CITY OF PORTLAND, MAINE
PLANNING BOARD

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

AGENDA
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a remote meeting on Tuesday, September 15, 2020. This meeting will take place using Zoom.

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

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

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

ZOOM MEETING INSTRUCTIONS
You are invited to a Zoom webinar.
When: Sep 15, 2020 04:30 PM Eastern Time (US and Canada)
Topic: Planning Board Workshop and Public Hearing 09/15/2020

Please click the link below to join the webinar:
https://us02web.zoom.us/j/83411790961

Or iPhone one-tap : US: +19292056099,,83411790961# or +13017158592,,83411790961#

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

Webinar ID: 834 1179 0961
International numbers available: https://us02web.zoom.us/u/kbNK60zgr

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

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

WORKSHOP - 4:30 PM

i. Level III Site Plan; 60 Merrymeeting Drive; Fallbrook Properties, LLC., Applicant. (estimated time 4:30 - 6:00 pm) The Planning Board will hold a remote workshop on a proposal for a 90-bed, 58,197 square foot nursing care facility at 60 Merrymeeting Drive. The subject property is 12.78 acres in size and is zoned R-3.

PUBLIC HEARING - 6:00 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON SEPTEMBER 8, 2020

Afternoon Workshop

40 W. Commercial St.: Chann, Dundon, Dunfey, Mazer, Silk and Smith present; Stanley recused.

163 Washington Ave.: Chann, Dundon, Dunfey, Mazer, Silk, Smith and Stanley present.

Evening Hearing

126-128 North St.: Chann, Dundon, Dunfey, Mazer, Silk, Smith and Stanley present.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON SEPTEMBER 8, 2020

i. Level III Site Plan and Subdivision; 126 and 128 North Street; Upright Properties, LLC., and Josh Wojcik, Co-Applicants. Stanley moved and Dundon seconded a motion to find the proposed conditional use for workforce housing to meet the standards of Section 14-484 of the Land Use Code with four conditions of approval. Vote 7-0. Stanley moved and Dundon seconded a motion to waive the Technical Manual standard requiring a parking space dimension of 9 feet wide by 18 feet long to allow dimensions of 9 feet wide by 16.5 feet long for parking space #5. Vote 7-0. Stanley moved and Dundon seconded a motion to approve the subdivision with three conditions of approval. Vote 7-0. Stanley moved and Dundon seconded a motion to approve the site plan with two conditions of approval. Vote 7-0.

5. NEW BUSINESS

i. Traffic Movement Permit; 191 Marginal Way; Earle W. Noyes & Sons, Applicant. (estimated time 6:00 - 7:00 pm) The Planning Board will hold a remote public hearing on a Traffic Movement Permit application to facilitate the lease and occupancy of an existing retail space at 191 Marginal Way by a new tenant, pursuant to an approval condition associated with a Level II Site Plan application approved by the Planning Authority on January 17, 2017. The subject property is zoned B-7.

ii. Level III Site Plan and Subdivision; 337 Cumberland Avenue; Portland Housing Development Corporation, Applicant. (estimated time 7:00 pm) The Planning Board will hold a remote public hearing on a proposal for a seven-story mixed-use building at 337 Cumberland Avenue containing a ground-floor child care facility and 60 upper-story residential units. The subject property is 19,592 square feet in size, is zoned B-3, and is located within the Downtown Entertainment Overlay Zone.

November 12, 2019
18347

Christine Grimando
Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Fallbrook Commons
Parcel ID: 400 D 023001

Dear Christine:

On behalf of Fallbrook Commons, we are pleased to submit the attached plans and supporting documents for Site Plan and Municipal Delegated review for the proposed improvements to Lot F001 Map 403. Fallbrook Commons has retained Sebago Technics, and Gawron Turgeon Architects to provide planning, design, permitting and construction services for the project.

The sole purpose of this project is to replace St. Joseph's Rehabilitation and Residence, a 121-bed licensed nursing care center built in 1974, that no longer meets current standards for nursing care centers. St. Joseph is currently owned by Maine Medical Center. In collaboration with Maine Medical Center, Sandy River Company and North Country Associates will create a new licensed nursing care facility to replace St. Joseph Rehabilitation and Residence. Sandy River and North Country have extensive experience developing, owning and operating senior care facilities throughout Maine.

The project includes a new 90-bed licensed nursing care center located next to Fallbrook Woods assisted living facility. The campus approach will allow visitors to access both facilities, provide a seamless transfer for assisted living residents that might need nursing care services, and allow an opportunity for shared support services and management. The development includes the construction of a two story, 58,197 sf building that will include three separate "neighborhoods" within the building with a shared commercial kitchen, community areas, and two parking areas totaling 92 parking spaces. Fallbrook Commons proposes a main entrance off Ray Street, and an emergency connection to Merrymeeting Drive.

This project will happen as one phase, which will involve clearing the incidental vegetation, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by late 2021.

In addition to the Site Plan Review, this application will require an amended Site Location of Development (SLODA) and a Natural Resource Protection Act (NRPA) permit. The Stormwater from the site will be collected using three BMP's following Maine Department of Environmental Protection's (DEP) chapter 500 standards.

The property is 12.78 acres, exists within the Residential-3 zone, and has frontage along Ray Street. The property will be divided into two lots with the addition of Lot F005 Map 403 to show two lots with frontage on Ray street. Fallbrook Commons will be 8.28 acres. Fallbrook Woods lot will be a conforming

lot with 4.95 acres and frontage on Ray Street. The following is a summary of how the project meets the Site Plan Review Standards:

TRANSPORTATION STANDARDS

- This type of facility generates moderate traffic trips. Residents do not drive; therefore, trips are limited to employees and family visitors.
- The primary entrance is proposed at Ray Street, with emergency access from Merrymeeting Drive. Adequate sight distance at Ray Street will be met with the removal of existing trees.
- The project includes a dedicated loading and service area at the lower level of the building.
- Sidewalks are provided from the proposed parking areas to the main entrance to the building.
- Adequate parking is provided for vehicles and bicycles.

ENVIRONMENTAL QUALITY STANDARDS

- To the extent possible, existing vegetation on the site will be maintained, Wetland impacts are proposed, however, are minimized by the proposed steep slopes and retaining walls.
- The project includes a robust landscaping program.
- Water quality is maintained, as the project meets the standards for stormwater management and erosion controls.

PUBLIC INFRASTRUCTUE AND PUBLIC SAFETY STANDARDS

- There are no City Master Plans governing the development of this site.
- There are no threats to public safety. Fire prevention is provided by a sprinkler system within the proposed building, a fire hydrant and adequate fire vehicle circulation is provided for.
- We understand that adequate public utility capacity is available to serve the project.

SITE DESIGN STANDRADS

- There are no issues relative to impacts from massing, ventilation, wind, shadows, snow/ ice loading nor view corridors.
- Proposed site lighting includes full cutoff fixtures and no light trespass onto adjacent properties.
- Noise and vibration from construction activities will be controlled within City standards.
- Adequate signage and wayfinding is provided for.
- All zoning related design standards are met.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel M Danvers, RLA
Maine Licensed Landscape Architect

Cc: Daniel Maguire / John Orestis / Doug Gardner

Portland, Maine — Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes to the left

General Application Documents

Checklist	Items to be Provided
Yes ✔ NA Plan	PROJECT DESCRIPTION • Cover Letter with detailed project description
Yes NA ✔ Plan	COMPLETED CHECKLIST – LEVEL III APPLICATION
Yes ✔ NA Plan	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements
Yes ✔ NA Plan	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable • Permits or letters of non-jurisdiction, if applicable
Yes ✔ NA Plan	ZONING ASSESSMENT • Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes NA Plan ✔	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable • Evidence of existing easements and any proposed easements
Yes NA ✔ Plan	WAIVER REQUESTS • Written request for waiver describing request and reason. Waiver Table
Yes ✔ NA Plan	FINANCIAL CAPABILITY • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes ✔ NA Plan	TECHNICAL CAPABILITY • Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Please submit each document as a separate PDF file.

TRANSPORTATION

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

ENVIRONMENTAL AND LANDSCAPE FEATURES	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Preservation of Significant Natural Features (14-526 (b) 1), if applicable** • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies
Yes NA Plan ✔	**Landscaping and Landscape Preservation (14-526 (b) 2 a)** • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable
Yes NA Plan ✔	**Site Landscaping (14-526 (b) 2 b)** • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes NA Plan ✔	**Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable** • Landscaped islands within parking areas (Technical Manual, Section 4)
Yes NA Plan ✔	**Street Trees (14-526 (b) 2 b iii)** • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable

ENVIRONMENTAL AND STORMWATER	
Check list	Assess/Provide/Document:
Yes NA Plan ✔ ✔	**Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)** • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA Plan ✔ ✔	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA Plan ✔ ✔	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable

SITE DESIGN

Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA Plan ✔	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA Plan ✔ ✔	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA Plan ✔	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appendix 1)

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

Level II and Level III Site Plan Checklist

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

☑ **RECENT BOUNDARY SURVEY** (stamped by Maine Licensed Surveyor)

Must be in compliance with Technical Manual, Section 13

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

☑ **Existing Conditions**

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

☑ **Proposed Site Plan**

- Ground floor area, and grade elevations for all buildings

☑ **Access, Circulation, and Parking**

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

☑ **Site Considerations**

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

☑ **UTILITY PLAN** including:

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

☑ **GRADING and DRAINAGE PLAN** including:

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

☑ **EROSION CONTROL**

- Must be in compliance with Technical Manual, Section 5

☑ **LANDSCAPE PLAN** including:

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

☐ **RECORDING PLAT**, if applicable

- IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)

☑ **ARCHITECTURAL PLANS & RENDERINGS** including:

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

AGREEMENT FOR PURCHASE AND SALE OF REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of two parcels of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal descriptions to be used in conveying the Property are annexed hereto and incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

period, not to exceed 30 days from the time Seller receives written notice of the defect, unless otherwise agreed to by both parties, to remedy the title, after which time, if such defect is not corrected so that there is marketable title, Buyer may within forty-five (45) days thereafter, at Buyer's option, withdraw said earnest money and neither party shall have any further obligation hereunder. Seller hereby agrees to make a good-faith effort to cure any title defect during such period,but shall not be obligated to expend more than $5,000 to cure. If Closing of the real estate transaction is delayed on account of such defects, the parties shall bargain regarding whether and the terms under which the remainder of the closing contemplated under the Memorandum of Agreement may be consummated and this real estate transaction completed thereafter.

b. Seller further agrees to execute and deliver to Buyer at Closing the following documents: (i) a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations); (ii) a title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession; (iii) an affidavit regarding underground storage tanks (as required by Maine Law), and (iv) documents demonstrating Seller's authority to convey and good standing as evidenced by a copy of Seller's resolution authorizing the transaction contemplated herein and all other documents regarding authority or any other matter reasonably required from the Closing.

c. To the extent that the conveyance of title to the Property to Buyer requires the subdivision of lots, Buyer shall bear the cost, or shall reimburse Seller, for the cost of any outside legal and surveyor expense reasonably necessary to secure such subdivision, including any necessary municipal or other approvals.

4. DEED: The Property shall be conveyed by a quitclaim with covenant deed and shall be free and clear of all encumbrances except for Permitted Encumbrances, and except for covenants, conditions, easements and restrictions of record and usual public utilities servicing the Property and shall be subject to applicable land use and building laws and regulations.

5. POSSESSION/OCCUPANCY: Possession/occupancy of Property shall be given to Buyer immediately at Closing unless otherwise agreed by both parties in writing.

6. RISK OF LOSS: Until transfer of title, the risk of loss or damage to said Property by fire or otherwise is assumed by Seller unless otherwise agreed in writing. Said Property shall at closing be in substantially the same condition as at present, excepting reasonable use and wear.

7. PRORATIONS: The following items shall be prorated as of the date of closing:

a. Buyer and Seller shall each pay one-half of the transfer tax as required by the laws of the State of Maine.

b. Buyer and Seller shall reasonably cooperate on the proration of any other needed item at Closing. The property is vacant land, and so no heating oil or water and sewer charges are expected.

c. Real Estate Taxes for any potions of the Property subject to such taxes, based on the municipality's current tax year.

8. INSPECTION. Buyer may enter into any part of the Property at all reasonable times in order to inspect the Property, conduct surveys, soil tests and engineering studies and to do such things as are reasonably necessary with respect to its acquisition and intended development of the Property. In the event that the Buyer does not terminate this Agreement, this inspection contingency to its obligation to close shall be conclusively deemed waived.

9. AGENCY DISCLOSURE: Buyer and Seller acknowledge that they have not engaged a real estate broker in their transaction.

10. PRIOR STATEMENTS: This Agreement and the referenced Memorandum of Agreement set forth the entire agreement between the parties relating to the conveyance of the property described in Exhibit A, and there are no other representations, agreements or understandings with respect to the subject matter of this Agreement.

11. ASSIGNS: This Agreement shall extend to and be obligatory upon successors, and assigns of the respective parties. This Agreement may be assigned only to persons or entities controlling, controlled by, or under common control of a party.

12. COUNTERPARTS: This Agreement may be signed on any number of identical counterparts, including telefax copies, with the same binding effect as if all of the signatures were on one instrument.

13. BUYER'S NOMINEE: Buyer may transfer its rights under this Agreement to an entity or the nominee which it controls. Buyer shall, however, remain jointly and severally liable with such transferee for all of Buyer's obligations under this Agreement and under the Memorandum of Agreement, and such transferee shall be required to assume joint and several liability for all such obligations. Buyer shall give Seller prompt written notice of any such transfer at least seven (7) days before the scheduled Closing, which notice shall include sufficient information to identify the transferee entity or nominee and certified copies of its organizational documents. No assignment shall be valid unless Seller has approved the agreement pursuant to which the assignment is consummated. No other assignment of this Agreement by Buyer is permitted.

14. EFFECTIVE DATE: This Agreement is a binding contract when signed by both Seller and Buyer and when that fact has been communicated to all parties or to their agents. Time is of the essence of this Agreement to the extent set forth in the Master Agreement.

15. BEST EFFORTS: Each of the parties shall undertake to take all reasonable steps necessary to achieve the satisfaction of conditions leading to a Closing under this Agreement.

16. FACSIMILE COPIES: All parties to this Agreement agree to accept facsimile or photocopies of this document and any signatures thereto as originals.

17. REPRESENTATIONS OF SELLER: Seller represents to Buyer that the following are true as of the date of this Agreement and will be true as of the Closing:

a. To the best of Seller's knowledge, there are no violations of any applicable law, ordinance or regulation at the Property.

b. To the best of Seller's knowledge, there are no special wastes, underground storage tanks, asbestos containing materials, waste oil, petroleum and any other hazardous substances, materials or wastes contaminating the Property. The terms used in the foregoing sentence shall include, without limitation, all substances, materials, etc., designated by such terms under any laws, ordinances, or regulations, whether federal, state, or local. This presentation shall except such materials used in the regular course of business and disposed of in compliance with all applicable laws.

c. Other than matters of record that constitute Permitted Encumbrances, there are no outstanding pending or threatened liens, claims, rights of first refusal, or encumbrances against the Property.

18. NOTICES. Any notice or communication given pursuant to this Agreement by either of the parties to the other shall be in writing and delivered as provided in the Master Agreement for notices.

19. GOVERNING LAW. This Agreement shall be construed according to the laws of the State of Maine.

20. TERMINATION OF AGREEMENT. This Agreement shall terminate if:

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

Seller acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2-1/2% of the consideration unless Seller furnishes to Buyer a certificate by the Seller stating, under penalty of perjury, that Seller is a resident of Maine or the transfer is otherwise exempt from withholding.

Buyer Fallbrook Core Development LLC ~~Tax I.D.~~
#

Signature

Daniel J. Maguire
Name/Title, there unto duly authorized
Member

Seller accepts Buyer's offer and agrees to deliver the Property at the price and upon the terms and conditions set forth above.

Signed this 26th day of August, 2019.

Seller FALLBROOK PROPERTIES, LLC Tax I.D. # 270433266

By:

Signature

JOHN C. ORESTIS, PRINCIPAL & MANAGING MEMBER
Name/Title, there unto duly authorized

EXHIBIT A

(legal descriptions begin on next page)

Exhibit A

AGREEMENT FOR PURCHASE AND SALE
OF
REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of a parcel of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal description to be used in conveying the Property are annexed hereto and also incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

EXHIBIT A
Proposed Description Parcel One

A certain lot or parcel of land situated on the westerly sideline of Ray Street in the City of Portland, County of Cumberland, State of Maine as depicted on a plan titled "Existing Conditions of Fallbrook Nursing Care, Merrymeeting Drive, Portland, Maine for Sandy River Company, 217 Commercial Street, Suite 201, Portland, Maine 04112, Record Owner Fallbrook Properties, LLC, 418 Ray Street, Portland Maine 04103" by Sebago Technics, Inc., dated May 30, 2019 and revised through July 10, 2019 to be recorded in the Cumberland County Registry of Deeds (CCRD) and being more particularity bounded and described as follows:

Beginning at a 5/8-inch rebar, 6-inches above grade on the westerly sideline of Ray Street and the northerly corner of land now or formerly of Amanda J. Connelly as described in a deed recorded in the CCRD in Book 34668, Page 155;

Thence S 54°32'18" W, along land now or formerly of Amanda J. Connelly and land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS as described in a deed recorded in the CCRD in Book 6632, Page 99, a distance of 150.00 feet to a 5/8-inch iron rod, 8-inches above grade;

Thence S 35°27'42" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at land now or formerly of Jason D. Smith and Laurie R. Smith JTS as described in a deed recorded in the CCRD in Book 32730, Page 23;

Thence S 35°27'42" E, along land now or formerly of Jason D. Smith and Laurie R. Smith JTS and land now or formerly of Debora D. Morgan as described in a deed recorded in the CCRD in Book 13636, Page 105, a distance of 72.78 feet to a point;

Thence S 34°40'07" E, along land now or formerly of Debora D. Morgan, Gladys A. Moody as described in a deed recorded in the CCRD in Book 32780, Page 65, Marilyn D. Webb as described in a deed recorded in the CCRD in Book 29023, Page 310, Anna J. Aiken and James W. Aiken JTS as described in a deed recorded in the CCRD in Book 25390, Page 8, John M. Scholz as described in a deed recorded in the CCRD in Book 10841, Page 202, Jaime L. Hiltz as described in a deed recorded in the CCRD in Book 23255, Page 247 and David DiPietro as described in a deed recorded in the CCRD in Book 32054, Page 195, a distance of 333.24 feet to a 5/8-inch iron rod, 15-inches above grade at land now or formerly of Hon Khuu as described in a deed recorded in the CCRD in Book 32424, Page 248 and land now or formerly of Regan S. Brendan as described in a deed recorded in the CCRD in Book 32806, Page 341;

Thence S 54°36'33" W, along land now or formerly of Regan S. Brendan, a distance of 51.09 feet to a point;

Thence S 51°05'03" W, along land now or formerly of Regan S. Brendan, land now or formerly of Christian Sabrina Katheryn as described in a deed recorded in the CCRD in Book 32949, Page 39, land now or formerly of Mary A. Packard and Amanda M. Packard as described in a deed recorded in the CCRD in Book 10936, Page 100, land now or formerly of Haylee E. Hasson as described in a deed recorded in the CCRD in Book 33706, Page 89, land now or formerly of Hilary Carr as described in a deed recorded in the CCRD in Book 29976, Page 255, land now or formerly of Paula M. Urbach as described in a deed recorded in the CCRD in Book 31613, Page 621, land now or formerly of Ian P. Houseal as described in a deed recorded in the CCRD in Book 30070, Page 164, land now or formerly of Luis O. Garcia and Monica M. Garcia JTS as described in a deed recorded in the CCRD in Book 30353, Page 291 and land now or formerly of Matthew A. Anderson as described in a deed recorded in the CCRD in Book 32380, Page 112, a distance of 481.12 feet to a 5/8-inch iron rod, 12-inches above grade;

Thence S 37°28'58" W, along land now or formerly of Matthew A. Anderson, a distance of 29.58 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 28°22'08" W, along land now or formerly of Matthew A. Anderson, land now or formerly of Megan T. and Jonathan A. York JTS as described in a deed recorded in the CCRD in Book 25317, Page 156 and land now or formerly of Joy M. and Michael J. Borlawsky as described in a deed recorded in the CCRD in Book 9606, Page 268, a distance of 186.45 feet;

Thence S 29°23'41" W, along land now or formerly of Joy M. and Michael J. Borlawsky, a distance of 20.45 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at the centerline of the vacated Wadco Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29;

Thence N 54°10'52" W, through the vacated Wadco Street, a distance of 182.25 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 18°20'52" W, through the vacated Wadco Street and the vacated Ash Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, a distance of 108.08 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 71°39'08" E, through the vacated Ash Street and along land now or formerly of Jeffrey A. Hayes Trustee as described in a deed recorded in the CCRD in Book 30716, Page 21, a distance of 123.80 feet to a point;

Thence N 17°52'57" W, along land now or formerly of Jeffrey A. Hayes Trustee, land now or formerly of Bertha L. Judkins as described in a deed recorded in the CCRD in Book 7750, Page 196, Topsham Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, land now or formerly of House of Hogwarts, LLC as described in a deed recorded in the CCRD in Book 34616, Page 309, a distance of 369.17 feet to a 1-inch iron pipe, 2-inches above grade;

Thence N 18°18'12" W, along land now or formerly of House of Hogwarts, LLC, a distance of 125.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 79°57'00" E, through land of Fallbrook Properties, LLC, a distance of 99.99 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, through land to be retained by Fallbrook Properties, LLC, a distance of 420.18 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at other land of Fallbrook Properties, LLC;

Thence continuing N 54°32'18" E, through other land of Fallbrook Properties, LLC, a distance of 119.82 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set on the westerly sideline of Ray Street;

Thence S 35°27'42" E, along Ray Street, a distance of 55.00 feet to the Point of Beginning;

Containing approximately 8.28 Acres.

The bearings herein are Grid North, Maine State Plane Coordinate System, West Zone 1802, NAD83.

August 28, 2019
AJS/jg

Current Owner Information:

CBL	400 D023001
Land Use Type Verify legal use with Inspections Division	RETAIL & PERSONAL SERVICE
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421
LAND VALUE	$305,600.00
BUILDING VALUE	$3,086,400.00
NET TAXABLE - REAL ESTATE	$3,392,000.00
TAX AMOUNT	$79,067.52

OWNER OF RECORD AS OF APRIL 2019
FALLBROOK PROPERTIES LLC

418 RAY ST
PORTLAND ME 04103

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map V

Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

SHORT FORM QUITCLAIM DEED WITH COVENANT

FALLBROOK, INC., a Maine corporation with a principal place of business in Portland, Maine, FOR CONSIDERATION PAID, grants to **FALLBROOK PROPERTIES, LLC**, a Maine limited liability company whose mailing address is 418 Ray Street, Portland, Maine 04103, with QUITCLAIM COVENANT certain real property, together with any improvements thereon, located at 418 Ray Street, Portland, Cumberland County, Maine, and more particularly described on **Exhibit A** attached hereto and made a part hereof (the "Premises").

IN WITNESS WHEREOF, Fallbrook, Inc. has caused this instrument to be executed by Robert J. Feeney, its President thereunto duly authorized, this 15th day of December, 2009.

WITNESSETH:

Name:

FALLBROOK, INC.

By:
Name: Robert J. Feeney
Title: President

State of Maine
County of Cumberland, ss.

December 15, 2009

PERSONALLY APPEARED the above-named Robert J. Feeney, President of Fallbrook, Inc., as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Before me,

Name: Kevan Lee Rinehart
Title: Attorney/ ME 9303

EXHIBIT A

A certain parcel of land situated Westerly of Ray Street in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at the southeasterly corner of Fallbrook, a Condominium, at a point on the Westerly sideline of land now or formerly of John N. Jr. and Glennis E. Fitzpatrick (Book 2773, Page 224);

Thence, S 13°-05'-20" E by the land of Fitzpatrick 110.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 76°-54 '-40" E by the land of Fitzpatrick 256.90 feet to a point on the Westerly sideline of Ray Street marked by 5/8" iron rod set;

Thence, S 16°-25'-15" E by the sideline of Ray Street 1.42 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Ivan G. and Edwina F. Callahan (Book 2997, Page 486);

Thence, S 73°-34'-45" W by the land of Callahan 220.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 16°-25'-15" E by the land of Callahan 65.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 73°-34'-45" E by the land of Callahan 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Malcolm A. and Gail E. McDonald (Book 3614, Page 219);

Thence, S 18°-02'-05" E by the land of McDonald 163.18 feet to a point marked by a 5/8" iron rod set;

Thence, N 74°-25'-15" E by the land of McDonald 120.00 feet to a point on the Westerly sideline of Ray Street marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the sideline of Ray Street 47.17 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Donald A. and Evelyn Thompson (Book 2892, Page 451);

Thence, S 71°-24'-15" W by the land of Thompson 150.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 71°-24'-15" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Richard E. and Carolyn Grover (Book 2895, Page 492);

Thence, S 18°-35'-45" E by the land of Grover and by the land now or formerly of Raymond A. and Florence M. Sevigny (Book 2490, Page 327) 72.78 feet to a point marked by a 5/8" iron rod set;

Thence, S 17°-48'-10" E by the land of Sevigny and by the lands now or formerly of Gladys A. and Kenneth V. Moody (Book 3471, Page 62), Betty L. Denbow (Book 2682; Page 313), Anna J. Aiken (Book 3570, Page 212), David A. and Carolyn J. Matthews (Book 4483, Page 163), Laura H. Clark (Book 3708, Page 194), and George and Doris Castonia (Book 4960, Page 286) 333.24 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Frances F. Gatchell (Book 6257, Page 342);

Thence, S 71°-28'-30" W by the land of Gatchell 51.09 feet to a point marked by a 5/8" iron rod set;

Thence, S 67°-57'-00" W by the land of Gatchell and lands now or formerly of Eleanor L. and Sherry Sapko, Charles E. and Linda J. Foshay (Book 3920, Page 212), Linwood J. and Ruth L. Thaxter, Charles L. Arey (Book 2320, Page 55), Dorothy M. and Richard M. Butler (Book 3765, Page 177), Norman C. and Caroline M. Walton (Book 2014, Page 140), James P. and Lula S. Cullen (Book 2044, Page 474), and Glenda R. and Roger R. Pushor (Book 4755, Page 44) 481.12 feet to a point marked by a 5/8" iron rod set;

Thence, S 54°-20'-55" W by the land of Pushor 29.58 feet to a point marked by a 5/8" iron rod set;

Thence, S 45°-14'-05" W by the land now or formerly of Claire D. and Edward L. Gulick (Book 3782, Page 285) and by the land now or formerly of John H. and Jeannette B. Greer (Book 2824, Page 131) 186.45 feet to a stone wall intersection and the end of Wadco Street;

Thence, N 01°-01'-00" W by a stone wall 7.90 feet to the Northeasterly sideline of Wadco Street;

Thence, N 37°-18'-55" W by the sideline of Wadco Street 165.51 feet to a point marked by a 5/8" iron rod set at the Easterly sideline of Ash Street;

Thence, N 01°-28'-55" W by the sideline of Ash Street 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Diane M. and Richard C. Hayes (Book 3615, Page 161);

Thence, N 88°-31'-05" E by the land of Hayes 98.80 feet to a stonewall;

Thence, N 01°-01'-00" W by the land of Hayes, the land now or formerly of Bertha C. Judkins, by the end of Topsham Street, and by the land now or formerly of David F. Marshall (Book 4804, Page 317) 369.17 feet to a 1" iron pipe found;

Thence, N 01°-26'-15" W by the land of Marshall 125.00 feet;

Thence, S 80°-04'-05" W by the land of Marshall 100.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 1°-09'-05" E by the land of Marshall 125.00 feet to a 1" iron pipe found at the Northeast corner of the land now or formerly of Bertha C. Judkins;

Thence, S 81°-21'-30" W by the land of Judkins 56.91 feet to a 1/4" iron rod found at the Southeast corner of the land now or formerly of F. S. Plummer Co. (Book 6869, Page 110);

Thence, N 07°-34'-10" E by land of F. S. Plummer Co. 592.31 feet;

Thence, S 63°-29'-00" E by Fallbrook, a Condominium, 190.24 feet to a point;

Thence, N 76°-59'-40" E by Fallbrook, a Condominium, 166.98 feet to the point of beginning.

