be age-friendly and well suited to serve individuals with mobility challenges. The proposed amendments encourage increased unit densities at these locations and make it easier to create ADA accessible units.

V. PUBLIC COMMENT

Staff has received no public comment on the proposed text amendments to date.

VI. STAFF RECOMMENDATION

The staff recommends that the Planning Board find the proposed text amendments to be consistent with the Comprehensive Plan and recommend to the City Council adoption of the proposed text amendments.

VII. PROPOSED MOTION

On the basis of the material provided in this report, public testimony, a review of applicable policies, and other information, the Planning Board finds that the proposed text amendments to Division 9. B-1 and B-1b Neighborhood Business Zones **[are or are not]** consistent with the Comprehensive Plan and **[recommends or does not recommend]** adoption of the proposed amendment to the City Council.

VIII. ATTACHMENTS

1. Proposed Text Amendments to Portland Land Use Code, Div. 9. B-1 and B-1b Neighborhood Business Zones
2. Public Hearing Report – 23 Ocean Avenue
3. Public Hearing Report - 502 Stevens Avenue



PLANNING BOARD REPORT PORTLAND, MAINE

Mixed-Use Development
23 Ocean Avenue
Level III Site Plan and Subdivision Review
23 Ocean Avenue Association, LLC

Submitted to: Portland Planning Board	Prepared by: Nell Donaldson, Planner
Date: October 21, 2016	CBL: 129-G-1
Public Hearing Date: October 25, 2016	Project #: 2016-120

I. INTRODUCTION

23 Ocean Avenue Association, LLC has requested a final Level III site plan and subdivision review for a mixed-use development at 23 Ocean Avenue, at the corner of Ocean Avenue and Hersey Street near Woodford's Corner. The proposed 7,000 SF development includes approximately 2,400 SF of office space on the basement level and first floor, and four two-bedroom apartments on the second and third floors. The proposal also includes new sidewalks on Ocean Avenue and Hersey Street, nine off-street parking spaces with a lease for additional off-site parking, landscaping, and stormwater treatment. The site is currently occupied by a former residential building which has been converted to office use and a large lawn area. This open space would be developed under the proposal. The existing office building would remain.

This development is being referred to the Planning Board for compliance with the site plan and subdivision standards of the land use code. A total of 144 notices were sent to property owners within 500 feet of the site and a legal ad ran in the *Portland Press Herald* on July 18 and 19, 2016.

Applicant: Steve and Roberta Cope, 23 Ocean Avenue Association, LLC

Consultants: Kevin Moquin Architects, Ransom Consulting, Carroll Associates

II. REQUIRED REVIEWS

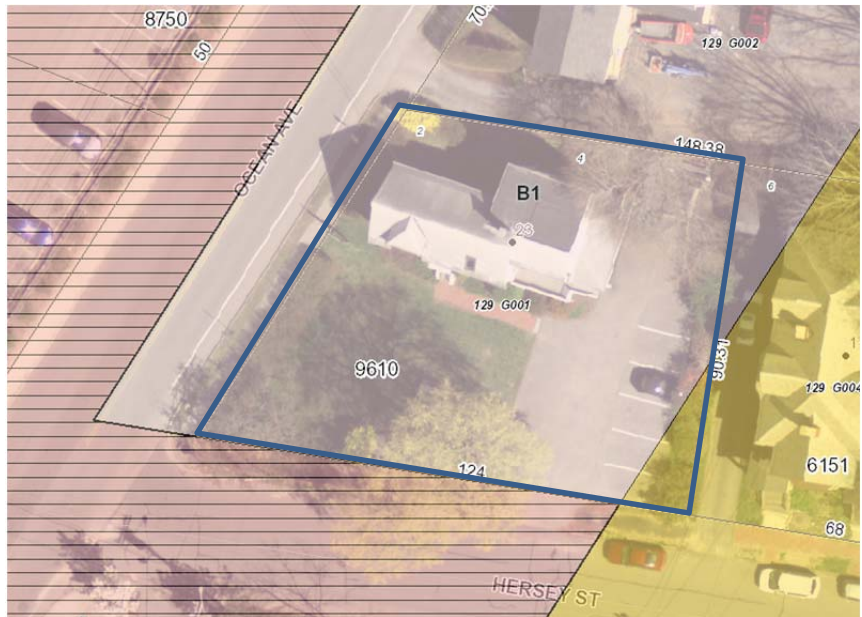
Waiver Requests	Applicable Standards
Aisle width – to allow 21 foot aisle in parking area	Technical Manual, <i>Section 1.14</i> . Aisle width for right-angle parking be 24 feet per <i>Figure I-27</i> .
Review	Applicable Standards
Site Plan	<i>Section 14-526</i>
Subdivision	<i>Section 14-497</i>

III. PROJECT DATA

Existing Zoning	B-1/R-3
Existing Use	Office
Proposed Use	Mixed use (office and residential)
Proposed Development Program	App. 2,400 SF office ; App. 4,700 SF residential (4 2-br apartment units); App. 220 SF storage
Parcel Size	9,519 SF

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	1,030 SF	2,730 SF	1,700 SF
Building Floor Area	1,580 SF	10,220 SF	8,640 SF
Impervious Surface Area	4,036 SF	6,188 SF	2,152 SF
Parking Spaces	5	9 on-site and 4 off-site	13
Bicycle Parking Spaces	0	6	6
Estimated Cost of Project	\$1,000,000		

Figures 1, 2, and 3 (Clockwise from top right):
 23 Ocean Avenue from above, showing existing building in office use;
 Site from the corner of Ocean Ave./Hersey St.;
 Zoning context



IV. BACKGROUND & EXISTING CONDITIONS

23 Ocean Avenue lies at the intersection of Ocean Avenue and Hersey Street, where Woodford's Corner meets the residential neighborhood of Back Cove. The Woodford's Corner Rite Aid sits directly across Ocean Avenue from the site and the former Thurston's Burgers lies directly to the south across Hersey Street, yet residential uses abut the site to the east and north. The site was originally developed for residential use, but the former home has since been repurposed for office. The majority of the site is zoned B-1, with a small sliver in the southeast corner lying in the R-3 zone.

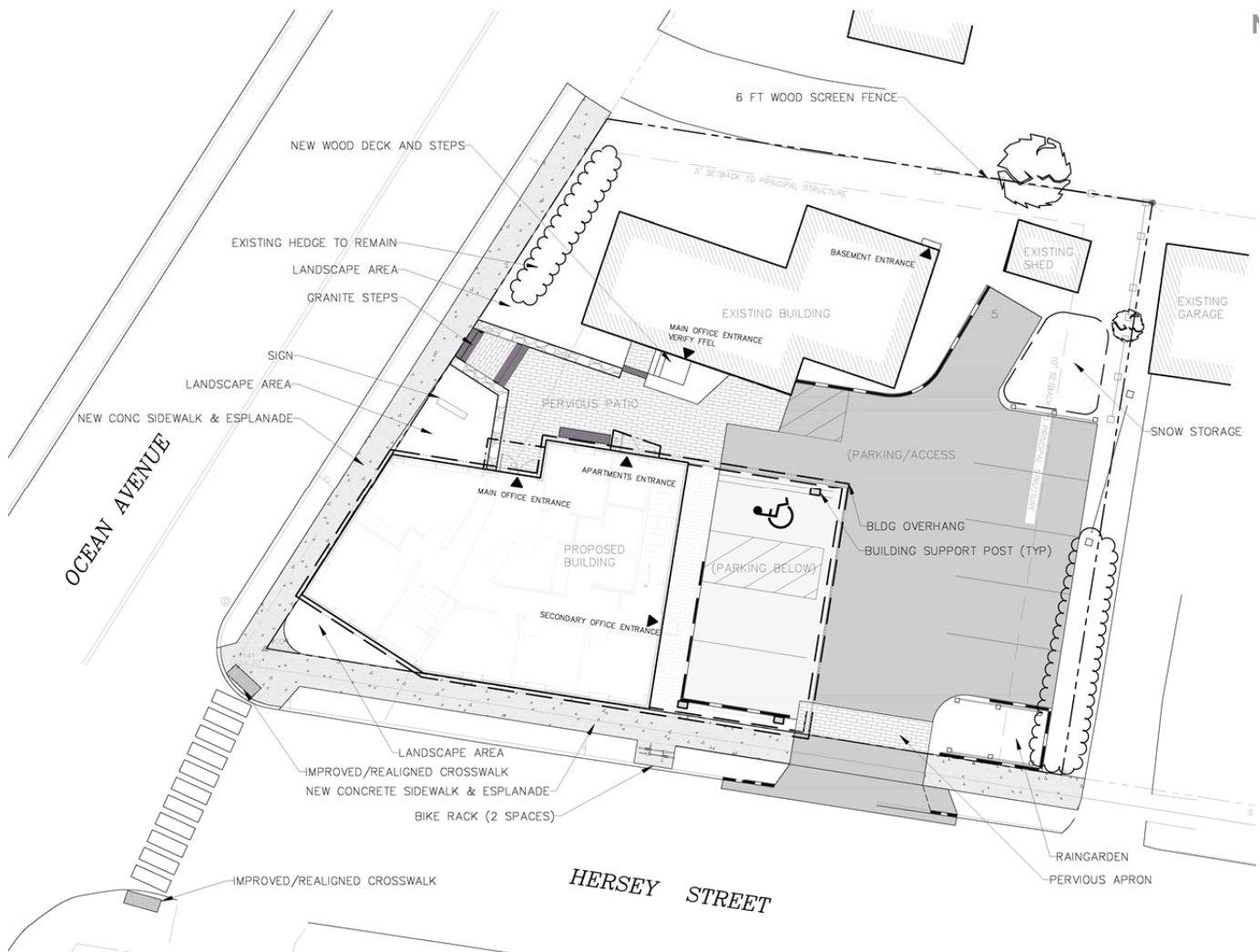


Figure 4: Final site plan

V. PROPOSED DEVELOPMENT

The applicant proposes to develop the existing, undeveloped portion of the lot with a 7,000 SF building including 2,400 SF of office space on the basement and first levels and four 2-bedroom apartment units on the top two floors. The main entrances for both uses would front a pervious patio courtyard area at the interior of the site, which would be shared with the existing office building. Vehicular access would be provided via an existing curb cut from Hersey Street. Nine parking spaces are proposed on site and six additional spaces would be leased off-site at a property on Vannah Avenue. New concrete sidewalks are proposed on Ocean Avenue and Hersey Street. The plans also include landscaping around the proposed building. Treated stormwater runoff from the roof of the new building would drain into the existing catch basin at Ocean Avenue and Hersey Street; the remainder of the site would drain to Hersey Street via a rain garden near the driveway entrance. Utilities are proposed to and from Hersey Street.

VI. PUBLIC COMMENT

The Planning Division has received a number of public comments on the proposal (*Attachments PC-1-5*). These comments raise questions about:

- The stormwater and utility plans, noting that Hersey Street experiences flooding during periods of heavy rain, and raising concerns about the impact of any additional stormwater runoff on the combined sewer in Hersey Street;
- The proposed parking supply as it relates to the demand analysis, and particularly the shared parking analysis, which neighbors have described as unsubstantiated and argued should be reviewed by the Zoning Board of Appeals;

- The use of off-site parking to meet projected parking demand and the potential for spillover impacts to Hersey Street;
- The trip generation analysis, which neighbors have criticized for failing to include actual counts from the existing office use;
- Traffic safety around the project site;
- The design and its lack of relationship to the residential context; and
- The construction management plan and potential impacts of truck traffic and contractor parking on Hersey Street.

The applicant is not required to host a neighborhood meeting, since only four residential units are proposed. No neighborhood meeting was held.

VII. RIGHT, TITLE, & INTEREST

The applicant's submittal includes a deed as evidence of right, title, and interest (*Attachment E*). A license is proposed for encroachments into the right-of-way for the purposes of footings and cornices. A public access easement will also be necessary for areas of sidewalk which are depicted on the site. This license and easement are proposed as conditions of approval.

VIII. FINANCIAL & TECHNICAL CAPACITY

The estimated cost of the development is approximately \$1 million. The applicant has provided a letter from Biddeford Savings Bank attesting to the applicant's financial capacity (*Attachment H*).

IX. ZONING ANALYSIS

The applicant has provided a zoning analysis documenting that the plans meet the dimensional requirements of the B-1 zone, including the front yard maximum of 10 feet and the maximum height of 35 feet (*Attachment D*). It should be noted that the elevations show a stair tower extending above the roofline of the building, and above the permitted height limit. Stair towers are technically allowed to extend beyond the height limit per *Section 14-430* of the city code.

X. SITE PLAN SUBMISSION REQUIREMENTS (*Section 14-527*) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (*Section 14-496*)

The applicant has submitted a subdivision plat meeting the requirements of *Section 14-527* of the city's land use code. This plat has been reviewed by William Clark, the city's surveyor (*Attachment 1*). A final recording plat, including all recording plat requirements, has been included as a condition of approval.

The applicant has submitted a draft construction management plan (*Attachment F*). Staff have forwarded several comments on this draft plan to the applicant, including a request that the applicant identify an off-street location for contractor parking, address concerns about truck traffic, and identify phasing. The applicant has requested that these comments be resolved as a condition of approval once a contractor has been selected for the project. A condition of approval has been suggested.

XI. SUBDIVISION REVIEW (*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.

1. Water, Air Pollution

Lauren Swett, consulting civil engineer, has reviewed the plans relating to stormwater runoff and water quality (*Attachment 3*). Her comments are discussed in detail under site plan review below. No detrimental water or air quality impacts are anticipated.

2 & 3. Adequacy of Water Supply

The plans show domestic and fire water service from an existing 8-inch main in Hersey Street. The applicant has provided evidence of water capacity (*Attachment J*).

4. Soil Erosion

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated.

5. Impacts on Existing or Proposed Highways and Public Roads

The applicant has provided traffic analysis in the final submittal. Tom Errico, the city's consulting traffic engineer, has provided comments on potential traffic impacts, which are discussed in detail under site plan review below. No detrimental impacts to existing roads are anticipated.

6. Sanitary Sewer/Stormwater Disposal

One 6-inch sewer line with backflow preventer is proposed to service the building; this line would outlet to the combined sewer in Hersey Street. The applicant has not provided evidence of wastewater capacity from the Department of Public Services at this time. As such, this letter has been included as a condition of approval. As noted above, a stormwater management plan has been provided. Ms. Swett's comments on the proposed plans for stormwater and sewer are discussed in detail under site plan review below.

7. Solid Waste

The applicant has proposed curbside trash and recycling. No dumpster is proposed. The applicant writes that "[t]enants will be informed of collection day and appropriate interim on-site storage of waste and recycling" (*Attachment D*). Storage of office waste is proposed in the basement.

8. Scenic Beauty

This proposal is not deemed to have an adverse impact on the scenic beauty of the area.

9. Comprehensive Plan

The applicant's narrative argues that the project would achieve a number of goals of the city's Comprehensive Plan, including goals related to housing and neighborhood stability and integrity. The applicant also cites the Woodford's Corner Public Improvement Plan and Transforming Forest Avenue, which called for improvements that "promote livability, economic vibrancy, and mobility in Woodford's Corner" (*Attachment D*).

10. Financial and Technical Capacity

As noted above, the applicant has provided evidence of financial capacity (*Attachment H*).

11. Wetland/Water Body Impacts

There are no wetlands or water bodies on or immediately proximate to the site.

12. Groundwater Impacts

There are no anticipated impacts to groundwater supplies.

13. Flood-Prone Area

Per the city's existing flood maps, the site is not located in a flood zone.

XII. SITE PLAN REVIEW

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance. Staff comments are below.

1. Transportation Standards**a. Impact on Surrounding Street Systems**

At the request of Tom Errico, the city's traffic engineer, the applicant has provided a trip generation analysis in the final submittal (*Attachment 2*). The trip generation analysis, which is based on ratios from the Institute of Traffic Engineers, estimates a total of six additional trips during the AM peak hour and seven additional trips during the PM peak hour, for a total of nine AM and PM peak hour trips from the site (including the existing office use on site, which the applicant's traffic engineer has estimated at three AM trips and two PM trips). The applicant writes, "this minimal level of new traffic would not be expected to have any significant impact off-site on traffic operations" (*Attachment L*). Mr. Errico has reviewed the

analysis and writes,

The applicant has provided an estimate of trip generation. As noted the project is expected to generate 6 new peak hour trips in the morning peak hour and 7 new peak hour trips during the afternoon peak hour. This level of trip generation is not expected to impact traffic operations and safety and therefore I have no further comment.

The applicant has also provided a safety analysis in the final submittal. This analysis finds, based on data from the Maine Department of Transportation, that although the segment of Ocean Avenue between Forest Avenue and Hersey Street has a “higher than expected accident rate,” this location fails to qualify as a high crash location since only two accidents occurred in this segment in the most recent three-year period. All other segments and intersections in the immediate vicinity of the project have lower than expected accident rates, and none qualify as high crash locations. Mr. Errico has also reviewed this analysis and writes,

A review of crash data was conducted by the applicant and that analysis indicated that there are no High Crash Locations in the vicinity of the project site. I have no further comment.

b. *Access and Circulation*

The plans include new concrete sidewalks on the length of the site’s frontage on both Hersey Street and Ocean Avenue. The applicant has proposed to provide a new detectable warning panel and a new crosswalk across Hersey Street at the Ocean Avenue intersection. Final details related to the design of this intersection are yet to be resolved, as there are right-of-way constraints on the property opposite the site. Mr. Errico writes,

The applicant shall upgrade the sidewalk ramp on the opposite side of Hersey Street to meet ADA requirements. The applicant shall submit plans to the City for review and approval. I would note that the City recognizes the right-of-way limitations at the subject corner and will assist the applicant in design development.

A condition of approval has been drafted to address this ramp.

The major building entrances are proposed via a patio at the interior of the site, with access from Ocean Avenue. This patio sits below the sidewalk elevation and thus is accessible via stair. ADA access to the major entrance of the proposed building would be provided from Hersey Street. In the final submittal, the applicant has noted that the proposed plan shows “accessible grades along the sidewalk connecting to the main office entrance and the accessible parking space” (*Attachment K*).

The final plans show continued use of an existing curb cut from Hersey Street for vehicular access. In the final plans, the applicant has reconfigured the parking area and reduced the number of proposed parking spaces by one as a means of eliminating the need for backing maneuvers to Hersey Street. The applicant has provided turning templates as documentation of the adequacy of the parking area design (*Plan 21*). The applicant has requested a waiver for parking lot aisle width. Mr. Errico writes,

The applicant has provided information that demonstrates onsite circulation can be accommodated.

Following a review of vehicle turning template information and revisions to the parking lot layout, I support a waiver from the City’s Technical Standards.

c. *Public Transit Access*

No accommodation for public transit is required.

d. *Parking*

Division 20 of the land use ordinance requires parking for residential uses at a ratio of two/unit off-peninsula and one/ 400 SF of usable area for office uses. At these ratios, eight parking spaces are required for the residential units and six spaces are required for the office space, for a total of 14 parking spaces for the proposed mixed-use building. Four additional parking spaces are required for the existing office building, bringing the total parking requirement for the site to 18 parking spaces. It should be noted that, in their final submittal, the applicant has provided a parking analysis that cites parking ratios from the Institute of Traffic Engineers, and estimates a total parking demand of six spaces for the residential uses and 13 spaces for the office uses, for a total of 19 parking spaces (*Attachment M*).

Recognizing the opportunity for shared parking in this context, where residential and office uses are apt to experience offset peak parking demand, the applicant's parking narrative includes some shared use analysis, based again on data from the Institute of Traffic Engineers (*Attachment M*). The city's code permits shared use parking under *Section 14-343*, stating,

the Board of Appeals may approve the joint use of a parking facility by two (2) or more principal buildings or uses where it is clearly demonstrated that the parking facility will substantially meet the intent of the requirements by reason of variation in the probable time of maximum use by patrons or employees among such establishments... The Planning Board may be substituted for the Board of Appeals only where an applicant is otherwise before the Planning Board for site plan approval.