Also including and subject to those easements and rights, in common with others, which are described in the below referenced documents:

(1) Easements from George and Doris Castonia dated December 20, 1985, recorded in Book 7036, Page 92;

(2) Easements from Calvin L. and Myrtle W. Gailey, dated December 20, 1985, and recorded in Book 7036, Page 96;

(3) Easement from Frances F. Gatchell dated December 20, 1985, and recorded in Book 7036, Page 100; and

(4) Easement to the City of Portland for a turn-around at the terminus of Topsham Street and other matters shown on the Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66.

Also, an easement for all purposes in common with others over, under and along the 50 foot wide right of way shown on the said Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66 and reserved in the Declaration of Fallbrook Condominium dated April 20, 1989 and recorded in Book 8730, Page 206.

Also subject to the following exceptions and matters:

1. Title to and rights of the public and others entitled thereto in and to any portion of the Premises located within the bounds of adjacent streets, roads and ways.

2. Setback and minimum building value restrictions set forth in Indenture by and between Reginald and Isabelle H. Carles and Gretta and Edith Henderson, dated January 24, 1949 and recorded in the Cumberland County Registry of Deeds in Book 1951, Page 85 (further references herein to recorded documents are

references to documents recorded in said Registry).

3. Terms and provisions of a State of Maine Department of Environmental Protection Site Location Order #L-011219-87-A-N issued to Liberty Group, Inc., dated October 10, 1985 and recorded in Book 6958, Page 88, as transferred by unrecorded Order dated January 22, 1988; as further transferred to MM II Real Estate Corporation by Order dated February 24, 1989 and recorded in Book 8681, Page 310; as further transferred to Merreal Corp. by Order dated April 3 1989 and recorded in Book 8733, Page 187; and as affected by Order dated December 28, 1992 and recorded in Book 10500, Page 287.

4. Easement from the Merrymeeting Developers to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 25, 1988 and recorded in Book 8444, Page 191.

5. Easement granted to Portland Water District by instrument dated September 21, 1988 and recorded in Book 8490, Page 164.

6. Matters affecting the Premises shown on plan entitled "Condominium Plat III, Fallbrook, A Condominium on Ray Street, Portland, Maine, for Merreal Corp., by Owen Haskell, Inc., dated May 10, 1990 and recorded in Plan Book 185, Page 15.

7. Terms and conditions of a Maintenance Agreement by and between Fallbrook, Inc. and Fallbrook, A Condominium, dated February 4, 1993 and recorded in Book 10546, Page 73.

8. Utility easement from Fallbrook, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 26, 1993 and recorded in Book 10771, Page 14.

9. Utility easement granted to Northern Utilities, Inc. by instrument dated October 7, 1993 and recorded in Book 11022, Page 51.

10. Agreement for Transfer and Assumption of Special Declarant Rights by and between Fallbrook, Inc. and Fallbrook Condominium Association, dated June 28, 1993 and recorded in Book 10804, Page 329.

11. Contract for Electric Service by and between Fall Brook Woods and Central Maine Power Company, dated June 18, 1993 and recorded in Book 11243, Page 201.

12. All encumbrances, restrictions and other matters of record affecting the Premises as of the date hereof.

Meaning and intending to convey the premises conveyed to Grantor herein by Deed from Merreal Corp., formerly named MM II Real Estate Corporation, to Fallbrook, Inc., dated December 20, 1991 and recorded in Book 9831, Page 59.

Received
Recorded Register of Deeds
Dec 30,2009 02:11:13P
Cumberland County
Pamela E. Lovley

Sandy River
COMPANY

Att. D

November 1, 2019

City of Portland
Planning Board
389 Congress Street
Portland, Maine 04101

Re: Funding the Development of Fallbrook Commons

Dear Planning Board:

On behalf of Fallbrook Commons, we are submitting this letter to assure you were can fund the proposed new 90-bed nursing care facility on the campus of Fallbrook Woods on Ray Street.

Sandy River Company is developing this project in partnership with the owner of Fallbrook Woods. This development team has a long history of successfully developing and securing debt and equity financing for senior care facilities throughout Maine. In the past 5 years alone, Sandy River has developed facilities in Maine with over $100M in total project costs. These projects are funded with a combination of bank loans and equity raised from our pool of private investors.

We are continuously in discussions with Maine banks who are eager to participate in the financing of our projects. Currently, Androscoggin Savings Bank is financing a 66-unit new assisted living center under construction in Auburn with $13M in bank financing. NBT Bank is financing a 90-bed facility in Sanford with $17M in bank financing. Please note that we have not selected a bank for the Fallbrook Commons project and generally won't select a bank while we are still going through the approval process to include a Certificate of Need approval from the Maine Department of Health and Human Services. We don't expect to break ground until early summer, 2020 and will negotiate with several banks and make a final bank selection near that time. Thus, we prefer to not include a letter on financing from any particular bank. Please note that we have obtained financing on our projects from five different Maine banks over the past five years.

On equity, we have investors eager to invest in these kinds of projects based on our decades of experience creating successful senior care facilities throughout Maine.

We assure the Planning Board we can finance this proposed project.

Sincerely,

Daniel J Maguire
Managing Partner

Technical Capability

Fallbrook Commons Development LLC has compiled a team of highly qualified contractors, consultants, and engineers for this proposed project.

The project team includes:

Sebago Technics, Inc. (STI) is a multi-disciplined engineering firm with over 35 years of experience, that offers a wide range of services specializing in land development, planning, permitting and engineering design services. We maintain a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, land surveying, and environmental engineering.

Gawron Turgeon Architects (GTA) is a multi-disciplined design firm with over 35 years of experience. They offer multi-disciplined planning and design services with a team that is comprised of architects, architectural designers, interior designers, landscape architects, and project managers.

Please see the cover letter for additional information.

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

Existing Lot Remaining: Fallbrook Woods

ZONING ANALYSIS Relevant Zone(s) Residential 3 (R-3)

All Projects:

	Required	Proposed
Lot Size	2 ac	4.5 ac
Area Per Dwelling Unit	6,500 sf	n/a
Minimum Street Frontage	50 ft	157 ft
Front Yard Minimum	n/a	n/a
Front Yard Maximum	25 ft	25 ft
Rear Yard	25 ft	25 ft
Yard Right	16 ft	16 ft
Yard Left	16 ft	16 ft
Side Street Setback	20 ft	20 ft
Step Back	n/a	n/a
Maximum Lot Coverage	35%	31%
Minimum Lot Coverage	n/a	n/a
Maximum Height	35 ft	No Change
Open Space	n/a	n/a
Maximum Impervious Area	n/a	n/a
Pavement Setback	n/a	n/a
Floor Area Ratio	n/a	n/a
Off Street Parking Spaces	---	93
Loading Bays	2	No Change
Other 1	n/a	n/a
Other 2	n/a	n/a
Other 3	n/a	n/a

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

Proposed Lot- Fallbrook Commons

ZONING ANALYSIS Relevant Zone(s) Residential 3 (R-3)

All Projects:

	Required	Proposed
Lot Size	2 ac	4.5 ac
Area Per Dwelling Unit	6,500 sf	n/a
Minimum Street Frontage	50 ft	157 ft
Front Yard Minimum	n/a	n/a
Front Yard Maximum	25 ft	25 ft
Rear Yard	25 ft	25 ft
Yard Right	16 ft	16 ft
Yard Left	16 ft	16 ft
Side Street Setback	20 ft	20 ft
Step Back	n/a	n/a
Maximum Lot Coverage	35%	31%
Minimum Lot Coverage	n/a	n/a
Maximum Height	35 ft	No Change
Open Space	n/a	n/a
Maximum Impervious Area	n/a	n/a
Pavement Setback	n/a	n/a
Floor Area Ratio	n/a	n/a
Off Street Parking Spaces	---	93
Loading Bays	2	No Change
Other 1	n/a	n/a
Other 2	n/a	n/a
Other 3	n/a	n/a

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

Att. H

Meeting Minutes

A neighborhood meeting was held on February 18, 2020 at the Fallbrook Woods lobby at 60 Merrymeeting Drive in Portland at 6:00pm for the proposed licensed nursing care facility Fallbrook Commons.

Minutes:

The meeting was attended by 30 members of the public. The Applicant began the presentation by introducing the development team. Offered some insight into the history of the project, explained the intent for programming, and handed off to Will Conway from Sebago Technics to explain the site plan, parking, landscaping, stormwater, and utility elements. Following Will's explanation, Michael Pednault from Gawron Turgeon Architects was introduced to explain the proposed building's exterior, interior, and programming. At the end of Michael's presentation, The Applicant opened the meeting to the public for Questions.

A member of the public sought insight into the name of Nevada Avenue, concerned the name would change as a result of the project.

A neighbor explained that they felt the entrance on Ray Street was dangerous and asked the team to consider signage, location, and entrance allocation carefully.

> The design team explained that Sebago Technics' traffic engineers have assessed the sight distance and speed limit on Ray Street and found that we meet city standards.

Many neighbors from Fallbrook Condos expressed opinions regarding traffic on Merrymeeting Drive. They expressed concerns that people speed down the road and present a hazard to pedestrians using the road. There is a general concern that patrons of the proposed facility will favor the entrance on Merrymeeting Drive, over the entrance on Ray Street.

> The design team explained that they are currently working with the Road Committee from Fallbrook Condominiums.

A neighbor from Florida Ave inquired about drainage from the site, showing a concern that water from the project will affect their property.

> The design team explained that the proposed Stormwater management plan results in no increased flows of water from the site.

An abutter inquired about the wetland impacts, and limits of clearing affiliated with the project.

> The design team explained the NRPA application process with DEP and showed the wetland fill areas on the plan, which are highlighted by a hatch pattern.

A neighbor inquired about the potential for a collaboration with Portland Trails.

> The Design team has been in contact with Portland Trails but no decisions have been made at this time.

An abutter from Florida Ave inquired about buffering between the project and the properties along Florida Ave.

> The design team highlighted the limits of clearing, and explained the area along Florida Avenue that is to be planted with evergreens to screen between the properties.

A neighbor asked if the design team had considered a 3-story design.

> The design team explained that they had considered a 3-story design, and that a 3-story layout was infeasible to accommodate residents having access to nature, and that the height of the building would breach the tree canopy which would present a visual impact on the neighbors.

A neighbor asked about the construction schedule and further inquired about the duration.

> The design team explained that construction could take 16 months, and they hope to start Summer – Fall of 2020.

A neighbor asked about the construction vehicle access to the project.

> The design team explained that construction vehicles would enter the project site through the new driveway and not along Merrymeeting Drive.

At the end of the question and answer period a neighbor did offer that their mother is a resident of another project completed by the team. She mentioned that the facility is fabulous and her mother and their family are very happy with the facility.

The meeting adjourned at 7:17pm the design team remained available for few additional questions. The meeting closed at 7:30 pm

Sincerely,

Daniel M. Danvers, RLA
Sebago Technics, Inc.

NEIGHBORHOOD MEETING SIGN-IN

18347

Proposed FALLBROOK COMMONS LICENSED NURSING CARE FACILITY
Ray Street, Portland

Date/Time of Meeting: **February 18, 2020 at 6 P.M.**

Location: **Fallbrook Woods, 60 Merrymeeting Drive**
Portland Maine 04103

Members of the Public in Attendance		
Printed Name	**E-mail**	**Address**
1. Mike & Deb Denbow	mdenbow@maine.rr.com	69 Florida Ave, Portland Maine
2. Gene & Ellen Rowe	None Provided	295 Ray Street, Portland
3. Elizabeth Huntley	ehuntley@maine.rr.com	1 Nevada Ave
4. George St.Clair	George36@gmail.com	36 Nevada Ave
5. Lee Whitney	leeanninmaine@gmail.com	1 Merrymeeting Drive
6. George Barber	gabarber@yahoo.com	19 Merrymeeting Drive
7. Carol Doughty	cndoughty@yahoo.com	54 Florida Ave
8. Ben Doughty	bdoughty@cozyharbor.com	54 Florida Ave
9. Donna Towle	None Provided	8 Merrymeeting Drive
10. Monica Garcia	Monygarcia2@yahoo.com	80 Florida Ave
11. Ann Acheson	tinkeya@yahoo.com	28 Merrymeeting Dr
12. Paul & Kym Cournoyer	Setsail34@gmail.com	24 Merrymeeting Dr
13. Darrin Ramsdell	dramsdell@gmail.com	12 Penn Ave Portland
14. David Dumont	Ddumont11@hotmail.com	2 Merrymeeting Drive
15. Karen Woodberry	Kwood07@hotmail.com	459 Allen Ave #26
16. Ellen Anastos	Ellen.Anastos@ncmoves.com	459 Allen Ave #25
17. Elizabeth Stanton	foodloverrd@gmail.com	16 Merrymeeting Drive
18. Joy Gallant	Gallant-joy@yahoo.com	62 Florida Ave

Printed Name	E-Mail	Address
19. James Sullivan	None Provided	83 Florida Ave
20. John Scholz	johnms@gwi.net	334 Ray Street
21. Beth Webster	Mom21kid@aol.com	47 Florida Ave
22. Susan Harkins	None Provided	50 Florida Ave
23. Hilary Shorey	Hilary.carr09@gmail.com	96 Florida Ave
24. Kimerly Sinclair	Ksinc@maine.edu	333 Ray Street
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Applicant and Consultant Team in Attendance:	
1. William Conway (Sebago Technics)	wconway@sebagotechnics.com
2. Dan Danvers (Sebago Technics)	ddanvers@sebagotechnics.com
3. Aaron Hunter (Sebago Technics)	ahunter@sebagotechnics.com
4. Daniel Maguire (Sandy River Company)	dmaguire@sandyriver2.com
5. Doug Gardner (North Country	DGardner@ncaltc.com
6. Michael Pednault	mpednault@gawronturgeon.com
7.	
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NEIGHBORHOOD MEETING SIGN-IN

18347

Proposed FALLBROOK COMMONS LICENSED NURSING CARE FACILITY
Ray Street, Portland

Date/Time of Meeting: February 18, 2020 at 6 P.M.

Location: Fallbrook Woods, 60 Merrymeeting Drive
Portland Maine 04103

Members of the Public in Attendance		
Printed Name	**E-mail**	**Address**
1. Mike & Deb Dearborn	mdearborn@maine.rr.com	69 Florida Ave Portland ME
2. Gene & Ellen Rowe		295 Ray St. Portland, ME.
3. Elizabeth Huntley	ehuntley@maine.rr.com	31 Nevada Ave.
4. George St. Clair	george36@myfairpoint.net	36 Nevada Ave. Portland
5. Lee Whitney	leeannin maine@gmail.com	1 Merrymeeting Dr. Portland
6. George Barber	gabarber@yahoo	19 " " "
7. Carol Doughty	Cndoughty@yahoo.com	54 Florida Ave
8. Ben Doughty	bdoughty@cozyharbor.com	54 Florida Ave
9. Donna Tozzle		8 Merrymeeting Drive - Portland, ME
10. Mónica Garcia	Monygarcia2@yahoo.com	80 Florida Avenue
11. Ann Acheson	finkoya@yahoo.com	2 Merrymeeting Dr. Portland
12. PAUL & KIM COURNOYER	SETSAIL34@GMAIL.COM	24 MERRYMEETING DR PORTLAND
13. Darrin Ramsdell	dramsdell@gmail.com	12 Penn Ave Portland
14. David Dumont	ddumont11@hotmail.com	2 Merrymeeting DR. Portland
15. Karen Woodberry	kwood07@hotmail.com	459 Allen Ave #16
16. Ellen Anastos	ELLEN.ANASTOS@NEMOVES.COM	" " " #25 Portland 04103
17. Elizabeth Stanton	foodloverrd@gmail.com	16 Merrymeeting Dr Portland 04103
18. Joy Gallant	gallant-joy@yahoo.com	62 Florida Ave Portland ME 04103.

	Printed Name	E-Mail	Address
19.	JAMES SULLIVAN		83 Florida Ave Port
20.	John Scholz	Johnms@gwi.net	334 Ray St Port
21.	Beth Webster	Mom2kid@aol.com	47 Florida Ave Portland
22.	Susan Hawkins		50 Florida Ave Portland
23.	Hilary Shorey	hilary.carr09@gmail.com	96 Florida Ave Portland
24.	Kimberly Sinclair	KSinC@maine.edu	333 Ray Street Portland
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Applicant and Consultant Team in Attendance:	
1. William Conway	wconway@sebagotechnics.com
2. Dan Danvers	ddanvers@sebagotechnics.com
3. Aaron Hunter	ahunter@sebagotechnics.com
4. Mike Pedhault	mpedhault@gawrontturgeon.com - Architect
5. ~~George Barbe~~	~~gabarber@yahoo.com~~
6. ~~LeeAnn Whitney~~	
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Sandy River
COMPANY

Att. I

May 15, 2020

Andrew Tufts
City of Portland Planning Board

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

Re: Fallbrook Commons replacement project for St Joseph Manor

We are providing this letter to share the need to replace St. Joseph Manor and to do so just as soon as we can.

This project is a collaboration between Maine Medical/Maine Health, Sandy River Company, and North Country Associates. Maine Medical Center currently owns St. Joseph Manor, a 121-bed licensed nursing home. Maine Medical will sell the bed rights of St Joseph Manor to Sandy River and North Country, who will jointly develop and operate a new 90-bed state-of-the art licensed nursing care center to replace St Joseph and to be located on land abutting Fallbrook Woods, a 66-bed assisted living facility on Ray Street.

The existing 45-year old nursing care facility does not meet today's skilled nursing facility standards and has outlived its useful life as a nursing home. Additionally, as we have all learned from COVID-19, existing older nursing homes are extremely vulnerable places in managing such outbreaks. We need to replace St Joseph Manor for the following reasons:

- The resident rooms are small, shared rooms, and four persons to a bathroom that do not meet ADA standards, nor appropriately allow for managing any possible virus outbreaks. The new building will be largely private rooms with private baths and offer a much safer environment to manage infectious disease control.

- Built in 1974, the facility is an old-style long double loaded corridor facility with dead end corridors. The layout of the building does not allow for efficient programming and caregiving. The proposed new facility will consist of three "neighborhoods" offering the opportunity to create both a traditional long-term care neighborhood and short stay rehabilitation neighborhoods, as well as decentralize dining and living areas. This layout also offers the opportunity to significant improve the management of any outbreaks of infectious disease.

- The physical plant is in poor condition with failing or outdated mechanical systems, heating inefficiencies and a roof that needs replacing; there is an entire wing that is not operational.

Clearly, replacing St Joseph Manor with a new state-of-the-art nursing center will have a dramatic positive impact on the quality of life of residents and improve the emotional health of residents and their families. As part of the collaboration for this project, it became important that the replacement facility and services continue to be offered within the City of Portland. Please note that the proposed new replacement facility is within a mile of St Joseph, allowing for a nearby transition for residents and family and staff. The development of a new 90-bed nursing home requires at least 5-7 acres of land which is almost impossible to find with the City. The available land at Fallbrook Woods offered the opportunity to create a campus whereby staff and resources can be shared as well as families could easily visit family members that might be in both facilities.

The project received approval from Maine Department of Health and Human Services on January 13, 2020. Since then, there has been several delays. First, we learned that the City of Portland's Planning Board was backed up with several other projects ahead of this project. And then COVID-19 entered all our lives and further delayed any opportunity to bring this project to an agenda with the Planning Board. We also held a "neighborhood" meeting and listened to concerns about our initial proposed entrance from Ray Street to the proposed new nursing center. Based on feedback from neighbors about traffic safety at that entrance point, we decided to change that entrance to a gated fire safety access only and utilize the existing private road, Merrymeeting Drive, that comes into the existing assisted living facility and create a more defined senior care campus. We have amended our plans accordingly with upgrades to Merrymeeting Drive that also address concerns from Fallbrook Condos neighbors which also share Merrymeeting Drive.

We would like to begin construction this year. The new facility will take approximately 16 months to build and not open until 2022. Building and opening the replacement facility for St Joseph Manor just as soon as possible is critical to the health and safety of residents and staff.

We really appreciate the City of Portland's support for this important project.

Sincerely,

Daniel J Maguire
Managing Partner
Sandy River Company

Maine Medical Center
MaineHealth

Att. J

November 12, 2019

Ms. Christine Grimando
Department of Planning and Urban Development of Portland
389 Congress Street
4th Floor
Portland, Maine 04101

Dear Ms. Grimando,

I am writing on behalf of Maine Medical Center to express our support for the proposed Fallbrook Care Center and the partnership between Sandy River Co. and North Country Associates that will bring this critically needed center for senior care services to Portland.

As the president of Maine Medical Center, I advocate daily for our vision of "Working together to ensure our communities are the healthiest in America," and that is exactly what this project is creating. As you already know, Maine is the oldest state in the nation and the need to serve the demand for senior care in new, innovative and resident-centered ways is growing.

Fallbrook Care Center will provide more than just a home to residents who require short and long-term living arrangements, it will also play an important role in the continuum of medical care in our local community. Patients recovering from complex medical conditions will have a supportive environment aligned with best practices for senior care.

Maine Medical Center strongly endorses the proposed project.

Please do not hesitate to reach out to me if we can be of further assistance as you evaluate this project.

Respectfully,

Jeffrey D. Sanders
President

22 Bramhall Street • Portland, ME 04102 • Phone: (207) 662-0111
www.mmc.org

Att. K

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

November 21, 2019

Ms. Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Project: MHPC #1678-19 Fallbrook Commons; Ray Street/ Merrymeeting Drive Senior Living Facility

Town: Portland, ME

Dear Ms. Nichols:

In response to your recent request, I have reviewed the information received November 14, 2019 to initiate consultation on the above referenced project in accordance with the requirements of Maine Department of Environmental Protection.

Based on the information provided, I have concluded that there are no National Register listed or known eligible properties on or adjacent to the proposed project site. In addition, the parcel is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, at megan.m.rideout@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132 FAX: (207) 287-2335

November 7, 2019
18347

Mr. Kirk Mohney
Maine Historic Preservation Commission
65 State House Station
Augusta, Maine 04333

Re: Fallbrook Commons - Senior Living Facility
Ray Street / Merrymeeting Drive, Portland
Parcel ID: 403 F001, 403-F005

Dear Mr. Mohney:

On behalf of the project applicant, Sebago Technics respectfully requests site review for a proposed new senior living facility adjacent to an existing senior facility in the North Deering section of Portland on Ray Street. The property is 12.78± acres and is located in the City Residential-3 zone. Per available resources we have determined that the site is not located in a local Historic District.

The project includes a new senior living facility that will be located next to the existing Fallbrook Woods assisted living community. The development includes the construction of a two-story, 37,450± sf building with 90 bedrooms and two adjacent parking areas. The new senior facility will be accessed by a new driveway from Ray Street with secondary access for emergency use over Merrymeeting Drive.

The project area is mostly wooded and will be cleared for the proposed site improvements. The applicant intends to leave the majority of the municipal building setbacks vegetated. Post-construction views to and from the new facility will be filtered through a combination of the existing mature vegetation and new landscaping.

We respectfully request review of the Maine Historic Preservation Commission database for any properties or structures of historic significance in the vicinity of the project site. For your reference, I have enclosed a site location map, the site property cards and Google Earth street view images of the surrounding residential areas. At your earliest convenience, please review and forward your findings. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,18347

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist / Project Coordinator

enc.

STI 18347

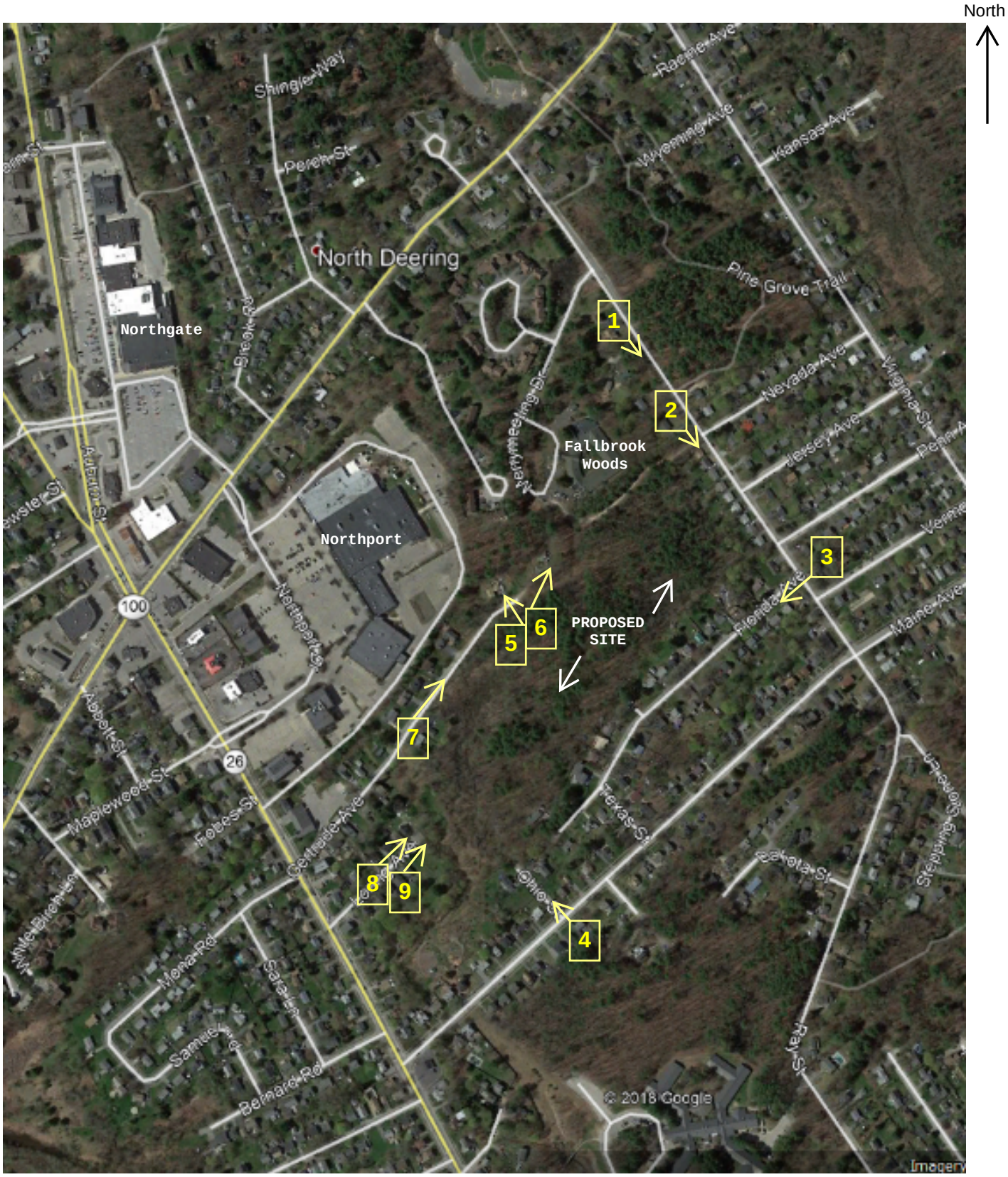

PHOTO KEY – Fallbrook Commons, Portland

Street view looking southeast along Ray Street toward the project entrance location

Street view looking southeast from the proposed Ray Street project entrance location

View along Florida Avenue from Ray Street

View along Ohio Street from Maine Avenue

Gertrude Avenue terminus -1

Gertrude Avenue terminus -2

Mid Gertrude Avenue Existing Conditions – residences and wooded area

View along Loring Avenue to end

View 2 - Loring Avenue to end

PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

Current Owner Information:

CBL	403 F005001
Land Use Type	SINGLE FAMILY
Verify legal use with Inspections Division	
Property Location	368 RAY ST
Owner Information	MCDONALD PATRICIA A & CATHERINE E MCDONALD 368 RAY ST PORTLAND ME 04103
Book and Page	8818/50
Legal Description	403-F-5 RAY ST 368 19695 SF
Rental Registration	No
Acres	0.4522

Current Assessed Valuation:

TAX ACCT NO.	25541
LAND VALUE	$79,700.00
BUILDING VALUE	$105,800.00
HOMESTEAD	($16,800.00)
NET TAXABLE - REAL ESTATE	$168,700.00
TAX AMOUNT	$3,932.40

OWNER OF RECORD AS OF APRIL 2019
MCDONALD PATRICIA A &
CATHERINE E MCDONALD
368 RAY ST
PORTLAND ME 04103

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1955
Style/Structure Type	3
# Units	1
Bedrooms	2
Full Baths	1
Total Rooms	5
Attic	NONE
Basement	FULL
Square Feet	1200

View Sketch View Map View Picture

Outbuildings/Yard Improvements:

	Building 1
Year Built	1980
Structure	GARAGE-WD/CB
Size	14X22
Units	1

Grade	C
Condition	A

Sales Information:

Sale Date	**Type**	**Price**	**Book/Page**
7/7/1989	LAND + BUILDING	$0.00	8818/50

PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

Services

Applications
Doing Business
Maps
Tax Relief
Tax Roll
Q & A

browse city services a-z

browse facts and links a-z

Best viewed at 800x600, with Internet Explorer

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	400 D023001
Land Use Type	RETAIL & PERSONAL SERVICE
Verify legal use with Inspections Division	
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421	**OWNER OF RECORD AS OF APRIL 2019**
LAND VALUE	$305,600.00	FALLBROOK PROPERTIES LLC
BUILDING VALUE	$3,086,400.00	
NET TAXABLE - REAL ESTATE	$3,392,000.00	418 RAY ST PORTLAND ME 04103
TAX AMOUNT	$79,067.52	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

	Building 1
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map View Picture

Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

New Search!

11/10/2019 Portland Maine Assessor's Online Database

Att. L

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

Site Location of Development Permit Application
Fallbrook Commons

Prepared for
Fallbrook Care Development, LLC
P.O. Box 110
Portland, ME 04112

Prepared by
Sebago Technics
75 John Roberts Rd.
South Portland, ME 04106

February 2020
18347

Table of Contents

Application

Section Title

Section 1 Development Description
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Section 3 Financial Capacity
Section 4 Technical Ability
Section 5 Noise
Section 6 Visual Quality and Scenic Character
Section 7 Wildlife and Fisheries
Section 8 Historic Site
Section 9 Unusual Natural Areas
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Section 11 Soils
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Section 20 Blasting
Section 21 Air Emissions
Section 22 Odors
Section 23 Water Vapor
Section 24 Sunlight
Section 25 Notices

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE **FORM A PAGE 1**
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ **20 acre development** ☐ **Planning Permit** ☐ **Metallic Mining**	☐ **Marine Oil Terminal** ☐ **Structure** ☐ **Subdivision**	■ **Major Amendment** ☐ **Minor Amendment**

1. Name of Applicant:	Fallbrook Care Development LLC	**6. Name of Agent (if applicable):**	Sebago Technics Inc/Dan Danvers
2. Applicant's Mailing Address:	P.O. Box 110, Portland, ME 04112	**7. Agent's Mailing Address:**	75 John Roberts Rd S. Portland
3. Applicant's Daytime Phone #:	207-233-8665	**8. Agent's Daytime Phone # :**	207-200-2125
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	dmaguire@sandyriver2.com	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	ddanvers@sebagotechnics.com

PROJECT INFORMATION

11. Name of Development:	Fallbrook Commons						
12. Map and Lot #'s:	**Map #:** 400	**Lot #:** D23-01	**13. Deed Reference #'s:**		**Book #:** 27501	**Page #:** 183	
14. Location of Project City/Town:	Portland	**15. County:**	Cumberland	**16. UTM Northing**		**17. UTM Easting**	
18. Brief Description of Project including total parcel size:	Construction of a two-story, 58,197 sf senior care facility on a 12.78 acre parcel						

19. Type of Direct Watershed: (Check all that apply)

☐ Lake not most at risk ■ River, stream or brook ☐ Coastal wetland
☐ Lake most at risk ☐ Urban impaired stream ☐ Wellhead or public water
☐ Lake most at risk, severely blooming ☐ Freshwater wetland

20. Name of Waterbody Project Site drains to:	unnamed stream that discharges to the Presumpscot River		
21. Amount of Developed Area:	Total acres: 5.6	Existing Developed area: 0 acres	New Developed area: 5.6 acres
22. Amount of Impervious Area:	Total acres: 2.7	Existing Impervious areas 0 acres	New Impervious area: 2.7 acres

23. Development started prior to obtaining a license?:	☐ **Yes** ■ **No**		
24. .Development or any portion of the site subject to enforcement action?	☐ **Yes** ■ **No**	**If yes**, name of enforcement staff involved?	
25. Common scheme of development?:	■ **Yes** ☐ **No**	**26. Title, Right or Interest:**	☐ **own** ☐ **lease** ■ **purchase option** ☐ **written agreement**
27. Natural Resources Protection Act permit required?:	■ **Yes** ☐ **No**	**If yes:** ☐ **PBR** ☐ **Tier 1** ☐ **Full Permit** ■ **Tier 2**	
28. Existing DEP Permit number (if applicable):	L-011219-87-A-N		
29. Names of DEP staff person(s) present at the pre-application meeting:	City of Portland delegated review		
30. Does agent have an interest in project? If yes, what is the interest?	☐ **Yes** ■ **No**		

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)"..

Signed: _____ **Title** Member **Date:** 2/20/20

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** _____ **Date:** 2/20/20

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): DANIEL DANVERS

Date: 03/02/2020

Re/Cert/Lic No.: _____

Engineer _____

Geologist _____

Soil Scientist _____

Land Surveyor _____

Site Evaluator _____

Active Member of the Maine Bar _____

Professional Landscape Architect 4815

Other _____

Section 1

Development Description

Section 1

Development Description

A. Narrative

The project includes a new senior living facility located next to Fallbrook Woods assisted living. The development includes the construction of a two story, 58,197 sf building that will house 90 beds, a commercial kitchen, community areas, and two parking areas with a total of 92 parking spaces. Fallbrook Health Center proposes a main entrance off of Ray Street, and an emergency connection to Merrymeeting Drive.

This project is proposed to be complete as one phase, which will involve clearing the incidental vegetation, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by 2021.

The project site is comprised of undeveloped, mostly wooded land with frontage on Ray Street. The site was originally permitted through the State; first as part of a phased subdivision plan and then as part of Fallbrook Woods senior center development (L-11219-87-G-C). The subject parcel is approximately 8.28 acres and is a portion of the Fallbrook Woods original 12.78-acre parcel. The Fallbrook Commons project is not directly affiliated with Fallbrook Woods, however given the nature of these two facilities there will be a connecting drive to the existing Fallbrook Woods.

The proposed project is within the watershed of an unnamed stream that is a tributary of the Presumpscot River, which is not classified as most-at-risk in the Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development, And Urban Impaired Streams. Chapter 500 Stormwater Phosphorus Standards do not apply.

B. Topographic Map

Attached as Figure 1.

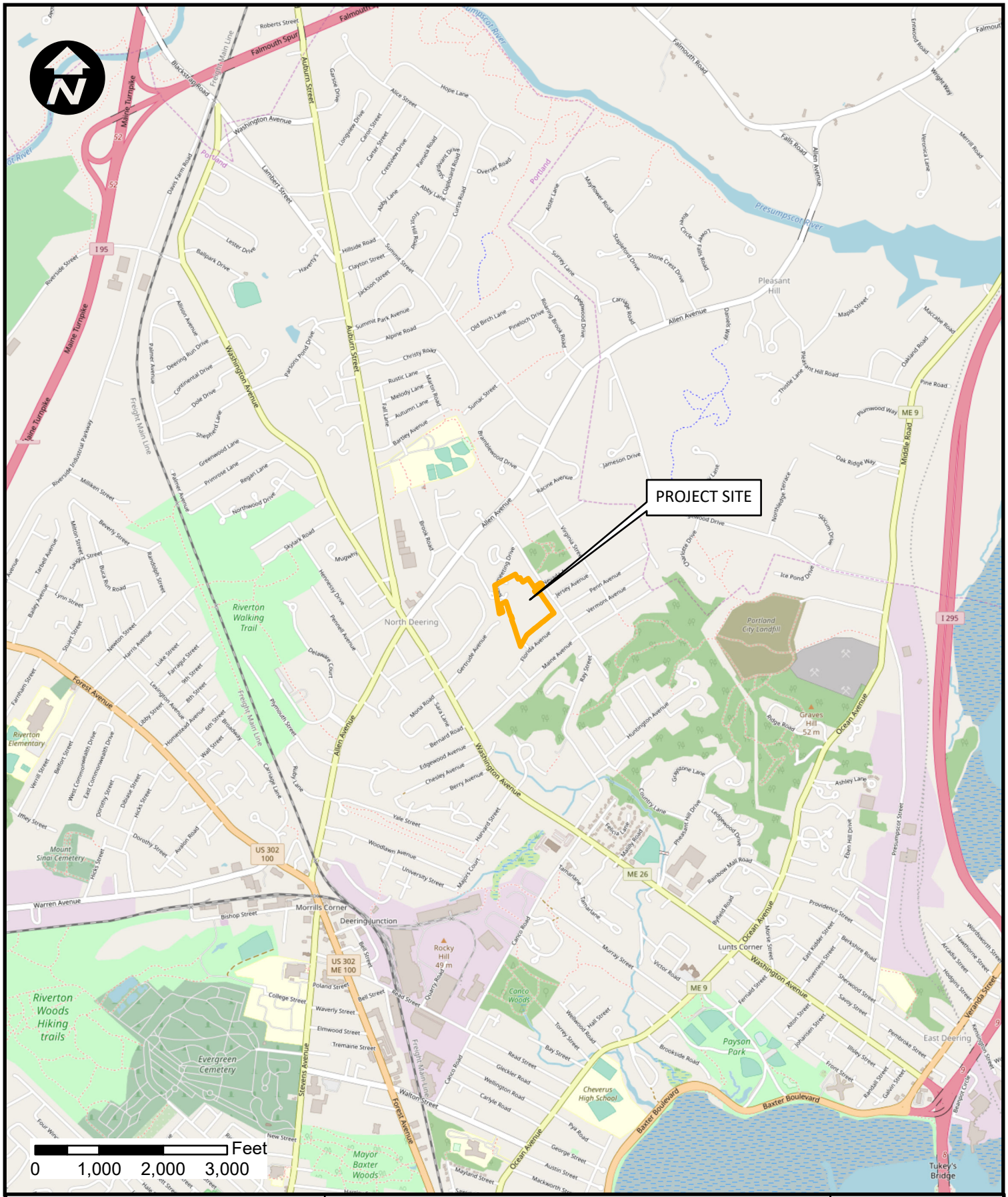
C. Construction Plan

Site improvements are scheduled to begin in summer 2020 with completion by late 2021. The proposed project will begin upon recipe of all appropriate permits.

D. Drawings

All appropriate site drawings are attached. Individual plans are listed below.

Sheet Number	Sheet Title
1	Cover Sheet
1 of 1	Existing Conditions Plan
2	Notes and Legend
3	Overall Site Plan
4	Site Plan 1
5	Site Plan 2
6	Grading Plan 1
7	Grading Plan 2
8	Gravel Wetland Detail
9	Underdrained Soil Filter Detail
10	Utility Plan 1
11	Utility Plan 2
12	Landscape Plan 1
13	Landscape Plan 2
14	erosion Control Notes and Details
15	Details 1
16	Details 2
17	Details 3
18	Pre-Development Stormwater Plan
19	Post-Development Stormwater Plan



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE LOCATION MAP
FALLBROOK COMMONS

SCALE: 1:24,000

DATE: 10/22/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
USGS Quadrangle: Portland West

Section 2

Title, Right or Interest

Section 2

Title, Right or Interest

The record owner of the parcels is Fallbrook Properties, LLC by a deed and recorded at the Cumberland County Registry of Deeds in Book 27501 Page 183. A purchase and sales agreement is in place between Fallbrook Properties, LLC and the applicant, Fallbrook Care Development, LLC.

Please see this Section for a copy of the deed and purchase and sales agreement.

AGREEMENT FOR PURCHASE AND SALE
OF
REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of two parcels of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal descriptions to be used in conveying the Property are annexed hereto and incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

period, not to exceed 30 days from the time Seller receives written notice of the defect, unless otherwise agreed to by both parties, to remedy the title, after which time, if such defect is not corrected so that there is marketable title, Buyer may within forty-five (45) days thereafter, at Buyer's option, withdraw said earnest money and neither party shall have any further obligation hereunder. Seller hereby agrees to make a good-faith effort to cure any title defect during such period,but shall not be obligated to expend more than $5,000 to cure. If Closing of the real estate transaction is delayed on account of such defects, the parties shall bargain regarding whether and the terms under which the remainder of the closing contemplated under the Memorandum of Agreement may be consummated and this real estate transaction completed thereafter.

b. Seller further agrees to execute and deliver to Buyer at Closing the following documents: (i) a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations); (ii) a title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession; (iii) an affidavit regarding underground storage tanks (as required by Maine Law), and (iv) documents demonstrating Seller's authority to convey and good standing as evidenced by a copy of Seller's resolution authorizing the transaction contemplated herein and all other documents regarding authority or any other matter reasonably required from the Closing.

c. To the extent that the conveyance of title to the Property to Buyer requires the subdivision of lots, Buyer shall bear the cost, or shall reimburse Seller, for the cost of any outside legal and surveyor expense reasonably necessary to secure such subdivision, including any necessary municipal or other approvals.

4. DEED: The Property shall be conveyed by a quitclaim with covenant deed and shall be free and clear of all encumbrances except for Permitted Encumbrances, and except for covenants, conditions, easements and restrictions of record and usual public utilities servicing the Property and shall be subject to applicable land use and building laws and regulations.

5. POSSESSION/OCCUPANCY: Possession/occupancy of Property shall be given to Buyer immediately at Closing unless otherwise agreed by both parties in writing.

6. RISK OF LOSS: Until transfer of title, the risk of loss or damage to said Property by fire or otherwise is assumed by Seller unless otherwise agreed in writing. Said Property shall at closing be in substantially the same condition as at present, excepting reasonable use and wear.

7. PRORATIONS: The following items shall be prorated as of the date of closing:

a. Buyer and Seller shall each pay one-half of the transfer tax as required by the laws of the State of Maine.

b. Buyer and Seller shall reasonably cooperate on the proration of any other needed item at Closing. The property is vacant land, and so no heating oil or water and sewer charges are expected.

c. Real Estate Taxes for any potions of the Property subject to such taxes, based on the municipality's current tax year.

8. INSPECTION. Buyer may enter into any part of the Property at all reasonable times in order to inspect the Property, conduct surveys, soil tests and engineering studies and to do such things as are reasonably necessary with respect to its acquisition and intended development of the Property. In the event that the Buyer does not terminate this Agreement, this inspection contingency to its obligation to close shall be conclusively deemed waived.

9. AGENCY DISCLOSURE: Buyer and Seller acknowledge that they have not engaged a real estate broker in their transaction.

10. PRIOR STATEMENTS: This Agreement and the referenced Memorandum of Agreement set forth the entire agreement between the parties relating to the conveyance of the property described in Exhibit A, and there are no other representations, agreements or understandings with respect to the subject matter of this Agreement.

11. ASSIGNS: This Agreement shall extend to and be obligatory upon successors, and assigns of the respective parties. This Agreement may be assigned only to persons or entities controlling, controlled by, or under common control of a party.

12. COUNTERPARTS: This Agreement may be signed on any number of identical counterparts, including telefax copies, with the same binding effect as if all of the signatures were on one instrument.

13. BUYER'S NOMINEE: Buyer may transfer its rights under this Agreement to an entity or the nominee which it controls. Buyer shall, however, remain jointly and severally liable with such transferee for all of Buyer's obligations under this Agreement and under the Memorandum of Agreement, and such transferee shall be required to assume joint and several liability for all such obligations. Buyer shall give Seller prompt written notice of any such transfer at least seven (7) days before the scheduled Closing, which notice shall include sufficient information to identify the transferee entity or nominee and certified copies of its organizational documents. No assignment shall be valid unless Seller has approved the agreement pursuant to which the assignment is consummated. No other assignment of this Agreement by Buyer is permitted.

14. EFFECTIVE DATE: This Agreement is a binding contract when signed by both Seller and Buyer and when that fact has been communicated to all parties or to their agents. Time is of the essence of this Agreement to the extent set forth in the Master Agreement.

15. BEST EFFORTS: Each of the parties shall undertake to take all reasonable steps necessary to achieve the satisfaction of conditions leading to a Closing under this Agreement.

16. FACSIMILE COPIES: All parties to this Agreement agree to accept facsimile or photocopies of this document and any signatures thereto as originals.

17. REPRESENTATIONS OF SELLER: Seller represents to Buyer that the following are true as of the date of this Agreement and will be true as of the Closing:

a. To the best of Seller's knowledge, there are no violations of any applicable law, ordinance or regulation at the Property.

b. To the best of Seller's knowledge, there are no special wastes, underground storage tanks, asbestos containing materials, waste oil, petroleum and any other hazardous substances, materials or wastes contaminating the Property. The terms used in the foregoing sentence shall include, without limitation, all substances, materials, etc., designated by such terms under any laws, ordinances, or regulations, whether federal, state, or local. This presentation shall except such materials used in the regular course of business and disposed of in compliance with all applicable laws.

c. Other than matters of record that constitute Permitted Encumbrances, there are no outstanding pending or threatened liens, claims, rights of first refusal, or encumbrances against the Property.

18. NOTICES. Any notice or communication given pursuant to this Agreement by either of the parties to the other shall be in writing and delivered as provided in the Master Agreement for notices.

19. GOVERNING LAW. This Agreement shall be construed according to the laws of the State of Maine.

20. TERMINATION OF AGREEMENT. This Agreement shall terminate if:

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

a. The Memorandum of Agreement is terminated.

b. Any other condition precedent set forth in the Memorandum of Agreement required to be fulfilled is not fulfilled (or waived by the party having the waive such condition) by August 30, 2020.

Seller acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2-1/2% of the consideration unless Seller furnishes to Buyer a certificate by the Seller stating, under penalty of perjury, that Seller is a resident of Maine or the transfer is otherwise exempt from withholding.

Buyer Fallbrook Core Development LLC ~~Tax I.D.~~
#

Signature

Daniel J. Maguire
Name/Title, there unto duly authorized
Member

Seller accepts Buyer's offer and agrees to deliver the Property at the price and upon the terms and conditions set forth above.

Signed this 26th day of August, 2019.

Seller FALLBROOK PROPERTIES, LLC Tax I.D. # 270433266

By:

Signature

JOHN C. ORESTIS, PRINCIPAL & MANAGING MEMBER
Name/Title, there unto duly authorized

EXHIBIT A

(legal descriptions begin on next page)

Exhibit A

AGREEMENT FOR PURCHASE AND SALE
OF
REAL ESTATE

AGREEMENT ("Agreement") made and entered into this 28th day of August, 2019, by and between Fallbrook Properties, LLC , a Maine corporation ("Seller"), having a mailing address of 60 Merrymeeting Drive, Portland, Maine 04013 and Fallbrook Care Development LLC, a Maine corporation with an address of PO Box 110, Portland, Maine 04112 or its assigns ("Buyer").

RECITALS

Seller is party to a Memorandum of Agreement relating to a project that entails the conveyances by Seller to a Joint Venture of real property (two land parcels) located adjacent to Fallbrook Woods in Portland, Maine, and the use of such assets by Buyer to develop, build and operate a new assisted living facility. This Agreement for the Purchase and Sale of Real Estate is contemplated by the Memorandum of Agreement., Joint Venture, dates August 28, 2019.

In consideration of the mutual covenants and agreements herein contained herein, the receipt and sufficiency of which are hereby acknowledged, Seller and Buyer hereby agree as follows:

1. PURCHASE AND SALE. Seller agrees to sell, and Buyer agrees to buy, on the terms and conditions hereinafter set forth certain real estate, and all appurtenances thereof, consisting of a parcel of real estate shown for illustration purposes in the diagram attached as Exhibit A. Copies of the legal description to be used in conveying the Property are annexed hereto and also incorporated herein by reference as Exhibit A (collectively to be referred to as the "Property").

2. PURCHASE PRICE AND DEPOSIT: As consideration for the conveyance of the Property, Buyer shall pay to Seller at Closing the sum of $800,000.

3. PERFORMANCE AT CLOSING: At Closing, Seller shall deliver to Buyer a deed, conveying the Property in fee simple with good and marketable title in accordance with standards of title adopted by the Maine Bar Association, and subject to the Permitted Encumbrances, and Buyer shall pay the Purchase Price as provided herein and execute all necessary papers for the completion of the purchase on or before August 30, 2020, unless extended by mutual agreement of the parties.

EXHIBIT A
Proposed Description Parcel One

A certain lot or parcel of land situated on the westerly sideline of Ray Street in the City of Portland, County of Cumberland, State of Maine as depicted on a plan titled "Existing Conditions of Fallbrook Nursing Care, Merrymeeting Drive, Portland, Maine for Sandy River Company, 217 Commercial Street, Suite 201, Portland, Maine 04112, Record Owner Fallbrook Properties, LLC, 418 Ray Street, Portland Maine 04103" by Sebago Technics, Inc., dated May 30, 2019 and revised through July 10, 2019 to be recorded in the Cumberland County Registry of Deeds (CCRD) and being more particularity bounded and described as follows:

Beginning at a 5/8-inch rebar, 6-inches above grade on the westerly sideline of Ray Street and the northerly corner of land now or formerly of Amanda J. Connelly as described in a deed recorded in the CCRD in Book 34668, Page 155;

Thence S 54°32'18" W, along land now or formerly of Amanda J. Connelly and land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS as described in a deed recorded in the CCRD in Book 6632, Page 99, a distance of 150.00 feet to a 5/8-inch iron rod, 8-inches above grade;

Thence S 35°27'42" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, along land now or formerly of Donald A. Thompson, Jr. and Evelyn L. Thompson JTS, a distance of 50.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at land now or formerly of Jason D. Smith and Laurie R. Smith JTS as described in a deed recorded in the CCRD in Book 32730, Page 23;

Thence S 35°27'42" E, along land now or formerly of Jason D. Smith and Laurie R. Smith JTS and land now or formerly of Debora D. Morgan as described in a deed recorded in the CCRD in Book 13636, Page 105, a distance of 72.78 feet to a point;

Thence S 34°40'07" E, along land now or formerly of Debora D. Morgan, Gladys A. Moody as described in a deed recorded in the CCRD in Book 32780, Page 65, Marilyn D. Webb as described in a deed recorded in the CCRD in Book 29023, Page 310, Anna J. Aiken and James W. Aiken JTS as described in a deed recorded in the CCRD in Book 25390, Page 8, John M. Scholz as described in a deed recorded in the CCRD in Book 10841, Page 202, Jaime L. Hiltz as described in a deed recorded in the CCRD in Book 23255, Page 247 and David DiPietro as described in a deed recorded in the CCRD in Book 32054, Page 195, a distance of 333.24 feet to a 5/8-inch iron rod, 15-inches above grade at land now or formerly of Hon Khuu as described in a deed recorded in the CCRD in Book 32424, Page 248 and land now or formerly of Regan S. Brendan as described in a deed recorded in the CCRD in Book 32806, Page 341;

Thence S 54°36'33" W, along land now or formerly of Regan S. Brendan, a distance of 51.09 feet to a point;

Thence S 51°05'03" W, along land now or formerly of Regan S. Brendan, land now or formerly of Christian Sabrina Katheryn as described in a deed recorded in the CCRD in Book 32949, Page 39, land now or formerly of Mary A. Packard and Amanda M. Packard as described in a deed recorded in the CCRD in Book 10936, Page 100, land now or formerly of Haylee E. Hasson as described in a deed recorded in the CCRD in Book 33706, Page 89, land now or formerly of Hilary Carr as described in a deed recorded in the CCRD in Book 29976, Page 255, land now or formerly of Paula M. Urbach as described in a deed recorded in the CCRD in Book 31613, Page 621, land now or formerly of Ian P. Houseal as described in a deed recorded in the CCRD in Book 30070, Page 164, land now or formerly of Luis O. Garcia and Monica M. Garcia JTS as described in a deed recorded in the CCRD in Book 30353, Page 291 and land now or formerly of Matthew A. Anderson as described in a deed recorded in the CCRD in Book 32380, Page 112, a distance of 481.12 feet to a 5/8-inch iron rod, 12-inches above grade;

Thence S 37°28'58" W, along land now or formerly of Matthew A. Anderson, a distance of 29.58 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 28°22'08" W, along land now or formerly of Matthew A. Anderson, land now or formerly of Megan T. and Jonathan A. York JTS as described in a deed recorded in the CCRD in Book 25317, Page 156 and land now or formerly of Joy M. and Michael J. Borlawsky as described in a deed recorded in the CCRD in Book 9606, Page 268, a distance of 186.45 feet;

Thence S 29°23'41" W, along land now or formerly of Joy M. and Michael J. Borlawsky, a distance of 20.45 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at the centerline of the vacated Wadco Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29;

Thence N 54°10'52" W, through the vacated Wadco Street, a distance of 182.25 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 18°20'52" W, through the vacated Wadco Street and the vacated Ash Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, a distance of 108.08 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 71°39'08" E, through the vacated Ash Street and along land now or formerly of Jeffrey A. Hayes Trustee as described in a deed recorded in the CCRD in Book 30716, Page 21, a distance of 123.80 feet to a point;

Thence N 17°52'57" W, along land now or formerly of Jeffrey A. Hayes Trustee, land now or formerly of Bertha L. Judkins as described in a deed recorded in the CCRD in Book 7750, Page 196, Topsham Street as depicted on a Plan recorded at the CCRD in Plan Book 16, Page 29, land now or formerly of House of Hogwarts, LLC as described in a deed recorded in the CCRD in Book 34616, Page 309, a distance of 369.17 feet to a 1-inch iron pipe, 2-inches above grade;

Thence N 18°18'12" W, along land now or formerly of House of Hogwarts, LLC, a distance of 125.00 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence S 79°57'00" E, through land of Fallbrook Properties, LLC, a distance of 99.99 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set;

Thence N 54°32'18" E, through land to be retained by Fallbrook Properties, LLC, a distance of 420.18 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set at other land of Fallbrook Properties, LLC;

Thence continuing N 54°32'18" E, through other land of Fallbrook Properties, LLC, a distance of 119.82 feet to a 5/8-inch rebar with plastic cap inscribed "STI PLS 2534" to be set on the westerly sideline of Ray Street;

Thence S 35°27'42" E, along Ray Street, a distance of 55.00 feet to the Point of Beginning;

Containing approximately 8.28 Acres.

The bearings herein are Grid North, Maine State Plane Coordinate System, West Zone 1802, NAD83.

August 28, 2019
AJS/jg

Current Owner Information:

CBL	400 D023001
Land Use Type Verify legal use with Inspections Division	RETAIL & PERSONAL SERVICE
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421
LAND VALUE	$305,600.00
BUILDING VALUE	$3,086,400.00
NET TAXABLE - REAL ESTATE	$3,392,000.00
TAX AMOUNT	$79,067.52

OWNER OF RECORD AS OF APRIL 2019
FALLBROOK PROPERTIES LLC

418 RAY ST
PORTLAND ME 04103

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map V

Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

SHORT FORM QUITCLAIM DEED WITH COVENANT

FALLBROOK, INC., a Maine corporation with a principal place of business in Portland, Maine, FOR CONSIDERATION PAID, grants to **FALLBROOK PROPERTIES, LLC**, a Maine limited liability company whose mailing address is 418 Ray Street, Portland, Maine 04103, with QUITCLAIM COVENANT certain real property, together with any improvements thereon, located at 418 Ray Street, Portland, Cumberland County, Maine, and more particularly described on **Exhibit A** attached hereto and made a part hereof (the "Premises").

IN WITNESS WHEREOF, Fallbrook, Inc. has caused this instrument to be executed by Robert J. Feeney, its President thereunto duly authorized, this 15th day of December, 2009.

WITNESSETH:

Name:

FALLBROOK, INC.

By:
Name: Robert J. Feeney
Title: President

State of Maine
County of Cumberland, ss.

December 15, 2009

PERSONALLY APPEARED the above-named Robert J. Feeney, President of Fallbrook, Inc., as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said corporation.