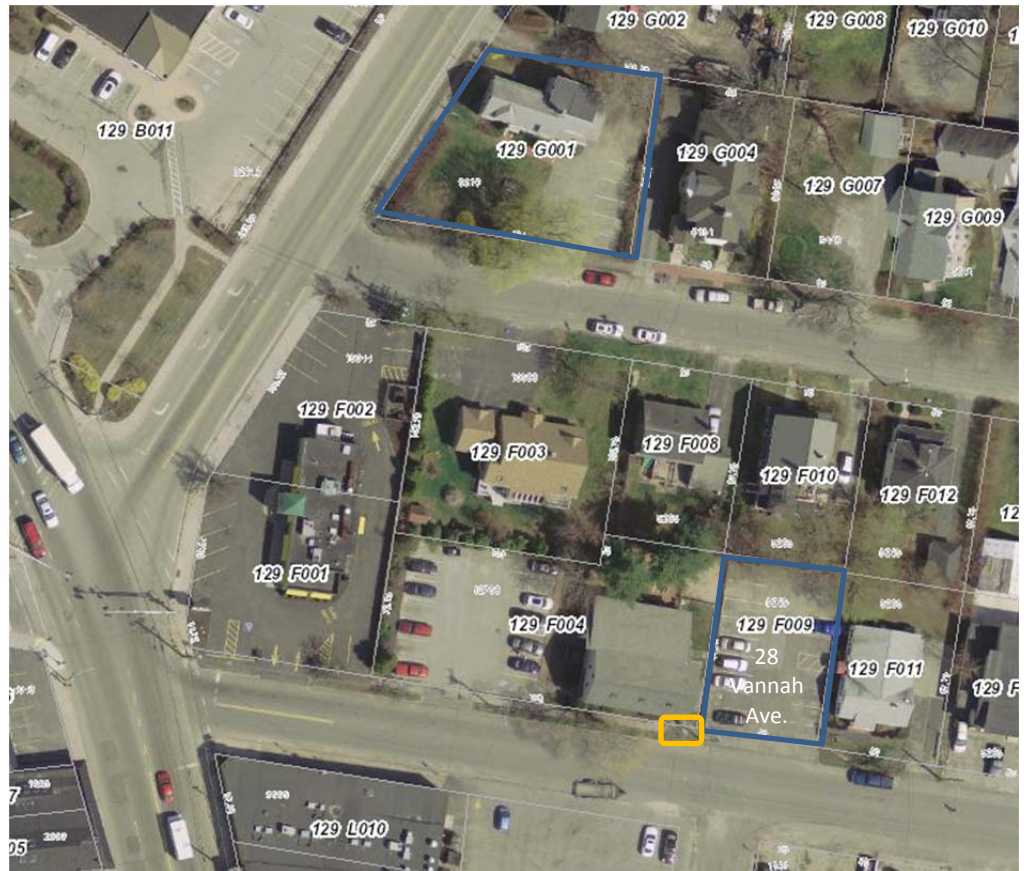
The applicant has based their shared parking analysis on shared use factors developed by the Institute of Traffic Engineers. By applying these factors to both the residential and office uses in their off-peak hours, the applicant arrives at total estimated daytime and nighttime parking demand figures which allow for some overlap in use. The analysis estimates a peak daytime demand of 10-13 parking spaces for the office and two-three for purposes of the residential use, or a total of 12-15 spaces. (The range cited here is a function of differing sources, with the former number a product of applying the shared use factors to the parking supply numbers as required by code and the latter a product of applying the factors to the ITE-derived demand figures.) The applicant argues that, at night, while the residential use will generate its peak demand of six to eight spaces, the office use will not generate any demand at all.

With nine spaces proposed on site, then, the applicant argues that they meet their nighttime peak demand requirement of six to eight spaces. The proposed on-site parking is not sufficient, however, to accommodate the peak daytime demand, which again has been estimated at 12-15 parking spaces. For this reason, the applicant has submitted a letter of intent from the property owner at 28 Vannah Avenue indicating their agreement to lease six parking spaces to the applicant (*Attachment M*), which, when added to the nine on site, would bring the total parking supply to 15 (*Figure 5*). Technically, this is permissible per *Section 14-334* of the city's ordinance, which allows the Planning Board to approve off-street parking within 1,500 feet upon presentation of a lease agreement. 28 Vannah Street lies approximately 500 feet from the site by lines of public access and contains sufficient parking (15 spaces) to lease six parking spaces and remain conforming with respect to its own parking requirement under Division 20 of the land use code.

In their final submittal, the applicant has provided a parking management plan which speaks to how on-site and off-site parking would be managed so as to ensure the shared parking arrangement functions as designed (*Attachment M*). This plan identifies a number of tools, including signage, lease restrictions for office tenants, incentives for use of the off-site parking, and monitoring as means of managing the shared parking. Mr. Errico has reviewed the shared parking analysis and the parking management plan and writes,

I generally find the parking generation analysis to be reasonable and would expect a parking demand of 18 to 21 vehicles, without the consideration of shared parking.

Figure 5:
Proposed
off-site
parking at
28 Vannah
Avenue, with
missing
sidewalk link
highlighted.



I support the concept of shared parking for this project and thereby a reduced parking supply given proposed land uses. Based upon the information provided by the applicant and information from the Urban Land Institute, I would estimate a peak parking demand of 16 to 18 parking spaces. The applicant is providing 9 parking spaces onsite and has an agreement in place for up to 6 parking spaces on Vannah Avenue, for a total of 15 parking spaces. I would suggest that the applicant conduct a monitoring study at the time of full occupancy and determine if 15 spaces is sufficient. If parking demand is greater than expected, the applicant shall provide additional offsite parking that meet actual demand. I would suggest that the Woodford Club site, as originally proposed, be formally agreed to as a backup site.

I support the location of the offsite parking lot on Vannah Avenue. For it to be fully accessible by pedestrians to and from the site, the applicant shall construct a missing sidewalk section on the north side of Vannah Avenue near the proposed parking lot. The applicant shall submit plans to the City for review and approval.

The applicant has provided a parking management plan for the site. I am concerned that implementation will not be easily enforced, particularly as it related to early morning and late afternoon time periods when the residential and office uses are likely to conflict. I would note that the applicant has noted that TDM will likely impact trip and parking generation (for which I agree), but it is also likely that the residential uses may leave their cars all day, while walking or biking to work destinations. I would therefore suggest that the monitoring study also include a review of the parking management plan and necessary adjustments. I would suggest that the monitoring study be closely coordinated with the Planning Authority.

A final copy of an off-site parking lease, written to including a five-year term as required by the land use code, has been included as a condition of approval. Improvements to the sidewalk on the north side of Vannah Street to close the sidewalk gap between the off-site parking location and the site have also been included as a condition of approval. Last, a monitoring study has been suggested as a condition of approval.

It should be noted that the applicant stresses in their parking analysis that TDM will be employed at the site in an effort to reduce car-dependency on site. The applicant writes, “the building will provide interior bike lockers for both resident and office uses to encourage bicycle commuting” and notes that METRO provides service within a block of the site (*Attachment M*).

e. *Transportation Demand Management*

A transportation demand management plan is not required.

2. Environmental Quality Standards

a. *Preservation of Significant Natural Features*

There are no known significant natural features on the site.

b. *Landscaping and Landscape Preservation*

At the request of Jeff Tarling, the city’s arborist, the applicant has revised the landscape plans to show two zelkovas on the Ocean Avenue frontage, three Armstrong maples in the esplanade on Hersey Street, and a cherry tree at the corner of Ocean Avenue and Hersey Street. Collectively, these trees meet the city’s street tree requirement of one per unit. It should be noted that staff has recommended a condition of approval to address a potential conflict between the cherry tree and a stormwater treatment unit proposed for the Ocean Avenue/Hersey Street corner.

Elsewhere on the site, the applicant shows a mix of perennials and sumac in the rain garden, a combination of juniper and lilacs on the eastern property line to create a buffer where the site addresses residential neighbors, and a mix of day lilies at the corner of Ocean Avenue and Hersey Street. Ferns, climbing hydrangeas, bayberries, fountain grass, and rhododendrons are also proposed for the site. Mr. Tarling has reviewed the revised plans and verbally indicated that they meet the landscaping requirements of the land use code.

c. *Water Quality/Storm Water Management/Erosion Control*

The site is currently occupied by a residential structure which has been converted to office use, a surface parking lot, and a landscaped lawn area. The project will disturb approximately 7,170 SF of the parcel and result in a total impervious area of 6,188 SF, or an increase of 2,152 SF. As such, the applicant has provided a stormwater management plan outlining their approach for managing and treating stormwater on and from the site (*Attachment J*).

At the Department of Public Works’ request, the applicant has modified their final drainage plan to direct runoff from the proposed building’s roof to an existing catch basin in Ocean Avenue, which, as a product of future city plans, would ultimately be connected to a new separated stormwater system. This runoff would be treated with a roof drain cartridge filter. The remainder of the site, including the existing building roof and the parking area, would drain to a rain garden, which would outlet to the combined sewer in Hersey Street and overflow to a pervious paver system in the driveway apron. The applicant writes that, under the proposed plan, “the peak flow rates discharging to Hersey Street will decrease for all storm events. This is because both the total area and impervious area draining to Hersey Street are proposed to decrease [under the post-development condition]” (*Attachment J*).

Ms. Swett has reviewed the design of this system and provided the following comments,

The project is required to include stormwater management features to control the rate or quantity of stormwater runoff from the site. The Applicant will be discharging a portion

of the site's stormwater to the combined sewer in Ocean Avenue. The site does not discharge to this location in the existing condition; however, the Applicant has discussed this condition with Public Works, and the connection will be allowed. Stormwater from the site will be collected as part of a future City sewer separation project. As a result of this connection, the stormwater discharge to Hersey Street will be reduced, providing an improvement over the existing condition on Hersey Street.

It should be noted that Ms. Swett has determined that a waiver from the flooding standard is not required in this instance.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

As noted above, the project is generally deemed consistent with related master plans.

b. Public Safety and Fire Prevention

The applicant has provided a life safety summary for review by the city's Fire Prevention Bureau (*Plan 16*). Per this summary, the building would be fully sprinklered and accessible from two sides. Assistant Fire Chief Keith Gautreau has reviewed the plans and indicated that he has no comments (*Attachment 4*).

c. Availability and Capacity of Public Utilities

As noted above, the applicant has proposed to connect to existing water and sewer lines in Hersey Street, and has provided evidence of water capacity (*Attachment I*). Evidence of sewer capacity has been included as a condition of approval. Underground electrical service would be provided from an existing pole on the opposite side of Hersey Street. With respect to the capacity of the combined sewer on Hersey Street, as noted above, the city's consulting civil engineer has noted that stormwater runoff to Hersey Street will be reduced under the post-development condition, "providing an improvement over the existing condition." The development is not anticipated to overburden existing public infrastructure.

4. Site Design Standards

a. Massing, Ventilation, and Wind Impact

The bulk, location, or height of the building is not likely to result in health or safety problems from a reduction in ventilation to abutting structures. In the final submittal, the applicant has indicated that HVAC equipment will consist of six rooftop condensers.

b. Shadows

The project will not result in shadow impacts to publicly accessible open spaces.

c. Snow and Ice Loading

The project is not likely to result in snow or ice loading impacts.

d. View Corridors

The project does not lie on a protected view corridor.

e. Historic Resources

There are no historic resources within 100 feet.

f. Exterior Lighting

The applicant has provided a photometric plan and lighting cut sheets which meet the standards of the Technical Manual (*Plan 17 and Attachment K*).

g. Noise and Vibration

Mechanical equipment is proposed at the interior of the site and generally screened from view. HVAC cut sheets will be required as a product of the building permit review.

h. *Signage and Wayfinding*

One sign is depicted on the site plan near the patio entrance. This sign is intended to serve both buildings on the site. The sign will be subject to separate sign permits, and is not being reviewed at this time.

i. *Zoning-Related Design Standards*

Projects within the B-1 zone are subject to design review, as are all multi-family buildings. In response to comments on the preliminary plans, the applicant has revised the design to accentuate the building entrances; employ materials to distinguish the lower floor (which would be occupied by office uses) from the upper floor residential; align windows to provide more rhythm on the street-facing facades; and accentuate the Ocean Avenue/Hersey Street corner through a change in roofline and material (*Attachment K*). Caitlin Cameron, the city's urban designer, has provided final comments from the B-1 design review, finding that the final design meets the design standards (*Attachment 5*).



Figures 6 and 7: Final architecture from the corner of Hersey Street and Ocean Avenue (top) and Ocean Avenue looking south



Figure 8: Hersey
Street building
entrance

XIII. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board approve the proposed mixed-use development at 23 Ocean Avenue.

XIV. 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 October 25, 2016 for application 2016-120 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 consulting transportation engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with the *Technical Manual* standard (Section 1.14) which requires that aisle width for right-angle parking be 24 feet per *Figure I-27*, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board **waives/does not waive** the *Technical Manual* standard (Section 1.14) to allow a 21 foot wide aisle in the parking area.

B. SUBDIVISION

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 October 25, 2016 for application 2016-120 relevant to the subdivision regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan **is/is not** in conformance with the subdivision standards of the land use code, subject to the following conditions of approval, which must be met prior to the signing of the plat:

1. The applicant shall finalize the subdivision plat for review and approval by Corporation Counsel, the Department of Public Works, and the Planning Authority; and

2. The applicant shall submit:
 - a. A license agreement for foundation footings and cornice proposed to encroach on the city's right-of-way and
 - b. A public pedestrian access easement for areas of sidewalk proposed to encroach on private propertyfor review and approval by the Department of Public Works and Corporation Counsel.
3. The applicant shall submit a final sewer capacity letter for review by the Planning Authority;

C. DEVELOPMENT 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 October 25, 2016 for application 2016-120 relevant to the site plan 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, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. The applicant shall submit a final construction management plan, including provisions for pedestrian access, contractor parking, truck deliveries, and phasing, for review and approval by the Department of Public Works and the Planning Authority;
2. The applicant shall submit final details for the reconstruction of the ramp on the south side of Hersey Street to meet ADA requirements for review and approval by the Department of Public Works;
3. Prior to certificate of occupancy, the applicant shall provide evidence of a lease for use of off-site parking spaces under *Section 14-334* for review and approval by the Planning Authority and Corporation Counsel;
4. Prior to certificate of occupancy, the applicant shall submit final details for the reconstruction of the missing sidewalk link on the north side of Vannah Street between the proposed off-site parking and the site and construct this sidewalk segment for review and approval by the Department of Public Works;
5. Within six months of certificate of occupancy, and on an annual basis thereafter for a period of five years, the applicant shall provide an analysis of parking demand, the efficacy of the parking management plan, and neighborhood impacts for review and approval by the Department of Public Works and the Planning Authority. Should the analysis indicate that parking demand is not adequately met with the approved shared parking and off-site parking arrangement, the applicant shall submit and implement a revised parking plan to address deficiencies for review and approval by the Department of Public Works and the Planning Authority; and
6. The applicant shall provide revised plans to address the conflict between the proposed cherry tree and stormwater treatment unit at the corner of Ocean Avenue and Hersey Street for review and approval by the City Arborist and the Planning Authority.

XIV. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. City Surveyor review (memo from Bill Clark, 10/13/16)
2. Traffic Engineer review (memo from Thomas Errico, 10/21/16)
3. Civil Engineer review (memo from Lauren Swett, 10/21/16)
4. Fire Prevention Bureau review (memo from Keith Gautreau, 7/11/16)
5. Design review (memo from Caitlin Cameron, 9/28/16)

APPLICANT'S SUBMITTALS

- A. Cover Letter
- B. Application
- C. Project Data
- D. Application Narrative
- E. Right, Title, and Interest
- F. Construction Management Plan
- G. Fire Department Checklist
- H. Evidence of Financial Capacity
- I. Evidence of Utility Capacity
- J. Stormwater Management Narrative
- K. Response to Staff Comments
- L. Trip Generation and Safety Analysis
- M. Parking Analysis
- N. Site Lighting Cut Sheets
- O. Siding Examples

PLANS

- Plan 1. Subdivision Plat
- Plan 2. Existing Conditions
- Plan 3. Site Preparation
- Plan 4. Site Plan
- Plan 5. Materials and Layout Plan
- Plan 6. Grading Plan
- Plan 7. Landscape Plan
- Plan 8. Landscape Details
- Plan 9. Stormwater/Utility Plan
- Plan 10. Details
- Plan 11. Details
- Plan 12. Stormwater Pre-Development Plan
- Plan 13. Stormwater Post-Development Plan
- Plan 14. Hersey Ocean View Rendering
- Plan 15. Ocean Courtyard View Rendering
- Plan 16. Ocean Hersey Gateway
- Plan 17. Streetscape Elevations
- Plan 18. Elevations and Sections
- Plan 19. Floor Plans
- Plan 20. Photometric Plan
- Plan 21. Turning Movement Plan

PUBLIC COMMENT

- PC-1. Levine letter (7/21/16)
- PC-2. Levine letter (7/25/16)
- PC-3. Haskell letter (7/25/16)
- PC-4. Dombek letter (8/1/16)
- PC-5. Levine letter (10/20/16)

PLANNING BOARD REPORT PORTLAND, MAINE



502 Deering Center
502 Stevens Avenue
Level III Site Plan and Subdivision Plan
2016-290
Denis Lachman, Applicant

Submitted to Portland Planning Board
Public Hearing Date: March 28, 2017

Prepared by: Matthew Grooms
Date: March 24, 2017

I. INTRODUCTION

Developer Denis Lachman has requested a preliminary Level III site plan and subdivision review of a mixed-use six-unit commercial and residential infill development at 502 Stevens Avenue immediately east of Lincoln Middle School at the intersection of Stevens Avenue and Hartley Street. The proposed 7,767 SF development includes a three-story mixed-use building, associated 'pocket park' and 10 surface parking spaces located to the rear of the property. The site will be accessed from Stevens Avenue via a newly proposed shared driveway straddling the northerly property line. This lot is currently occupied by a 2,107 SF single family home. The demolition for this structure is currently under review. The site is within the B-1b zone.

The Planning Board will review the application for compliance with the site plan and subdivision standards.

A total of 168 notices were sent to property owners within 500 feet of the site and a legal ad ran on February 6th and 7th, 2017 prior to the workshop which was held on February 14th 2017. The legal ad was again run on March 20th and 21st, prior to the public hearing. There were nine public comments that have been received by the Planning Office, see [Attachment 7](#).

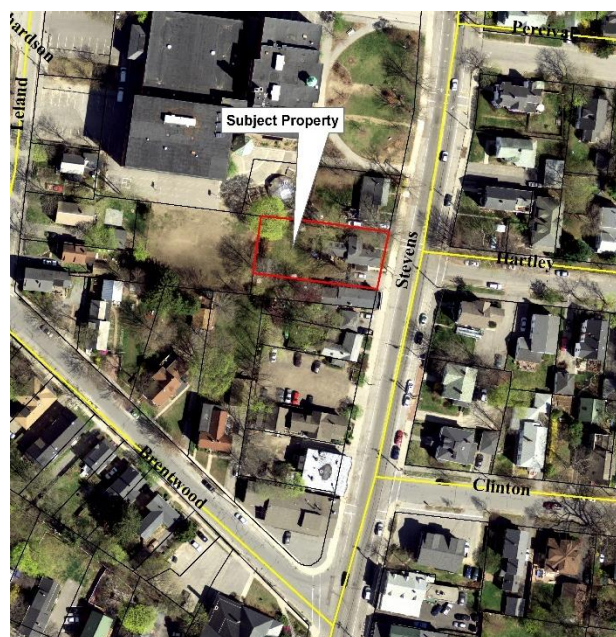


Figure 1: Aerial of 502 Stevens Avenue

Applicant: Denis Lachman

Consultants: Pat Carroll, Carroll Associates, Tom Greer, Pinkham and Greer Civil Engineers, Don Dostie, Four Points Associates, Nelson Toner, Bernstein Shur.

II. REQUIRED REVIEWS

Waiver Requests	Applicable Standards
Drive Aisle width – To allow a 21' foot aisle in the parking area. <u>Staff Comments:</u> The review staff recommends waiving this standard.	Technical Manual, <i>Section 1.14</i> , requiring that aisle width for right-angle parking be 24 feet per Figure I-27
Driveway width – To allow a 18' foot driveway <u>Staff Comments:</u> The review staff recommends waiving this standard.	Technical Manual, <i>Section 1.7.2.3 (multi-family residential with 10 or more parking spaces)</i> , requiring that two-way driveway widths be a minimum of 20 feet, with a preferred width of 24 feet. aisle width for right-angle parking be 20 feet per Figure I-27

Infiltration system – To allow infiltration system separation from property line less than 25 feet.	Maine Stormwater Best Management Practices Manual, as referenced by Maine DEP Chapter 500, as referenced by Section 5 of the Technical Manual, requires that a 25-foot separation be provided between a subsurface stormwater infiltration system and an adjacent property boundary. The project is located on a small lot, and the proposed infiltration system is not anticipated to have a negative impact on the adjacent property. A waiver of this requirement is granted to the Applicant.
Staff Comments: The review staff recommends waiving this standard given the constraints of the lot.	
Review	Applicable Standards
Site Plan	Section 14-526
Subdivision	Section 14-497

III. PROJECT DATA

Existing Zoning	Neighborhood Business B-1b
Existing Use	Residential
Proposed Use	Mixed-Use Residential and Commercial
Proposed Development Program	6 Residential Units and 1,906 SF of Commercial Space
- Bedroom Mix	4 three-bedroom units
Parcel Size	9,562 SF

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	1,295 SF	2,557 SF	1,262 SF
Building Floor Area	2,107 SF	7,767 SF	5,660 SF
Impervious Surface Area	2,828 SF	7,970 SF	5,142 SF
Parking Spaces (on site)	2	10	8
Parking Spaces (off-site)	0	2	2
Bicycle Parking Spaces	0	10	10
Estimated Cost of Project	\$1,046,000.00		

IV. BACKGROUND & EXISTING CONDITIONS

The proposed project site is located on Stevens Avenue in proximity to Lincoln Middle School at the intersection of Stevens Avenue and Hartley Street. At present, the site is occupied by a single-family structure under review for demolition. This property is located within a transitional neighborhood, with a mixture of retail and service uses located to the south of the subject site along Stevens Avenue, Lincoln Middle School is located immediately to the west of this site, and the surrounding area away from Stevens Avenue is predominantly single family residential. The project site is located at the northern edge of the Deering Center commercial district.



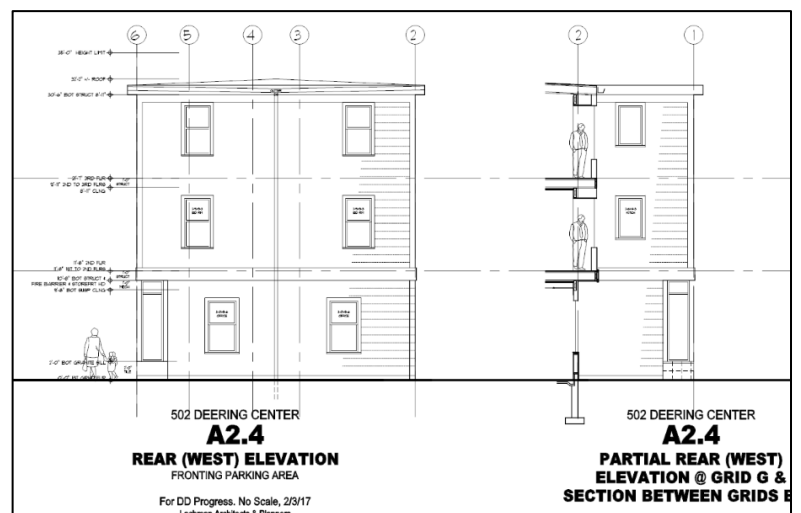
Figure 2: 502 Stevens Avenue Site

V. PROPOSED DEVELOPMENT

The development is proposed as a mixed-use commercial and residential project with frontage on Stevens Avenue. The project will consist of a three-story building with a commercial suite on the first floor, and two three-bedroom and four one-bedroom units located on the second and third floors. This development will be oriented towards

[illegible]

Parking for ten (10) vehicles is proposed on-site, including a space intended for a car-share vehicle, with a single two-way driveway measuring a minimum of 18' feet in width is being proposed along Stevens Avenue. Two (2) additional off-site parking spaces located at 229 Pleasant Street are presently leased. The applicant is seeking a waiver for driveway width, having asked that 18' feet be allowed whereas under the Technical Manual, 1.7.2.3., 20' feet is the minimum allowable for a multi-family residential development and 24' feet is preferred.



VI. WORKSHOP (2/14/2017)

On February 14, 2017, this proposed development was heard before the Planning Board as a workshop item. At this meeting, two members of the public spoke, both of whom were supportive of the project, stating that the proposed development was appropriately sized, thoughtfully designed and a desirable addition for the Deering Center neighborhood. Members of the Board voiced concerns regarding the balance of the building, particularly of the front façade. The Planning Board directed staff to work with the applicant to clarify outstanding design review comments. Since the Planning Board workshop, the applicant has worked with city staff to address review comments and has since resubmitted revised plans and documents on March 13, 2017.

VII. PUBLIC COMMENT

As of the writing of this report, nine abutters have submitted written comments. These comments have been largely in favor of the proposed project with consensus being that the scope and scale of the project is fitting for this neighborhood, that mixed-use developments are desirable for Deering Center and that this development could invigorate future development within the neighborhood. One public comment was received opposed to this proposal. This comment cited potential traffic impacts within a school zone.

A Neighborhood Meeting is required for this project and the applicant has confirmed that the neighborhood meeting was held on Wednesday, February 1, 2017, attended by 30 people, see [Attachment T](#).

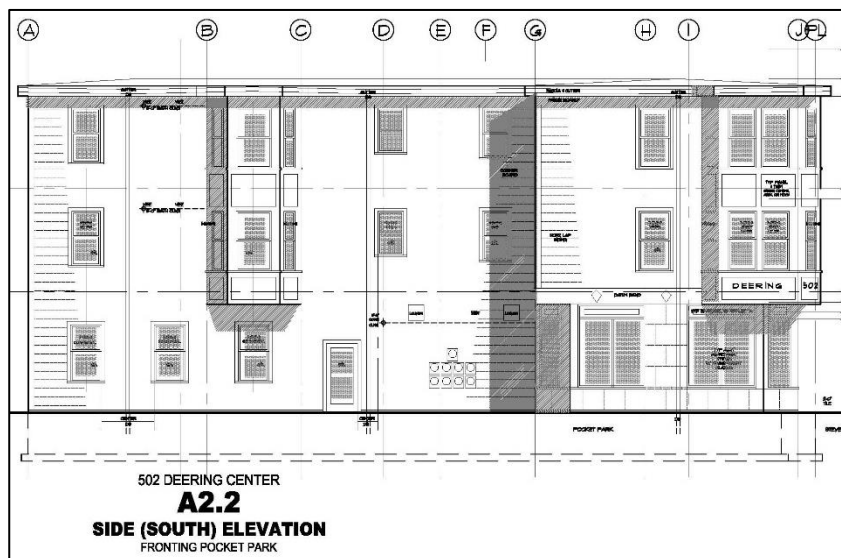
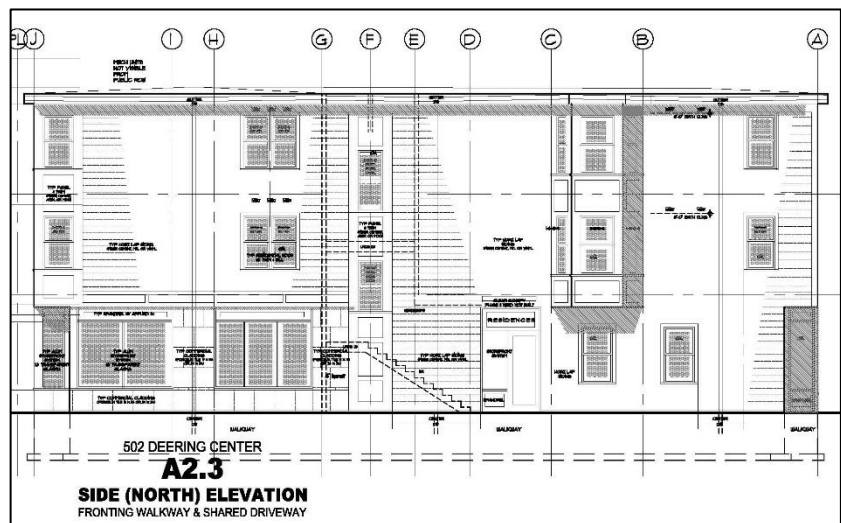
VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

a. The owner of the property is Denis Lachman and Karen J Smith. The applicant has provided a City of Portland Assessor Record, Evidence of Right, Title and Interest, for CBL 135 E009001, showing proof of ownership as of April 2016.

b. The estimated cost of the development is \$1.046 Million. The applicant has submitted a letter from Androscoggin Bank, dated December 12, 2016, as demonstration of their financial and technical capacity to complete the proposed development.

VIII. ZONING ANALYSIS

The proposed mixed-use commercial and residential building is a permitted use in the Neighborhood Business B-1b which allows multifamily dwellings. Under the B-1b zone all of the dimensional requirements are being met.



IX. DEVELOPMENT REVIEW

A. SUBDIVISION (Section 14-497)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's Subdivision Ordinance and applicable regulations. Staff comments are listed below.

1. Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)

Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the erosion and sediment control plans and details, and inspection and maintenance requirements. She finds them to be in accordance with the Basic Standard.

2. Sufficient Water Available (Section 14-497 (a) 2 and 3)

The project will be served by a new 2-inch domestic service and 4-inch fire service drawn from the existing water main in Stevens Avenue. The Portland Water District has approved the applicant's application and will provide service to this site.

3. Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)

The applicant is proposing access to the site from a new curb cut on Stevens Avenue for a total of one vehicular access point. Tom Errico, P.E. Ty Lin reviewed this detail and also reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1) and states:

- *I reviewed the trip generation and safety analysis prepared by Maine Traffic Resources and I find the methods used to be acceptable. The project is not expected to generate a significant amount of traffic and there are no documented safety deficiencies in the vicinity of the project. The project does not require a Traffic Movement Permit. In my professional opinion, the project will not have a significant impact on transportation conditions in the project.*

1. Circulation on Site

As mentioned before, ten surface parking spaces will be provided to the rear of the proposed building. The circulation for the proposed surface lot will consist of vehicles pulling in out onto Stevens Avenue via a two-way driveway. The city's consulting transportation engineer has no objections to site circulation as proposed. Tom Errico, P.E. Ty Lin reviewed this detail and also reviewed the proposal's details including the access, parking, and vehicle circulation (Attachment 1) and states:

- *The applicant is requesting a waiver from the City's Technical Standards for parking aisle width. The project is proposing 21 feet (the City standard is 24 feet). Given low trip generating characteristics and the general layout of the site (backing maneuvers onto Stevens Avenue are very unlikely), I support a waiver.*
- *The applicant is requesting a waiver from the City's Technical Standards for driveway width. The project is proposing 18.24 feet (the City standard for minimum width is 20 feet). Given low trip generating characteristics, I support a waiver.*

4. Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)

The applicant proposed to tie into the existing gravity sewer line located in Stevens Avenue and has submitted a wastewater capacity application to the Department of Public Works. Approval of this request has been suggested as condition of approval.

The residential units will make use of municipal waste services and the commercial tenant will be responsible for relocating solid waste and recyclable material off site. There will be minimal burden on the municipal solid waste.

5. Comprehensive Plan (Section 14-497 (a) 9)

The staff has identified the following goals and policies which are relevant to the proposed housing development and finds the proposal in conformance with the Comprehensive Plan:

Portland Housing Goal: Ensure that an adequate supply of housing is available to meet the needs, preferences, and financial capabilities of all Portland households, now and in the future.

Policies

- Ensure the construction of a diverse mix of housing types that offers a continuum of options across all income levels, which are both renter and owner-occupied, including but not limited to the following:
 - ii. Housing units for decreasing household size, such as young professionals, empty nesters, single-parent households, and senior citizens.
- Encourage higher density housing for both rental and home ownership opportunities, particularly located near services, such as schools, businesses, institutions, employers, and public transportation.
- Increase Portland's rental housing stock to maintain a reasonable balance between supply and demand yielding consumer choice, affordable rents, and reasonable return to landlords.
- Identify vacant land and redevelopment opportunities throughout the City to facilitate the construction of new housing.

This project provides higher density than what was previously found at this location in a form compatible with the existing Deering Center Neighborhood.

Portland Housing Goal: Maintain and enhance the livability of Portland's neighborhoods as the City grows and evolves through careful land use regulation, design and public participation that respects neighborhood integrity.

Policies

- While accommodating needed services and facilities, protect the stability of Portland residential neighborhoods from excessive encroachment by inappropriately scaled and obtrusive commercial, institutional, governmental, and other non-residential uses.
- Support Portland's livable neighborhoods by encouraging a mix of uses that provide goods and services needed and are within distance of most residents.
- Encourage innovative new housing development, which is designed to be compatible with the scale, character, and traditional development patterns of each individual residential neighborhood. Encourage new housing development in proximity to neighborhood assets such as open space, schools, community services and public transportation.
- Ensure the integrity and economic value of Portland's neighborhoods.
- Encourage Portland's neighborhoods to address the City's housing issues through the Neighborhood Based Planning Process.
- Encourage neighborhood populations that are economically, socially, culturally and ethnically diverse.

This project provides a mixture of uses at a scale determined to be line with surrounding developments. Design of this building has been carefully considered and based upon surrounding structures and a now destroyed nearby landmark, with a mixture of housing units to serve diverse needs. This development is easily accessed via public transit and is proximate to other neighborhood services, including Lincoln Middle School.

6. Financial Capability (Section 14-497 (a) 10)

The estimated cost of the development is \$1.046 Million. The applicant has submitted a letter from Androscoggin, dated December 12, 2016, as demonstration of their financial and technical capacity to complete the proposed development.

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- see Subdivision, Paragraph IX (B) (3), above.

b. Construction Management Plan

A construction management plan has been submitted by the applicant for review. All the construction is proposed within the limits of the property lines. Tom Errico has reviewed the plan and requests the following:

- *The applicant has submitted a Construction Management document. Given the presence of school children, I do not support the temporary closure of the sidewalk with a detour to the opposite side of the street. The applicant shall maintain a fully ADA compliant sidewalk facility along the project frontage. Additionally, the applicant shall maintain or provide a reasonable alternative to the existing Stevens Avenue Crossing.*
- **Updated Status (3/24/17):** *The construction management plan is not acceptable. A sidewalk detour to the opposite side of the street is not acceptable and the plan shall be revised to include a temporary sidewalk in Stevens Avenue ([Attachment 5](#)).*

The applicant has since responded to this comment and submitted a revised document currently under review. See [Attachment 1](#).

c. Sidewalks

The applicant is proposing to install new concrete sidewalks along their frontage as well as at the northeast and southeast corners of the Stevens Avenue and Hartley Street intersection, with an additional internal pervious paver walkway around the perimeter of the proposed building. Mr. Errico has reviewed the plans and recommends the following:

- *The proposed project is relocating the existing crosswalk across Stevens Avenue from the north side of Hartley Street to the south side. Please note the following:*
 - *The applicant will be responsible for the removal of existing pavement markings that meet City requirements.*
 - *Changes to signage (parking, warning, etc.) will be the responsibility of the applicant. It is suggested new pedestrian crossing warning signs be installed. Recommendations for no-street parking regulations should be provided.*
 - *A design detail for the proposed sidewalk ramp at the southeast corner of Hartley Street shall be provided. Specific details on slopes, width dimensions, and curb details shall be provided.*
 - *A detectable warning panel shall be installed at the northeast corner of Hartley Street. Details shall be provided for review.*
 - **Updated Status (3/24/17):** *The plans have been revised and I generally find conditions to be acceptable. The sidewalk ramp design detail at the southeast corner of Hartley Street is not acceptable given some slopes that appear to be non-compliant (exceed 2 percent maximum). I would suggest a condition of approval that requires the applicant to submit a revised detail for review and approval by the Planning Authority ([Attachment 5](#)).*

d. Public Transit Access

The public transit requirements do not apply to this project.

e. Parking

Section 14-332.1 (a) – For new residential developments, the parking requirement is two (2) spaces per dwelling unit. The applicant is proposing four one-bedroom and two three-bedroom units.

Section 14-332.1 (h) – For retail stores, one (1) parking space is required for each two-hundred (200) square feet of first floor area in excess of two-thousand (2,000) square feet. The applicant is proposing two thousand (1,906) square feet of retail.

The applicant is proposing a total of ten (10) on-site parking spaces, including one (1) space allocated for a car-share vehicle, and two (2) leased off-site parking spaces at 229 Pleasant Street in conformity with Section 14-331.1.

As noted above in the subdivision analysis, the circulation for the proposed two surface parking spaces on York Street will consist of vehicles pulling in out onto Stevens Avenue. The parking within the surface lot will have a twenty-one foot (21') aisle width that does not meet standard of twenty-four feet (24'), therefore, the applicant has requested a waiver. Mr. Errico supports this waiver given the minimal trip generation.

f. Bicycle Parking

The proposals include twelve bicycle parking spaces outside of the building, which does meet the ordinance standard of two bicycle parking spaces for every five dwelling units.

2. *Environmental Quality Standards*

a. Preservation of Significant Natural Features

There are no known significant natural features on the site.

b. Landscaping and Landscape Preservation

A landscaping plan was submitted as part of the application. The plan shows no street trees and very minimal landscaping along the development's frontage, in line with existing conditions along Stevens Avenue. The applicant is proposing 15 periwinkles and a sargent cherry within the proposed pocket park, set back roughly 4 feet from the property line at the southern property boundary.

In the original submittal, the applicant proposed landscaping along the periphery of the proposed pocket park, with ornamental grasses being proposed along the rear property line adjacent to Lincoln Middle School and within the parking area. This was done to preserve these locations for snow storage. These elements have since been revised to address initial comments made by Jeff Tarling, the City Arborist, seeking additional landscaping and buffering to meet city standards.

Jeff Tarling, the City Arborist, has reviewed the revised landscaping plan and has requested no further revisions.

c. Water Quality, Storm Water Management and Erosion Control

Prior to the demolition of the existing single family structure, just under 30% of the property is covered by impervious surfaces including a bituminous driveway. Currently the site has very little slope, with all grades being 119' feet, plus or minus one foot. The rest of the site was mature tree growth, vegetation, and exposed soil. The project will result in a net increase of impervious area above 1,000 sf, with proposed impervious surface being 7,970 sf, as such, this project is required to include stormwater management features for stormwater quality & quantity control.

The site will have two subsurface stormwater systems. The first will utilize crushed stone bed for stormwater storage and infiltration into the underlying soils for treatment. The second system will

treat the plaza area with pervious pavers.

The parking lot run off will be pretreated in a small grass bowl located between the proposed pocket park and parking lot. Overflows from the bowl will go to a catch basin with a 3' sump and then to the infiltration area. Overflow from this system is conveyed to the street storm drain system.

The second system is under the previous paver plaza area. The system treats the roof water from the building next door and the plaza area. It stores the stormwater in the stone bedding and infiltrates it. Overflow for the system goes to the street system.

Under Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. Lauren Swett, P.E. with Woodard and Curran Engineering offers the following review comments ([Attachment 4](#));

- *General Standard: The project will result in an increase in impervious surface, and stormwater treatment in conformance with the General Standard is required. The Applicant is proposing to utilize an underdrained infiltration system and pervious pavers to provide treatment. This method of treatment will be acceptable. We have reviewed the proposed design as well as the Maine DEP standards for infiltration systems and have the following comments:*
 - *Maine DEP typically requires 25 feet of separation of infiltration systems from property boundaries. Due to site constraints a waiver of this standard would be supported for the project.*
- *The stormwater system for the site is shown connecting to the combined sewer via an existing catch basin. This is not in conformance with the City of Portland standard, and approval from the City will be required. Public Works has indicated that this type of connection would now be allowed. The Applicant will need to address the connection requirements with the Water Resources Division of Public Works.*
- *It is noted that the stormwater system proposed on the site crosses property boundaries, and includes components on both properties utilizing the shared driveway. The responsibility for maintenance of this system should be clearly defined. The Applicant has acknowledged this, noting that there will be an easement for the access driveway and joint facilities of the two properties. Details of this easement, and information on maintenance agreements should be provided.*

3. *Public Infrastructure and Community Safety Standards*

a. Public Safety and Fire Prevention

Keith Gautreau, Assistant Fire Chief, has requested that the applicant provide an address for the property consistent with 911, tax assessor, Inspections Division and future mailing address. The applicant is working to comply ([Attachment 1](#)).

b. Availability and Adequate Capacity of Public Utilities

The project will be served by the Portland Water District, City Department of Public Works, and underground/power/cable/communications. The Applicant will need to contact the City Department of Public Works, and the other utilities and secure appropriate confirmation letters.

4. *Site Design Standards*

a. Snow and Ice Loading

The applicant has provided a detailed response for how snow and ice loading will be managed and have similarly indicated on-site snow storage areas on submitted plans.

b. View Corridors

This site is not within a Protected View Corridor as per the “View Corridor Protection Plan” approved by the Portland City Council in 2001.

c. Historic Resources

The site is not in any historic district.

d. Exterior Lighting

The applicant has submitted a lighting and photometric plan. All exterior site lighting including lighting of building entrances will be full cutoff with no light emitted above the horizontal plane. There shall be minimal light trespass of 0.1 foot-candles across the northerly property line along the shared driveway and the easterly property line where the development fronts Stevens Avenue. Staff has no objections. Illumination levels will be adequate but not excessive for the safety, comfort and convenience of occupants and user of the site and will conform to all applicable standards of Section 12 of the Technical Manual.

e. Noise and Vibration

All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will have to be shown on the plans and meet state and federal emissions requirements. These should be located to the interior of the site, away from abutting residential properties and be screened from view from any public street and from adjacent sites by structure walls, evergreen landscaping, fencing, masonry wall or a combination thereof.

f. Signage and Wayfinding

This standard does not apply to the proposal.

g. Zoning Related Design Standards

A design review according to the *City of Portland Design Manual* Standards was performed for the proposed new construction of a mixed-use commercial and residential development at 502 Stevens Avenue. The review was performed by Caitlin Cameron, Urban Designer, Deb Andrews, Historic Preservation Program Manager, and myself. The project was reviewed against the *B-1b Commercial Business Zones Standards (Section (d) of the Design Manual)*.

Findings of the Design Review:

The Planning Authority under an Alternative Design Review may approve a design not meeting one or more of the individual standards provided that all of the conditions listed below are met:

- A. The proposed design is consistent with all of the Principle Statements.
- B. The majority of the Standards within each Principle are met.
- C. The guiding principle for new construction under the alternative design review is to be compatible with the surrounding buildings in a two-block radius in terms of size, scale, materials, and siting, as well as the general character of the established neighborhood, thus Standards A-1 through A-3 shall be met.
- D. The design plan is prepared by an architect registered in the State of Maine.