Before me,

Name: Kevan Lee Rinehart
Title: Attorney/ ME 9303

EXHIBIT A

A certain parcel of land situated Westerly of Ray Street in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

Beginning at the southeasterly corner of Fallbrook, a Condominium, at a point on the Westerly sideline of land now or formerly of John N. Jr. and Glennis E. Fitzpatrick (Book 2773, Page 224);

Thence, S 13°-05'-20" E by the land of Fitzpatrick 110.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 76°-54 '-40" E by the land of Fitzpatrick 256.90 feet to a point on the Westerly sideline of Ray Street marked by 5/8" iron rod set;

Thence, S 16°-25'-15" E by the sideline of Ray Street 1.42 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Ivan G. and Edwina F. Callahan (Book 2997, Page 486);

Thence, S 73°-34'-45" W by the land of Callahan 220.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 16°-25'-15" E by the land of Callahan 65.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 73°-34'-45" E by the land of Callahan 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Malcolm A. and Gail E. McDonald (Book 3614, Page 219);

Thence, S 18°-02'-05" E by the land of McDonald 163.18 feet to a point marked by a 5/8" iron rod set;

Thence, N 74°-25'-15" E by the land of McDonald 120.00 feet to a point on the Westerly sideline of Ray Street marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the sideline of Ray Street 47.17 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Donald A. and Evelyn Thompson (Book 2892, Page 451);

Thence, S 71°-24'-15" W by the land of Thompson 150.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 18°-35'-45" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set;

Thence, N 71°-24'-15" E by the land of Thompson 50.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Richard E. and Carolyn Grover (Book 2895, Page 492);

Thence, S 18°-35'-45" E by the land of Grover and by the land now or formerly of Raymond A. and Florence M. Sevigny (Book 2490, Page 327) 72.78 feet to a point marked by a 5/8" iron rod set;

Thence, S 17°-48'-10" E by the land of Sevigny and by the lands now or formerly of Gladys A. and Kenneth V. Moody (Book 3471, Page 62), Betty L. Denbow (Book 2682; Page 313), Anna J. Aiken (Book 3570, Page 212), David A. and Carolyn J. Matthews (Book 4483, Page 163), Laura H. Clark (Book 3708, Page 194), and George and Doris Castonia (Book 4960, Page 286) 333.24 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Frances F. Gatchell (Book 6257, Page 342);

Thence, S 71°-28'-30" W by the land of Gatchell 51.09 feet to a point marked by a 5/8" iron rod set;

Thence, S 67°-57'-00" W by the land of Gatchell and lands now or formerly of Eleanor L. and Sherry Sapko, Charles E. and Linda J. Foshay (Book 3920, Page 212), Linwood J. and Ruth L. Thaxter, Charles L. Arey (Book 2320, Page 55), Dorothy M. and Richard M. Butler (Book 3765, Page 177), Norman C. and Caroline M. Walton (Book 2014, Page 140), James P. and Lula S. Cullen (Book 2044, Page 474), and Glenda R. and Roger R. Pushor (Book 4755, Page 44) 481.12 feet to a point marked by a 5/8" iron rod set;

Thence, S 54°-20'-55" W by the land of Pushor 29.58 feet to a point marked by a 5/8" iron rod set;

Thence, S 45°-14'-05" W by the land now or formerly of Claire D. and Edward L. Gulick (Book 3782, Page 285) and by the land now or formerly of John H. and Jeannette B. Greer (Book 2824, Page 131) 186.45 feet to a stone wall intersection and the end of Wadco Street;

Thence, N 01°-01'-00" W by a stone wall 7.90 feet to the Northeasterly sideline of Wadco Street;

Thence, N 37°-18'-55" W by the sideline of Wadco Street 165.51 feet to a point marked by a 5/8" iron rod set at the Easterly sideline of Ash Street;

Thence, N 01°-28'-55" W by the sideline of Ash Street 100.00 feet to a point marked by a 5/8" iron rod set at the land now or formerly of Diane M. and Richard C. Hayes (Book 3615, Page 161);

Thence, N 88°-31'-05" E by the land of Hayes 98.80 feet to a stonewall;

Thence, N 01°-01'-00" W by the land of Hayes, the land now or formerly of Bertha C. Judkins, by the end of Topsham Street, and by the land now or formerly of David F. Marshall (Book 4804, Page 317) 369.17 feet to a 1" iron pipe found;

Thence, N 01°-26'-15" W by the land of Marshall 125.00 feet;

Thence, S 80°-04'-05" W by the land of Marshall 100.00 feet to a point marked by a 5/8" iron rod set;

Thence, S 1°-09'-05" E by the land of Marshall 125.00 feet to a 1" iron pipe found at the Northeast corner of the land now or formerly of Bertha C. Judkins;

Thence, S 81°-21'-30" W by the land of Judkins 56.91 feet to a 1/4" iron rod found at the Southeast corner of the land now or formerly of F. S. Plummer Co. (Book 6869, Page 110);

Thence, N 07°-34'-10" E by land of F. S. Plummer Co. 592.31 feet;

Thence, S 63°-29'-00" E by Fallbrook, a Condominium, 190.24 feet to a point;

Thence, N 76°-59'-40" E by Fallbrook, a Condominium, 166.98 feet to the point of beginning.

Also including and subject to those easements and rights, in common with others, which are described in the below referenced documents:

(1) Easements from George and Doris Castonia dated December 20, 1985, recorded in Book 7036, Page 92;

(2) Easements from Calvin L. and Myrtle W. Gailey, dated December 20, 1985, and recorded in Book 7036, Page 96;

(3) Easement from Frances F. Gatchell dated December 20, 1985, and recorded in Book 7036, Page 100; and

(4) Easement to the City of Portland for a turn-around at the terminus of Topsham Street and other matters shown on the Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66.

Also, an easement for all purposes in common with others over, under and along the 50 foot wide right of way shown on the said Plat of Fallbrook, a Condominium, recorded in Plan Book 178, Page 66 and reserved in the Declaration of Fallbrook Condominium dated April 20, 1989 and recorded in Book 8730, Page 206.

Also subject to the following exceptions and matters:

1. Title to and rights of the public and others entitled thereto in and to any portion of the Premises located within the bounds of adjacent streets, roads and ways.

2. Setback and minimum building value restrictions set forth in Indenture by and between Reginald and Isabelle H. Carles and Gretta and Edith Henderson, dated January 24, 1949 and recorded in the Cumberland County Registry of Deeds in Book 1951, Page 85 (further references herein to recorded documents are

references to documents recorded in said Registry).

3. Terms and provisions of a State of Maine Department of Environmental Protection Site Location Order #L-011219-87-A-N issued to Liberty Group, Inc., dated October 10, 1985 and recorded in Book 6958, Page 88, as transferred by unrecorded Order dated January 22, 1988; as further transferred to MM II Real Estate Corporation by Order dated February 24, 1989 and recorded in Book 8681, Page 310; as further transferred to Merreal Corp. by Order dated April 3 1989 and recorded in Book 8733, Page 187; and as affected by Order dated December 28, 1992 and recorded in Book 10500, Page 287.

4. Easement from the Merrymeeting Developers to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 25, 1988 and recorded in Book 8444, Page 191.

5. Easement granted to Portland Water District by instrument dated September 21, 1988 and recorded in Book 8490, Page 164.

6. Matters affecting the Premises shown on plan entitled "Condominium Plat III, Fallbrook, A Condominium on Ray Street, Portland, Maine, for Merreal Corp., by Owen Haskell, Inc., dated May 10, 1990 and recorded in Plan Book 185, Page 15.

7. Terms and conditions of a Maintenance Agreement by and between Fallbrook, Inc. and Fallbrook, A Condominium, dated February 4, 1993 and recorded in Book 10546, Page 73.

8. Utility easement from Fallbrook, Inc. to Central Maine Power Company and New England Telephone and Telegraph Company, dated May 26, 1993 and recorded in Book 10771, Page 14.

9. Utility easement granted to Northern Utilities, Inc. by instrument dated October 7, 1993 and recorded in Book 11022, Page 51.

10. Agreement for Transfer and Assumption of Special Declarant Rights by and between Fallbrook, Inc. and Fallbrook Condominium Association, dated June 28, 1993 and recorded in Book 10804, Page 329.

11. Contract for Electric Service by and between Fall Brook Woods and Central Maine Power Company, dated June 18, 1993 and recorded in Book 11243, Page 201.

12. All encumbrances, restrictions and other matters of record affecting the Premises as of the date hereof.

Meaning and intending to convey the premises conveyed to Grantor herein by Deed from Merreal Corp., formerly named MM II Real Estate Corporation, to Fallbrook, Inc., dated December 20, 1991 and recorded in Book 9831, Page 59.

Received
Recorded Register of Deeds
Dec 30,2009 02:11:13P
Cumberland County
Pamela E. Lovley

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Tue Nov 12 2019 13:38:02. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
FALLBROOK COMMONS DEVELOPMENT LLC	20200861DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
08/12/2019	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

JAMES N. BRODER, ESQ.
C/O BERNSTEIN SHUR
P.O. BOX 9729
PORTLAND, ME 04104 5029

Back to previous screen | New Search

Click on a link to obtain additional information.

List of Filings	View list of filings	
Obtain additional information:		
Additional Addresses	Plain Copy	Certified copy
Certificate of Existence (more info)	Short Form without amendments ($30.00)	Long Form with amendments ($30.00)

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© Department of the Secretary of State

Section 3

Financial Capacity

Section 3

Financial Capacity

A. Estimated Costs

The anticipated construction cost of the proposed site improvements is approximately $17,840,821.

B. Financing

Please see this Section for a letter of financial capacity.

Sandy River
COMPANY

November 1, 2019

City of Portland
Planning Board
389 Congress Street
Portland, Maine 04101

Re: Funding the Development of Fallbrook Commons

Dear Planning Board:

On behalf of Fallbrook Commons, we are submitting this letter to assure you were can fund the proposed new 90-bed nursing care facility on the campus of Fallbrook Woods on Ray Street.

Sandy River Company is developing this project in partnership with the owner of Fallbrook Woods. This development team has a long history of successfully developing and securing debt and equity financing for senior care facilities throughout Maine. In the past 5 years alone, Sandy River has developed facilities in Maine with over $100M in total project costs. These projects are funded with a combination of bank loans and equity raised from our pool of private investors.

We are continuously in discussions with Maine banks who are eager to participate in the financing of our projects. Currently, Androscoggin Savings Bank is financing a 66-unit new assisted living center under construction in Auburn with $13M in bank financing. NBT Bank is financing a 90-bed facility in Sanford with $17M in bank financing. Please note that we have not selected a bank for the Fallbrook Commons project and generally won't select a bank while we are still going through the approval process to include a Certificate of Need approval from the Maine Department of Health and Human Services. We don't expect to break ground until early summer, 2020 and will negotiate with several banks and make a final bank selection near that time. Thus, we prefer to not include a letter on financing from any particular bank. Please note that we have obtained financing on our projects from five different Maine banks over the past five years.

On equity, we have investors eager to invest in these kinds of projects based on our decades of experience creating successful senior care facilities throughout Maine.

We assure the Planning Board we can finance this proposed project.

Sincerely,

Daniel J Maguire
Managing Partner

Section 4

Technical Ability

Section 4

Technical Ability

Fallbrook Care Development LLC has compiled a team of highly qualified contractors, consultants, and engineers for this proposed project.

The project team includes:

Sebago Technics, Inc. (STI) is a multi-disciplined engineering firm with over 35 years of experience, that offers a wide range of services specializing in land development, planning, permitting and engineering design services. We maintain a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, land surveying, and environmental engineering.

Gawron Turgeon Architects (GTA) is a multi-disciplined design firm with over 35 years of experience. They offer multi-disciplined planning and design services with a team that is comprised of architects, architectural designers, interior designers, landscape architects, and project managers.

Resumes of key personnel will be provided upon request.

Section 5

Noise

Section 5

Noise

A. Developments Producing a Minor Noise Impact

The proposed project involves the construction of a senior living facility on an undeveloped parcel abutting an assisted living facility. Given the nature of the proposed development and the surrounding complementary services, it is not anticipated that the project will result in an increase of noise generated at this site. As a result, a full noise study is not warranted. Temporary noise may arise during construction as a result of construction equipment working on the site. This noise potential is short-term and also not expected to be significant.

Construction will occur from 7 a.m. to 7 p.m. or during daylight hours and will be in compliance with the City of Portland ordinance.

Section 6

Visual Quality & Scenic Character

Section 6

Visual Quality

The proposed project involves the construction of a new senior living facility near an existing assisted living facility. All proposed improvements have been designed with the visual quality of the site in mind. The proposed trees and shrubs have been selected and sited to provide a privacy buffer, as well as to be visual appealing and easily maintained. A wooded buffer is to remain between the development and the abutting properties along Ray Street and Florida Avenue,

New lighting proposed for the project will have full cut-off's and has been modeled to demonstrate the anticipated lighting levels at the property line.

See this section for the product information sheets for items related to project improvements. See the plan set for more detailed information on the project design.

CIMARRON LED

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Construction:
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:
- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:
- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:
- L90 at 60,000 hours (Projected per IESNA TM-21-11)

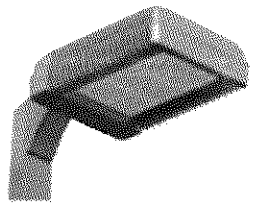
Installation:
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

Finish:
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

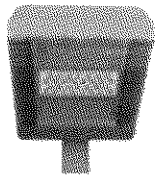
Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

Listings:
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- IDA approved • IP65

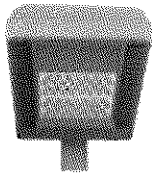
PRODUCT IMAGE(S)



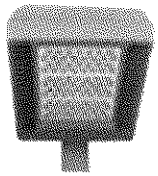
90 LED 3/4 VIEW



30 LED

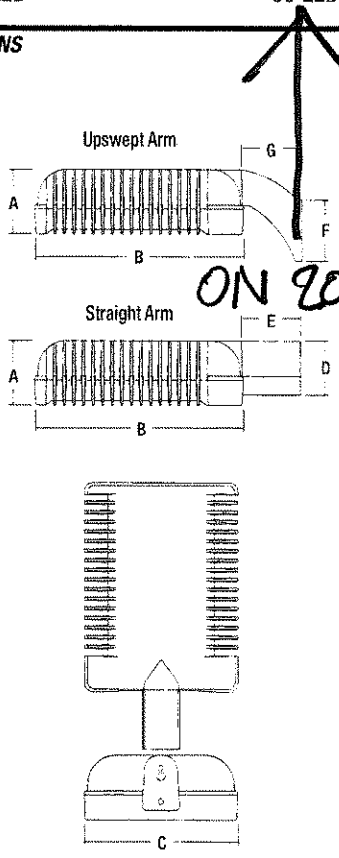


60 LED



90 LED

DIMENSIONS



ON 20' poles

A	B	C	D	E	F	G
6 3/4" 171mm	21 3/4" 552mm	16" 406mm	6 5/8" 168mm	6 5/16" 160mm	5 5/8" 143mm	6 1/8" 155mm

CERTIFICATIONS/LISTINGS

Turtle Friendly

*3000K and warmer CCTs only

ORDERING INFORMATION SEE NEXT PAGE

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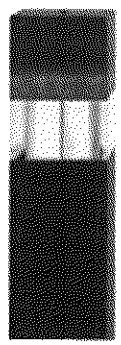
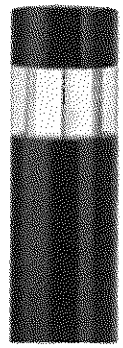
Fresno FN

Bollards

- Rotatable LED assembly adjustment for ideal placement and aiming of asymmetric light pattern
- 24 high brightness LEDs at 500mA deliver symmetric distribution at 46w
- 12 high brightness LEDs at 700mA deliver asymmetric distribution at 30w
- Available in three different color correlated temperatures
- >60,000 HOUR L90
- Extruded aluminum housing with single screw access for top relamping; Decorative cast top with tamper resistant hardware
- Sealed one-piece, clear acrylic lens
- Durable Lektrocote® TGIC thermoset polyester powder coat paint finish assures long life and maintenance-free service
- Concealed, cast aluminum anchor base; Four 1/2" x 10" anchor bolts on 4" diameter bolt circle
- Listed to UL1598 for use in wet locations
- 5 year limited system warranty



FRESNO SQUARE



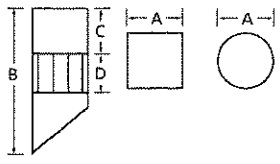
FRESNO ROUND

MADE-TO-ORDER **ORDERING INFORMATION**

SERIES	SOURCE/WATTAGE/LED	VOLTAGE	COLOR	OPTIONS[1]
FN1 Fresno Square	12LU-3K asymmetric, 27W, 3000K CCT	U 120V-277V	DB Dark Bronze	CD 0-10V dimmable
FN2 Fresno Round	12LU-4K asymmetric, 27W, 4000K CCT	1 120	BL Black	24 24" OAH[2]
	12LU-5K asymmetric, 27W, 5000K CCT	2 277	WH White	30 30" OAH[2]
	24LU-3K symmetric, 41W, 3000K CCT	3 240	GR Gray	36 36" OAH[2]
	24LU-4K symmetric, 41W, 4000K CCT	4 277	PS Platinum Silver	F(X) Fusing[3]
	24LU-5K symmetric, 41W, 5000K CCT	5 480	RD Red (premium color)	P(X) Button Photocell[3]
	24LU-AM symmetric, 20W, Amber 590nm	F 347	FG Forest Green (premium color)	ABS Bolts shipped ahead
			CC Custom Color (consult factory)	

[1] Any or all options may be used together
[2] Standard fixture height is 42", only one overall height (OAH) may be selected
[3] Replace '(X)' with corresponding voltage (1=120, 2=208, 3=240, 4=277, 5=480, 6=347), Button Photocell not available in 480V

DIMENSIONS



	A	B	C	D	Weight
FN1	6 3/4" sq.	42"	6"	4"	41 lbs.
	171 mm	1067 mm	152 mm	102 mm	18.6 kg
FN2	7" dia.	42"	6"	4"	41 lbs.
	178 mm	1067 mm	152 mm	102 mm	18.6 kg

Section 7

Wildlife and Fisheries

Section 7

Wildlife and Fisheries

Maine Inland Fisheries and Wildlife (IF&W) was contacted to review the project site and a response letter was received on November 20, 2019. There are no essential habitats or fisheries habitats that have been mapped that will be impacted by this project. IF&W did note that given the nature of Maine that there was a possibility that the project area falls within the migration path of several species of bats. They also recommended that the site be reviewed for the presence of vernal pools.

All proposed tree clearing is planned for the fall which is outside the bat migration and breeding season. There are no known sizable outcrops on site that could be utilized as habitat for bats.

The project site has been reviewed for vernal pools. Please see Section 11 for the wetland memo dated May 14, 2019 by Sebago Technics.

Please see this Section for all Maine Inland Fisheries and Wildlife correspondence.

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

November 20, 2019

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 1A
Portland, ME 04101

RE: Information Request - Fallbrook Commons Senior Living Facility, Portland

Dear Stefanie:

Per your request received November 12, 2019, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Fallbrook Commons Senior Living Facility Project* in Portland.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat.

While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Significant Wildlife Habitat

Significant Vernal Pools

At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are

Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

We recommend that 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Becca Settele
Wildlife Biologist

Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Portland, Fallbrook Commons Senior Living Facility (Version 1)

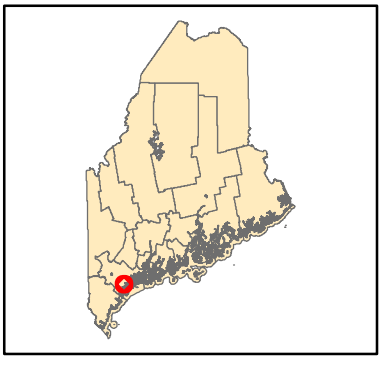
Maine Department of Inland Fisheries and Wildlife

0 0.125 0.25 0.5 0.75 1 Miles

Projection: UTM, NAD83, Zone 19N

Date: 11/14/2019

- ProjectPoints
- ProjectLines
- ProjectPolys
- ProjectSearchAreas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 Iwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats



November 7, 2019
18347

Mr. John Perry, Environmental Coordinator
Maine Department of Inland Fisheries & Wildlife
41 State House Station
Augusta, Maine 04333
ifw@environmentalreview@maine.gov

Re: Fallbrook Commons - Senior Living Facility
Merrymeeting Drive, Portland
Parcel ID: 400 D 023001

Dear John:

On behalf of the project applicant, Sebago Technics, Inc. respectfully requests a site review for the proposed new senior living facility and associated site improvements on Merrymeeting Drive in the North Deering section of Portland. In order to move forward with regulatory permitting we ask that you review your available data for any lands that support rare, threatened and endangered species, designated essential and significant wildlife habitats, and fisheries habitat.

For your reference, I have enclosed a site location map. At your earliest convenience, please review and forward your findings. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist/ Project Coordinator

enc.

Section 8

Historic Sites

Section 8

Historic Sites

Maine Historic Preservation Commission (MHPC) was contacted on November 7, 2019 to review the project site for possible impacts to historic resources. As per the MHPC response letter dated November 21, 2019, the proposed project will not result in an impact to any historic resources.

Please see this Section for a copy of the request letter and the MHPC response

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

November 21, 2019

Ms. Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Project: MHPC #1678-19 Fallbrook Commons; Ray Street/ Merrymeeting Drive Senior Living Facility

Town: Portland, ME

Dear Ms. Nichols:

In response to your recent request, I have reviewed the information received November 14, 2019 to initiate consultation on the above referenced project in accordance with the requirements of Maine Department of Environmental Protection.

Based on the information provided, I have concluded that there are no National Register listed or known eligible properties on or adjacent to the proposed project site. In addition, the parcel is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, at megan.m.rideout@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohney
State Historic Preservation Officer

PHONE: (207) 287-2132 FAX: (207) 287-2335

November 7, 2019
18347

Mr. Kirk Mohney
Maine Historic Preservation Commission
65 State House Station
Augusta, Maine 04333

Re: Fallbrook Commons - Senior Living Facility
Ray Street / Merrymeeting Drive, Portland
Parcel ID: 403 F001, 403-F005

Dear Mr. Mohney:

On behalf of the project applicant, Sebago Technics respectfully requests site review for a proposed new senior living facility adjacent to an existing senior facility in the North Deering section of Portland on Ray Street. The property is 12.78± acres and is located in the City Residential-3 zone. Per available resources we have determined that the site is not located in a local Historic District.

The project includes a new senior living facility that will be located next to the existing Fallbrook Woods assisted living community. The development includes the construction of a two-story, 37,450± sf building with 90 bedrooms and two adjacent parking areas. The new senior facility will be accessed by a new driveway from Ray Street with secondary access for emergency use over Merrymeeting Drive.

The project area is mostly wooded and will be cleared for the proposed site improvements. The applicant intends to leave the majority of the municipal building setbacks vegetated. Post-construction views to and from the new facility will be filtered through a combination of the existing mature vegetation and new landscaping.

We respectfully request review of the Maine Historic Preservation Commission database for any properties or structures of historic significance in the vicinity of the project site. For your reference, I have enclosed a site location map, the site property cards and Google Earth street view images of the surrounding residential areas. At your earliest convenience, please review and forward your findings. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,18347

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist / Project Coordinator

enc.

STI 18347

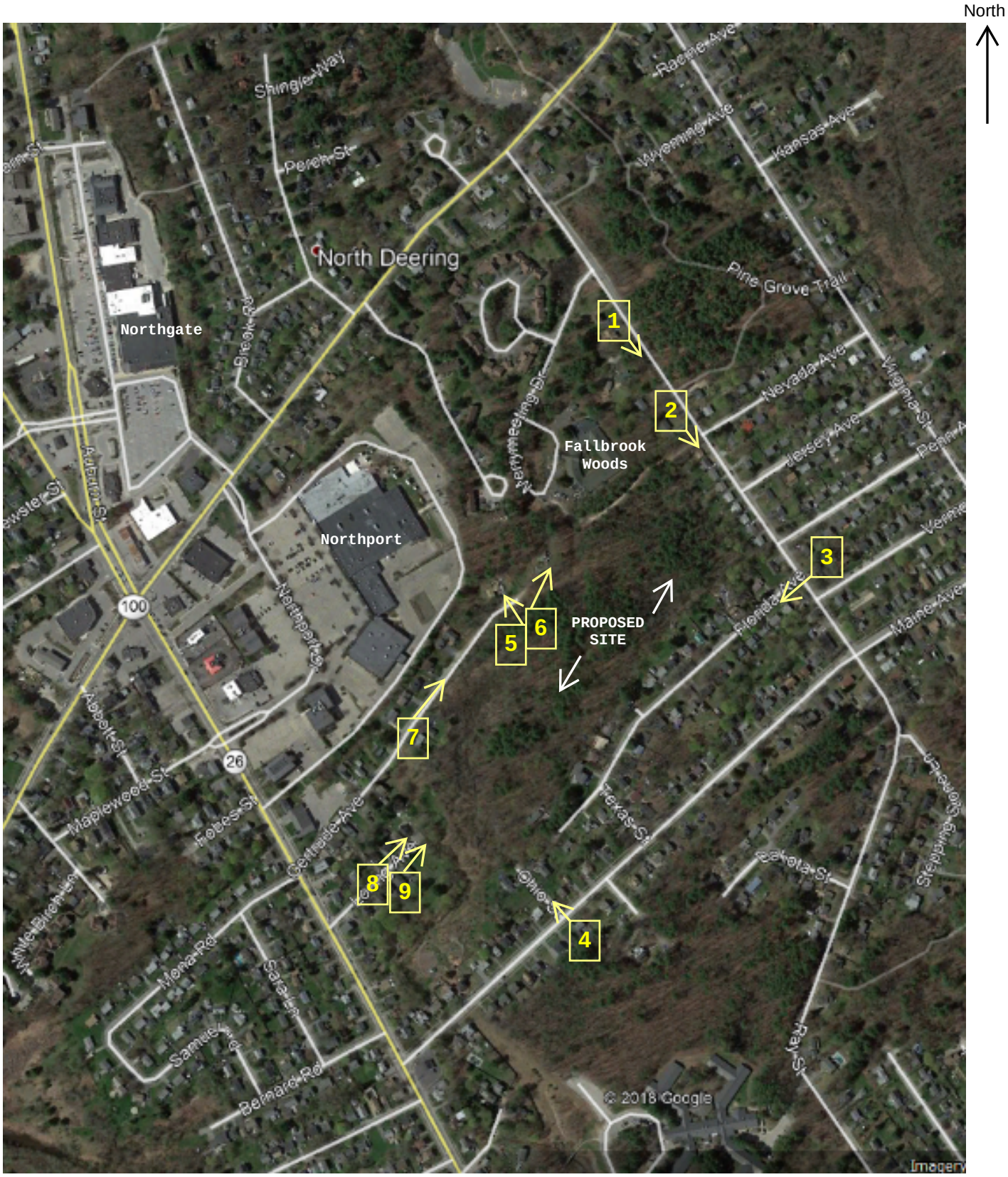


PHOTO KEY – Fallbrook Commons, Portland

Street view looking southeast along Ray Street toward the project entrance location

Street view looking southeast from the proposed Ray Street project entrance location

View along Florida Avenue from Ray Street

View along Ohio Street from Maine Avenue

Gertrude Avenue terminus -1

Gertrude Avenue terminus -2

Mid Gertrude Avenue Existing Conditions – residences and wooded area

View along Loring Avenue to end

View 2 - Loring Avenue to end

PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

Current Owner Information:

CBL	403 F005001
Land Use Type	SINGLE FAMILY
Verify legal use with Inspections Division	
Property Location	368 RAY ST
Owner Information	MCDONALD PATRICIA A & CATHERINE E MCDONALD 368 RAY ST PORTLAND ME 04103
Book and Page	8818/50
Legal Description	403-F-5 RAY ST 368 19695 SF
Rental Registration	No
Acres	0.4522

Current Assessed Valuation:

TAX ACCT NO.	25541
LAND VALUE	$79,700.00
BUILDING VALUE	$105,800.00
HOMESTEAD	($16,800.00)
NET TAXABLE - REAL ESTATE	$168,700.00
TAX AMOUNT	$3,932.40

OWNER OF RECORD AS OF APRIL 2019
MCDONALD PATRICIA A &
CATHERINE E MCDONALD
368 RAY ST
PORTLAND ME 04103

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

Building 1	
Year Built	1955
Style/Structure Type	3
# Units	1
Bedrooms	2
Full Baths	1
Total Rooms	5
Attic	NONE
Basement	FULL
Square Feet	1200

View Sketch View Map View Picture

Outbuildings/Yard Improvements:

	Building 1
Year Built	1980
Structure	GARAGE-WD/CB
Size	14X22
Units	1

Grade	C
Condition	A

Sales Information:

Sale Date	**Type**	**Price**	**Book/Page**
7/7/1989	LAND + BUILDING	$0.00	8818/50

PORTLAND MAINE *Assessor's Office*

Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

Services

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browse city services a-z

browse facts and links a-z

Best viewed at 800x600, with Internet Explorer

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	400 D023001
Land Use Type	RETAIL & PERSONAL SERVICE
Verify legal use with Inspections Division	
Property Location	60 MERRYMEETING DR
Owner Information	FALLBROOK PROPERTIES LLC 418 RAY ST PORTLAND ME 04103
Book and Page	27501/183
Legal Description	400-D-23 402-I-1 403-F-1 RAY ST 362-362 MERRYMEETING DR 60 549978 SF
Rental Registration	No
Acres	12.6258

Current Assessed Valuation:

TAX ACCT NO.	25421	**OWNER OF RECORD AS OF APRIL 2019**
LAND VALUE	$305,600.00	FALLBROOK PROPERTIES LLC
BUILDING VALUE	$3,086,400.00	
NET TAXABLE - REAL ESTATE	$3,392,000.00	418 RAY ST PORTLAND ME 04103
TAX AMOUNT	$79,067.52	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

Building Information:

	Building 1
Year Built	1993
Style/Structure Type	
# Units	1
Square Feet	27600

View Sketch View Map View Picture

Exterior/Interior Information:

	Building 1
Levels	01/01
Size	27600
Use	NURSING HOME
Height	9
Walls	FRAME
Heating	HEAT PUMP
A/C	CENTRAL

Other Features:

	Building 1
Structure	SPRINKLER - WET
Size	27600X1

	Building 1
Structure	CANOPY - ONLY
Size	708X1

Outbuildings/Yard Improvements:

	Building 1
Year Built	1993
Structure	ASPHALT PARKING
Size	20000
Units	1
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	LIGHT - MERCURY VAPOR, POLE
Size	1X1
Units	6
Grade	C
Condition	3

	Building 1
Year Built	1993
Structure	SHED-FRAME
Size	10X14
Units	1
Grade	C
Condition	3

Sales Information:

Sale Date	Type	Price	Book/Page
12/30/2009	LAND + BUILDING	$0.00	27501/183

New Search!