The proposed design now passes all of the criteria. On February 23, 2017, city staff including Ms. Cameron met with the applicant and discussed outstanding comments, particularly the material being used for the ground floor façade and the balance of the east (front) façade. Ms. Cameron’s recommendations have since been incorporated into the applicant resubmittal, dated March 13, 2017, with no further revisions being requested by the Urban Designer (Attachment 7).

XII. 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 March 28, 2017 for application 2016-290 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 consulting transportation engineer's review (*Attachment 1*), that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard (*Section 1.14*) which requires that aisle width for right-angle parking be 24 feet per Figure I-27. The Planning Board [**waives/does not waive**] the Technical Manual standard (*Section 1.14*) to allow a 21 foot-wide aisle within the proposed surface parking lot;
2. The Planning Board [**finds/does not find**], based upon the consulting transportation engineer's review (*Attachment 1*), that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard (*Section 1.7.2.3*) which requires that a two-way driveway width be a minimum of 20 feet per Figure I-27. The Planning Board [**waives/does not waive**] the Technical Manual standard (*Section 1.7.2.3*) to allow an 18 foot-wide two-way driveway.
3. The Planning Board [**finds/does not find**], based upon the consulting stormwater engineer's review (*Attachment 1*), that extraordinary conditions exist or undue hardship may result from strict compliance with the Maine Stormwater Best Management Practices Manual, as referenced by Maine DEP Chapter 500, as referenced by Section 5 of the Technical, which requires that a 25-foot separation be provided between a subsurface stormwater infiltration system and an adjacent property boundary. The Planning Board [**waives/does not waive**] the Technical Manual standard (*Section 5*) to allow a reduction of the minimum separation requirement for a stormwater infiltration system.

B. SUBDIVISION

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 March 28, 2017 for application 2016-290 relevant to the subdivision regulations; and the testimony presented at the planning board hearing, the Planning Board finds that the plan [is/is not] in conformance with the subdivision standards of the land use code, subject to the following conditions of approval, which must be met prior to the signing of the plat:

1. Requiring that the revised recording plat be submitted for review and approval by the Planning Authority, Department of Public Works and Associate Corporation Counsel.
2. The applicant shall provide finalized easements for shared site access for review and approval by Planning Authority, Department of Public Works and Associate Corporation Counsel.

C. DEVELOPMENT 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 March 28, 2017 for application 2016-290 relevant to the site plan 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, subject to the following conditions of approval that must be met prior to the issuance of a building permit, unless otherwise stated:

1. The applicant shall provide a revised construction management plan, including the details regarding safe pedestrian access along the west side of Stevens Avenue adjacent to the proposed development as requested by the city's consulting traffic engineer;
2. The applicant shall provide either a monetary contribution to the City's Tree fund in an amount determined by the City Arborist or shall be responsible for the planting of required trees at a nearby location in order to meet the City's Street Tree standards.
3. The applicant shall provide a maintenance agreement for the stormwater drainage system, shall be submitted, signed and recorded prior to the issuance of a building permit with a copy to the Department of Public Works.
4. The sidewalk ramp design detail at the southeast corner of Hartley Street shall be revised to be in compliance with City Standards (less than 2 percent slope). The revised detail shall be submitted for review and approval by the Planning Authority.
5. The applicant shall provide a revised stormwater plan to address the stormwater engineer's Comment 2 from the review memo dated March 23, 2017 (Attachment 3). This plan shall be reviewed and approved by the Planning Authority and the Department of Public Works prior to the issuance of a building permit.
6. The applicant shall provide an approval letter from the Department of Public Works in regards to their wastewater capacity application prior to the issuance of a building permit.

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Development Review Comments (1.31.2017)
2. Design Review Memo (2.10.2017)
3. Development Review Comments (3.6.2017)
4. Woodard and Curran Review Memo (3.23.2017)
5. Ty Lin Email (3.24.2017)
6. Design Review Memo (3.24.2017)
7. Public Comments
 - PC1 Nancy Polito
 - PC 2 Margot Fine
 - PC 3 Eve Sawyer
 - PC 4 Barbara Hager
 - PC 5 Bobbi Cope and John Thibodeau
 - PC 6 Jennifer Frick
 - PC 7 Ethan Croce
 - PC 8 Brian Daly
 - PC 9 Jennifer Frick

APPLICANT'S SUBMITTALS

- A. Preliminary Site Plan Application
- B. Application Fees
- C. Written Description
- D. Evidence of Right, Title, and Interest
- E. Zoning Analysis
- F. Easements
- G. Requested Waivers
- H. Financial and Technical Capacity
- I. Construction Management Plan
- J. Comprehensive Plan Compatibility
- K. Utility Capacity Letter
- L. Solid Waste Description

- M. City of Portland Wastewater Application
- N. Water District Capacity Letter
- O. Fire Department Technical Standards
- P. Design Review Analysis
- Q. HVAC Information Sheet
- R. Erosion Control Analysis
- S. Traffic Analysis
- T. Neighborhood Meeting Certification and Minutes
- U. Geotechnical Report
- V. Applicant Response to Staff Comments (2.7.2017)
- W. Applicant Response to Staff Comments (2.7.2017)
- X. Applicant Response to Staff Comments (2.7.2017)
- Y. Applicant Response to Staff Comments (3.14.2017)

PLANS

- Plan 1. Cover Sheet
- Plan 2. Lower Level Plan with Site Plan
- Plan 3. 1st Floor Plan with Site Plan
- Plan 4. 2nd and 3rd Floor Plan with Site Plan
- Plan 5. Building Elevation Front (east) with Building Sections
- Plan 6. Building Elevation Front (east)
- Plan 7. Building Elevation Side (south)
- Plan 8. Building Elevation Side (north)
- Plan 9. Building Elevation Rear (west)
- Plan 10. Carport and Bicycle Shelter Details
- Plan 11. Keyed Notes, Features and Descriptions
- Plan 12. Site Survey
- Plan 13. Site Demolition and Site Preparation Plan
- Plan 14. Site Plan
- Plan 15. Subdivision Plan
- Plan 16. Grading and Stormwater Plan
- Plan 17. Utilities Plan
- Plan 18. Civil Details 1
- Plan 19. Civil Details 2
- Plan 20. Site Details 1
- Plan 21. Site Details 2
- Plan 22. Erosion Control Plan
- Plan 23. Drainage Analysis Plan 1
- Plan 24. Drainage Analysis Plan 2
- Plan 25. Landscape and Lighting Plan
- Plan 26. Landscape Details
- Plan 27. Photometric Plan



MEMORANDUM

PLANNING AND URBAN DEVELOPMENT DEPARTMENT

PLANNING DIVISION

To: Sean Dundon, Chair, and Members of the Portland Planning Board
From: Nell Donaldson, Senior Planner
Date: February 9, 2018
Re: 56 Parris Street, Parris Terraces
Project #: 2017-287 CBL: 33-A-13
Meeting Date: February 13, 2018

I. INTRODUCTION

Horton LLC appears before the Planning Board for a public workshop associated with the site plan, subdivision, and inclusionary zoning conditional use review of a proposed 23-unit condominium project at 56 Parris Street in Bayside. Notice of this hearing appeared in the *Portland Press Herald* on February 5 and 6, 2018. Notices were sent to 106 property owners within 500 feet and to the interested citizens list.

Applicant: Jack Soley, Horton LLC

Consultants: Kaplan Thompson Architects, Ransom Consulting, Titcomb Associates

II. REQUIRED REVIEWS

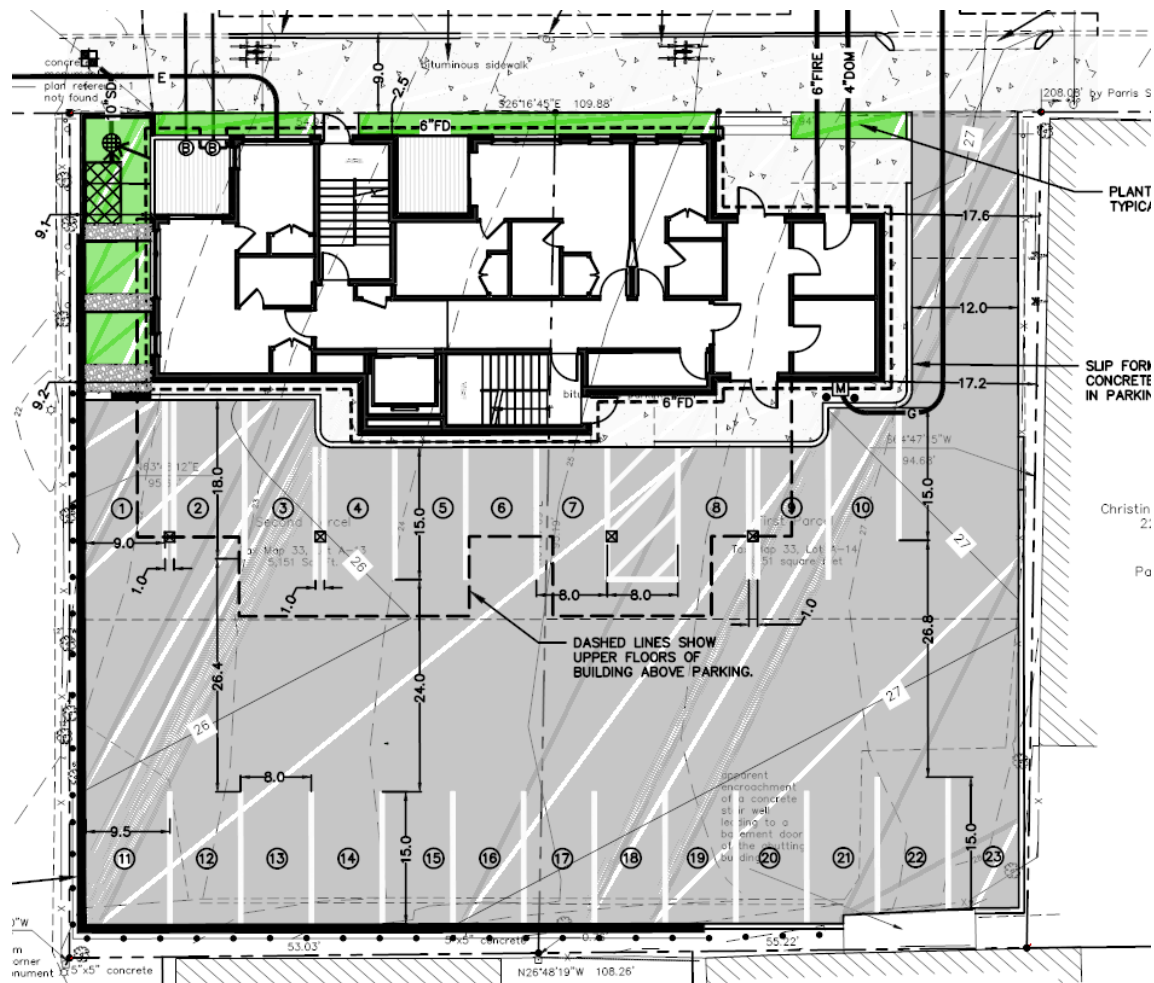
<i>Waiver Requests</i>	<i>Applicable Standards</i>
<i>Driveway Separation</i> – to allow a curb cut approximately 40' from the adjacent property's	Technical Manual, <i>Section 1.7.2.7</i> . Along arterial, collector, and local streets, minimum acceptable spacing shall be 100-150 feet, depending on speed limit.
<i>Driveway Width</i> – to allow a driveway less than 20' in width	Technical Manual, <i>Section 1.7.2.3</i> . Two-way driveways for multi-family developments with over 10 parking spaces shall be a minimum of 20 feet in width, with a preferred width of 24 feet.
<i>Compact Parking Spaces</i> – to allow compact parking spaces at a ratio of greater than 20%	Technical Manual, <i>Section 1.14</i> . In parking areas of over 10 parking spaces, no more than 20% of parking spaces shall be compact in size.

<i>Review</i>	<i>Applicable Statute</i>
Subdivision	<i>Section 14-497</i>
Site Plan	<i>Section 14-526</i>
IZ Conditional Use	<i>Section 14-487</i>

III. PROJECT DATA

Existing Zoning	B-2b
Existing Use	Surface Parking
Proposed Use	Multi-Family Residential
Proposed Development Program	23-Unit Condominium
Parcel Size	10,302 SF

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	0 SF	2,216 SF	2,216 SF
Building Floor Area	0 SF	14,132 SF	14,132 SF
Impervious Surface Area	9,103 SF	9,103 SF	0 SF
Parking Spaces	Approximately 32	23	-9
Bicycle Parking Spaces	0	23	23
Estimated Cost of Project	\$1.78 million		



Figures 1, 2,
and 3 (from
top left): 56
Parris
zoning
context; 56
Parris site;
preliminary
site plan

IV. CONTEXT

56 Parris Street is located in West Bayside, between Cumberland Avenue and Kennebec Street. The property is one of several the city is in the process of selling as a part of the plan to relocate the Department of Public Works from Bayside to Canco Road. The site is zoned B-2b and is currently used as a surface parking lot. Residential properties surround the site to the west and south, Fork Food Lab lies to the immediate north. The city's DPW garage facilities lie to the east across Parris Street. These properties are slated for future redevelopment.

V. PROPOSED DEVELOPMENT

The proposed residential condominium development at 56 Parris Street, to be called Parris Terraces, includes 23 one-bedroom units, 20 of which are to be sold to households below 120% of AMI. The project also includes 23 parking spaces, a rain garden and stormwater treatment, and a new concrete sidewalk on Parris Street.

VI. PUBLIC COMMENT

The Planning Division has received no public comments on the Parris Terraces application. A neighborhood meeting is currently being scheduled.

VII. RIGHT, TITLE, & INTEREST

The application includes a purchase and sales agreement as evidence of right, title, and interest (*Attachment C*).

VIII. FINANCIAL & TECHNICAL CAPACITY

The estimated cost of the project is approximately \$1.8 million. The applicant has provided a letter from Norway Savings Bank attesting to their financial capacity (*Attachment D*).

IX. ZONING ANALYSIS

Staff has conducted a zoning analysis with respect to the B-2b zone. Staff has requested that, in their final submittal, the applicant confirm that they meet maximum height requirements.

X. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)

Per the city's land use ordinance, the following materials should be submitted at time of final review:

- A subdivision plat meeting all plat requirements as noted in 14-496; and
- Final site plan submittal requirements as noted in 14-527(e) and (f), including a construction management plan.

XI. SUBDIVISION REVIEW (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.

1. Water, Air Pollution

The site is currently occupied by a surface parking lot and is almost entirely impervious. The majority of the post-development impervious surface is comprised of roof, which is expected to improve the quality of the water leaving the site. No detrimental water or air quality impacts are anticipated.

2 & 3. Adequacy of Water Supply

The applicant will be required to provide evidence of capacity from the Portland Water District at final plan review.

4. Soil Erosion

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated.

5. Impacts on Existing or Proposed Highways and Public Roads

The city's consulting traffic engineer has reviewed the project and has noted that he does not anticipate significant traffic generation from the project, nor significant impacts to adjacent streets.

6. Sanitary Sewer/Stormwater Disposal

All sewer connections are proposed to the combined system in Parris Street. The applicant has submitted a wastewater capacity application to the Department of Public Services (*Attachment L*). Verification of capacity will be required at the time of final plan.

As proposed, surface runoff from the site would generally flow to a rain garden system at the site's northeast corner, where a Focal Point biofiltration system is proposed, and from there to a storm drain connection to Parris Street. Foundation drains would outlet directly to Parris Street. The city's consulting civil engineer, Lauren Swett, has requested a stormwater management plan in the final submittal.

7. Solid Waste

The applicant has proposed a trash and recycling room at the southern end of the building proximate to the driveway. Staff has requested that the applicant provide additional information on the handling of trash and recycling within the final plan submittal.

8. Scenic Beauty

This proposal is not deemed to have an adverse impact on the scenic beauty of the area.

9. Comprehensive Plan

The Parris Terraces project addresses several of Portland's Plan's housing goals, including increasing the overall housing supply available to residents of all financial capabilities and encouraging housing density proximate to nodes and services.

10. Financial and Technical Capacity

The applicant has submitted a letter from Norway Savings Bank indicating the intent to consider project financing (*Attachment D*).

11. Wetland/Water Body Impacts

There are no anticipated impacts to wetlands.

12. Groundwater Impacts

There are no anticipated impacts to groundwater supplies.

13. Flood-Prone Area

The site does not lie within a flood zone.

XII. SITE PLAN REVIEW (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's site plan ordinance. Staff comments are below.

1. Transportation Standards**a. Impact on Surrounding Street Systems**

Tom Errico, the city's consulting engineer, has completed a preliminary review and has not identified any potential detrimental impact to surrounding street systems. He writes,

The project is not expected to generate a significant amount of traffic and thus is not expected to significantly impact traffic mobility and safety in the project area.

b. Access and Circulation

The applicant has proposed one 12' driveway at the southern end of the site as means of vehicular access to the parking area at the site's rear. Staff has consulted with the applicant on the width of this driveway, noting that it is insufficient to meet fire access standards, and the applicant is currently working on plans to expand the width of the driveway. Mr. Errico has reviewed the vehicular access and writes,

It is my understanding that the driveway is being widened to 16-feet per Fire Department comments. I will review the revised plan when provided. In general, I support a waiver from City standards given, low trip generation to and from the site and low traffic volumes on Parris Street.

A new 8.5 foot concrete sidewalk is proposed along Parris Street. Staff has requested that the applicant confirm the extent of sidewalk reconstruction in the final plans, and that the applicant show clearances around bike racks to ensure sufficient sidewalk width in these areas. Staff has also requested that the final submittal document accessible routes to the building's main entrance.

c. Public Transit Access

There is no public transit line on Parris Street. As such, no provisions for public transit access are required.

d. Parking

The preliminary plans show 23 parking spaces at the rear of the site to serve the building's 23 units. Per Division 20 of the city's land use code, parking is required on the site at a ratio of 1/unit, although the code includes provisions to allow lesser parking supply, including the option to substitute shared use vehicles and to submit a parking analysis documenting that unique conditions exist that might result in lesser parking demand.

The preliminary plans show that a significant number of the 23 spaces are designed as compact spaces. Staff has requested that in the final submittal, the applicant document the number of compact and standard parking spaces with dimensioned drawings. On this point, Mr. Errico writes,

The project is proposing a significant number of compact parking spaces and thus does not comply with City standards. I will be conducting informal observations at existing similar sites to assess likely vehicle size characteristics. I will also provide comments regarding on-site vehicle circulation at that time.

e. Transportation Demand Management

The project is not required to submit a Transportation Demand Management Plan.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

There are no known significant natural features on the site.

b. Landscaping and Landscape Preservation

The applicant has submitted a conceptual landscape plan with the preliminary submittal. The plan includes ornamental grasses at the sidewalk, a rain garden at the northeast corner of the site, and a fence with vines around the northern, western, and southern property lines. Jeff Tarling, the City Arborist, has reviewed the plan and writes,

The proposed 56 Paris Street project appears to use 98% of their lot building with a small percentage for dedicated tree and landscape. This is one of the very few residential projects we have seen with zero trees, perhaps additional trees could be planted nearby with the contribution to the Tree Fund.

Given the building mass stays the same we would ask if additional landscape elements could be introduced to add some variety. This would include taking a second look at the proposed 'planters with grasses' to see if any woody plants (shrubs) could be introduced. The same for the rain garden area, these are places where some additional tree or landscaping could be shown.

Overall we would ask for more details on the landscape and trees, it is disappointing to think of new residential construction with minimal thought of greening as an important element of design. The rain garden / snow storage has some potential in this regard. It would be good to have an actual plant list with the final plan stating the type and size of the landscape plant stock. Good to have additional information on the proposed fence with vines types as well.

Staff has also requested that the applicant address the street tree requirement in the final submittal.

c. *Water Quality/Storm Water Management/Erosion Control*

The site is currently mostly impervious, and the impervious area is not proposed to change as a product of the development. As noted above, the applicant has proposed to install a rain garden with a storage and Focal Point biofiltration system as a means of controlling and treating stormwater leaving the site. This system is proposed to outlet to the combined system in Parris Street. The applicant has not provided a stormwater management plan in the preliminary submittal. Lauren Swett, the city's consulting civil engineer, has reviewed the plans and writes,

In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments

Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.

General Standard: A stormwater management report has not been submitted, but it appears that the project will not result in an increase in new impervious area. The amount of redeveloped, non-roof impervious surface should be quantified. The Applicant is proposing to provide treatment using a FocalPoint system. Calculations and details should be provided for this system.

Flooding Standard: A stormwater management report has not been submitted, but it appears that the project will not result in an increase in new impervious area and will not be required to comply with the Flooding Standard.

A retaining wall is proposed around a portion of the site. No details have been provided. Please note that a geotechnical evaluation of soil types and soil bearing capacities is required for retaining walls over three feet in height.

No stormdrain infrastructure is proposed within the parking lot. Additional spot grades should be provided to further show drainage intent.

The plans should note a location for snow storage or a snow removal plan should be described. The snow storage location should be sited outside of existing and proposed drainage courses.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

The project is generally deemed consistent with related master plans.

b. Public Safety and Fire Prevention

Robert Thompson, of the city's Fire Prevention Bureau, has reviewed the plans and has raised concerns regarding the width of the proposed driveway. He writes,

Access to the rear of the building must be a minimum of 16'.

As noted above, the applicant is in the process of modifying plans to address this comment.

c. Availability and Capacity of Public Utilities

The applicant has proposed all utilities from Parris Street, including underground electric from a pole on the west side of Parris Street just north of the site, fire and domestic water, and gas from Parris Street. Evidence of sewer capacity will be required at final review.

4. Site Design Standards

a. Massing, Ventilation, and Wind Impact

The bulk, location, or height of the proposed buildings are not likely to result in health or safety problems from a reduction in ventilation to abutting structures.

b. Shadows

The project is not anticipated to result in shadows on publicly accessible open space.

c. Snow and Ice Loading

The project is not anticipated to result in snow or ice accumulation on public ways or adjacent properties.

d. View Corridors

The project does not abut a protected view corridor.

e. Historic Resources

The site does not lie adjacent to or within 100 feet of a historic landmark, district, or landscape.

f. Exterior Lighting

Staff has requested that the applicant provide an exterior lighting plan with the final submittal. Staff has also requested that the final plan include street lights as specified in the *Technical Manual*, noting that the lighting standards of the *Technical Manual* are currently under review. Depending on the timing of *Technical Manual* revisions, final street lighting specifications may need to be addressed as a condition of site plan approval.

g. Noise and Vibration

Staff has requested that the applicant show the location of HVAC and mechanical equipment in the final plans.

h. Signage and Wayfinding

No new signage or wayfinding is proposed.

i. Zoning-Related Design Standards

The preliminary elevations show a contemporary four-story building, located at the street with a clear building entry and use of balconies and windows to provide visual interest and relief. The preliminary elevations indicate fiber cement panel and wood grain panel at the balconies.

The project is subject to the B-2b and multi-family standards of the city's *Design Manual*. Caitlin Cameron, the city's Urban Designer, has reviewed the elevations and writes,

Please provide a rendering showing project in context.

More information is requested regarding material scale and placement.



Figure 4: East elevation

B-2b Commercial Business Zone Design Standards

Standard (1) c. Building Entrances – Main building entrance faces and is directly accessible from the street. Will the second door be egress only or will people be able to enter through that stair? If so, a small canopy or sidelight may be

warranted but should not compete with the primary entrance. For legibility, staff prefer the bike room door be relocated to the side of the building.

Standard (1) d. Windows – Windows are provided along street frontage as required. VT of .7 or greater is required. Window height is raised due to private nature of program.

Standard (1) g. Building Materials – Primary material is fiber cement panel. More information is requested regarding material scale and placement. See below for further comments.

Two-Family, . . . Multiple-Family Design Standards

Standard (1) . Exterior Design – Context currently does not include multi-family buildings of this scale. The project successfully incorporates industrial and residential references. This context is 2 appropriate for more contemporary design and more flexibility of forms, scale, and patterns. The project includes interesting forms and massing as well as articulation elements such as balconies to provide a visually interesting, contemporary design. Staff observe that though building type, scale, and placement vary throughout the neighborhood, there is a consistent use of material, trim, roof overhangs, and other articulation elements to add texture, fine-grain scale, and visual interest to the buildings, even if in a vernacular way. Staff request to better meet the standard, some fine-grain elements be introduced whether it is through the balcony railing, material scale and detailing, or trim/edge details. The proposed color gradient is not determined successful in achieving this effect.

The applicant is in the process of modifying the design to address these comments.

XIII. WORKFORCE HOUSING CONDITIONAL USE (Section 14-487)

The Parris Terraces project is subject to the city's inclusionary zoning ordinance, which requires that residential developments of ten or more units be reviewed as conditional uses subject to 14-487, and that these projects provide on-site workforce housing units or make an in-lieu payment to the City's Housing Trust Fund. As proposed, 20 of the project's 23 one-bedroom units would be affordable at 120% of AMI. Per the inclusionary zoning ordinance, two of these will be required to include deed restrictions. Victoria Volent, the city's Housing Program Manager, has reviewed the conditional use application and writes,

The development located at 60 Parris Street proposes the creation of 23 dwelling units of owner occupied housing consisting of twenty (23) one-bedroom units. As dwelling units for sale, the designated Workforce Units will be restricted to households earning up to 120% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of two (2) workforce units consisting of one (1) bedroom in each unit. The Applicant has elected to provide two (2) workforce units, on-site, consisting of two (2) one-bedroom units to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the City enter into an Affordable Housing Agreement (AHA) before a Building Permit may be issued. The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the workforce units and will be filed as covenant to the 60 Parris Street property's deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued.

XIV. NEXT STEPS

1. Applicant to address staff comments and additional comments of the Planning Board;
2. Applicant to prepare final plan submission, including site plan submittal requirements as included in 14-527(e) and (f) for review by the Planning Authority and Planning Board; and
3. Hold final Planning Board Hearing.

XV. ATTACHMENTS**PLANNING BOARD REPORT ATTACHMENTS**

1. Traffic Engineer review (memo from Thomas Errico, 1/17/18)
2. City Arborist review (memo from Jeff Tarling, 1/30/18)
3. Civil Engineer review (memo from Lauren Swett, 1/18/18)
4. Fire Prevention Bureau review (memo from Mike Thompson, 2/1/18)
5. Urban Designer review (memo from Caitlin Cameron, 1/12/18)
6. Housing Program Manager review (memo from Victoria Volent, 1/18/18)
7. Planning review

APPLICANT'S SUBMITTALS

- A. Level III Site Plan Application
- B. Project Summary
- C. Evidence of Right, Title, and Interest
- D. Financial Capacity Letter
- E. Wastewater Capacity Application

PLANS

- Plan 1 Boundary Survey
- Plan 2 Cover Sheet
- Plan 3 Site Plan
- Plan 4 Grading, Stormwater, & Drainage Plan
- Plan 5 Utility Plan
- Plan 6 Landscape Plan
- Plan 7 Code Summary
- Plan 8 Basement Plan
- Plan 9 Ground Floor Plan
- Plan 10 Upper Level Floor Plan
- Plan 11 East Elevation
- Plan 12 North & South Elevations
- Plan 13 West Elevation



Helen Donaldson <hcd@portlandmaine.gov>

56 Parris Street - Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com>

Wed, Jan 17, 2018 at 3:55 PM

To: Helen Donaldson <HCD@portlandmaine.gov>

Cc: Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>

Hi Nell – I have reviewed the plans and offer the following preliminary comments.

- The project is not expected to generate a significant amount of traffic and thus is not expected to significantly impact traffic mobility and safety in the project area.
- It is my understanding that the driveway is being widened to 16-feet per Fire Department comments. I will review the revised plan when provided. In general, I support a waiver from City standards given, low trip generation to and from the site and low traffic volumes on Parris Street.
- The project is proposing a significant number of compact parking spaces and thus does not comply with City standards. I will be conducting informal observations at existing similar sites to assess likely vehicle size characteristics. I will also provide comments regarding on-site vehicle circulation at that time.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director

TYLIN INTERNATIONAL

12 Northbrook Drive

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Visit us online at www.tylin.com

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"One Vision, One Company"



Helen Donaldson <hcd@portlandmaine.gov>

comments on 56 Parris, Parris Terraces (2017-287)

Jeff Tarling <jst@portlandmaine.gov>

Tue, Jan 30, 2018 at 3:20 PM

To: Helen Donaldson <hcd@portlandmaine.gov>

Hi Nell -

The proposed 56 Paris Street project appears to use 98% of their lot building with a small percentage for dedicated tree and landscape. This is one of the very few residential projects we have seen with zero trees, perhaps additional trees could be planted nearby with the contribution to the Tree Fund.

Given the building mass stays the same we would ask if additional landscape elements could be introduced to add some variety. This would include taking a second look at the proposed 'planters with grasses' to see if any woody plants (shrubs) could be introduced. The same for the rain garden area, these are places where some additional tree or landscaping could be shown.

Overall we would ask for more details on the landscape and trees, it is disappointing to think of new residential construction with minimal thought of greening as an important element of design. The rain garden / snow storage has some potential in this regard. It would be good to have an actual plant list with the final plan stating the type and size of the landscape plant stock. Good to have additional information on the proposed fence with vines types as well.

Thanks,

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
212 Canco Road
Portland, ME. 04103
(207) 808-5446
jst@portlandmaine.gov

[Quoted text hidden]

MEMORANDUM



TO: Nell Donaldson, Planner
FROM: Lauren Swett, P.E. & Amy LeBel, E.I.T.
DATE: January 18, 2018
RE: 56-60 Parris Street Condominiums, Level III Preliminary

Woodard & Curran has reviewed the Level III Preliminary Site Plan Application for the proposed residential development, *Parris Terraces*, located at 56-60 Parris Street in Portland, Maine. The project involves construction of 23 unit condominium and associated site improvements.

Documents Reviewed by Woodard & Curran

- Level III Preliminary Site Plan Application and attachments, dated December 6, 2017, prepared by Shinberg Consulting, LLC, on behalf of Horton, LLC.
- Engineering Plans, Sheets C1-C3, dated December 13, 2017, prepared by Ransom Consulting, Inc., on behalf of Horton, LLC.

Comments

- 1) The application is preliminary. As such, additional documents must be submitted for the final application, including letters from utilities confirming ability to serve the proposed development, a stormwater management plan, a Construction Management Plan, erosion and sedimentation control information, and engineering details. Woodard & Curran will perform a review of the Final Application upon receipt of those documents.
- 2) In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments
 - a) Basic Standard: Plans, notes, and details should be provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in accordance with Appendix A, B, & C of MaineDEP Chapter 500.
 - b) General Standard: A stormwater management report has not been submitted, but it appears that the project will not result in an increase in new impervious area. The amount of redeveloped, non-roof impervious surface should be quantified. The Applicant is proposing to provide treatment using a FocalPoint system. Calculations and details should be provided for this system.
 - c) Flooding Standard: A stormwater management report has not been submitted, but it appears that the project will not result in an increase in new impervious area and will not be required to comply with the Flooding Standard.
- 3) A retaining wall is proposed around a portion of the site. No details have been provided. Please note that a geotechnical evaluation of soil types and soil bearing capacities is required for retaining walls over three feet in height.
- 4) No stormdrain infrastructure is proposed within the parking lot. Additional spot grades should be provided to further show drainage intent.
- 5) The plans should note a location for snow storage or a snow removal plan should be described. The snow storage location should be sited outside of existing and proposed drainage courses.

MEMORANDUM

To: FILE
From: Nell Donaldson
Subject: Application ID: 2017-287
Date: 2/1/2018

1/17/2018

Access to the rear of the building must be a minimum of 16'.

1/17/2018

Adequate fire hydrants are in the area for this project.

1/17/2018

The main entrance of the building must be the address for the property. This should be consistent with 911, tax assessor, Inspections Division, and future mailing address.

Planning and Urban Development Department

Planning Division



Subject: B-2b Design Review – 56 Parris Street

Written by: Caitlin Cameron, Urban Designer

Date of Review : Friday, January 12 2018

The project at 56 Parris Street was reviewed according to the *City of Portland Design Manual* standards by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Nell Donaldson, Senior Planner, against the *B2b Commercial Business Zones Standards* (Section (d) of the Design Manual) and *Multiple-Family Standards*.

Design Review Comments: *(questions and unmet standards in red)*

- Please provide a **rendering** showing project in context.
- **More information** is requested regarding material scale and placement.

(d) B-2b Commercial Business Zones

Standard (1) a. Urban Street Wall – Building placement is near the property line with a setback to accommodate landscape buffer, stoops, and some privacy.

Standard (1) b. Mixed Uses – Not applicable

Standard (1) c. Building Entrances – Main building entrance faces and is directly accessible from the street. **Will the second door be egress only or will people be able to enter through that stair? If so, a small canopy or sidelight may be warranted but should not compete with the primary entrance. For legibility, staff prefer the bike room door be relocated to the side of the building.**

Standard (1) d. Windows – Windows are provided along street frontage as required. **VT of .7 or greater is required.** Window height is raised due to private nature of program.

Standard (1) e. Façade Character – Building is private residences with no commercial/public program but front door/lobby oriented to the street and includes some transparency.

Standard (1) f. Building Design – See multi-family comments below.

Standard (1) g. Building Materials – Primary material is fiber cement panel. **More information is requested regarding material scale and placement. See below for further comments.**

Standard (1) h. Building Scale – Not applicable

Standard (1) i. Landscaping and Buffers – Parking is to the rear of the property and is screened from view by the building (except for parking space 1).

(i) Two-Family, . . . Multiple-Family . . . :

Standard (1) . Exterior Design – Context currently does not include multi-family buildings of this scale. The project successfully incorporates industrial and residential references. This context is

appropriate for more contemporary design and more flexibility of forms, scale, and patterns. The project includes interesting forms and massing as well as articulation elements such as balconies to provide a visually interesting, contemporary design. Staff observe that though building type, scale, and placement vary throughout the neighborhood, there is a consistent use of material, trim, roof overhangs, and other articulation elements to add texture, **fine-grain scale, and visual interest** to the buildings, even if in a vernacular way. **Staff request to better meet the standard, some fine-grain elements be introduced whether it is through the balcony railing, material scale and detailing, or trim/edge details. The proposed color gradient is not determined successful in achieving this effect.**

Standard (2). Relationship to Street – Existing neighborhood is a mix of small-scale residential and industrial building types. In addition, there are many undeveloped lots. There is not, therefore, a consistent street wall or building relationship to the street. That being said, the building placement of the proposal is consistent with the residential buildings adjacent – close to the street with a small setback buffer. Building is oriented to the street as desired by the B-2b standards.

Standard (3). Open Space – Open spaces provided through balconies.

Standard (4). Light and Air – All units provided with ample windows and some storage space.

Standard (5). Parking – Parking is to the rear of the property behind the building.

Standard (6). Not applicable

To: Helen Donaldson, Planner, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: January 18, 2018

Subject: 60 Parris Street – Inclusionary Zoning Conditional Use

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Division 30, Section 14-487, Ensuring Workforce Housing, requires at least ten percent (10%) of the dwelling units in the development shall meet the definition of Workforce Housing units for sale or for rent. The ordinance under Section 14-487 e 3 also requires the number of bedrooms in the Workforce units shall be at least 10% of the total number of bedrooms made available as part of the development.

The development located at 60 Parris Street proposes the creation of 23 dwelling units of owner occupied housing consisting of twenty (23) one-bedroom units. As dwelling units for sale, the designated Workforce Units will be restricted to households earning up to 120% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of two (2) workforce units consisting of one (1) bedroom in each unit. The Applicant has elected to provide two (2) workforce units, on-site, consisting of two (2) one-bedroom units to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant and the City enter into an Affordable Housing Agreement (AHA) before a Building Permit may be issued.

The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the workforce units and will be filed as covenant to the 60 Parris Street property's deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued.

Sincerely,

Victoria Volent
Housing Program Manager

LEVEL II/III SITE PLAN REVIEW (14-526): Parris Terraces, 56 Parris St. (23 1 br condos – 20 affordable)
B-2b

		PRELIMINARY Review	FINAL Review
Transportation	a. Impact on Surrounding Street Systems	See comments from Traffic Engineer	
	b. Access and Circulation	- Need 16’ for vehicles at driveway (20’ minimum for two-way per TM) - Look at spacing (35’ from adjacent). Need waiver request - Show extent of SW rehab on plans - Document accessible route to front door	
	c. Public Transit Access		
	d. Parking	23 spaces, 3(?) standard, rest compact. Request waiver for number of compact spaces (up to 20% permitted per TM) - Show clearance around bike racks in sidewalk. This placement may not work. - Show snow storage areas on plan.	
	e. Transportation Demand Management (TDM)	N/A	
Environmental Quality	a. Preservation of Significant Natural Features	N/A	
	b. Landscaping and Landscape Preservation	- LS plan should identify plant types - Living fence around three sides of property? Update civil set to match LS plan. - Could living fence be used to screen northernmost parking spaces at rear, which will be visible from ROW? - Show street trees and need waiver request	
	c. Water Quality, Storm Water Management and Erosion Control	- See comments from Civil Engineer - Provide narrative re contamination?	
Public Infrastructure and Community Safety	a. Consistency with Master Plans	OK	
	b. Public Safety and Fire Prevention	Widen driveway to at least 16’	
	c. Availability and Adequate Capacity of Public Utilities	- See comments from DPW (forthcoming) - Need capacity letters	
Site Design	a. Massing, Ventilation and Wind Impact	Show location of HVAC vents on architectural plans.	
	b. Shadows		
	c. Snow and Ice Loading		
	d. View Corridors		
	e. Historic Resources		
	f. Exterior Lighting	- Need exterior lighting plan - Per TM, Bayside street lights are required. There is some discussion re changing the spec on the Bayside lights. This may need to be addressed as a condition of approval.	
	g. Noise and Vibration		
	h. Signage and Wayfinding		
	i. Zoning Related Design Standards	See comments from Urban Designer	

SUBDIVISION REVIEW (14-497)

	Preliminary Review	2nd Review	3 rd Review
1. Water/Air Pollution	OK		
2. & 3. Water Supply	OK		

4. Erosion	OK		
5. Transportation Impacts			
6. Sanitary Sewer/Stormwater			
7. Solid Waste	Need plan		
8. Scenic Beauty	N/A		
9. Comprehensive Plan	OK		
10. Financial and Technical Capacity	OK		
11. Wetland Impacts	N/A		
12. Groundwater Impacts	N/A		
13. Flood-Prone Area?			

Additional Submittals Required

Subdivision plat
Construction management plan

Zoning

Show height calculations and zoning compliance narrative (height max = 45')

Easements



Level III – Preliminary and Final Site Plans Development Review Application Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), Design Manual and Technical Manual.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

60 PARRIS STREET CONDOMINIUMS

12/5/2017

I. Project Information (Please enter n/a on those fields that are not applicable)

Project Name:	Parris Terraces
Proposed Development Address:	60 Parris Street
Project Description:	23 Unit Condominiums with 23
Chart/Block/Lot:	
Preliminary Plan	December 6, 2017
Final Plan	

II. Contact Information (Please enter n/a on those fields that are not applicable)

APPLICANT

Name:	Jack Soley
Business Name:	Horton, LLC
Address:	PO Box 411, 100 Commercial Street, Suite 306
City/State:	Portland, Maine
Zip Code:	04101
Work #:	207 775 2252
Home #:	
Cell #:	207 808 4714
Fax #:	
E-mail:	jsoley@eastbrowncow.com

OWNER

Name:	Horton, LLC
Address:	PO Box 411, 100 Commercial Street, Suite 306
City/State:	Portland, ME
Zip Code:	04101
Work #:	207 775 2252
Home #:	
Cell #:	207 808 4714
Fax #:	
E-mail:	jsoley@esatbrowncow.com

AGENT/REPRESENTATIVE

Name:	Greg Shinberg
Address:	477 Congress St, Suite 1012
City/State:	Portland, ME
Zip Code:	04101
Work #:	207 772 7070
Home #:	
Cell #:	207 653 7510
Fax #:	207 772 7080
E-mail:	gls@shinbergconsulting.com

BILLING (to whom invoices will be forwarded to)

Name:	Jack Soley, Horton, LLC
Address:	PO Box 411, Suite 306
City/State:	Portland, ME
Zip Code:	04101
Work #:	207 775 2252
Home #:	
Cell #:	207 808 4714
Fax #:	
E-mail:	jsoley@eastbrowncow.com

ENGINEER

Name:	Ransom Consulting
Address:	100 Commercial Street, Suite 404
City/State:	Portland, ME
Zip Code:	04101
Work #:	207 772 2891
Home #:	
Cell #:	
Fax #:	
E-mail:	john.mahoney@ransomenv.com

SURVEYOR

Name:	Titcomb Associates
Address:	133 Gray Road
City/State:	Falmouth, ME
Zip Code:	04105
Work #:	207 791 9199
Home #:	
Cell #:	
Fax #:	
E-mail:	

ARCHITECT

Name:	Jesse Thompson, Kaplan Thompson Architects
Address:	102 Exchange Street, 2nd Floor
City/State:	Portland, ME
Zip Code:	04101
Work #:	207 842 2888
Home #:	
Cell #:	
Fax #:	
E-mail:	jesse@kaplanthompson.com

ATTORNEY

Name:	Michael Friedman
Address:	130 Main Street Unit 4
City/State:	Bridgton, ME
Zip Code:	04009
Work #:	207 647 8380
Home #:	
Cell #:	
Fax #:	207 647 2050
E-mail:	friedman@mgfriedmanlaw.com

DESIGNATED PERSON(S) FOR UPLOADING INTO e-PLAN

Name:	Adam Wallace
E-mail:	adam@kaplanthompson.com
Name:	
E-mail:	
Name:	
E-mail:	

III. APPLICATION FEES

LEVEL III DEVELOPMENT (check applicable review)