11/10/2019 Portland Maine Assessor's Online Database

Section 9

Unusual Natural Areas

Section 9

Unusual Natural Areas

A project review request was forwarded to Maine Natural Areas Program (MNAP) and a response was received on November 7, 2019. Their review of the site found no documented rare botanical features within the project area.

Please see this Section for a copy of the request letter and the MNAP response.

`

SEBAGO TECHNICS

November 7, 2019
18347

Ms. Lisa St. Hilaire
Maine Natural Areas Program
93 State House Station
Augusta, ME 04333-0093
lisa.st.hilaire@maine.gov

Re: Fallbrook Commons - Senior Living Facility
Merrymeeting Drive, Portland
Parcel ID: 400 D 023001

Dear Lisa:

On behalf of the project applicant, Sebago Technics, Inc. respectfully requests a site review for a proposed new senior living facility and associated site improvements on Merrymeeting Drive in the North Deering section of Portland. In order to move forward with regulatory permitting we ask that you review your available data for any lands that support rare and endangered plants, rare natural communities and ecosystems, and other natural communities and ecosystems in the vicinity of the proposed project area.

For your reference, I have enclosed a Site Location Map with the proposed project location identified. If you have any questions on this project, please do not hesitate to contact me at snichols@sebagotechnics.com or on my direct line at (207) 200-2120. I look forward to hearing from you.

Sincerely,

SEBAGO TECHNICS, INC.

Stefanie Nichols
Permitting Specialist/Project Coordinator

enc.

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

November 7, 2019

Stefanie Nichols
Sebago Technics
75 John Roberts Road, Suite 4A
South Portland, ME 04106

Via email: snichols@sebagotechnics.com

Re: Rare and exemplary botanical features in proximity to: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Dear Ms. Nichols:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received November 7, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry barrens (partly forested, upland)
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
	T	S2	G5	2011-08-15	17	Tidal wetland (non-forested, wetland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
Columbia Water-meal						
	SC	S2	G5	2002-08-04	2	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested, seasonally wet)
Hollow Joe-pye Weed						
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5?	2011-08-04	19	Open wetland, not coastal nor rivershore (non-forested, wetland),Old

Rare and Exemplary Botanical Features within 4 miles of
Project: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
						field/roadside (non-forested, wetland or upland)
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
MacGregor's Rye						
	SC	S2	G5	2016-09-11	13	<null>
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not coastal nor rivershore (non-forested, wetland)
Missouri Rockcress						
	T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested, upland),Hardwood to mixed forest (forest, upland)
Mountain-laurel						
	SC	S2	G5	1985-08-01	13	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Mountain Honeysuckle						
	E	S2	G5	2018-06-02	14	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2007-07-30	10	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S2	G5	2015-07-07	17	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Pale Green Orchis						
	SC	S2	G4?T4Q	1907-07-05	27	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not coastal nor rivershore (non-forested, wetland)
Palmate-leaved Violet						
	PE	SH	G5	1908	1	Hardwood to mixed forest (forest, upland)
Slender Knotweed						
	PE	SH	G5	1902-09-07	1	Dry barrens (partly forested, upland)

Rare and Exemplary Botanical Features within 4 miles of
Project: #18347, Fallbrook Commons Senior Living Facility, Portland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Small Reed Grass						
	SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Spotted Wintergreen						
	T	S2	G5	1991-09	11	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Tidal Marsh Estuary Ecosystem						
	<null>	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Upper Floodplain Hardwood Forest						
	<null>	S3	GNR	2012	20	Forested wetland
Upright Bindweed						
	T	S2	G4G5	2007-06-28	5	Dry barrens (partly forested, upland),Old field/roadside (non-forested, wetland or upland)
Variable Sedge						
	E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	1911-06-29	9	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	2018-08-29	6	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
	E	S1	G3	2017-08-22	4	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Vasey's Pondweed						
	SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Wild Garlic						
	SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest, upland)
Wild Leek						
	SC	S3	G5	2018-05-02	55	Hardwood to mixed forest (forest, upland),Forested wetland

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNR Not yet ranked.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

Section 10

Buffers

Section 10

Buffers

Visual Buffers

Please see the plan set for the Landscaping plans for detailed information on the proposed visual buffers.

Stormwater Buffers

There are no stormwater buffers proposed for this project.

Section 11

Soils

Section 11

Soils

A. Soil Survey Map and Report

Please see the pre- and post-development drainage plans for the Class 'D' soil delineation.

B. Soil Survey Intensity Level by Development Type

A class 'D' medium intensity soil survey was utilized on the drainage plans and a site-specific geotechnical investigation was conducted for infrastructure improvements.

C. Geotechnical Investigation

See this Section for a copy of the geotechnical report completed by S.W. Cole.

D. Hydric Soils Mapping

Sebago Technics, Inc. reviewed the site for wetlands and vernal pools within the project area. See this section for a copy of a wetlands memo from Sebago Technics dated May14, 2019.

Memorandum

18347To: Kylie Mason

From: Mike Jakubowski

Date: May 14, 2019

Subject: #18347 – Fallbrook

The wetlands on this site were delineated by Gary Fullerton and Mike Jakubowski of Sebago Technics, Inc. in September of 2018. This delineation conforms to the standards and methods outlined in the 1987 Wetlands Delineation Manual and Regional Supplement authored and published by the U.S. Army Corps of Engineers. The wetlands were marked in the field with alpha numeric pink "wetland delineation" flagging. The flags were then located using a Trimble gps backpack unit capable of decimeter accuracy.

Wetlands found are classified as forested wetlands (PFO). The vegetation in these PFO wetlands primarily consists of, maple (*Acer spp.*), speckled alder (*Alnus incana*), cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern (*Onoclea sensibilis*), and jewelweed (*Impatiens capensis*). Upland vegetation primarily consists of white pine (*Pinus strobus*) and red oak (*Quercus rubra*).

A vernal pool survey was conducted on May 6th, 2019. No vernal pools were identified on the property. There has been no field determination for streams and it is not suspected that there are streams present on this property.

Photograph 1. PFO wetland at western extent of project boundary.

Photograph 2. PFO wetland at eastern extent of project boundary.

Photograph 3. PFO wetland at eastern extent of project boundary.

Photograph 4. PFO wetland at eastern extent of project boundary, near access road.

REPORT

18-1201.1 S

October 24, 2019

Explorations and Geotechnical Engineering Services

Proposed Assisted Living Facility
418 Ray Street
Portland, Maine

Prepared For:
Sandy River Company
Attention: Daniel Maguire
P.O. Box 110
Portland, Maine 04112

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-615-2766

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

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18-1201.1 S

October 24, 2019

Sandy River Company
Attention: Daniel Maguire
P.O. Box 110
Portland, Maine 04112

Subject: Explorations and Geotechnical Engineering Services
Proposed Assisted Living Facility
418 Ray Street
Portland, Maine

Dear Daniel:

In accordance with our Proposal, dated June 21, 2019, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations, earthwork and pavement associated with the proposed construction. Our scope of services included a review of prior test pit explorations, coordinating supplemental test boring and auger probe explorations, soils laboratory testing, a geotechnical analysis of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The site is located at 418 Ray Street in Portland, Maine and consists of an undeveloped, wooded parcel. The site generally slopes downward from a high knob in the western-central portion of the site to the north, south and east, with about 24 feet of

surface relief across the site. An existing gravel service road for the adjacent Fallbrook Woods facility is located on the north side of the site.

Based on the information provided, we understand development plans call for construction of a new single-story with partial basement, multi-wing, assisted living building with associated paved parking and access road areas. We understand the building will have a finish floor elevation of 102 feet (project datum) and a finish basement elevation of 90 feet, requiring tapered fills approaching 19 feet and tapered cuts approaching 12 feet. Site access is proposed off of Ray Street, along the existing service road, and connecting to Merrymeeting Drive.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

S. W. Cole Engineering, Inc. (S.W.COLE) reviewed prior test pit explorations and coordinated and logged supplemental test boring and auger probe explorations as detailed below.

2.1.1 Current Explorations

Eight test borings (B-1 through B-8) and six auger probes (P-1 through P-6) were made July 25 and August 6, 2019 by S. W. Cole Explorations, LLC. The exploration locations were selected and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using GPS methods. The approximate locations of these explorations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the test borings and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.1.2 Prior Explorations

Fifteen test pits (TP-1 through TP-15) were made at the site on September 13, 2018 by Shaw Brothers Construction, Inc. working under subcontract to S.W.COLE. These exploration locations were selected and established in the field by S.W.COLE using GPS methods. The approximate exploration locations are shown on the "Exploration

DRAFT

Location Plan" attached in Appendix B. Logs of these explorations are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information provided by Sebago Technics.

2.2 Testing

The test borings and auger probes were drilled using a combination of solid-stem auger, hollow-stem auger and cased wash-boring techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. Shelby tube sampling and Vane Shear Testing (VST) were performed where softer cohesive soils were encountered. SPT blow counts, PPT and VST results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Atterberg Limits and moisture content test results are noted on the logs. The results of a one-dimensional laboratory consolidation test are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

The explorations generally encountered a soil profile consisting of glaciomarine sands, silts, and clays, overlying relatively shallow refusal surfaces (bedrock). The principle soils encountered are described below. Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

Fill: Test pits TP-12 and TP-13 encountered existing access road embankment fill, consisting of dark brown and brown sand with varying portions of silt, gravel, cobbles, brick, and organics. Test pit TP-12 penetrated the fill at a depth of 1.3 feet; a layer of geotextile was present at the bottom of the fill.

Glaciomarine Soils: Underlying surficial organics and the fill, the explorations generally encountered glaciomarine soils consisting of loose to medium dense, brown and light brown sand with varying portions of silt and gravel, sandy silt, and silty clay. The silty clay was predominantly stiff and brown, interbedded in the silts and sands, but transitioned to a

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layer of softer gray silty clay at test pit TP-7 and borings B-4 and B-5. The softer gray clay extended to depths varying from 14 to 15 feet, where penetrated. One dimensional consolidation testing performed on a sample of the gray clay indicates it is overconsolidated by approximate 2,700 psf at a depth of about 11 feet. VST performed in the gray clay indicates undrained shear strength of approximately 600 psf.

Refusal Surfaces: Where encountered, depth to refusal surface (probable bedrock) varied from about 2 feet to 20 feet. Up to approximately 2 feet of weathered bedrock was penetrated by the drilling equipment before encountering refusal at the test boring and auger probe explorations. The depths to refusal (probable bedrock) at the exploration locations are summarized on the "Exploration Location Plan".

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Saturated soils were encountered at depths varying from 2 to 13 feet. Groundwater likely becomes perched on the relatively impervious silts, clays, and bedrock encountered at the explorations. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- Spread footing foundations and a slab-on-grade floors bearing on properly prepared subgrades appear suitable for the proposed building. Footings should bear on at least 3-inches of compacted Crushed Stone overlying properly prepared subgrades. On-grade floor slabs should bear on at least 12-inches of properly compacted Structural Fill overlying properly prepared subgrades. On-grade lower level floor slabs should bear on 6 inches of compacted Crushed Stone overlying properly prepared subgrades.

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- Some areas of shallow bedrock were encountered at the explorations; thus blasting for bedrock removal should be anticipated. The depth of blasting should be controlled to less than 1 foot below footing subgrades and 2 feet below floor slab, pavement and utility subgrades.

- All topsoil, existing fills and debris must be completely removed from beneath the proposed building and backfilled with compacted Granular Borrow.

- Existing fills in paved areas should be proof-rolled and soft areas repaired prior to filling or placing pavement subbase gravels.

- Subgrades across the site will consist of sensitive silts and clays. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays when wet. Excavation of soil bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.

4.2 Site and Subgrade Preparation

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil should be completely removed from areas of proposed fill and construction. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Building Pad and Footings: As discussed, bedrock removal is anticipated in the building pad. The contractor should be prepared to remove fractured and overblasted bedrock beneath the building until sound, intact bedrock is encountered. Voids and fractures in the bedrock surface should be thoroughly choked by working and compacting blasting fines or Crushed Stone into the surface.

We recommend that fills needed to raise the building pad in the on-grade portion of the building, as well as adjacent retaining walls and surrounding site areas, be completed up to within 2 feet of finished grade at least 30 days prior to excavating for foundations in this portion of the building.

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We recommend that footings be excavated using a smooth-edged bucket and that footings be underlain by at least 3 inches of compacted Crushed Stone overlying native non-organic soils, compacted Granular Borrow or sound intact bedrock.

Paved and Utilities: Uncontrolled fills and blasted bedrock subgrades encountered beneath proposed paved areas should be proof-rolled and densified with at least 3 passes of a 10 ton vibratory roller compactor. Areas that become soft or continue to yield after densification should be removed and replaced with compacted Granular Borrow.

Beneath pipes and utility structures with soft trench bottoms, we recommend overexcavating with a smooth edged bucket and installing at least 1 foot of Underdrain Sand below fabric wrapped bedding materials. The depth of bedding materials for soft trench bottoms should be at least 12 inches of pipes and 24 inches of structures.

4.3 Excavation and Dewatering

Excavation work will generally encounter uncontrolled fills, silty sand, silt, clay and bedrock. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays, when wet. Final cuts to subgrade in soil should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Based on the subsurface findings, we anticipate blasting will be required for bedrock removal. We recommend a licensed blasting contractor be engaged to provide bedrock removal. Pre-blast surveys should be completed on surrounding structures, water supply wells and infrastructure prior to commencing blasting activities. The depth of blasting should be controlled to less than 1 foot below footing subgrades and 2 feet below floor slab, pavement and utility subgrades.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, water supply wells and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity.

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Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.4 Foundations

We recommend the proposed buildings be supported on spread footings founded on at least 3-inches of compacted Crushed Stone overlying properly prepared subgrades. For foundations bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design consideration:

Geotechnical Parameters for Spread Footings and Foundation Walls	
Design Frost Depth (100 year AFI)	4.5 feet
Net Allowable Soil Bearing Pressure	2.0 ksf
Base Friction Factor	0.35
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	30°
Seismic Soil Site Class	D (IBC 2015)
Estimated Total Settlement	1-inch
Differential Settlement	½-inch

Foundations adjacent to site retaining walls must be founded below a 1H:1V plane extending up and back from the bottom of the reinforced soil zone or back of wall, whichever is closer to the building.

4.5 Foundation Drainage

We recommend an underdrain system be installed on the outside edge of perimeter footings. The underdrain pipe should consist of 4-inch diameter, perforated SDR-35 foundation drain pipe bedded in Crushed Stone and wrapped in non-woven geotextile fabric. The underdrain pipe must have a positive gravity outlet protected from freezing, clogging and backflow. Surface grades should be sloped away from the building for positive surface water drainage. General underdrain details are illustrated on the "Foundation Detail Sketch" attached in Appendix B.

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4.6 Slab-On-Grade

On-grade floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted Structural Fill placed over properly prepared subgrades. Similarly, basement floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci provided the slab is underlain by at least 6-inches of compacted Crushed Stone over properly prepared subgrades. The structural engineer or concrete consultant must design steel reinforcing and joint spacing appropriate to slab thickness and function.

We recommend a radon venting system and sub-slab vapor retarder be installed beneath the building floor slabs. The vapor retarder must have a permeance that is less than the floor cover or surface treatment that is applied to the slab. The vapor retarder must have sufficient durability to withstand direct contact with the sub-slab base material and construction activity. The vapor retarder material should be placed according to the manufacturer's recommended method, including the taping and lapping of all joints and wall connections. The architect and/or flooring consultant should select the vapor retarder products compatible with flooring and adhesive materials.

The floor slab should be appropriately cured using moisture retention methods after casting. Typical floor slab curing methods should be used for at least 7 days. The architect or flooring consultant should assign curing methods consistent with current applicable American Concrete Institute (ACI) procedures with consideration of curing method compatibility to proposed surface treatments, flooring and adhesive materials.

4.7 Entrance Slabs and Sidewalks

Entrance slabs and sidewalks adjacent to the building must be designed to reduce the effects of differential frost action between adjacent pavement, doorways, and entrances. We recommend that non-frost susceptible Structural Fill be provided to a depth of at least 4.5 feet below the top of entrance slabs. This thickness of Structural Fill should extend the full width of the entrance slab and outward at least 4.5 feet, thereafter transitioning up to the bottom of the adjacent sidewalk or pavement gravels at a 3H:1V or flatter slope. General details of this frost transition zone are shown on the "Foundation Detail Sketch" attached in Appendix B.

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For plaza slabs extending beyond immediate building entrances, we recommend extending the thickness of Structural Fill beneath the entire plaza slab thereafter transitioning up to the bottom of the adjacent sidewalk or pavement gravels at a 3H:1V or flatter slope. Alternatively, the entrance slab and plaza slab may be insulated for frost protection. General details of this frost transition zone are shown on the "Foundation Detail Sketch" attached in Appendix B.

4.8 Segmental Retaining Wall

For the proposed site retaining walls, we recommend wet-cast segmental retaining walls. We recommend the facing blocks be founded on a minimum 6-inch thick leveling course of compacted Crushed Stone overlying properly prepared subgrades. For design of Segmental Retaining Walls (SRW), such as Redi-Scape, we recommend the following geotechnical parameters for design:

Geotechnical Parameters for Segmental Retaining Wall		
Wall Zone	**Unit Weight (pcf)**	**Friction Angle**
Reinforced Soil	130	34
Retained Soil	125	30
Foundation Soil	125	30

Design of the retaining wall and evaluation of base sliding, overturning and internal stability of the wall are the responsibility of the wall design engineer. The wall designer must account for construction surcharge loads and future live load conditions. S.W.COLE should be retained to perform a global stability analysis of the SRW and to review the SRW submittal.

4.9 Fill, Backfill and Compaction

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Common Borrow: Fill to raise grades in paved and landscape areas should be non-organic compactable earth meeting the requirements of 2014 MaineDOT Standard Specification 703.18 Common Borrow. Where used beneath paved areas, Common Borrow fills shall be capped with a 12 inch layer of Granular Borrow prior to installing Pavement Subbase materials.

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Granular Borrow: Fill to raise grades in building and paved areas, as well as to repair soft areas, should be sand or silty sand meeting the requirements of 2014 MaineDOT Standard Specification 703.19 Granular Borrow.

Structural Fill: Backfill for foundations, on-grade slab base material and material below exterior entrance slabs should be clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

Underdrain Sand: Sand used beneath bedding materials in soft trench bottoms should be clean, free-draining sand meeting the requirements of 2014 MaineDOT Standard Specification 703.22 Underdrain Backfill Material Type B.

Crushed Stone: Crushed Stone, used beneath foundations, basement floor slabs and for underdrain aggregate should be washed ¾-inch crushed stone meeting the requirements of 2014 MaineDOT Standard Specification 703.22 Underdrain Backfill Material Type C.

Reuse of Site Soils: The non-organic on-site soils are unsuitable for reuse in building areas, but may be suitable for reuse as Common Borrow in paved and landscape areas, provided they are at a compactable moisture content at the time of reuse.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill in building and paved areas be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

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4.10 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.11 Paved Areas

We anticipate paved areas will be subjected primarily to passenger vehicle and light delivery truck traffic with occasional heavy delivery truck traffic. Considering the site soils, and proposed usage, we offer the following pavement section for consideration.

FLEXIBLE (HMA) PAVEMENT SECTION – 2014 MaineDOT Standard Specs	
Pavement Layer	**Material Thickness**
MaineDOT 9.5 mm Hot Mix Asphalt	1 ½ inches
MaineDOT 19.0 mm Hot Mix Asphalt	2 ½ inches
MaineDOT 703.06 Aggregate Base Type A	6 inches
MaineDOT 703.06 Aggregate Subbase Type D	12 inches

The base and subbase materials should be compacted to at least 95 percent of their maximum dry density as determined by ASTM D-1557. Hot mix asphalt pavement should be compacted to 92 to 97 percent of its theoretical maximum density as determined by ASTM D-2041. A tack coat should be used between successive lifts of bituminous pavement.

It should be understood that frost penetration can be on the order of 4.5 feet in this area. In the absence of full depth excavation of frost susceptible soils below paved areas and subsequent replacement with non-frost susceptible compacted fill, frost penetration into the subgrade will occur and some heaving and distress of pavement must be anticipated.

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4.12 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork, foundation and pavement recommendations have been properly interpreted and implemented.

A soils and concrete testing program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities, the preparation of foundation bearing surfaces and pavement subgrades, as well as to provide testing and IBC Special Inspection services for soils, concrete, steel, spray-applied fireproofing, structural masonry and asphalt construction materials.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Timothy J. Boyce, P.E.
Senior Geotechnical Engineer

TJB:emw

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S.W.COLE ENGINEERING, INC.

APPENDIX A

Limitations

This report has been prepared for the exclusive use of Sandy River Company for specific application to the proposed Assisted Living Facility at 418 Ray Street in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

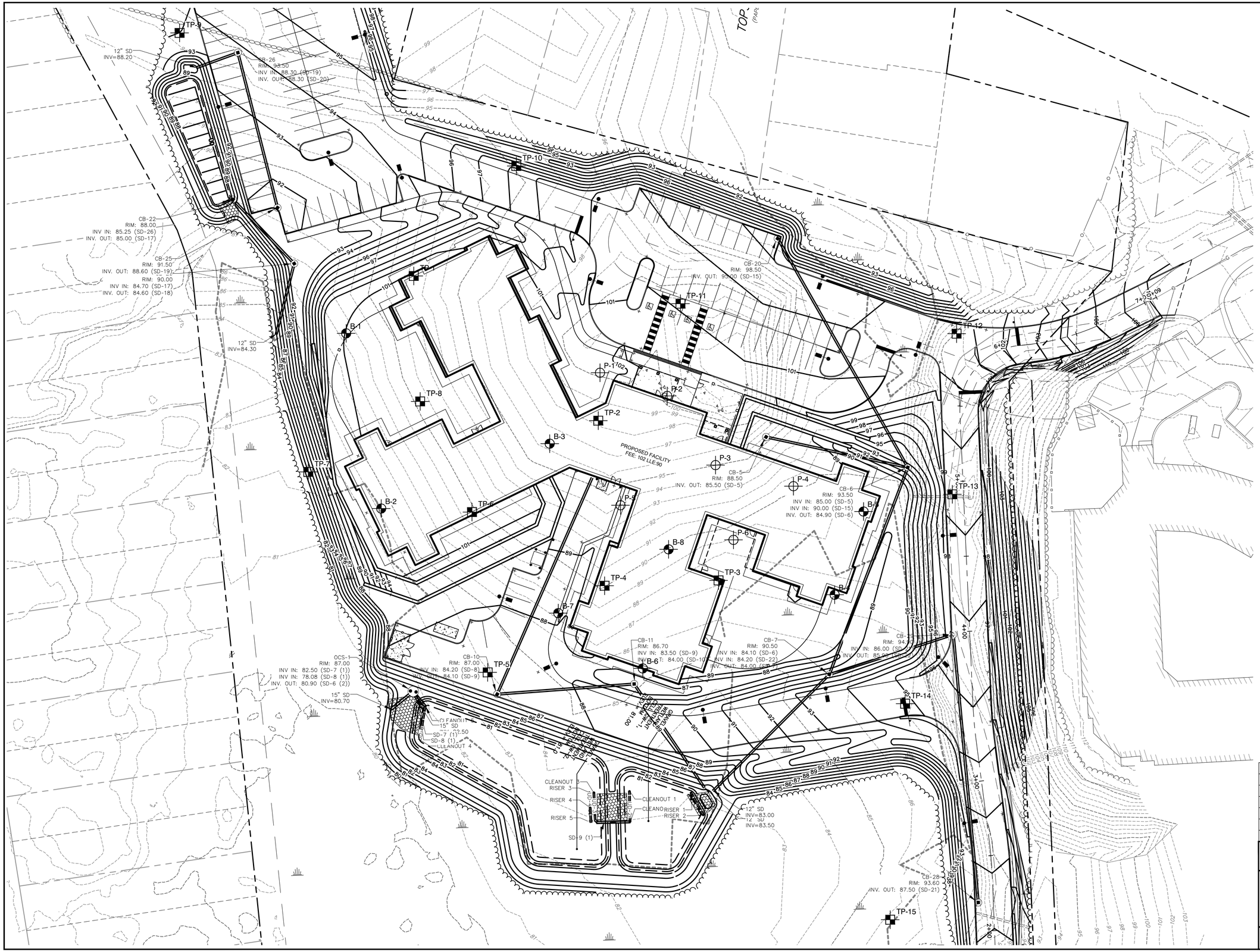
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures



EXPLORATION ID	DEPTH TO TOP OF ROCK, FT.	DEPTH TO REFUSAL, FT.
P-1	1.8	3.1
P-2	6.8	7.5
P-3	9.0	9.6
P-4	5.5	6.3
P-5	5.5	6.2
P-6	6.5	7.3
B-1	7.3	7.5
B-2	18.2	19.9
B-3	1.5	3.3
B-4	16.5	17.8
B-5	18.1	18.1
B-6	12.5	12.5
B-7	14.0	14
B-8	10.0	10
TP-1	2.4	2.4
TP-2	4.3	4.3
TP-3	7.5	7.5
TP-4	6.7	6.7
TP-5	8.5	8.5
TP-6	9.0	9
TP-7	10.5 NR	NO REFUSAL
TP-8	4.0	4
TP-9	1.8	1.8
TP-10	5.0 NR	NO REFUSAL
TP-11	4.4 NR	NO REFUSAL
TP-12	6.0 NR	NO REFUSAL
TP-13	3.2 NR	NO REFUSAL
TP-14	5.0 NR	NO REFUSAL
TP-15	5.0 NR	NO REFUSAL

LEGEND:

- APPROXIMATE BORING LOCATION
- APPROXIMATE PROBE LOCATION
- APPROXIMATE TEST PIT LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1" = 40' SCALE PLAN OF THE SITE ENTITLED "GRADING PLAN," PREPARED BY SEBAGO TECHNICS, INC., DATED 11/1/2019.
2. THE EXPLORATIONS WERE LOCATED IN THE FIELD BY GPS SURVEY BY S. W. COLE ENGINEERING, INC., USING A MAPPING GRADE TRIMBLE GPS RECEIVER.
3. TEST PITS TP-1 THROUGH TP-13 WERE PERFORMED UNDER THE DIRECTION OF S.W.COLE IN SEPTEMBER 2018.
4. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
5. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 30 60 Feet

NO.	DATE	DESCRIPTION	BY
1	10/24/2019	REPORT SUBMITTAL	CEM
0	08/07/2019	DRAFT SUBMITTAL	CEM

S.W.COLE ENGINEERING, INC.