☒	Less than 50,000 sq. ft.	\$750.00
☐	50,000 – 100,000 sq. ft.	\$1,000.00
☐	100,000 – 200,000 sq. ft.	\$2,000.00
☐	200,000 – 300,000 sq. ft.	\$3,000.00
☐	Over 300,000 sq. ft.	\$5,000.00
☐	Parking lots over 100 spaces	\$1,000.00
☐	After-the-fact Review	\$1,000.00 + applicable application fee above

PLAN AMENDMENTS (check applicable review)

☒	Planning Staff Review	\$250.00
☒	Planning Board Review	\$500.00

OTHER REVIEWS (check applicable review)

☐	Traffic Movement	\$1,500.00
☒	Stormwater Quality	\$250.00
☒	Subdivision	\$500.00 + applicable fee for lots/units below
	# of Subdivision Lots/Units [23] x \$25.00 each	\$
☐	Site Location	\$3,500.00 + applicable fee for lots/units below
	# of Site Location Lots/Units [] x \$200.00 each	\$
☐	Change of Use	
☐	Flood Plain	
☐	Shoreland	
☒	Design Review	
☐	Housing Replacement	
☐	Historic Preservation	
TOTAL APPLICATION FEE DUE:		\$

IV. FEES ASSESSED AND INVOICED SEPARATELY

- Notices to abutters (receipt of application, workshop and public hearing meetings) (\$.75 each)
- Legal Ad in the Newspaper (% of total ad)
- Planning Review (\$52.00 hour)
- Legal Review (\$75.00 hour)
- Third Party Review (all outside reviews or analysis, eg. Traffic/Peer Engineer, are the responsibility of the applicant and will be assessed and billed separately)

V. PROJECT DATA (Please enter n/a on those fields that are not applicable)

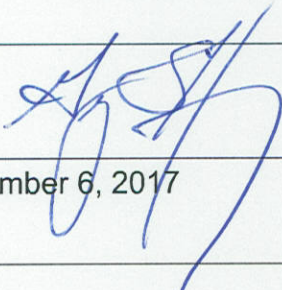
TOTAL AREA OF SITE	10,302	sq. ft.
PROPOSED DISTURBED AREA OF THE SITE	9,103	sq. ft.
<i>If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.</i>		
IMPERVIOUS SURFACE AREA		
Impervious Area (Total Existing)	9,103	sq. ft.
Impervious Area (Total Proposed)	9,103	sq. ft.
Building Ground Floor Area and Total Floor		
Building Footprint (Total Existing)		sq. ft.
Building Footprint (Total Proposed)	2,216	sq. ft.
Building Floor Area (Total Existing)		sq. ft.
Building Floor Area (Total Proposed)	14,132	sq. ft.
ZONING		
Existing	B2b	
Proposed, if applicable		
LAND USE		
Existing	Parking lot	
Proposed	Residential Multi-family	
RESIDENTIAL, IF APPLICABLE		
# of Residential Units (Total Existing)	0	
# of Residential Units (Total Proposed)	23	
# of Lots (Total Proposed)		
# of Affordable Housing Units (Total Proposed)	2	
PROPOSED BEDROOM MIX		
# of Efficiency Units (Total Proposed)		
# of One-Bedroom Units (Total Proposed)	23	
# of Two-Bedroom Units (Total Proposed)		
# of Three-Bedroom Units (Total Proposed)		
PARKING SPACES		
# of Parking Spaces (Total Existing)		
# of Parking Spaces (Total Proposed)	23	
# of Handicapped Spaces (Total Proposed)	2	
BICYCLE PARKING SPACES		
# of Bicycle Spaces (Total Existing)		
# of Bicycle Spaces (Total Proposed)	23	
ESTIMATED COST OF THE PROJECT		
	\$ 1,779,000	

VI. APPLICANT SIGNATURE

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a **legal signature** per Maine state law.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:	
Date:	December 6, 2017

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
✓		1	Completed Application form
✓		1	Application fees
✓		1	Written description of project
✓		1	Evidence of right, title and interest
N/A		1	Evidence of state and/or federal approvals, if applicable
✓		1	Written assessment of proposed project's compliance with applicable zoning requirements
✓		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
✓		1	Written requests for waivers from site plan or technical standards, if applicable.
✓		1	Evidence of financial and technical capacity
N/A		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	SITE PLAN SUBMISSIONS CHECKLIST
✓		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
✓		1	Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)
✓			Proposed grading and contours;
✓			Existing structures with distances from property line;
✓			Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;
✓			Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);
✓			Preliminary infrastructure improvements;
✓			Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;
N/A			Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);
✓			Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);
✓			Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;
✓			Exterior building elevations.

PARRIS TERRACES

LEVEL III PRELIMINARY SITE PLAN APPLICATION

December 6, 2017



APPLICANT

HORTON, LLC

PO Box 411, 100 Commercial Street, Suite 306
Portland, Maine 04101
(207) 808 4714

December 6, 2017

City of Portland Planning Department &
City of Portland Planning Board Members
389 Congress Street
Portland, Maine 04101

60 Parris Street Condominiums, Portland Maine

Dear Mr.O'Brien, Chair Boepple, City Staff and Planning Board Members:

On behalf of Horton, LLC we are pleased to submit this Level III Preliminary Site Plan Application to construct a new 23-unit condominium on the land located at 60 Parris Street in Bayside.

Today this parcel is a paved surface parking lot for City employees. It will be transformed into an attractive new modern building that is at the center of a vibrant transformation of the old industrial land into new residential, retail and commercial businesses.

This new building will provide a boost to the local economy and add new construction-related employment and some permanent management positions. The community will benefit from the addition of new urban residences in a tight housing market on the peninsula.

The Site

The site is comprised of 14,132 square feet and is bordered by the USPS parking lot to the west and Parris Street to the north. Today, the entire site is an impervious surface parking lot for about 30 vehicles. Adjacent to the site to the east is a multi-unit apartment building and 2 single / two-family residences that are located to the south. Other buildings nearby include a City car maintenance facility across the street, many industrial buildings and several multi-family apartment buildings that typically range from 2 to 4 stories tall.

Project Description

The building will be constructed with four levels plus the basement that is located under a portion of the first floor. The ground floor will have a main front and rear entrance, mechanical room(s), trash, recycling and bicycle storage room, an elevator to all levels, common areas, 2 one-bedroom units and a guest suite with a bathroom for residents of the building.

Parris Terraces is a twenty-three one-bedroom condominium development, of which twenty units will be sold at or below 120% of area medium income (\$199,467 for 2017). Building amenities include; on-site parking for all twenty-three units, balconies, indoor storage, in-unit washer/dryer hookup, and a shared guest suite (no kitchen facility) managed by the condo association. The development is being built on a 100% impervious surface parking lot currently owned by the City of Portland. This is the *first* known multi-unit homeownership development in the City of Portland to target 120% of AMI and be built without municipal, state or federal subsidies.

This project is located within the B2b zone.

Parking for Parris Terraces:

The adjacent surface parking lot will have 23 parking spaces.

Design Elements

The project is a unique effort to create affordable homeownership in Portland. The twenty-three condominium units are organized with upmost efficiency in mind while still holding to the fundamental Design Standards of the City of Portland and the Bayside Design & Zoning Standards.

The building is positioned with its longest dimension facing Parris Street and is held off the sidewalk by two and a half feet, for a border of vegetated landscaping. The main entrance, at the upper and southern end of the lot, faces the street and is tucked under the cantilevering upper portion of the building. This allows for a welcoming entrance area and activates the streetscape.

Each 400 square feet unit captures as much natural light as possible through plentiful windows. The building is designed around a central core with all the units occupying the exterior of the building. Each unit has a generous glazing

as well as a sliding glass door to a private balcony. The units on the fourth floor offer taller vaulted ceilings to give more living space and contribute to the overall form of the building.

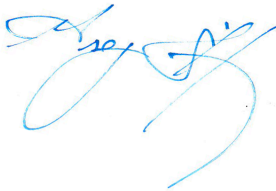
A series of simple pitched roofs defines the vertical mass of the building. The recessed balconies create shadowed voids along with a bold change of material at the balustrade. The main surface of the building will be clad with fiber cement panels, painted with a variety of grey tones to create the effect of a linear gradient that fades from dark to light up the façade.

We have worked diligently with our talented design professionals to create an exciting project that will be a great addition to the Bayside community. We have an experienced team that includes a local owner, local general contractor, local architect and engineering firms and local owner's representative.

Please consider this application complete for the Planning Board Workshop meeting scheduled for January 9, 2018.

Do not hesitate to contact me if you desire any additional information or have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Greg Shinberg', with a stylized flourish at the end.

Greg Shinberg
Owner's Representative
Horton, LLC

87 Main Street
Yarmouth | Maine 04096
T 207 846 4966

www.mrld.net
info@mrld.net

MRLD

Landscape Architecture + Urbanism

MEMO

DATE: 7 December 2017
TO: City of Portland Planning Board
FROM: Mitchell Rasor, Maine Licensed Landscape Architect
RE: Parris Terraces Landscape and Lighting Plan

1. Existing Landscape Features:

The site is currently an asphalt parking lot. There are a few small trees along the property line that are in poor health and not worth preserving. The proposed landscaping and buffering will improve upon the existing conditions, meeting the criteria set forth in Section 14-526 (b) (1).

2. Landscape Plan:

Two to three planters running the length of the front facade between the building and sidewalk will create a well-defined, attractive, and pervious edge addressing the street. The planters will articulate the form of the building, while providing pedestrian scale and seasonal interest.

Due to the placement of the building along the front property line and the adjacent existing overhead utilities, street trees are not recommended. The horizontal and vertical limitations create a space that is not ideal for the long-term health of street trees.

The sides and rear of the property will be buffered with a continuous trellis / fence planted with hardy vines. There is limited space along the property lines and a green system will provide screening, while avoiding more harsh design solutions such as stockade fencing.

A terraced landscape area along the northern edge of the property will further integrate the building with the site and provide a location for snow storage.

3. Site Lighting

The required site lighting will be achieved by utilizing soffit lights at the front and rear entrances as well as building mounted, full cut-off LED lights illuminating the entrance drive and the parking behind the structure. The soffit lights at the entrances will aid wayfinding and create safe zones. The building mounted lights will provide for the safe circulation of vehicles and pedestrians without impacting abutting properties.

Parcel 3

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT IS made this 12th day of October, 2017 by and between the City OF PORTLAND, a body politic and corporate located in Cumberland County, Maine, (hereinafter referred to as "Seller" or "City"), and HORTON, LLC, or assigns, a Maine limited liability company having a mailing address of 100 Commercial Street, Box 411, Portland, ME 04101 (hereinafter referred to as "Buyer" or "Horton, LLC").

RECITALS

WHEREAS, the CITY is the owner of approximately .23 acres of land at or near 56 Parris Street, Portland, Maine as generally depicted on the plan attached hereto as Exhibit A (the "Premises") and incorporated herein; and

WHEREAS, Buyer desires to purchase the Premises, and the City desires to convey the Premises to Buyer, subject to all easements of record and any other existing easements burdening the Premises;

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, hereby agree as follows:

1. **SALE.** City agrees to sell the Premises to Buyer, and Buyer agrees to purchase the Premises in accordance with the terms and conditions set forth in this Agreement. This Agreement is for the sale of land only.
2. **CONSIDERATION.** The purchase price for the Premises shall be One Hundred Seventy-Five Thousand Seven Hundred Dollars (\$175,000) (the "Purchase Price"), subject to the following cost adjustments and conditions:
 - a. Buyer shall deposit in the sum of Five Thousand Dollars (\$5,000.00) (the "Deposit") within 3 business days after the full execution of this Agreement that the parties agree will be held in escrow as of the date of this Agreement, in a non-interest bearing account with CBRE | The Boulos Company; the Deposit shall be fully refundable until the end of the Due Diligence Period and the Financing Period as both are described herein; after both such Periods, the Deposit shall be non-refundable; and
 - b. The Buyer shall pay the remainder of the Purchase Price to the City by wire transfer (or as otherwise reasonably requested by the City) at closing.

3. TITLE AND DUE DILIGENCE.

- a. Due Diligence Period. Buyer will have from the date of this Agreement until 4:00 PM Eastern Daylight Savings Time on the day that is sixty (60) calendar days after the date of this Agreement (the "Due Diligence Period") to complete any survey, environmental review and title examinations.
- b. Property Description. The property description contained in the deed will be a survey description based upon a survey plan (the "Premises") that will more specifically describe the property shown on Exhibit A hereto. The Premises will be distributed to the parties hereto prior to expiration of the Due Diligence Period and the parties will agree on the property description prior to closing.
- c. Financing Contingency. Buyer shall have from the date of this Agreement until 4:00 PM Eastern Daylight Savings Time on the day that is thirty (30) calendar days after the date of this Agreement (the "Financing Period") to obtain commercially reasonable financing, and shall take timely and commercially reasonable steps to secure such financing.
- d. Title and Survey Objections. Buyer will have until the end of the Due Diligence Period to deliver to City any written objections to title, environmental, or survey matters (other than the permitted exceptions identified herein) that materially affect marketability or use. Objections not made prior to the end of the Due Diligence Period will be deemed waived; provided, however, that objections pertaining to matters of record first appearing after the end of the Due Diligence Period may be made at any time prior to the closing.
- e. Option to Cure. In the event of a title or survey objection, City will have the option, but not the obligation, to cure the objection and will notify Buyer of its election within ten (10) business days after receipt of the objection. In the event that the City elects to cure the objection, it will have sixty (60) days from the date of the notice of election, or such other reasonable time as the parties may agree, to cure the objection. In the event that the City does not elect to cure the objection, or, having elected to cure the objection fails to timely do so to Buyer's reasonable satisfaction, Buyer will have the option to (1) terminate this Agreement and obtain a refund of the Deposit (after which neither party will have any further obligation or liability to the other under this Agreement), (2) waive the objection and close, or (3) undertake the cure of such objection at its own expense (in which case it shall have 60 days to do so).
- f. Deed. City shall convey the Premises to Buyer at the closing in fee simple by a municipal quitclaim deed without covenant. Title shall be good and insurable title, free and clear of all encumbrances except (i) easements described herein; (ii) easements for utilities servicing the property, (ii) zoning ordinances, and (iii) real estate taxes not yet due and payable. Further, Buyer

acknowledges that the deed shall contain a restriction stating that in the event that the Premises or any portion thereof shall be exempt from real and personal property taxes, by transfer, conversion, or otherwise, then the then-owner of the exempt portion shall make annual payments to the City in lieu of taxes in the amount equal to the amount of property taxes that would have been assessed on the exempt portion of the real and personal property situated on the Premises had such property remained taxable. Such restriction shall also confirm that Buyer and its successors and assigns shall possess and be vested with all rights and privileges as to abatement and appeal of valuations, rates, and the like as are accorded owners of real and personal property in Maine.

4. INSPECTIONS.

- a. During the Due Diligence Period, Buyer and its employees, consultants, contractors and agents shall have the right, at Buyer's expense, to enter on the Premises at reasonable times in order to (i) inspect the same, (ii) conduct engineering studies, percolation tests, geotechnical exams, environmental assessments, and other such studies, tests, exams, and assessments, and (iii) do such other things as Buyer determines, it is sole discretion, to be required to determine the suitability of the Premises for Buyer's intended use (collectively, the "Inspections"). The City acknowledges that such Inspections may include the digging of test pits, which the City hereby approves.
- b. Buyer agrees to defend, indemnify and hold harmless the City against any mechanics liens that may arise from the activities of Buyer and its employees, consultants, contractors and agents on the Premises.
- c. Buyer shall exercise the access and inspection rights granted hereunder at its sole risk and expense, and Buyer hereby releases the City from, and agrees to indemnify, defend, and hold the City harmless against, any and all losses, costs, claims, expenses and liabilities (including without limitation reasonable attorney fees and costs) (collectively, "Damages") suffered by the City on account of any injury to person or damage to property arising out of the exercise by Buyer of its rights hereunder, except to the extent that such Damages result from the act or omission of the City.
- d. Buyer shall cause any contractors, consultants or any other party conducting the Inspections to procure automobile insurance, if applicable, and general public liability insurance coverage in amounts of not less than Four Hundred Thousand Dollars (\$400,000.00) per occurrence for bodily injury, death and property damage, listing the City as an additional insured thereon, and also Workers' Compensation Insurance coverage to the extent required by law; the forms of all such insurance to be subject to City's Corporation Counsel's reasonable satisfaction.

- e. In the event that Buyer does not purchase the Premises, Buyer agrees to either return the Premises as nearly as possible to its original condition after conducting the Inspections, or, at the City's option, reimburse the City for any physical damage caused to the Premises in connection with the Inspections; provided, however, the City hereby acknowledges and agrees that the term "physical damage" does not include any disturbance of any pre-existing environmental contamination on the Premises caused by such inspections, studies, tests, exams, and assessments, and that Buyer shall have no obligation to clean-up, remove or take any other action with respect to any pre-existing environmental contamination disturbed thereby.
- f. The parties hereto acknowledge and agree that it is a condition to Buyer's obligations under this Agreement that the results of the Inspections be acceptable to Buyer in its sole discretion. If the results of such due diligence are not acceptable to Buyer in its sole discretion, and if Buyer exercises its right to terminate this Agreement, then the City shall refund to Buyer the Deposit, if previously paid, without interest, within ten (10) days after receipt of Buyer's termination notice, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.

- 5. **REAL ESTATE TAXES, PRORATIONS AND TRANSFER TAX.** Buyer shall be liable for all real estate taxes beginning as of the start of fiscal year following the closing and continuing thereafter. Because the Property is currently owned by the City of Portland, which is exempt from real estate taxes, no taxes were assessed or will be due for any portion of the current fiscal year, and no taxes will be prorated at the closing. Any utilities for the Property shall be prorated as of the closing. The Maine real estate transfer tax shall be paid for by Buyer in accordance with 36 M.R.S.A. § 4641-A. City is exempt from paying the transfer tax pursuant to 36 M.R.S.A. § 4641-C. The recording fee for the deed of conveyance and any expenses relating to Buyer's financing or closing shall be paid for by Buyer.
- 6. **DEFAULT AND REMEDIES.** In the event that Buyer defaults hereunder for a reason other than the default of the City, City shall retain the deposit as its sole remedy. In the event City defaults under this Agreement, and if Buyer is not then in default hereunder, Buyer shall have the right to pursue specific performance, but at all times may elect in substitution therefor, as its sole remedy, the right to a return of its deposit.
- 7. **RISK OF LOSS.** The risk of loss or damage to the Premises by fire, eminent domain, condemnation, or otherwise, until transfer of title hereunder, is assumed by the City. The Premises is to be delivered in substantially the same condition as of the date of this Agreement unless otherwise stated. In the event City is not able to deliver the Premises as stated, Buyer may terminate this Agreement and receive a refund of the Deposit without interest, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.

Lead

8. **PROPERTY SOLD "AS IS, WHERE IS."** Buyer acknowledges that Buyer has had an opportunity to inspect the Premises, and to hire professionals to do so, and that Premises will be sold "as is, where is" and "with all faults." City, and its agents, make no representations or warranties with respect to the accuracy of any statement as to boundaries or acreage, or as to any other matters contained in any description of the Premises, or as to the fitness of the Premises for a particular purpose, or as to development rights, merchantability, habitability, or as to any other matter, including without limitation, land use, zoning and subdivision issues or the environmental, mechanical, or structural condition of the Premises. Acceptance by Buyer of the Deed at closing and payment of the purchase price shall be deemed to be full performance and discharge by the City of every agreement and obligation contained herein.
9. **ENVIRONMENTAL INDEMNIFICATION.** Buyer covenants and agrees to indemnify, defend, and hold the City harmless from and against any and all claims, damages, losses, liabilities, obligations, settlement payments, penalties, assessments, citations, directives, claims, litigation, demands, defenses, judgments, costs, or expenses of any kind, including, without limitation, reasonable attorneys', consultants', and experts' fees incurred in investigating, defending, settling, or prosecuting any claim, litigation or proceeding, that may at any time be imposed upon, incurred by or asserted or awarded against Buyer or the City and relating directly or indirectly to the violation of or compliance with any federal, state, or local environmental laws, rules, or regulations governing the release, handling or storage of hazardous wastes or hazardous materials and affecting all or any portion of the Premises, except to the extent that such a claim results directly from the City's release, handling or storage of hazardous wastes or hazardous materials on the Premises. This duty to indemnify, defend, and hold harmless shall be included in a covenant in the deed and shall run with the land conveyed and be binding upon Buyer's successors, assigns, and transferees.
10. **CLOSING.** Time is of the essence in the performance of this agreement. The closing shall be held at the offices of Buyer's counsel at a time agreeable to the parties on or before the day that is five months after the date of this Agreement (the "Closing Date"). At the Closing:
- a. the City shall execute, acknowledge and deliver to Buyer a municipal quitclaim deed conveying to Buyer good and marketable title to the Premises, free and clear of all encumbrances except as otherwise set forth herein.
 - b. Buyer shall deliver the balance of the Purchase Price to the City by wire transfer (or as otherwise reasonably requested by the City); and
 - c. Each party shall deliver to the other such other documents, certificates and the like as may be required herein or as may be necessary to carry out the obligations under this Agreement.
 - d. Buyer shall deliver evidence, reasonably satisfactory to City's Corporation Counsel, that the entity receiving title to the Premises is in good standing

under Maine law, and that the individuals acting to Closing and executing documents on behalf of Buyer are authorized to do so.