SANDY RIVER COMPANY

EXPLORATION LOCATION PLAN

PROPOSED ASSISTED LIVING FACILITY
418 RAY STREET
PORTLAND, MAINE

Job No.: 18-1201.1 Scale: 1" = 30'
Date : 08/07/2019 Sheet: 1

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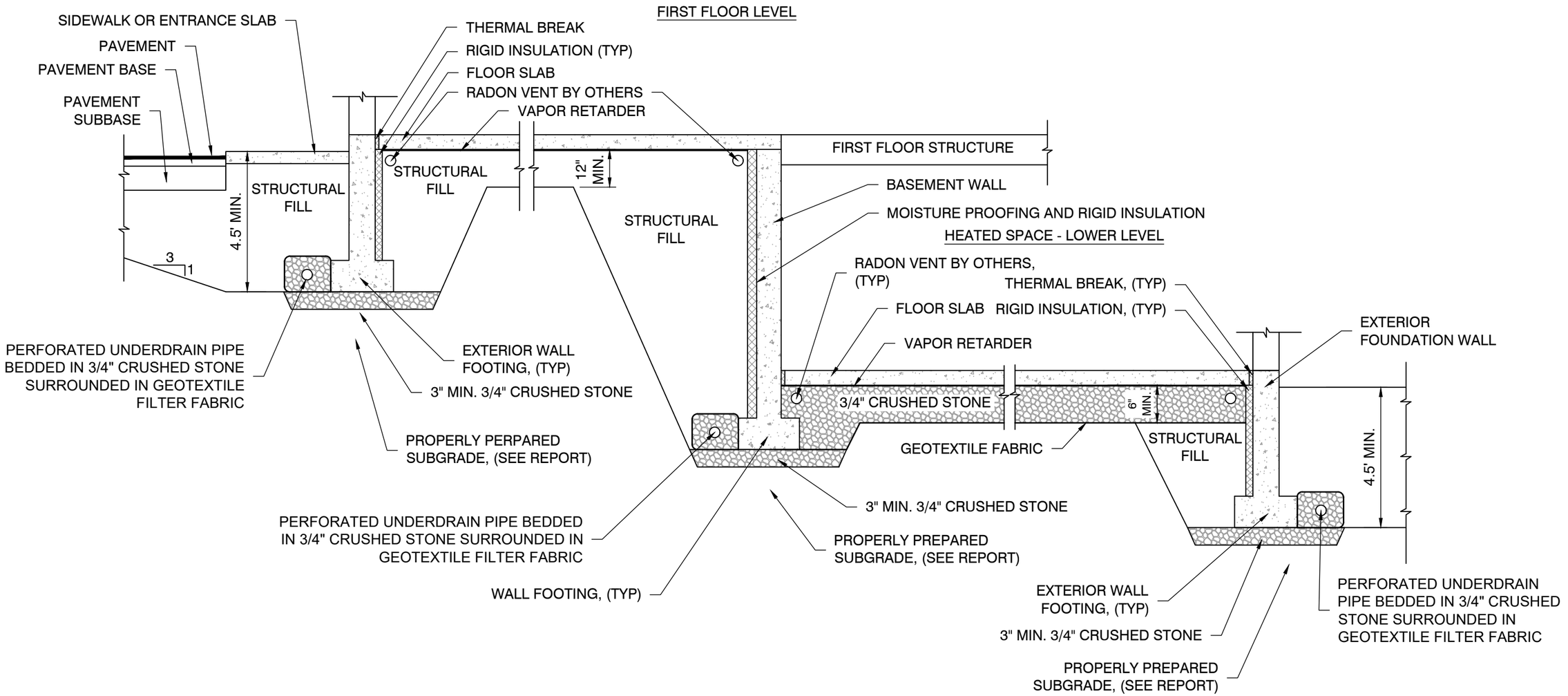

NOTE:

1. UNDERDRAIN INSTALLATION AND MATERIAL GRADATION RECOMMENDATIONS ARE CONTAINED WITHIN THIS REPORT.
2. DETAIL IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY, NOT FOR CONSTRUCTION.

S.W.COLE ENGINEERING, INC.

SANDY RIVER COMPANY

FOUNDATION DETAIL SKETCH

PROPOSED ASSISTED LIVING FACILITY
418 RAY STREET
PORTLAND, MAINE

Job No.:	18-1201.1	Scale:	Not to Scale
Date :	10/24/2019	Sheet:	2

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S.W.COLE ENGINEERING, INC.

APPENDIX C

Exploration Logs and Key

S.W.COLE ENGINEERING, INC.

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-1
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 87' +/- | **TOTAL DEPTH (FT):** 7.5 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 7/25/2019 Soils wet to saturated below 6.5 ft
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
85			1D		0-2	24/10	1-1-3-4			0.8 Dark brown, sandy silt with roots and organics (Topsoil)		
			2D		2-4	24/15	3-3-7-10	w =13.1 %		1.5 Loose, rust-brown silty SAND with gravel; Medium dense light brown silty SAND, trace gravel		
	5		3D		5-7	24/21	12-10-9-8			5.0 Medium dense, light brown and gray SAND and SILT, trace gravel		
80										7.3 Probable weathered BEDROCK		

Refusal at 7.5 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT:	Sandy River Company
PROJECT:	Proposed Assisted Living Facility
LOCATION:	418 Ray Street, Portland, Maine

BORING NO.:	**B-2**
SHEET:	1 of 1
PROJECT NO.	18-1201.1
DATE START:	7/25/2019
DATE FINISH:	7/25/2019

Drilling Information

LOCATION:	See Exploration Location Plan	**ELEVATION (FT):**	83' +/-	**TOTAL DEPTH (FT):**	19.9
LOGGED BY:	Paul Kohler	**DRILLING CO.:**	S. W. Cole Explorations, LLC	**DRILLER:**	Kevin Hanscom
DRILLING METHOD:	Hollow Stem Auger	**RIG TYPE:**	Track Mounted Diedrich D-50	**AUGER ID/OD:**	2 1/4 in / 5 5/8 in
SAMPLER:	Standard Split-Spoon	**HAMMER TYPE:**	Automatic / Automatic	**HAMMER WEIGHT (lbs):**	140 / 300
CASING ID/OD:	N/A /N/A	**CORE BARREL:**		**HAMMER EFFICIENCY FACTOR:**	0.91
HAMMER DROP (inch):	30 / 16				

WATER LEVEL DEPTHS (ft): ▼ 2 ft 7/25/2019 Free Water in borehole at 2'

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:

Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling

D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear

Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot

WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/20	WOH-1-3-4	q_P=4 ksf		0.8 Dark brown, clayey silt with roots and organics (Topsoil)	▼	
80			2D		2-4	24/24	5-6-6-6	q_P=3 to 6 ksf w =27.8 %		Stiff to very stiff, brown silty CLAY		
	5		3D		5-7	24/24	3-4-4-4	q_P=3 ksf w =36.4 %				
75										9.1 Medium dense, brown-gray silty SAND, some gravel		
	10		4D		10-12	24/1	6-9-11-11					
70										16.0 Medium dense to dense, brown SAND, some silt, trace gravel		
	15		5D		15-17	24/16	7-7-12-23			18.2 Probable cobbles or weathered BEDROCK		
65												

Refusal at 19.9 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

S.W.COLE ENGINEERING, INC.

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-3
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 96' +/- | **TOTAL DEPTH (FT):** 3.3 | **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 7/25/2019 No free water observed. Soils moist.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
95			1D		0-1.4	17/12	1-2-50/5"			0.8 Dark brown, sandy silt with roots and organics (Topsoil) 1.5 Medium dense, gray-brown silty SAND with bedrock fragements Probable weathered BEDROCK Refusal at 3.3 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-4
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 7/25/2019
DATE FINISH: 7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 87' +/- | **TOTAL DEPTH (FT):** 17.8 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.91 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 12.8 ft 7/25/2019 Free water at 12.8'
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
85			1D		0-2	24/7	WOH/12"-1-1			1.0 Forest duff & dark brown sandy silt with organics (Topsoil)		
			2D		2-4	24/22	3-3-3-4	q_P=4 to 2 ksf		2.0 Very loose, gray silty SAND with rootlets Stiff to medium, gray sandy clayey SILT		
	5		3D		5-7	24/24	3-3-5-6	q_P=6 to 2 ksf w =29.5 %		4.5 Very stiff to medium, brown silty CLAY, some sand		
80												
	10		4D		10-12	24/24	WOH-WOH-2-2	w =34.1 % W_L=29 W_P=16		9.0 Soft to medium, gray silty CLAY with frequent sand seams		
75			1U		10.1-12.1	24/24						
			1V		12-12	0				No Vane Penetration at 1V - sand seam Offset Boring and Obtained 1U	▽	
	15									14.0 Medium dense, brown SAND and SILT		
			5D		15-16.5	18/12	9-9-10-25/0"					
70										16.5 Probable weathered BEDROCK		

Refusal at 17.8 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT:	Sandy River Company
PROJECT:	Proposed Assisted Living Facility
LOCATION:	418 Ray Street, Portland, Maine

BORING NO.:	**B-5**
SHEET:	1 of 1
PROJECT NO.	18-1201.1
DATE START:	7/25/2019
DATE FINISH:	7/25/2019

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 89' +/- **TOTAL DEPTH (FT):** 18.1 **LOGGED BY:** Patrick Otto

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Hollow Stem Auger

RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: 0.91 **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): 7/25/2019 Soils saturated below 9'

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:

Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling

D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear

Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot

WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/3	WOH-1-1-4			Forest duff & dark brown sandy silt with organics (Topsoil)		
										1.5		
			2D		2-4	24/20	2-3-4-4			2.0 Loose, tan silty SAND		
										Very stiff to stiff, brown sandy clayey SILT with silty SAND seams, trace gravel at 3.5'		
85												
	5		3D		5-7	24/24	4-3-5-5			4.5 Very stiff to stiff, brown silty CLAY		
								w =30.9 %				
80												
	10		4D		10-10.5	6/6	WOH	S_V=0.63/0.16ksf		9.0 Medium, gray silty CLAY		
			1V		10.5-11.3	10		w =42.1 %				
75												
	15									No Vane Rotation at 2V - Sand Seam		
			2V		15-16	12				15.0 Loose, layered gray silty CLAY and SAND		
			5D		16-18	24/24	6-7-8-15			16.0 Medium dense, brown silty SAND, some gravel		

Refusal at 18.1 feet
Probable Bedrock

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BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT:	Sandy River Company
PROJECT:	Proposed Assisted Living Facility
LOCATION:	418 Ray Street, Portland, Maine

BORING NO.:	**B-6**
SHEET:	1 of 1
PROJECT NO.	18-1201.1
DATE START:	8/6/2019
DATE FINISH:	8/6/2019

Drilling Information

LOCATION:	See Exploration Location Plan	**ELEVATION (FT):**	85' +/-	**TOTAL DEPTH (FT):**	12.5
LOGGED BY:	Patrick Otto	**DRILLING CO.:**	S. W. Cole Explorations, LLC	**DRILLER:**	Jeff Lee
DRILLING METHOD:	Hollow Stem Auger	**RIG TYPE:**	Track Mounted CME 850	**AUGER ID/OD:**	2 1/4 in / 5 5/8 in
SAMPLER:	Standard Split-Spoon	**HAMMER TYPE:**	Automatic / Automatic	**HAMMER WEIGHT (lbs):**	140 / 140
CASING ID/OD:	N/A /N/A	**CORE BARREL:**		**HAMMER EFFICIENCY FACTOR:**	0.75
HAMMER DROP (inch):	30 / 16				

WATER LEVEL DEPTHS (ft): ▽ 8 ft 8/6/2019 Soils saturated below 8'

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:

Water Level
▽ At time of Drilling
▼ At Completion of Drilling
▼ After Drilling

D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear

Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot

WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/24	1-5-7-7			0.5 Very loose, dark brown sandy silt with organics (Topsoil)		
			2D		2-4	24/18	7-9-9-12			2.0 Medium dense, gray-brown sandy SILT with rootlets		
80	5		3D		5-7	24/24	5-8-12-15			Medium dense, gray SAND and SILT with clay seams 4.5 Very stiff, brown silty CLAY with frequent sand seams	▽	
			4D		8-10	24/20	6-9-14-10			8.0 Medium dense, tan silty SAND, some gravel		
75	10											

Refusal at 12.5 feet
Probable Bedrock

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BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-7
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 8/6/2019
DATE FINISH: 8/6/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 87' +/-
TOTAL DEPTH (FT): 14.0
LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Jeff Lee
DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Track Mounted CME 850
AUGER ID/OD: 2 1/4 in / 5 5/8 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic
HAMMER WEIGHT (lbs): 140 / 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.75
HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 8 ft 8/6/2019 Soils wet at 5', saturated at 10'
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Drilling
▼ At Completion of Drilling
▼ After Drilling
D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear
Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot
WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
85			1D		0-2	24/24	1-3-5-7			0.5 Very loose, dark brown sandy SILT with organics 1.0 Loose, tan SAND and SILT with rootlets 3.0 Medium dense, gray SAND and SILT with rootlets		
	5		2D		5-7	24/24	4-7-6-8			Medium dense, brown silty SAND with olive-brown silty clay seams	▽	
80												
	10		3D		10-12	24/20	5-6-8-9			9.0 Medium dense, tan silty SAND, some gravel		
75												

Refusal at 14.0 feet
Probable Bedrock

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BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

S.W.COLE ENGINEERING, INC.

BORING LOG

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

BORING NO.: B-8
SHEET: 1 of 1
PROJECT NO. 18-1201.1
DATE START: 8/6/2019
DATE FINISH: 8/6/2019

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 89' +/-
TOTAL DEPTH (FT): 10.1
LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Jeff Lee
DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted CME 850
AUGER ID/OD: N/A / 4 1/2 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic
HAMMER WEIGHT (lbs): 140 / 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.75
HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 8/6/2019 No free water observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		0-2	24/14	1-1-1-2			Very loose, dark brown sandy silt with organics (Topsoil)		
										1.0		
			2D		2-4	24/15	2-6-7-14			Very loose, tan silty SAND		
										2.0		
85										Medium dense, tan silty SAND, some gravel		
	5		3D		5-7	24/22	5-5-10-11					
80												
	10		4D		10-10.1	1/1	25/1"			Refusal at 10.1 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 18-1201.1.GPJ SWCE TEMPLATE.GDT 10/24/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 1

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 92' +/- **COMPLETION DEPTH (FT):** 2.4
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics and roots					
		0.8 Brown silty SAND with roots					
		2.0 Brown gravelly SAND, some silt, with bedrock fragments					

Refusal at 2.4 feet
Probable bedrock

TEST PIT TP- 2

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 98' +/- **COMPLETION DEPTH (FT):** 4.3
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics and roots					
		0.8 Brown sandy SILT with roots					
		2.0 Light brown gravelly SAND, some silt					

Refusal at 4.3 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

S.W.COLE ENGINEERING, INC.

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 3

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 86.5' +/- **COMPLETION DEPTH (FT):** 7.5
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.0 Gray-brown sandy SILT with rootlets to 2'					
		2.6 Brown sandy SILT, some clay					
5							
		6.0 Layered brown silty SAND and sandy SILT					

Refusal at 7.5 feet
Probable bedrock

TEST PIT TP- 4

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 88' +/- **COMPLETION DEPTH (FT):** 6.7
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.3 Brown silty SAND with rootlets to 2.3'					
		3.4 Brown sandy silty CLAY				4-	q_p=8 ksf
5							
		6.0 Brown silty SAND, some gravel, with bedrock fragments				6-	q_p=8 ksf

Refusal at 6.7 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

S.W.COLE ENGINEERING, INC.

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 5

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 84' +/- **COMPLETION DEPTH (FT):** 8.5
WATER LEVEL DEPTHS (FT): 9/13/2018 Soils wet below 6' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / Dark brown sandy SILT with rootlets					
		0.8 Brown sandy clayey SILT, with rootlets to 2'				3-	q_P=6 ksf
5		4.4 Layered brown SAND and SILT					
		6.0 Gray-brown silty CLAY					
		7.5 Brown silty gravelly SAND, with cobbles					

Refusal at 8.5 feet
Probable bedrock

TEST PIT TP- 6

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 88' +/- **COMPLETION DEPTH (FT):** 8.5
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown sandy SILT with organics and roots					
		1.3 Rust brown silty SAND, with rootlets					
		2.4 Light brown SAND, some gravel, some silt, with cobbles and boulders					
5							

Refusal at 9.0 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 7

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 82' +/- **COMPLETION DEPTH (FT):** 10.5
WATER LEVEL DEPTHS (FT): 9/13/2018 Light seepage at 7', soils saturated at 8.5' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown silty SAND with organics and roots					
		0.8 Gray-brown SAND and SILT, with clay seams					
		3.0 Gray-brown sandy silty CLAY				3-	q_P=5 ksf
		4.0 Very stiff to medium, gray-brown sandy silty CLAY				4-	q_P=3 to 4 ksf
5						5-	q_P=2 to 3 ksf
						6-	q_P=1.5 ksf
						8-	q_P=1 ksf
		8.5 Gray silty CLAY					
10							

Bottom of Exploration at 10.5 feet
Limit of excavator

TEST PIT TP- 8

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 88' +/- **COMPLETION DEPTH (FT):** 4.0
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.3 Brown silty SAND, with roots					
		2.0 Brown gravelly SAND, some silt, with cobbles					

Refusal at 4.0 feet
Probable bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP- 9

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 94' +/- **COMPLETION DEPTH (FT):** 1.8
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.0 Brown sandy SILT, with roots and cobbles/bedrock fragments					

Refusal at 1.8 feet
Probable bedrock

TEST PIT TP-10

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 94' +/- **COMPLETION DEPTH (FT):** 5.0
WATER LEVEL DEPTHS (FT): No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		1.0 Brown silty SAND with roots					
		2.0 Gray-light brown SAND and SILT					
		4.0 Layered brown SAND and SILT					
5		4.9 Brown gravelly SAND, some silt					

Bottom of Exploration at 5.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP-11

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 100' +/- **COMPLETION DEPTH (FT):** 4.4
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with organics					
		0.5 Brown silty SAND with roots					
		2.3 Brown gravelly SAND and SILT with cobbles					

Bottom of Exploration at 4.4 feet

TEST PIT TP-12

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 98' +/- **COMPLETION DEPTH (FT):** 6.0
WATER LEVEL DEPTHS (FT): 9/13/2018 Light seepage in test pit sidewall at 4' and 5.5' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Dark brown sandy SILT with organics, roots and fabric (FILL)					
		1.3 Brown silty SAND					
		3.0 Brown SAND and silt, some clay					
		4.2 Brown sandy silty CLAY					
5						5-	q_P=4 to 5 ksf

Bottom of Exploration at 6.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP-13

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 96' +/- **COMPLETION DEPTH (FT):** 3.2
WATER LEVEL DEPTHS (FT): 9/13/2018 No free water observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Brown silty gravelly SAND with cobbles and brick (FILL)					
		2.0 Brown silty gravelly SAND with cobbles and boulders (FILL) -geotextile fabric at 3'-					
		Bottom of Exploration at 3.2 feet					

TEST PIT TP-14

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 86' +/- **COMPLETION DEPTH (FT):** 5.0
WATER LEVEL DEPTHS (FT): 9/13/2018 Light seepage at ground surface and 4' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Dark brown sandy SILT with organics and roots					
		0.6 Gray-brown SAND and silt with roots					
		1.5 Gray-brown SAND and silt, trace gravel, with clayey seams and layers					
5		Bottom of Exploration at 5.0 feet					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

TEST PIT LOGS

CLIENT: Sandy River Company
PROJECT: Proposed Assisted Living Facility
LOCATION: 418 Ray Street, Portland, Maine

PROJECT NO.: 18-1201
LOGGED BY: Patrick Otto
CONTRACTOR: Shaw Brothers Construction, Inc.
EQUIPMENT: Takeuchi TB-290

TEST PIT TP-15

DATE: 9/13/2018 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 85' +/- **COMPLETION DEPTH (FT):** 5.0
WATER LEVEL DEPTHS (FT): 9/13/2018 Soils wet at 4.5' **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest duff / dark brown sandy SILT with roots					
		1.0 Brown sandy SILT					
		2.7 Very stiff, gray sandy clayey SILT				3-	q_P=6 to 8 ksf
5		Bottom of Exploration at 5.0 feet					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 18-1201.GPJ SWCE TEMPLATE.GDT 8/14/19

S.W.COLE ENGINEERING, INC.

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

S.W.COLE ENGINEERING, INC.

APPENDIX D

Laboratory Test Results

S.W.COLE ENGINEERING, INC.

Consolidation Test

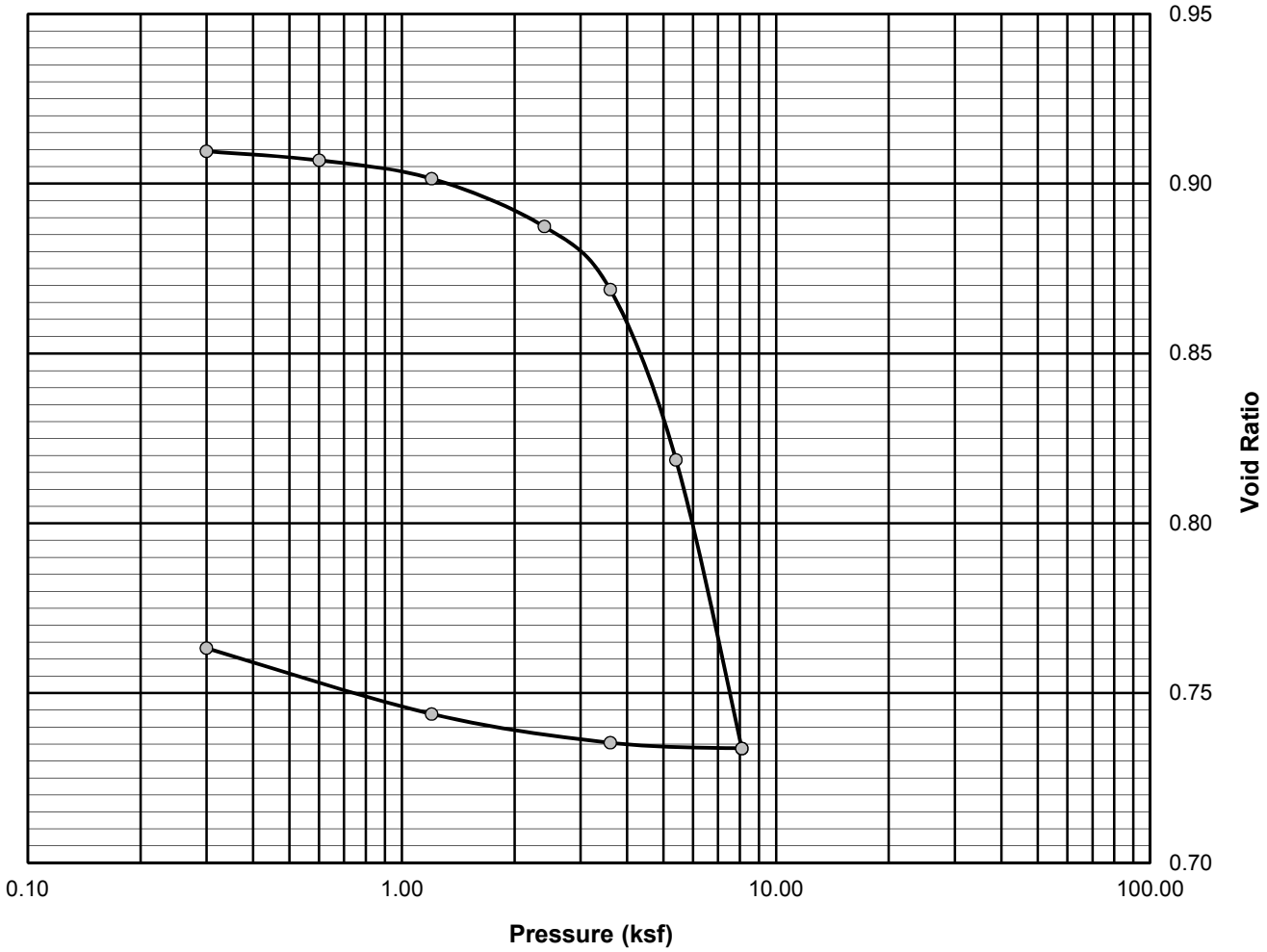
ASTM D-4767

Project Name: Portland - Assisted Living Facility
Client: Sandy River Company

Project Number: 18-1201.1
Lab ID: 22903B
Date: 8/26/2019

Boring: B-4
Sample: 1U
Depth: 10-12'

P_C =	4.1 KSF +/-
C_C =	0.02
C_R =	0.48
w =	34.1%
W_L =	29
W_P =	16



Comments:

EMW
Reviewed By

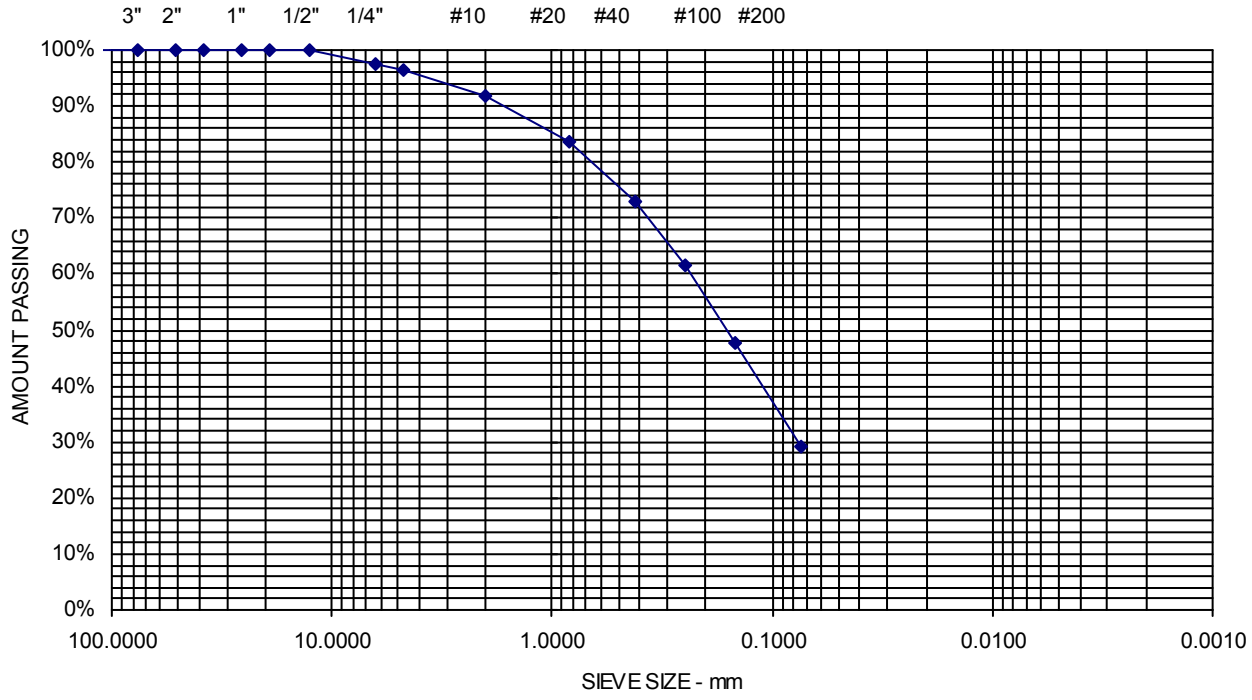
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - PROPOSED ASSISTED LIVING FACILITY - DESIGN PHASE GEOTECHNICAL	Project Number	18-1201.1
		Lab ID	25367G
Client	SANDY RIVER COMPANY	Date Received	7/29/2019
		Date Completed	7/31/2019
Material Source	**B-1 2D 2-4**	Tested By	JACK LABBE

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
125 mm	**5"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
6.3 mm	**1/4"**	**98**	
4.75 mm	**No. 4**	**97**	3.5% Gravel
2.00 mm	**No. 10**	**92**	
850 um	**No. 20**	**84**	
425 um	**No. 40**	**73**	67.5% Sand
250 um	**No. 60**	**61**	
150 um	**No. 100**	**48**	
75 um	**No. 200**	**29.0**	29% Fines



Comments:

Sheet

Section 12

Stormwater Management

Section 12

Stormwater Management

See this Section for a copy of the stormwater management plan.

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT PLAN

For

FALLBROOK COMMONS
PORTLAND, MAINE

Prepared for

Sandy River Company
217 Commercial Street
Portland, Maine 04112

November 12, 2019

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Appendix 2: Stormwater Quality Calculations
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STORMWATER MANAGEMENT PLAN REPORT
Fallbrook Commons
Portland, Maine

I. Introduction

This Stormwater Management Plan Report has been prepared to present analyses performed to address the potential impacts associated with the project due to proposed modification to stormwater runoff characteristics and land cover changes. The stormwater management controls outlined in this report have been designed to suit the proposed development and to comply with applicable regulatory requirements.

II. Existing Conditions

The project site is comprised of undeveloped land consisting of mostly wooded land coverage with access from Ray Street and Merrymeeting Drive. The site is approximately 12.78 acres and is bounded by Florida Avenue and Ray Street residences to the south and east, Fallbrook Woods senior center to the north, and Topsham Street and undeveloped residential parcels to the west. Paper streets Wadco Street and Ash Street are located to the south and southeast of the site and are currently undeveloped.

Slopes on the site range from flat low-lying easterly wetland areas to undeveloped slopes ranging from 5-40% with exposed ledge areas located in the western portion of the parcel. Site drainage generally travels easterly toward the wetland area nearest the intersection and residences of Ray Street and Florida Avenue and enters a closed drainage system in the Ray Street right of way. Small portions of the site drain west to a wetland in the Topsham Street right of way.

The site is tributary to an unnamed stream draining northeasterly from the site and discharging at the mouth of the Presumpscot River, which is not classified as most-at-risk or urban impaired according to Chapter 502, Direct Watersheds of Lakes Most At-Risk From New Development, and Urban Impaired Stream Standards.

The proposed development area of the site is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Portland, community-panel number 230051 002 C. Please find a copy of the FEMA map attached as Appendix 6.

III. Soils

Soil information for the site was obtained via the USDA United States Department of Agriculture and Natural Resources Conservation Service's Web Soil Survey. The Hydrologic Soil Group (HSG) of the site soils are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Name	Soil Symbol	HSG	Slope (%)
BELGRADE	BgB	C	0-8
BUXTON	BuB	D	3-8
HOLLIS	HrB	C	0-8
HOLLIS	HrC	C	8-15
HOLLIS	HsB	C	0-8
SCANTIC	Sn	D	0-3

Hydrologic Soil Group boundaries are delineated on the Watershed Map. A copy of the Web Soil Survey is included as Appendix 5.

IV. Proposed Site Improvements

The project includes a new senior living facility located next to the existing Fallbrook Woods Assisted Living facility. The development includes the construction of a two story, 37,455 sf building that will house 90 bedrooms, a commercial kitchen, community areas, and two parking areas totaling 93 parking spaces. Fallbrook Health Center proposes an entrance off of Ray Street, and an emergency connection to Merrymeeting Drive.

This project will happen as one phase, which will involve clearing the vegetation as required, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by 2021.

The property is 12.78 acres, exists within the Residential-3 zone, and has frontage along Ray Street. The proposed development will improve approximately 5.6 acres of undeveloped land, as shown on the General Standards worksheet attached as Appendix 2. This includes approximately 2.7 acres of new impervious area.

V. Pre-Development Conditions Model

The pre-development watershed plan consists of four subcatchments labeled 1.0S, 1.1S, 2.0S, and 3.0S in the HydroCAD model. Three locations were identified as Study Points (SP) for comparing peak runoff rates.

SP-1 is located in the easterly corner of the lot where runoff leaves the site via a wetland. Watershed 1.0S directly contributes runoff to this study point with a tributary area of approximately 9.4 acres. Subcatchment 1.1S flows into to 1.0S through an existing 15" culvert with an inlet control structure identified as node 1.1P. The culvert crosses under an existing gravel access road draining an area of approximately 2.7 acres. SP-1 and the associated drainage area are tributary to an offsite unnamed stream traveling northeasterly from the site and discharging to the Presumpscot River.

SP-2 is located in the undeveloped southerly corner of the lot where runoff leaves the site via overland flow into the paper street right of way of Wadco Street. Subcatchment 2.0S contributes runoff to this study point with a tributary area of approximately 0.4 acres. SP-2 and its associated drainage area drain to an offsite unnamed stream discharging to the Presumpscot River.

SP-3 is located in the westerly corner of the lot that is a majority undeveloped where runoff leaves the site into the undeveloped Topsham Street right of way. A small portion of this area includes previously developed grass and pavement area from the neighboring Fallbrook Woods facility. Watershed 3.0S contributes runoff to this study point with a tributary area of approximately 0.9 acres. SP-3 and the associated drainage area are also tributary to an offsite unnamed stream discharging to the Presumpscot River.

VI. Post-Development Conditions Model

The post-development watershed area consists of the same overall area as the pre-development plan, however, the subcatchments have been broken into smaller areas as a result of the proposed development.

SP-1: Post-development subcatchments 10.0S and 10.1S represent the existing undeveloped and developed land within pre-development subcatchments 1.0S and 1.1S respectively. Subcatchments 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, and 13.1S represent the majority of the proposed developed area including the building, parking areas, and landscaped islands.

Subcatchments 11.0S, 11.1S, and 11.2S represent approximately 3.1 acres of the developed site tributary to a proposed Gravel Wetland (GW-1) modeled as node 11.0P which provides both quantity and quality treatment of the stormwater runoff. Portions of subcatchment 11.1S include developed areas from the neighboring Fallbrook Woods facility and are directed to a proposed replacement culvert modeled as node 11.1P.

Subcatchment 12.0S represents approximately 1.3 acres of the developed area and is tributary to the proposed Underdrained Soil Filter (UDSF-1) modeled as node 12.0P which provides both quantity and quality treatment of the stormwater runoff.

Subcatchments 13.0S and 13.1S are approximately 0.8 acres of the proposed building roofline area and is tributary to the proposed Roof Drip Edge BMPs modeled as nodes 13.0P and 13.1P which provide quality treatment of the stormwater runoff.

SP-2: Post-development subcatchment 20.0S represents the remaining undeveloped land from pre-development subcatchment 2.0S.

SP-3: Post-development subcatchment 30.0S represents the remaining undeveloped land from pre-development subcatchment 3.0S and a small portion of developed landscape and pavement directed via constructed grassed swale and sheet flow to an existing wetland area.

The three Best Management Practices (gravel wetland, underdrained soil filter, and roof drip edge) have been designed and sized in accordance with MDEP BMP standards contained within Chapter 500 and the BMP Manual. The proposed BMPs treat runoff tributary to SP-1. The areas tributary to SP-2 and SP-3 are reduced in the post-development conditions due to site development. Sizing calculations can be found in Appendix 2.

VII. Stormwater Management

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. The project avoids adverse impacts by implementing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 4) during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply, which require a project's stormwater management system to include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The General Standards require treatment of no less than 95% of the site's created impervious area and no less than 80% of the site's created developed area (landscaped area and impervious area combined).

To mitigate the changes in hydrologic patterns due to the development of this project, an underdrained soil filter, a gravel wetland, and a roof drip edge filters have been included in the stormwater management infrastructure. Filtration BMPs are effective at removing a wide range of pollutants through the use of soil filter media.

BMP sizing and treatment calculations are provided as Appendix 2.

Through the use of the proposed BMP's, 106.5% of new impervious area and 91.8% of new developed area will be receiving treatment. This exceeds the requirements for the Maine DEP General Standards. The project exceeds 100% of the new impervious area treated by directing untreated offsite impervious area to the proposed gravel wetland.

Flooding Standard - Chapter 500, Section 4(F)

Since the planned project will create less than three (3) acres of impervious surface, MDEP Flooding Standards are not required to be met. However, the Flooding Standard has been met as a local requirement. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

A runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500: Stormwater Management (effective date August 2015). Rainfall values for York County are listed in the table below.

Storm Frequency Precipitation (in./24 hr) Cumberland County	
2-year	3.1
10-year	4.6
25-year	5.8

The following table presents the watershed data for pre- and post-development conditions, as delineated for the analysis.

Subcatchment (Watershed)	Pre-Development			Post-Development		
	Area (ac)	Cn	Tc (Min.)	Area (ac)	Cn	Tc (Min.)
1.0S	9.42	77	29.3			
1.1S	2.68	80	23.9			
2.0S	0.44	70	18.7			
3.0S	0.92	72	16.1			
10.0S				4.54	79	28.5
10.1S				2.63	80	23.9
11.0S				1.93	92	11.7
11.1S				0.54	76	18.0
11.2S				0.62	81	15.0
12.0S				1.29	87	17.3
13.0S				0.40	98	6.0
13.1S				0.39	98	6.0
20.0S				0.28	70	18.0
30.0S				0.85	73	16.1
Total	**13.46**			**13.46**		

The following table presents the results of the stormwater runoff calculations at the analysis points for the pre-development and post-developed conditions.

Stormwater Runoff Summary Table			
Study Point	**Storm Event**	**Pre-Development (cfs)**	**Post-Development (cfs)**
SP-1	2-year	8.4	6.3
	10-year	19.4	17.2
	25-year	25.9	24.7
SP-2	2-year	0.2	0.2
	10-year	0.7	0.4
	25-year	0.9	0.6
SP-3	2-year	0.6	0.6
	10-year	1.6	1.5
	25-year	2.2	2.1

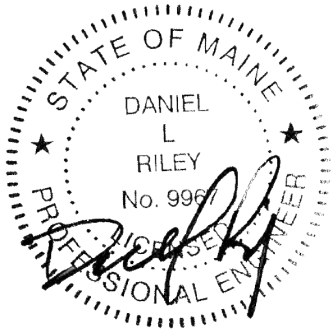
The HydroCAD Data output sheets from this analysis are appended to this report (Appendix 3) along with pre-development and post-development watershed maps (Appendix 1). The model predicts that the peak runoff rates in the post-development condition at Study Points 1, 2, and 3 are at or below pre-development runoff rates for the 2, 10, and 25-year storm events with implementation of the proposed stormwater management practices.

VIII. Summary

The proposed development has been designed to manage stormwater runoff through Best Management Practices approved by MDEP. Stormwater BMP's provide treatment to 106.5% (95% required) of impervious areas, and 91.8% (80% required) of the total developed area. Runoff discharging from the site will be at or below pre-development conditions for the 2, 10 and 25-year storm events at all three study points. Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping procedures have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

Prepared by:

SEBAGO TECHNICS, INC.



Daniel L. Riley, P.E.
Vice President, Engineering

DLR/BAW

11/12/2019

Appendix 1

Watershed Plans

(see plan set)

Appendix 2

Stormwater Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 18347 Fallbrook Commons **Date:** 11/11/2019

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10.0S	197,762	8,676	226	167,582	21,278	21,504	176,258	NO	0	0	0	
10.1S	114,524	24,914	0	85,730	3,880	3,880	110,644	NO	0	0	0	
11.0S	83,879	0	55,667	0	28,212	83,879	0	YES	55,667	28,212	83,879	GW-1
11.1S	23,407	0	0	0	23,407	23,407	0	YES	0	23,407	23,407	GW-1
11.2S	27,173	7,890	700	9,821	8,762	9,462	17,711	YES	8,590	18,583	27,173	GW-1
12.0S	56,194	0	27,298	0	28,896	56,194	0	YES	27,298	28,896	56,194	UDSF-1
13.0S	17,204	0	17,204	0	0	17,204	0	YES	17,204	0	17,204	DL
13.1S	16,974	0	16,974	0	0	16,974	0	YES	16,974	0	16,974	DL
20.0S	12,129	0	0	12,129	0	0	12,129	NO	0	0	0	
30.0S	37,005	0	0	24,501	12,504	12,504	24,501	NO	0	0	0	
TOTAL (S.F.)	**586,251**	**41,480**	**118,069**	**299,763**	**126,939**	**245,008**	**341,243**		**125,733**	**99,098**	**224,831**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**118,069**	**TOTAL DEVELOPED AREA (S.F.)**	**245,008**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**125,733**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**224,831**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**106.49%**	**% OF AREA RECEIVING TREATMENT**	**91.76%**

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SHEET NO.	1	OF	1		
CALCULATED BY	BAW	DATE	11/11/2019		
FILE NAME	18347 WQC.xlsx	PRNT DATE	11/11/2019		

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system….holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to GRAVEL WETLAND

Landscaped Area	70,202.0	SF							
Impervious Area	64,257.0	SF							
Minimum Surface Area									
Required	(2% X Landscaped + 5%" X Impervious)								
Total Landscaped Area	70,202.00	SF	Area	1,404.0	SF				
Total Impervious Area	64,257.00	SF	Area	3,212.9	SF				
Required Minimum Surface Area				4,616.9	SF				
Provided Surface Area				6,175.0	SF				
Treatment Volume									
Required	(0.4" X Landscaped + 1.0" X Impervious)								
Landscaped Area	70,202.00	SF	Volume	2,340.1					
Impervious Area	64,257.00	SF	Volume	5,354.8					
Treatment Volume Required				7,694.8	CF	0.177	AF		
Minimum Treatment Cell Volume (45%)				3,462.7	CF	0.079	AF		
Provided Treatment Volume (Bay 1)				4,790.0	CF				
Provided Treatment Volume (Bay 2)				5,860.0	CF				
Total Provided Treatment Volume				10,650.0	CF				
Minimum "Forebay" Cell Volume (10%)				769.5	CF				
Provided Treatment Volume (Forebay)				800.0	CF				

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UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

1. Maine DEP Chapter 500, Section 4.C.(3)(b)

References

a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1

a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter	UDSF-1							
Landscaped Area	28,896.00	SF						
Impervious Area	27,298.00	SF						
Minimum Surface Area								
Required	(2% X Landscaped + 5%" X Impervious)							
Total Landscaped Area	28,896.00	SF	Area	577.9	SF			
Total Impervious Area	27,298.00	SF	Area	1,364.9	SF			
Required Minimum Surface Area				1,942.8	SF			
Provided Surface Area				1,955.0	SF			
Treatment Volume								
Required	(0.4" X Landscaped + 1.0" X Impervious)							
Landscaped Area	28,896.00	SF	Volume	963.2				
Impervious Area	27,298.00	SF	Volume	2,274.8				
Treatment Volume Required				3,238.0	CF	0.074	AF	
Provided Treatment Volume				3,730.0	CF	0.086	AF	
Sediment Pre-Treatment								
Per Reference 2, Chapter 7.1	"Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"							
Annual Sediment Load:	55 cubic feet per acre per year of sanded area							
Area to be sanded:	27,298.00	SF						
Sediment Volume	34	CF						
Provided	160	CF	16	Inch Deep Forebay	with area of		120	sf

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Gravel Wetland - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 10,650 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.12 \text{ cfs}$$

surface area of filter = 6,175 SF

h = 1.72 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.019 sf = 2.81 sq. in.

Max. Diam = 1.89 in

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Underdrained Soil Filter 1 - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 3,730 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.04 \text{ cfs}$$

surface area of filter = 1,955 SF

h = 1.91 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.006 sf = 0.93 sq. in.

Max. Diam = 1.09 in

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CALCULATED BY	BAW	DATE	11/11/2019
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FILE NAME	18347 WQC.xlsx	PRINT DATE	11/11/2019

Treatment Calculations for Proposed Roof Drip Edge						
WQV Calculation						
(WQV = Water Quality Volume)						
Total Impervious Area =	34,180	sf				
WQV (MDEP)= 1" x Impervious Area =		2,848.3	cf =	0.065	acre-ft	
Length of Trench=		1510.0	ft.			
Width of Trench=		3.5	ft.			
Depth of Stone		12.0	in.	40% porosity		
Depth of Sand Media=		12.0	in.	20% porosity		
WQV Provided = Area of Trench * (Depth of stone*stone porosity + Depth of sand*sand porosity)						
WQV for first 1" =	2,114.0	cf				
Additional WQV Provided =	1,057.0	cf				
Total WQV Provided =	**3,171.0**	**cf**				

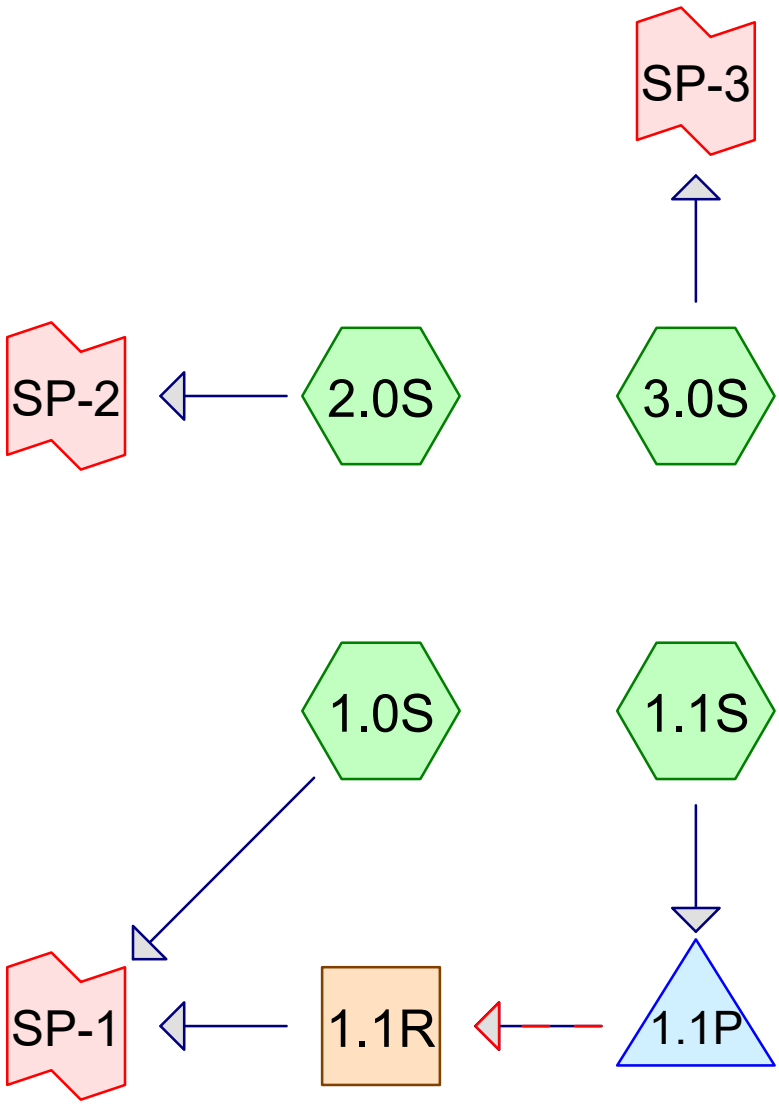
The stone reservoir volume for the drip edge filter was designed to provide the storage required to convey the water quality storm (storm that generates 1" of runoff over the roof) through the filter media under the stone. Additonal water quality is provided in the porosity of the underdrain sand.

Appendix 3

HydroCAD Output
Pre-Development and
Post-Development Models

Appendix 3A
PREDEVELOPMENT

PRE-DEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 18347 PRE-DEVELOPMENT 2019-11-07
Prepared by Sebago Technics, Printed 11/7/2019
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.917	74	>75% Grass cover, Good, HSG C (1.0S, 1.1S, 3.0S)
1.899	80	>75% Grass cover, Good, HSG D (1.0S, 1.1S)
0.139	96	Gravel surface, HSG C (1.0S, 3.0S)
0.063	96	Gravel surface, HSG D (1.0S)
0.124	98	Paved parking, HSG C (1.0S, 1.1S, 3.0S)
0.046	98	Paved parking, HSG D (1.0S, 1.1S)
0.400	98	Roofs, HSG C (1.0S, 1.1S)
0.394	98	Roofs, HSG D (1.0S, 1.1S)
3.529	70	Woods, Good, HSG C (1.0S, 1.1S, 2.0S, 3.0S)
5.947	77	Woods, Good, HSG D (1.0S, 1.1S, 3.0S)
13.458	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.108	HSG C	1.0S, 1.1S, 2.0S, 3.0S
8.350	HSG D	1.0S, 1.1S, 3.0S
0.000	Other	
13.458		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=1.14"
Flow Length=740' Tc=29.3 min CN=77 Runoff=6.95 cfs 0.895 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.56 cfs 0.296 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.24 cfs 0.028 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=0.87"
Flow Length=292' Tc=16.1 min CN=72 Runoff=0.63 cfs 0.067 af

Reach 1.1R: Avg. Flow Depth=0.11' Max Vel=0.44 fps Inflow=2.43 cfs 0.294 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=1.82 cfs 0.294 af

Pond 1.1P: Peak Elev=93.92' Storage=1,040 cf Inflow=2.56 cfs 0.296 af
Primary=2.43 cfs 0.294 af Secondary=0.00 cfs 0.000 af Outflow=2.43 cfs 0.294 af

Link SP-1: Inflow=8.42 cfs 1.190 af
Primary=8.42 cfs 1.190 af

Link SP-2: Inflow=0.24 cfs 0.028 af
Primary=0.24 cfs 0.028 af

Link SP-3: Inflow=0.63 cfs 0.067 af
Primary=0.63 cfs 0.067 af

Total Runoff Area = 13.458 ac Runoff Volume = 1.286 af Average Runoff Depth = 1.15"
92.84% Pervious = 12.494 ac 7.16% Impervious = 0.964 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=2.46"
Flow Length=740' Tc=29.3 min CN=77 Runoff=15.49 cfs 1.928 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.33 cfs 0.606 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.66 cfs 0.070 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.05"
Flow Length=292' Tc=16.1 min CN=72 Runoff=1.60 cfs 0.157 af

Reach 1.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.22 cfs 0.605 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=4.32 cfs 0.605 af

Pond 1.1P: Peak Elev=94.16' Storage=1,502 cf Inflow=5.33 cfs 0.606 af
Primary=5.22 cfs 0.605 af Secondary=0.00 cfs 0.000 af Outflow=5.22 cfs 0.605 af

Link SP-1: Inflow=19.39 cfs 2.533 af
Primary=19.39 cfs 2.533 af

Link SP-2: Inflow=0.66 cfs 0.070 af
Primary=0.66 cfs 0.070 af

Link SP-3: Inflow=1.60 cfs 0.157 af
Primary=1.60 cfs 0.157 af

Total Runoff Area = 13.458 ac Runoff Volume = 2.761 af Average Runoff Depth = 2.46"
92.84% Pervious = 12.494 ac 7.16% Impervious = 0.964 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=3.31"
Flow Length=740' Tc=29.3 min CN=77 Runoff=20.90 cfs 2.594 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=7.05 cfs 0.803 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.94 cfs 0.098 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.83"
Flow Length=292' Tc=16.1 min CN=72 Runoff=2.24 cfs 0.217 af

Reach 1.1R: Avg. Flow Depth=0.21' Max Vel=0.63 fps Inflow=6.32 cfs 0.802 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=5.75 cfs 0.802 af

Pond 1.1P: Peak Elev=94.42' Storage=2,183 cf Inflow=7.05 cfs 0.803 af
Primary=6.32 cfs 0.802 af Secondary=0.00 cfs 0.000 af Outflow=6.32 cfs 0.802 af

Link SP-1: Inflow=25.86 cfs 3.396 af
Primary=25.86 cfs 3.396 af

Link SP-2: Inflow=0.94 cfs 0.098 af
Primary=0.94 cfs 0.098 af

Link SP-3: Inflow=2.24 cfs 0.217 af
Primary=2.24 cfs 0.217 af

Total Runoff Area = 13.458 ac Runoff Volume = 3.712 af Average Runoff Depth = 3.31"
92.84% Pervious = 12.494 ac 7.16% Impervious = 0.964 ac

Summary for Subcatchment 1.0S:

Runoff = 20.90 cfs @ 12.40 hrs, Volume= 2.594 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,649	98	Paved parking, HSG C
1,243	98	Paved parking, HSG D
12,810	74	>75% Grass cover, Good, HSG C
65,319	80	>75% Grass cover, Good, HSG D
5,779	98	Roofs, HSG C
6,933	98	Roofs, HSG D
85,234	70	Woods, Good, HSG C
223,398	77	Woods, Good, HSG D
5,175	96	Gravel surface, HSG C
2,751	96	Gravel surface, HSG D
410,291	77	Weighted Average
394,687		96.20% Pervious Area
15,604		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0930	0.15		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.6	180	0.0550	1.17		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
29.3	740	Total			

Summary for Subcatchment 1.1S:

Runoff = 7.05 cfs @ 12.33 hrs, Volume= 0.803 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,275	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,695	74	>75% Grass cover, Good, HSG C
17,419	80	>75% Grass cover, Good, HSG D
11,644	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,088	70	Woods, Good, HSG C
33,453	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
116,561	80	Weighted Average
91,655		78.63% Pervious Area
24,906		21.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Summary for Subcatchment 2.0S:

Runoff = 0.94 cfs @ 12.26 hrs, Volume= 0.098 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,260	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
19,260	70	Weighted Average
19,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.8	110	0.0400	1.00		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
18.7	210	Total			

Summary for Subcatchment 3.0S:

Runoff = 2.24 cfs @ 12.22 hrs, Volume= 0.217 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,473	98	Paved parking, HSG C
0	98	Paved parking, HSG D
4,421	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
31,125	70	Woods, Good, HSG C
2,219	77	Woods, Good, HSG D
875	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
40,113	72	Weighted Average
38,640		96.33% Pervious Area
1,473		3.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Summary for Reach 1.1R:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.32 cfs @ 12.44 hrs, Volume= 0.802 af
Outflow = 5.75 cfs @ 12.60 hrs, Volume= 0.802 af, Atten= 9%, Lag= 9.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.63 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 42.6 min

Peak Storage= 4,419 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.49 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'

‡

Stage-Area-Storage for Reach 1.1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
89.00	0.0	0
89.01	0.3	149
89.02	0.6	305
89.03	1.0	467
89.04	1.3	636
89.05	1.7	812
89.06	2.1	995
89.07	2.4	1,185
89.08	2.8	1,381
89.09	3.3	1,584
89.10	3.7	1,795
89.11	4.1	2,011
89.12	4.6	2,235
89.13	5.1	2,465
89.14	5.6	2,702
89.15	6.1	2,946
89.16	6.6	3,197
89.17	7.1	3,455
89.18	7.7	3,719
89.19	8.2	3,990
89.20	8.8	4,268
89.21	9.4	4,553
89.22	10.0	4,844
89.23	10.6	5,142
89.24	11.2	5,448
89.25	11.9	5,759
89.26	12.5	6,078
89.27	13.2	6,403
89.28	13.9	6,736
89.29	14.6	7,075
89.30	15.3	7,420
89.31	16.0	7,773
89.32	16.8	8,132
89.33	17.5	8,499
89.34	18.3	8,872
89.35	19.1	9,251
89.36	19.9	9,638
89.37	20.7	10,031
89.38	21.5	10,431
89.39	22.3	10,838
89.40	23.2	11,252
89.41	24.1	11,672
89.42	24.9	12,100
89.43	25.8	12,534
89.44	26.8	12,975
89.45	27.7	13,422
89.46	28.6	13,877
89.47	29.6	14,338
89.48	30.5	14,806
89.49	31.5	15,281
89.50	32.5	15,763
89.51	33.5	16,251
89.52	34.5	16,746
89.53	35.6	17,248
89.54	36.6	17,757
89.55	37.7	18,272
89.56	38.8	18,795
89.57	39.8	19,324
89.58	40.9	19,860
89.59	42.1	20,402
89.60	43.2	20,952
89.61	44.3	21,508
89.62	45.5	22,071
89.63	46.7	22,641
89.64	47.9	23,218
89.65	49.1	23,801
89.66	50.3	24,392
89.67	51.5	24,989
89.68	52.8	25,592
89.69	54.0	26,203
89.70	55.3	26,821
89.71	56.6	27,445
89.72	57.9	28,076
89.73	59.2	28,713
89.74	60.5	29,358
89.75	61.9	30,009
89.76	63.2	30,668
89.77	64.6	31,332
89.78	66.0	32,004
89.79	67.4	32,683
89.80	68.8	33,368
89.81	70.2	34,060
89.82	71.7	34,759
89.83	73.1	35,465
89.84	74.6	36,177
89.85	76.1	36,896
89.86	77.6	37,622
89.87	79.1	38,355
89.88	80.6	39,095
89.89	82.1	39,841
89.90	83.7	40,595
89.91	85.3	41,354
89.92	86.8	42,121
89.93	88.4	42,895
89.94	90.1	43,675
89.95	91.7	44,462
89.96	93.3	45,256
89.97	95.0	46,057
89.98	96.6	46,865
89.99	98.3	47,679
90.00	**100.0**	**48,500**

Summary for Pond 1.1P:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 7.05 cfs @ 12.33 hrs, Volume= 0.803 af
Outflow = 6.32 cfs @ 12.44 hrs, Volume= 0.802 af, Atten= 10%, Lag= 6.9 min
Primary = 6.32 cfs @ 12.44 hrs, Volume= 0.802 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 94.42' @ 12.44 hrs Surf.Area= 3,015 sf Storage= 2,183 cf
Flood Elev= 95.01' Surf.Area= 4,798 sf Storage= 4,485 cf

Plug-Flow detention time= 6.8 min calculated for 0.802 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (837.9 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.70'	12,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.70	80	0.0	0	0
92.00	100	100.0	27	27
93.00	214	100.0	157	184
94.00	1,779	100.0	997	1,180
95.00	4,735	100.0	3,257	4,438
96.00	11,075	100.0	7,905	12,343