11. BUYER'S POST CLOSING OBLIGATIONS; RIGHTS OF CITY TO

REPURCHASE PROPERTY. Buyer agrees to commence construction of the project, as very generally depicted on the attached Plan which was presented to the City's Economic Development Committee on July 19, 2017, but specifically including at least the same number of ("workforce housing") dwelling units depicted therein (the "Project") within twelve (12) months after closing. Twenty (20) unit sale prices will be calculated for affordability to 120% AMI for 2018 for the initial sale only. If Buyer, its successors, assigns, or transferees fails to commence construction of the Project on the Property within 12 months after the closing, and construct the buildings which are part of the Project within thirty (30) months after closing, the City shall have the right, but not the obligation, to repurchase the Premises at the lesser of (1) the Purchase Price plus all construction and approval expenses incurred by Buyer, or successors, to that juncture, or (2) the fair market value of the Premises determined by an appraiser agreed upon by the parties. The provisions of this paragraph will survive closing, and the City's deed to Buyer shall include a reference to the City's option to repurchase the Premises, and/or a Declaration of Covenants, Conditions and Restrictions, and Option to Repurchase with the provisions of this paragraph with greater detail, executed before or at the time of Closing, shall be recorded in the Cumberland County Registry of Deeds. This right to repurchase shall be assignable by the City.

- 12. ENTIRE AGREEMENT.** This Agreement represents the entire and complete Agreement and understanding between the parties and supersedes any prior agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of the Property hereunder. This Agreement cannot be amended except by written instrument executed by City and Buyer.
- 13. NON-WAIVER.** No waiver of any breach of any one or more of the conditions of this Agreement by either party shall be deemed to imply or constitute a waiver of any succeeding or other breach hereunder.
- 14. HEADINGS AND CAPTIONS.** The headings and captions appearing herein are for the convenience of reference only and shall not in any way affect the substantive provisions hereof.
- 15. BINDING EFFECT.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, administrators, successors and assigns.
- 16. TIME.** The City and Buyer each confirm and agree that each of the time periods set forth herein are essential provisions of the terms of this Agreement.
- 17. GOVERNING LAW.** This Agreement shall be construed in all respects in accordance with, and governed by, the laws of the State of Maine. All parties hereto hereby consent to the exclusive jurisdiction of the Superior Court for the County of Cumberland in the State of Maine, for all actions, proceedings and litigation arising

from or relating directly or indirectly to this Agreement or any of the obligations hereunder, and any dispute not otherwise resolved as provided herein shall be litigated solely in said Court. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

- 18. NOTICE.** All notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after mailing if mailed to the party to whom notice is to be given by first class mail, postage prepaid, certified, return receipt requested, addressed to the recipient at the addresses set forth below. Either party may change addresses for purposes of this paragraph by giving the other party notice of the new address in the manner described herein.

FOR THE City: City of Portland
ATTN: City MANAGER
389 Congress Street
Portland, ME 04101

With a copy to: The Office of the Corporation Counsel at the same address.

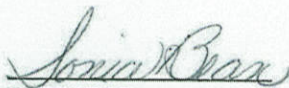
FOR Buyer: Horton, LLC
100 Commercial St., Box 411
Portland, ME 04101

With a copy to: Michael G. Friedman, Esq.
P.O. Box 10
Bridgton, ME 04009

- 19. SIGNATURES; MULTIPLE COUNTERPARTS.** This Agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement.
- 20. BROKERS.** City shall pay CBRE | The Boulos Company at closing a brokerage commission equal to five percent (5%) of the Purchase Price at closing. The CITY and Buyer each represent and warrant that they have not dealt with a real estate broker in connection with this transaction other than CBRE | The Boulos Company. Buyer agrees to indemnify and hold harmless City from any claims made by any broker should Buyer's representation in this paragraph be false. Subject to the limitations of liability set forth in the Maine Tort Claims Act, City agrees to indemnify and hold harmless Buyer from any claims made by any broker should City's representation in this paragraph be false. The foregoing indemnities shall include all legal fees and costs incurred in defense against any such claim, and shall survive closing.

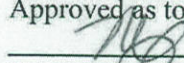
21. RECITALS INCORPORATED BY REFERENCE. The recitals set forth above are incorporated herein by reference and made a part of this Agreement.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed on their behalf by their duly authorized offices or representatives, on the day and year first written above.

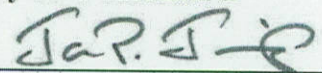

WITNESS


WITNESS

Approved as to Form:


Corporation Counsel's Office

City OF PORTLAND


Jon P. Jennings
Its City Manager

HORTON, LLC


Printed Name: Jack Soley
Its PRESIDENT, HORTON, LLC



December 5, 2017

City of Portland Planning Authority
389 Congress Street
Portland, ME 04101

Re: Horton, LLC / 60 Parris Street

To whom it may concern:

Please be advised that Jack Soley and his related businesses have maintained a banking relationship with Norway Savings Bank for several years. The relationship includes both deposit accounts and commercial loans both of which have been handled as agreed. We consider the subject companies and its owner Jack Soley valued clients and hold them in the highest regard.

We understand that Horton, LLC intends to acquire and construct a new building at 60 Parris Street, Portland at a total cost of approximately \$3,444,200. We feel that the subject company and its owner have the financial capacity including borrowings on a commercial basis to complete this project as presented.

I trust that this reference will satisfy the requirements of the Portland Permitting Authority that the applicant demonstrates its financial capacity to undertake the project. If you have any further questions regarding our client's financial capacity please feel free to contact me at 284-8355 or ngraydon@norwaysavingsbank.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Noel B. Graydon', is written over a horizontal line.

Noel B. Graydon
Regional Vice President

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991



Bradley Roland, P.E.
Water Resources Division

Date: 2017-12-13

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 60 PARRIS STREET

Chart Block Lot Number: 033 A013

Proposed Use: RESIDENTIAL

Previous Use: SURFACE PARKING

Existing Sanitary Flows: 0 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

15" VIT. CLAY GRAVITY SEWER
IN PARRIS ST.

Site Category

Commercial (see part 4 below)	☐
Industrial (complete part 5 below)	☐
Governmental	☐
Residential	☒
Other (specify)	☐

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: _____ Phone: _____

Owner/Developer Name: HORTON, LLC / JACK SOLEY

Owner/Developer Address: PO BOX 411, 100 COMMERCIAL ST, SUITE 306, PORTLAND

Phone: 775-2252 Fax: _____ E-mail: JSOLEY@EASTPORTONLINE.COM

Engineering Consultant Name: JOHN MAHONEY, RANSOM CONSULTING

Engineering Consultant Address: 400 COMMERCIAL ST, PORTLAND, ME

Phone: 773-2891 Fax: _____ E-mail: JOHN.MAHONEY@RANSOMENV.COM

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 2160 GPD

Peaking Factor/ Peak Times: _____

Specify the source of design guidelines: (i.e. ☒ "Handbook of Subsurface Wastewater Disposal in Maine," ☐ "Plumbers and Pipe Fitters Calculation Manual," ☐ Portland Water District Records, Other (specify) _____

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values:

N/A

Size of External Grease Interceptor:

Retention Time:

Peaking Factor/ Peak Times:

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time.

Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated:

N/A

GPD

Do you currently hold Federal or State discharge permits?

Yes

No

Is the process wastewater termed categorical under CFR 40?

Yes

No

OSHA Standard Industrial Code (SIC):

(<http://www.osha.gov/oshstats/sicser.html>)

Peaking Factor/Peak Process Times:

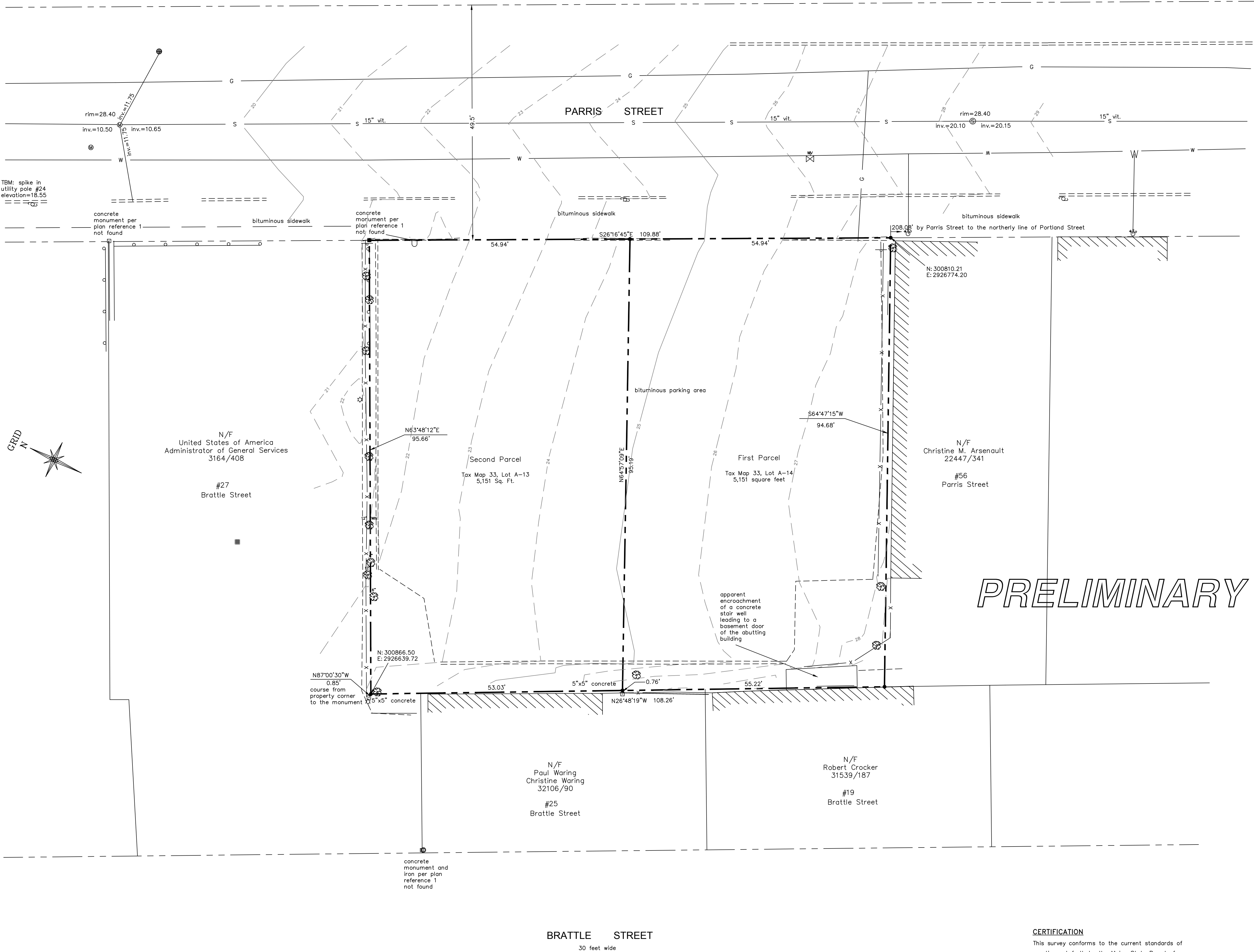
Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

SEE ATTACHED.

60 Parris Street Sewer/Water Capacity Estimate

Dwelling Unit Type	Qty	Total Bedrooms	Flow per Bedroom (GPD)	Design Flow (GPD)
One-bedroom	24	24	90	2160
			Subtotal:	2160



LEGEND	
	Monument - found
	Iron marker - set (#5 rebar)
	Property line (locus)
	Property line (abutter)
	Right of way line
	Edge of pavement
	Curb
	Fence
	Guard rail
	Underground water line
	Underground gas line
	Sewer line
	Contours (1ft)
	Contours (5ft)
	Water valve
	Utility pole
	Lamp or light pole
	Sewer manhole
	Sign
	Manhole
	Square catch basin
	Water valve
	Round catch basin
	Round catch basin with inlet
	Now or formerly of
	Deed reference (Book/Page)
	Deciduous tree
	Existing building

- NOTES**
- 1) Book and Page references are to the Cumberland County Registry of Deeds.
 - 2) Bearings are referenced to grid north, Maine State Plane Coordinate System, NAD83, West Zone.
 - 3) Elevations are based on the City of Portland datum.
 - 4) Utility information on this plan is approximate, based on location of visible features and information contained on plans and drawings provided by others. DigSafe and/or the appropriate utilities should be contacted prior to any construction.
 - 5) Properties lie within Zone C based on FIRM Community #230051 Panel #0013-B, dated July 17, 1988. They do not lie within a special flood hazard area.
 - 6) Right of way lines shown per electronic drawing file provided by the City of Portland Department of Engineering. See plan reference #3.

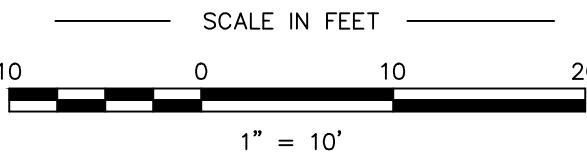
- PLAN REFERENCES**
- 1) City of Portland Department of Public Works plan number 421/6.
 - 2) City of Portland Department of Public Works property plan number 302.
 - 3) Digital Drawing File of Kennebec Street and surrounding streets provided by the City of Portland Department of Engineering.
 - 4) Standard Boundary Survey made for the City of Portland by Titcomb Associates dated September 15, 2017.

AREA

Total area=10,378 square feet

OWNER OF RECORD

City of Portland
389 Congress Street
Portland, ME 04101
Book 23202, Page 38



PLAN OF Existing Conditions / Standard Boundary Survey 60 Parris Street Portland, Maine		
MADE FOR Jack Soley		
JOB #217075	DATE: October 19, 2017	SCALE: 1" = 10'
BOOK #906	 Titcomb Associates 133 Gray Road, Falmouth, Maine 04105 (207)797-9199 www.titcombsurvey.com	
217075.dwg (60 Parris)		

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

Rex J. Croteau, P.L.S. #2273



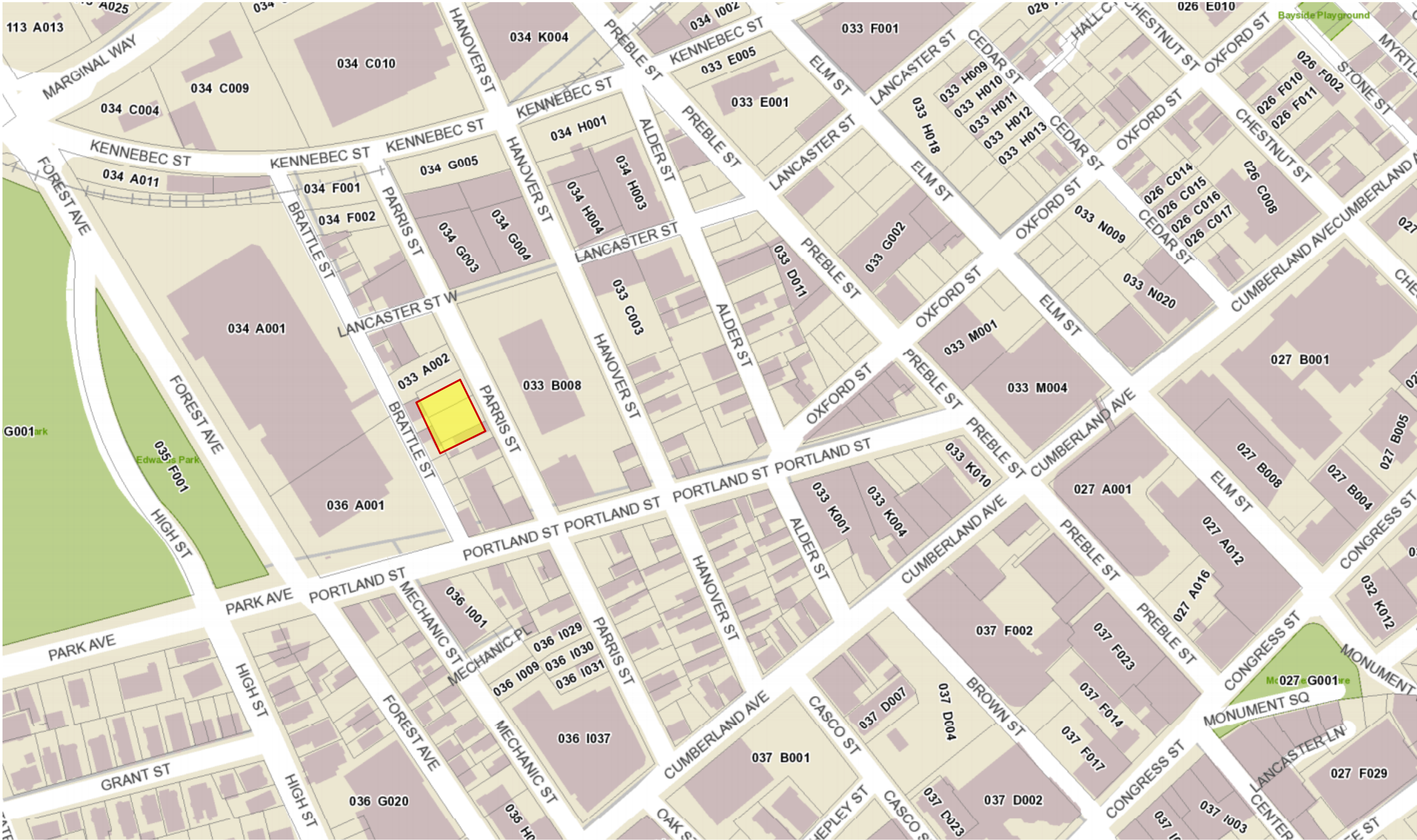
60 PARRIS ST.
PORTLAND, ME 04101

ELECTRICAL :
Swiftcurrent Engineering
10 Forest Falls Drive, Unit 18
Yarmouth, ME 04096
p: 207 331-7900

[illegible]

PROJECT NO:	PRSR
DATE:	12/13/2017
REVISED 1:	
REVISED 2:	
DRAWN BY:	JT/AW
PHASE:	SCHEMATIC DESIGN

COVER SHEET



Parris Terraces
Development

60 Parris Street
Portland , Maine

Applicant:

Jack Soley; Horton, LLC
PO Box 411
100 Commercial Street, Suite 306
Portland, Maine
207-775-2252
jsoley@eastbrowncow.com

Owner's Representative:

Greg Shinberg; Shinberg Consulting
477 Congress Street, Suite 1012
Portland, Maine
207-772-7070
gls@shinbergconsulting.com

KAPLAN
THOMPSON
ARCHITECTS

102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

MRLD
Landscape Architecture + Urbanism

RANSOM

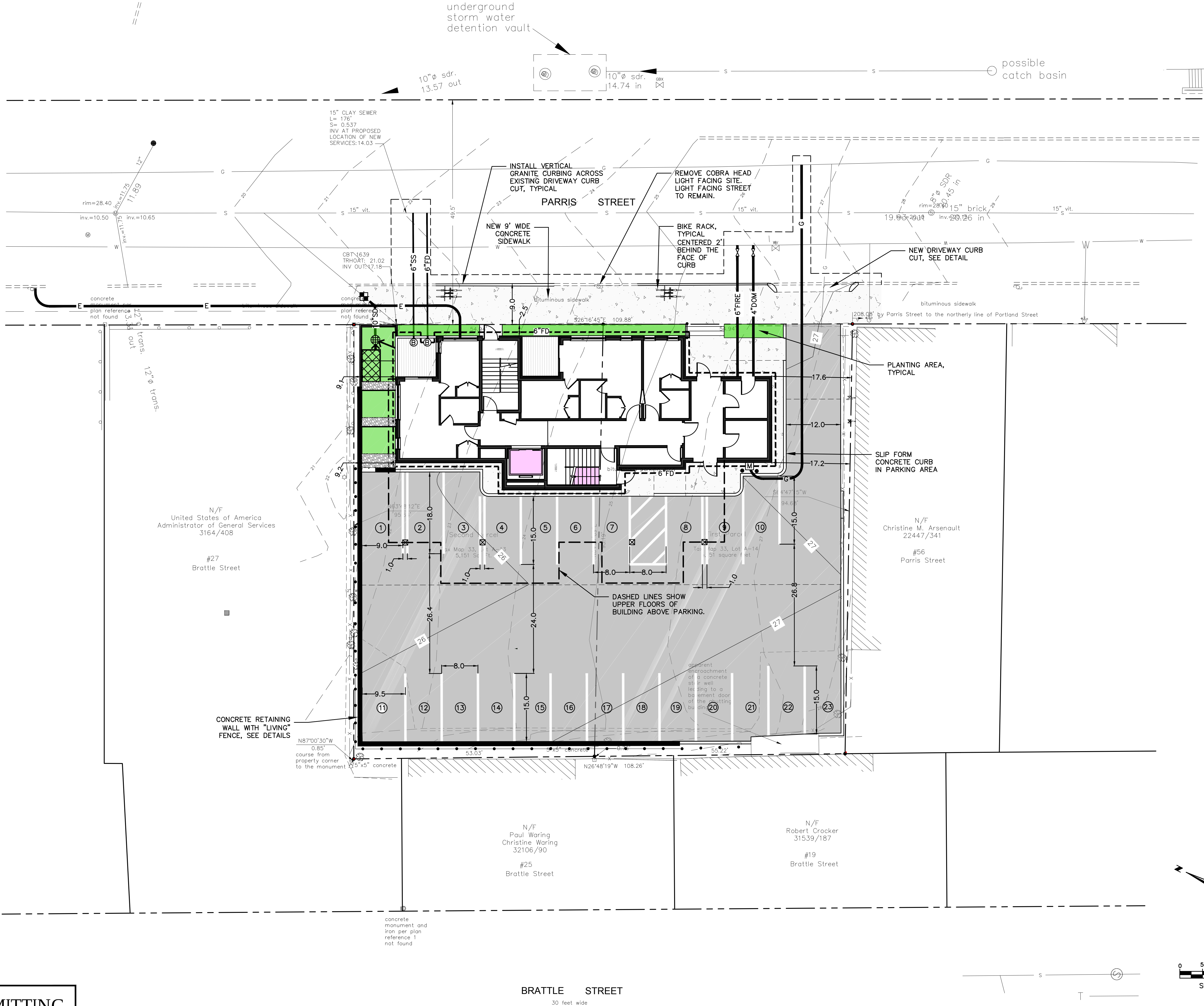
Consulting, Inc.

Civil Engineer
Ransom Consulting, Inc.
400 Commercial Street, Suite 404
Portland, Maine 04101
207-772-2891

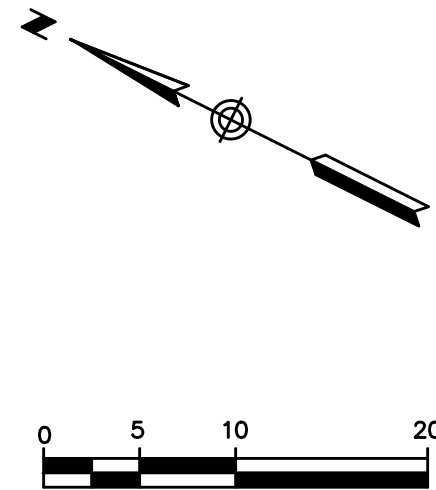


SITE PLAN

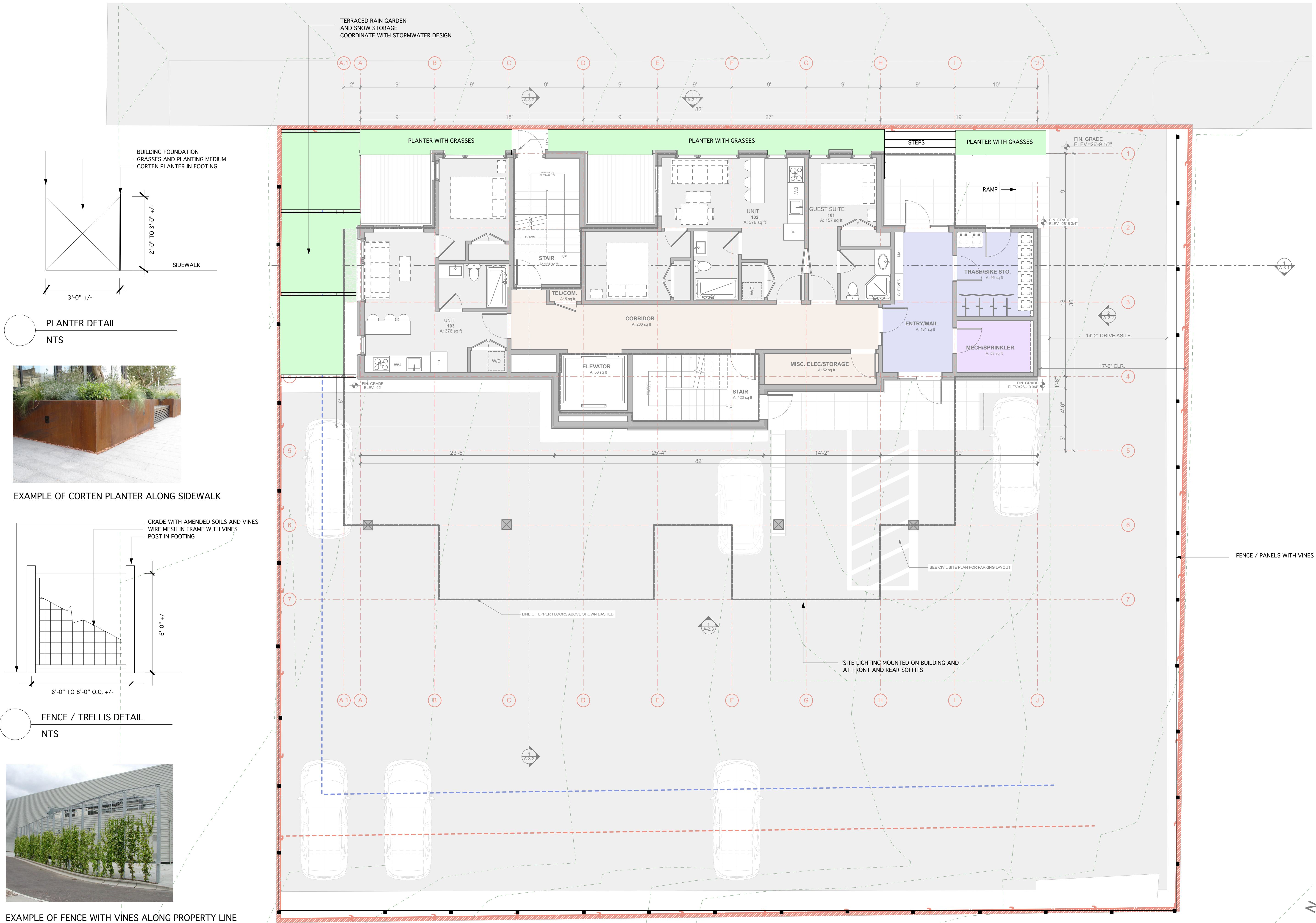
A	PERMITTING	12/13/17
No.	Revision/Issue	Date
Design by:	JIM	Checked by: SJB
Drawn by:	TGN	Approved by: SJB
Project:	171.06098	2017-11-17
Sheet No:	C-1	

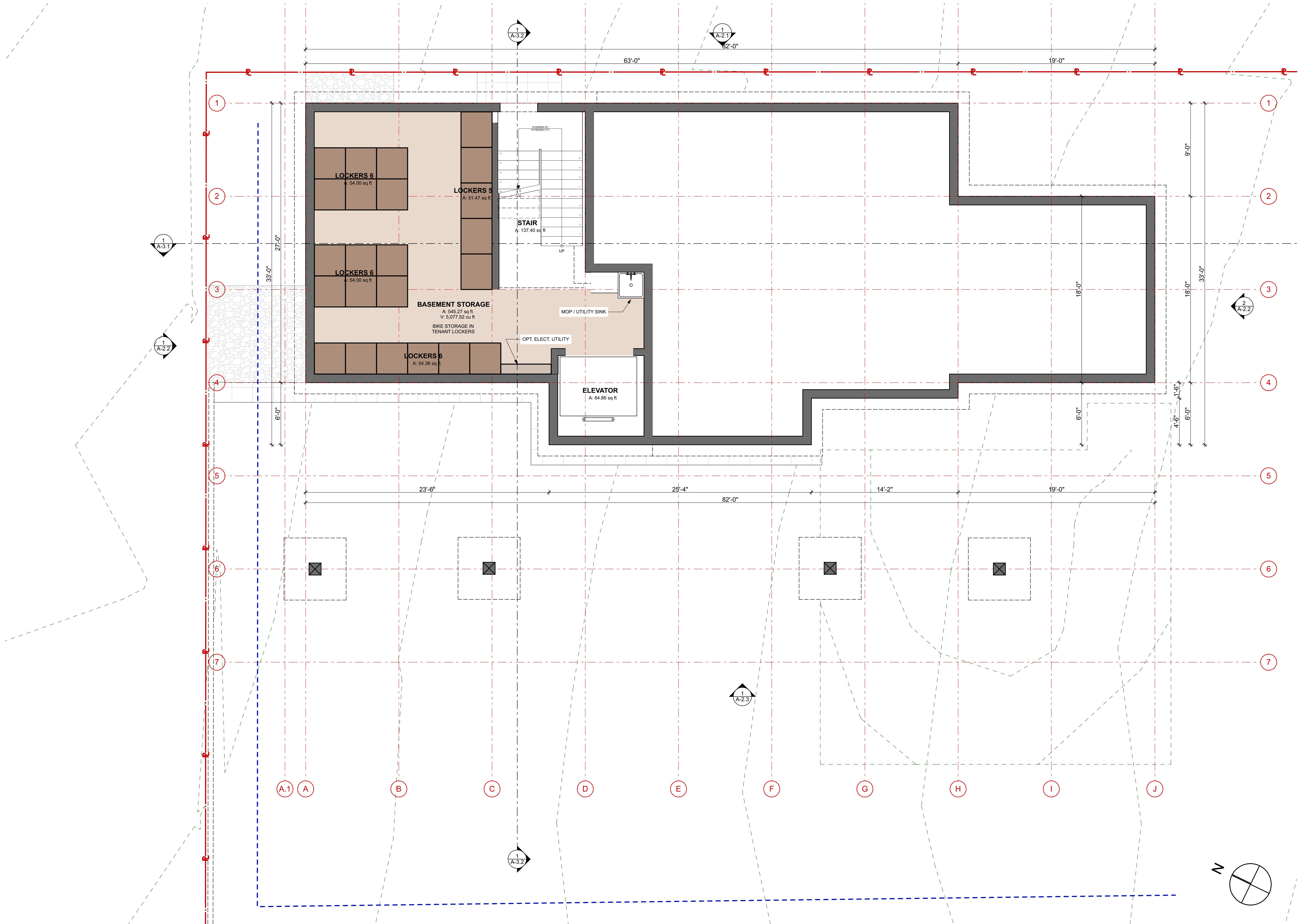


FOR PERMITTING



C-3





1 BASEMENT PLAN
SCALE: 1/4" = 1'-0"

KAPLAN THOMPSON ARCHITECTS
102 EXCHANGE STREET
PORTLAND, ME 04101
207-842-2888
KAPLANTHOMPSON.COM

PROJECT:
PARRIS TERRACES
60 PARRIS ST.
PORTLAND, ME 04101

OWNER REP :
Shinberg Consulting, LLC
477 Congress Street, Suite 1012
Portland, ME 04101
p: 207-772-7070
f: 207-772-7080

STRUCTURAL :
Structural Integrity
46 Forrest Avenue
Portland, ME 04101
p: 207-774-4614
f: 866-793-7835

CIVIL :
Ransom Consulting Engineers and Scientists
400 Commercial Street, Suite 404
Portland, ME 04101
p: 207 772-2891

LANDSCAPE :
MRLD Landscape Architecture + Urbanism
87 Main Street
Yarmouth, ME 04096
p: 207 846-4966

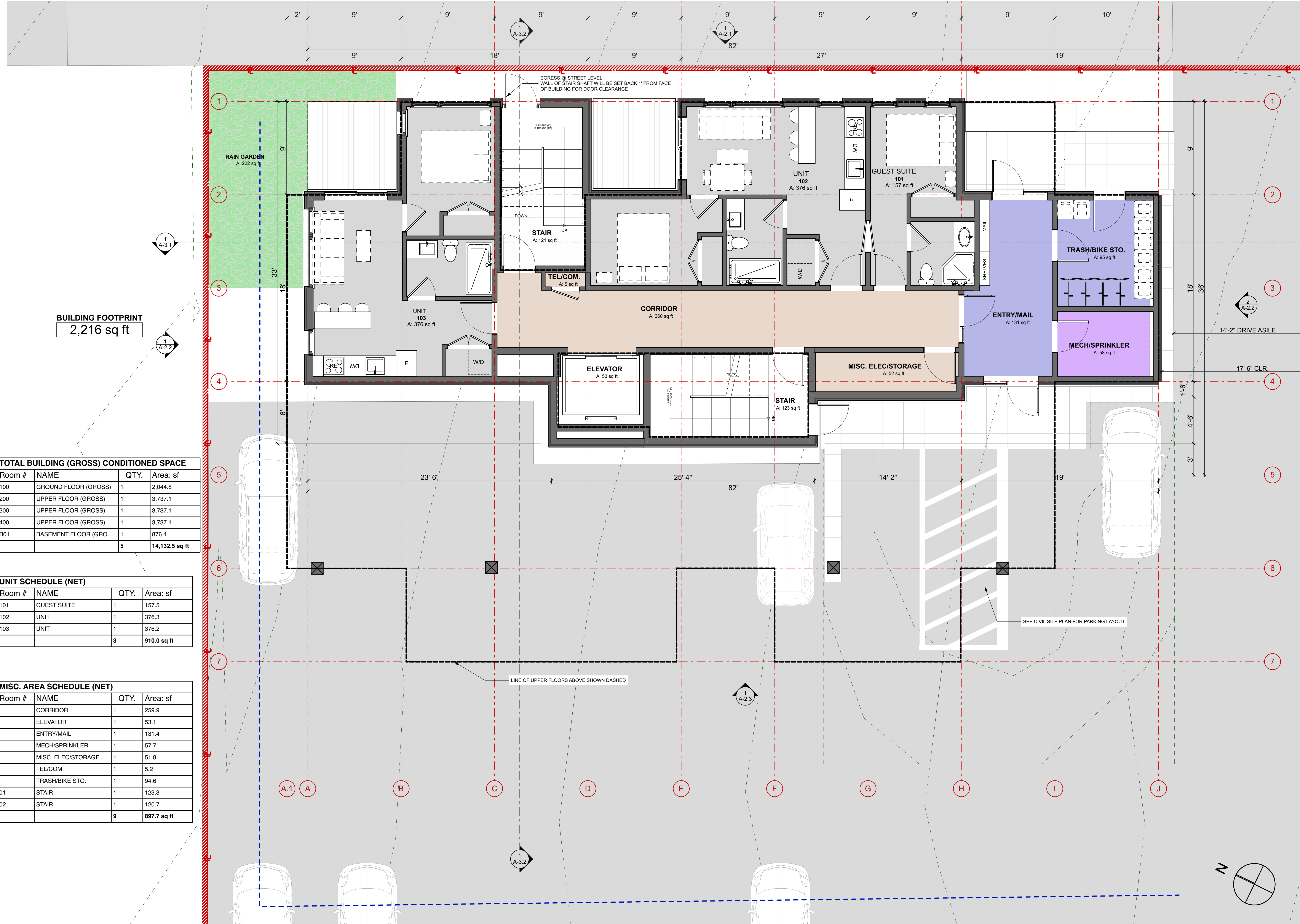
MECHANICAL :
Ripcord Engineering
PO Box 4175
Portland, ME 04101
p: 207 331-7900

ELECTRICAL :
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10 Forest Falls Drive, Unit 18
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ISSUE NO.	DESCRIPTION	CHD	CHANGE NAME	DATE
1	PLANNING BOARD SUBMISSION			12/13/17
2				
3				
4				
5				
6				
7				

NOT FOR CONSTRUCTION
PROJECT NO: PRS
DATE: 12/13/2017
REVISED 1:
REVISED 2:
DRAWN BY: JT/AW
PHASE: SCHEMATIC DESIGN

BASEMENT PLAN
A-1.0



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CHD	
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GROUND FLOOR
PLAN

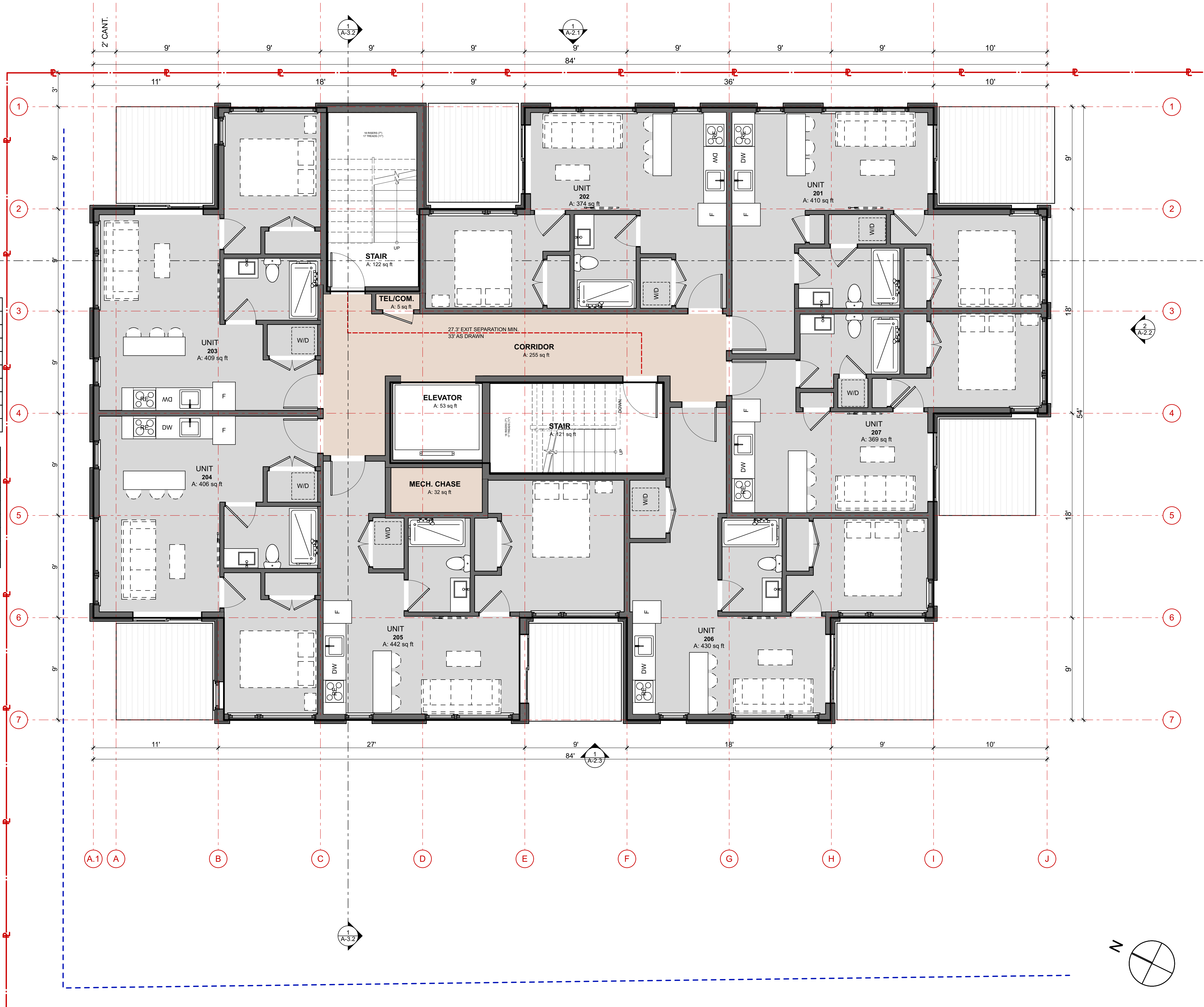
A-1.1

UNIT SCHEDULE (NET)			
Room #	NAME	QTY.	Area: sf
201	UNIT	1	410.3
202	UNIT	1	373.6
203	UNIT	1	409.5
204	UNIT	1	405.6
205	UNIT	1	441.6
206	UNIT	1	429.8
207	UNIT	1	368.6
		7	2,839.0 sq ft

MISC. AREA SCHEDULE (NET)			
Room #	NAME	QTY.	Area: sf
	CORRIDOR	1	255.1
	ELEVATOR	1	53.1
	TEL/COM.	1	5.2
01	STAIR	1	121.1
02	STAIR	1	121.7
I	MECH. CHASE	1	31.8
		6	588.0 sq ft

1 2ND - 4TH FLOOR PLAN

SCALE: 1/4" = 1'-0"



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UPPER LEVEL
FLOOR PLAN

A-1.2

AVERAGE GRADE CALCULATIONS

SEE A-1.1 FOR LOCATIONS

SOUTHEAST	26.782'
SOUTHWEST	26.901'
NORTHWEST	22'
NORTHEAST	21.509'
TOTAL	97.192' / 4
	= 24.298' AV. GRADE ELEV.



1 EAST ELEVATION
SCALE: 1/4" = 1'-0"



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EAST ELEVATION

A-2.1

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**PARRIS
TERRACES**

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PHASE: SCHEMATIC DESIGN

NORTH & SOUTH
ELEVATIONS

A-2.2