Device	Routing	Invert	Outlet Devices
#1	Primary	91.72'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.72' / 89.67' S= 0.0512 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	92.25'	**6.0" Vert. Controlling Orifice** C= 0.600
#3	Device 1	93.70'	**15.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	95.05'	**30.0' long x 10.0' breadth Roadway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.32 cfs @ 12.44 hrs HW=94.42' TW=89.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.32 cfs of 6.72 cfs potential flow)
  ├**2=Controlling Orifice** (Orifice Controls 1.31 cfs @ 6.67 fps)
  └**3=Grate** (Orifice Controls 5.01 cfs @ 4.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.70' TW=89.00' (Dynamic Tailwater)
└**4=Roadway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 1.1P:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
91.70	80	0
91.75	83	4
91.80	87	8
91.85	90	13
91.90	93	17
91.95	97	22
92.00	100	27
92.05	106	32
92.10	111	38
92.15	117	43
92.20	123	49
92.25	129	56
92.30	134	62
92.35	140	69
92.40	146	76
92.45	151	84
92.50	157	91
92.55	163	99
92.60	168	108
92.65	174	116
92.70	180	125
92.75	186	134
92.80	191	143
92.85	197	153
92.90	203	163
92.95	208	173
93.00	214	184
93.05	292	197
93.10	371	213
93.15	449	234
93.20	527	258
93.25	605	286
93.30	683	319
93.35	762	355
93.40	840	395
93.45	918	439
93.50	997	487
93.55	1,075	538
93.60	1,153	594
93.65	1,231	654
93.70	1,310	717
93.75	1,388	785
93.80	1,466	856
93.85	1,544	931
93.90	1,623	1,010
93.95	1,701	1,094
94.00	1,779	1,180
94.05	1,927	1,273
94.10	2,075	1,373
94.15	2,222	1,481
94.20	2,370	1,595
94.25	2,518	1,718
94.30	2,666	1,847
94.35	2,814	1,984
94.40	2,961	2,129
94.45	3,109	2,280
94.50	3,257	2,440
94.55	3,405	2,606
94.60	3,553	2,780
94.65	3,700	2,961
94.70	3,848	3,150
94.75	3,996	3,346
94.80	4,144	3,550
94.85	4,292	3,761
94.90	4,439	3,979
94.95	4,587	4,204
95.00	4,735	4,438
95.05	5,052	4,682
95.10	5,369	4,943
95.15	5,686	5,219
95.20	6,003	5,511
95.25	6,320	5,819
95.30	6,637	6,143
95.35	6,954	6,483
95.40	7,271	6,839
95.45	7,588	7,210
95.50	7,905	7,598
95.55	8,222	8,001
95.60	8,539	8,420
95.65	8,856	8,855
95.70	9,173	9,305
95.75	9,490	9,772
95.80	9,807	10,254
95.85	10,124	10,753
95.90	10,441	11,267
95.95	10,758	11,797
96.00	**11,075**	**12,343**

Summary for Link SP-1:

Inflow Area = 12.095 ac, 7.69% Impervious, Inflow Depth = 3.37" for 25-YR event
Inflow = 25.86 cfs @ 12.44 hrs, Volume= 3.396 af
Primary = 25.86 cfs @ 12.44 hrs, Volume= 3.396 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link SP-2:

Inflow Area = 0.442 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.94 cfs @ 12.26 hrs, Volume= 0.098 af
Primary = 0.94 cfs @ 12.26 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

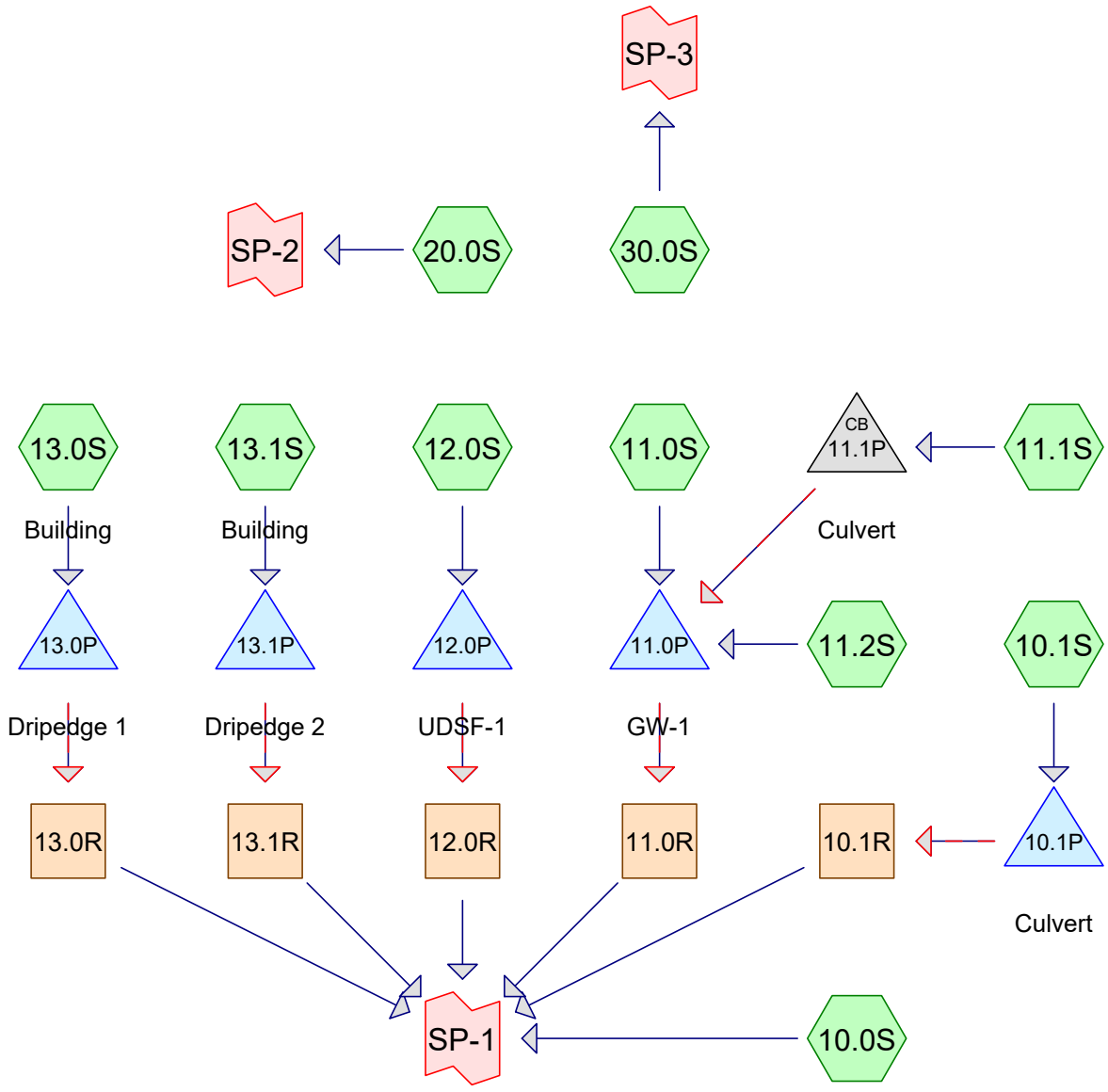
Summary for Link SP-3:

Inflow Area = 0.921 ac, 3.67% Impervious, Inflow Depth = 2.83" for 25-YR event
Inflow = 2.24 cfs @ 12.22 hrs, Volume= 0.217 af
Primary = 2.24 cfs @ 12.22 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Appendix 3B
POSTDEVELOPMENT

POST-DEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 18347 POST-DEVELOPMENT 2019-11-07
Prepared by Sebago Technics, Printed 11/11/2019
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.801	74	>75% Grass cover, Good, HSG C (10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 30.0S)
3.495	80	>75% Grass cover, Good, HSG D (10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 30.0S)
1.136	98	Paved parking, HSG C (10.1S, 11.0S, 11.2S, 12.0S)
0.810	98	Paved parking, HSG D (10.0S, 10.1S, 11.0S, 12.0S)
0.903	98	Roofs, HSG C (10.0S, 10.1S, 11.0S, 11.2S, 13.0S, 13.1S)
0.809	98	Roofs, HSG D (10.0S, 10.1S, 11.0S, 13.0S, 13.1S)
1.269	70	Woods, Good, HSG C (10.0S, 10.1S, 11.2S, 12.0S, 20.0S, 30.0S)
3.236	77	Woods, Good, HSG D (10.0S, 10.1S, 30.0S)
13.458	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.108	HSG C	10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, 13.1S, 20.0S, 30.0S
8.350	HSG D	10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 13.0S, 13.1S, 30.0S
0.000	Other	
13.458		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=1.26"
Flow Length=626' Tc=28.5 min CN=79 Runoff=3.80 cfs 0.477 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.52 cfs 0.290 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=2.26"
Flow Length=254' Tc=11.7 min CN=92 Runoff=4.15 cfs 0.362 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=1.08"
Flow Length=266' Tc=18.0 min CN=76 Runoff=0.46 cfs 0.048 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=1.39"
Flow Length=100' Tc=15.0 min CN=81 Runoff=0.76 cfs 0.072 af

Subcatchment12.0S: Runoff Area=56,194 sf 48.58% Impervious Runoff Depth=1.83"
Flow Length=436' Tc=17.3 min CN=87 Runoff=1.98 cfs 0.196 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.19 cfs 0.094 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.17 cfs 0.093 af

Subcatchment20.0S: Runoff Area=12,129 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.15 cfs 0.018 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=0.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=0.62 cfs 0.065 af

Reach 10.1R: Avg. Flow Depth=0.11' Max Vel=0.45 fps Inflow=2.52 cfs 0.290 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=1.95 cfs 0.290 af

Reach 11.0R: Avg. Flow Depth=0.06' Max Vel=0.19 fps Inflow=0.64 cfs 0.310 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.87 cfs Outflow=0.58 cfs 0.305 af

Reach 12.0R: Avg. Flow Depth=0.03' Max Vel=0.15 fps Inflow=0.48 cfs 0.160 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.08 cfs Outflow=0.25 cfs 0.153 af

Reach 13.0R: Avg. Flow Depth=0.03' Max Vel=0.17 fps Inflow=0.40 cfs 0.094 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.05 cfs Outflow=0.31 cfs 0.094 af

Reach 13.1R: Avg. Flow Depth=0.03' Max Vel=0.18 fps Inflow=0.33 cfs 0.093 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.88 cfs Outflow=0.32 cfs 0.093 af

Pond 10.1P: Culvert Peak Elev=91.00' Storage=0 cf Inflow=2.52 cfs 0.290 af
Primary=2.52 cfs 0.290 af Secondary=0.00 cfs 0.000 af Outflow=2.52 cfs 0.290 af

Pond 11.0P: GW-1 Peak Elev=82.65' Storage=11,986 cf Inflow=5.23 cfs 0.483 af
Primary=0.64 cfs 0.310 af Secondary=0.00 cfs 0.000 af Outflow=0.64 cfs 0.310 af

Pond 11.1P: Culvert Peak Elev=84.04' Inflow=0.46 cfs 0.048 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=0.46 cfs 0.048 af

Pond 12.0P: UDSF-1 Peak Elev=89.10' Storage=4,061 cf Inflow=1.98 cfs 0.196 af
Primary=0.48 cfs 0.160 af Secondary=0.00 cfs 0.000 af Outflow=0.48 cfs 0.160 af

Pond 13.0P: Dripedge 1 Peak Elev=100.10' Storage=969 cf Inflow=1.19 cfs 0.094 af
Primary=0.40 cfs 0.094 af Secondary=0.00 cfs 0.000 af Outflow=0.40 cfs 0.094 af

Pond 13.1P: Dripedge 2 Peak Elev=87.00' Storage=742 cf Inflow=1.17 cfs 0.093 af
Primary=0.33 cfs 0.093 af Secondary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.093 af

Link SP-1: Inflow=6.26 cfs 1.413 af
Primary=6.26 cfs 1.413 af

Link SP-2: Inflow=0.15 cfs 0.018 af
Primary=0.15 cfs 0.018 af

Link SP-3: Inflow=0.62 cfs 0.065 af
Primary=0.62 cfs 0.065 af

Total Runoff Area = 13.458 ac Runoff Volume = 1.717 af Average Runoff Depth = 1.53"
72.82% Pervious = 9.801 ac 27.18% Impervious = 3.658 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=2.63"
Flow Length=626' Tc=28.5 min CN=79 Runoff=8.10 cfs 0.995 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.24 cfs 0.596 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=3.89"
Flow Length=254' Tc=11.7 min CN=92 Runoff=6.97 cfs 0.625 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=2.37"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.05 cfs 0.106 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=2.81"
Flow Length=100' Tc=15.0 min CN=81 Runoff=1.55 cfs 0.146 af

Subcatchment12.0S: Runoff Area=56,194 sf 48.58% Impervious Runoff Depth=3.38"
Flow Length=436' Tc=17.3 min CN=87 Runoff=3.61 cfs 0.363 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.85 cfs 0.150 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.83 cfs 0.148 af

Subcatchment20.0S: Runoff Area=12,129 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.42 cfs 0.044 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.12"
Flow Length=292' Tc=16.1 min CN=73 Runoff=1.54 cfs 0.150 af

Reach 10.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.23 cfs 0.596 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=4.38 cfs 0.596 af

Reach 11.0R: Avg. Flow Depth=0.17' Max Vel=0.37 fps Inflow=4.39 cfs 0.701 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.87 cfs Outflow=3.87 cfs 0.696 af

Reach 12.0R: Avg. Flow Depth=0.09' Max Vel=0.30 fps Inflow=2.89 cfs 0.323 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.08 cfs Outflow=1.53 cfs 0.316 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.48 cfs 0.150 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.05 cfs Outflow=0.42 cfs 0.150 af

Reach 13.1R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.37 cfs 0.148 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.88 cfs Outflow=0.36 cfs 0.148 af

Pond 10.1P: Culvert Peak Elev=91.35' Storage=49 cf Inflow=5.24 cfs 0.596 af
Primary=5.23 cfs 0.596 af Secondary=0.00 cfs 0.000 af Outflow=5.23 cfs 0.596 af

Pond 11.0P: GW-1 Peak Elev=83.12' Storage=16,258 cf Inflow=9.34 cfs 0.877 af
Primary=4.39 cfs 0.701 af Secondary=0.00 cfs 0.000 af Outflow=4.39 cfs 0.701 af

Pond 11.1P: Culvert Peak Elev=84.23' Inflow=1.05 cfs 0.106 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.05 cfs 0.106 af

Pond 12.0P: UDSF-1 Peak Elev=89.37' Storage=4,904 cf Inflow=3.61 cfs 0.363 af
Primary=2.89 cfs 0.323 af Secondary=0.00 cfs 0.000 af Outflow=2.89 cfs 0.323 af

Pond 13.0P: Dripedge 1 Peak Elev=100.76' Storage=1,731 cf Inflow=1.85 cfs 0.150 af
Primary=0.48 cfs 0.150 af Secondary=0.00 cfs 0.000 af Outflow=0.48 cfs 0.150 af

Pond 13.1P: Dripedge 2 Peak Elev=87.85' Storage=1,574 cf Inflow=1.83 cfs 0.148 af
Primary=0.37 cfs 0.148 af Secondary=0.00 cfs 0.000 af Outflow=0.37 cfs 0.148 af

Link SP-1: Inflow=17.18 cfs 2.901 af
Primary=17.18 cfs 2.901 af

Link SP-2: Inflow=0.42 cfs 0.044 af
Primary=0.42 cfs 0.044 af

Link SP-3: Inflow=1.54 cfs 0.150 af
Primary=1.54 cfs 0.150 af

Total Runoff Area = 13.458 ac Runoff Volume = 3.324 af Average Runoff Depth = 2.96"
72.82% Pervious = 9.801 ac 27.18% Impervious = 3.658 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=3.50"
Flow Length=626' Tc=28.5 min CN=79 Runoff=10.80 cfs 1.325 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=6.92 cfs 0.789 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=4.87"
Flow Length=254' Tc=11.7 min CN=92 Runoff=8.62 cfs 0.782 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=3.21"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.42 cfs 0.144 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=3.70"
Flow Length=100' Tc=15.0 min CN=81 Runoff=2.04 cfs 0.192 af

Subcatchment12.0S: Runoff Area=56,194 sf 48.58% Impervious Runoff Depth=4.33"
Flow Length=436' Tc=17.3 min CN=87 Runoff=4.58 cfs 0.465 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.24 cfs 0.183 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.21 cfs 0.181 af

Subcatchment20.0S: Runoff Area=12,129 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.60 cfs 0.061 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=2.14 cfs 0.207 af

Reach 10.1R: Avg. Flow Depth=0.21' Max Vel=0.64 fps Inflow=6.90 cfs 0.789 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.49 cfs Outflow=5.92 cfs 0.789 af

Reach 11.0R: Avg. Flow Depth=0.21' Max Vel=0.42 fps Inflow=5.98 cfs 0.941 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.87 cfs Outflow=5.57 cfs 0.936 af

Reach 12.0R: Avg. Flow Depth=0.12' Max Vel=0.36 fps Inflow=4.14 cfs 0.425 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.08 cfs Outflow=2.46 cfs 0.418 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.20 fps Inflow=0.86 cfs 0.183 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.05 cfs Outflow=0.48 cfs 0.183 af

Reach 13.1R: Avg. Flow Depth=0.05' Max Vel=0.22 fps Inflow=0.89 cfs 0.181 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.88 cfs Outflow=0.56 cfs 0.181 af

Pond 10.1P: Culvert Peak Elev=91.81' Storage=137 cf Inflow=6.92 cfs 0.789 af
Primary=6.90 cfs 0.789 af Secondary=0.00 cfs 0.000 af Outflow=6.90 cfs 0.789 af

Pond 11.0P: GW-1 Peak Elev=83.42' Storage=19,185 cf Inflow=11.79 cfs 1.118 af
Primary=5.98 cfs 0.941 af Secondary=0.00 cfs 0.000 af Outflow=5.98 cfs 0.941 af

Pond 11.1P: Culvert Peak Elev=84.37' Inflow=1.42 cfs 0.144 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.42 cfs 0.144 af

Pond 12.0P: UDSF-1 Peak Elev=89.47' Storage=5,242 cf Inflow=4.58 cfs 0.465 af
Primary=4.14 cfs 0.425 af Secondary=0.00 cfs 0.000 af Outflow=4.14 cfs 0.425 af

Pond 13.0P: Dripedge 1 Peak Elev=101.01' Storage=2,064 cf Inflow=2.24 cfs 0.183 af
Primary=0.51 cfs 0.178 af Secondary=0.35 cfs 0.005 af Outflow=0.86 cfs 0.183 af

Pond 13.1P: Dripedge 2 Peak Elev=88.02' Storage=1,791 cf Inflow=2.21 cfs 0.181 af
Primary=0.37 cfs 0.172 af Secondary=0.52 cfs 0.008 af Outflow=0.89 cfs 0.181 af

Link SP-1: Inflow=24.66 cfs 3.831 af
Primary=24.66 cfs 3.831 af

Link SP-2: Inflow=0.60 cfs 0.061 af
Primary=0.60 cfs 0.061 af

Link SP-3: Inflow=2.14 cfs 0.207 af
Primary=2.14 cfs 0.207 af

Total Runoff Area = 13.458 ac Runoff Volume = 4.329 af Average Runoff Depth = 3.86"
72.82% Pervious = 9.801 ac 27.18% Impervious = 3.658 ac

Summary for Subcatchment 10.0S:

Runoff = 10.80 cfs @ 12.38 hrs, Volume= 1.325 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
1,470	98	Paved parking, HSG D
1,693	74	>75% Grass cover, Good, HSG C
83,115	80	>75% Grass cover, Good, HSG D
273	98	Roofs, HSG C
6,933	98	Roofs, HSG D
411	70	Woods, Good, HSG C
103,867	77	Woods, Good, HSG D
197,762	79	Weighted Average
189,086		95.61% Pervious Area
8,676		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0850	0.14		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	66	0.0300	0.87		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
28.5	626	Total			

Summary for Subcatchment 10.1S:

Runoff = 6.92 cfs @ 12.33 hrs, Volume= 0.789 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,274	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,713	74	>75% Grass cover, Good, HSG C
17,290	80	>75% Grass cover, Good, HSG D
11,653	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,039	70	Woods, Good, HSG C
31,568	77	Woods, Good, HSG D
114,524	80	Weighted Average
89,610		78.25% Pervious Area
24,914		21.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Summary for Subcatchment 11.0S:

Runoff = 8.62 cfs @ 12.16 hrs, Volume= 0.782 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
30,453	98	Paved parking, HSG C
19,414	98	Paved parking, HSG D
913	74	>75% Grass cover, Good, HSG C
27,299	80	>75% Grass cover, Good, HSG D
4,300	98	Roofs, HSG C
1,500	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
83,879	92	Weighted Average
28,212		33.63% Pervious Area
55,667		66.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	62	0.0150	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	67	0.0200	2.87		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
0.5	125	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
11.7	254	Total			

Summary for Subcatchment 11.1S:

Runoff = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,653	74	>75% Grass cover, Good, HSG C
7,754	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
23,407	76	Weighted Average
23,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0120	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.2	20	0.0120	1.64		**Shallow Concentrated Flow, B** Grassed Waterway Kv= 15.0 fps
0.6	146	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
18.0	266	Total			

Summary for Subcatchment 11.2S:

Runoff = 2.04 cfs @ 12.20 hrs, Volume= 0.192 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
3,092	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,185	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
5,497	98	Roofs, HSG C
0	98	Roofs, HSG D
3,390	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
27,164	81	Weighted Average
18,575		68.38% Pervious Area
8,589		31.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	50	0.0100	0.08		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
4.4	50	0.2600	0.19		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
15.0	100	Total			

Summary for Subcatchment 12.0S:

Runoff = 4.58 cfs @ 12.23 hrs, Volume= 0.465 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
13,655	98	Paved parking, HSG C
13,643	98	Paved parking, HSG D
14,137	74	>75% Grass cover, Good, HSG C
12,539	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
2,220	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
56,194	87	Weighted Average
28,896		51.42% Pervious Area
27,298		48.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0150	0.11		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	114	0.0500	4.54		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
1.1	222	0.0050	3.47	2.73	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
17.3	436	Total			

Summary for Subcatchment 13.0S: Building

Runoff = 2.24 cfs @ 12.08 hrs, Volume= 0.183 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
9,791	98	Roofs, HSG C
7,413	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
17,204	98	Weighted Average
17,204		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 13.1S: Building

Runoff = 2.21 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
7,807	98	Roofs, HSG C
9,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
16,974	98	Weighted Average
16,974		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 20.0S:

Runoff = 0.60 cfs @ 12.26 hrs, Volume= 0.061 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
12,129	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
12,129	70	Weighted Average
12,129		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	100	0.0300	0.09		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 30.0S:

Runoff = 2.14 cfs @ 12.22 hrs, Volume= 0.207 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
8,150	74	>75% Grass cover, Good, HSG C
4,260	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,072	70	Woods, Good, HSG C
5,523	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
37,005	73	Weighted Average
37,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Summary for Reach 10.1R:

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.90 cfs @ 12.35 hrs, Volume= 0.789 af
Outflow = 5.92 cfs @ 12.48 hrs, Volume= 0.789 af, Atten= 14%, Lag= 8.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.64 fps, Min. Travel Time= 12.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 43.6 min

Peak Storage= 4,508 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.49 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'

‡

Stage-Area-Storage for Reach 10.1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
89.00	0.0	0
89.01	0.3	149
89.02	0.6	305
89.03	1.0	467
89.04	1.3	636
89.05	1.7	812
89.06	2.1	995
89.07	2.4	1,185
89.08	2.8	1,381
89.09	3.3	1,584
89.10	3.7	1,795
89.11	4.1	2,011
89.12	4.6	2,235
89.13	5.1	2,465
89.14	5.6	2,702
89.15	6.1	2,946
89.16	6.6	3,197
89.17	7.1	3,455
89.18	7.7	3,719
89.19	8.2	3,990
89.20	8.8	4,268
89.21	9.4	4,553
89.22	10.0	4,844
89.23	10.6	5,142
89.24	11.2	5,448
89.25	11.9	5,759
89.26	12.5	6,078
89.27	13.2	6,403
89.28	13.9	6,736
89.29	14.6	7,075
89.30	15.3	7,420
89.31	16.0	7,773
89.32	16.8	8,132
89.33	17.5	8,499
89.34	18.3	8,872
89.35	19.1	9,251
89.36	19.9	9,638
89.37	20.7	10,031
89.38	21.5	10,431
89.39	22.3	10,838
89.40	23.2	11,252
89.41	24.1	11,672
89.42	24.9	12,100
89.43	25.8	12,534
89.44	26.8	12,975
89.45	27.7	13,422
89.46	28.6	13,877
89.47	29.6	14,338
89.48	30.5	14,806
89.49	31.5	15,281
89.50	32.5	15,763
89.51	33.5	16,251
89.52	34.5	16,746
89.53	35.6	17,248
89.54	36.6	17,757
89.55	37.7	18,272
89.56	38.8	18,795
89.57	39.8	19,324
89.58	40.9	19,860
89.59	42.1	20,402
89.60	43.2	20,952
89.61	44.3	21,508
89.62	45.5	22,071
89.63	46.7	22,641
89.64	47.9	23,218
89.65	49.1	23,801
89.66	50.3	24,392
89.67	51.5	24,989
89.68	52.8	25,592
89.69	54.0	26,203
89.70	55.3	26,821
89.71	56.6	27,445
89.72	57.9	28,076
89.73	59.2	28,713
89.74	60.5	29,358
89.75	61.9	30,009
89.76	63.2	30,668
89.77	64.6	31,332
89.78	66.0	32,004
89.79	67.4	32,683
89.80	68.8	33,368
89.81	70.2	34,060
89.82	71.7	34,759
89.83	73.1	35,465
89.84	74.6	36,177
89.85	76.1	36,896
89.86	77.6	37,622
89.87	79.1	38,355
89.88	80.6	39,095
89.89	82.1	39,841
89.90	83.7	40,595
89.91	85.3	41,354
89.92	86.8	42,121
89.93	88.4	42,895
89.94	90.1	43,675
89.95	91.7	44,462
89.96	93.3	45,256
89.97	95.0	46,057
89.98	96.6	46,865
89.99	98.3	47,679
90.00	**100.0**	**48,500**

Summary for Reach 11.0R:

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth > 3.66" for 25-YR event
Inflow = 5.98 cfs @ 12.44 hrs, Volume= 0.941 af
Outflow = 5.57 cfs @ 12.62 hrs, Volume= 0.936 af, Atten= 7%, Lag= 11.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.42 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 39.7 min

Peak Storage= 3,842 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 121.87 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 290.0' Slope= 0.0086 '/'
Inlet Invert= 81.00', Outlet Invert= 78.50'

‡

Stage-Area-Storage for Reach 11.0R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
81.00	0.0	0
81.01	0.5	147
81.02	1.0	298
81.03	1.6	453
81.04	2.1	612
81.05	2.7	776
81.06	3.3	943
81.07	3.8	1,114
81.08	4.4	1,290
81.09	5.1	1,469
81.10	5.7	1,653
81.11	6.3	1,841
81.12	7.0	2,032
81.13	7.7	2,228
81.14	8.4	2,428
81.15	9.1	2,632
81.16	9.8	2,840
81.17	10.5	3,052
81.18	11.3	3,268
81.19	12.0	3,488
81.20	12.8	3,712
81.21	13.6	3,940
81.22	14.4	4,173
81.23	15.2	4,409
81.24	16.0	4,649
81.25	16.9	4,894
81.26	17.7	5,142
81.27	18.6	5,395
81.28	19.5	5,652
81.29	20.4	5,912
81.30	21.3	6,177
81.31	22.2	6,446
81.32	23.2	6,719
81.33	24.1	6,996
81.34	25.1	7,277
81.35	26.1	7,562
81.36	27.1	7,851
81.37	28.1	8,144
81.38	29.1	8,441
81.39	30.1	8,743
81.40	31.2	9,048
81.41	32.3	9,357
81.42	33.3	9,671
81.43	34.4	9,988
81.44	35.6	10,310
81.45	36.7	10,636
81.46	37.8	10,965
81.47	39.0	11,299
81.48	40.1	11,637
81.49	41.3	11,979
81.50	42.5	12,325
81.51	43.7	12,675
81.52	44.9	13,029
81.53	46.2	13,387
81.54	47.4	13,749
81.55	48.7	14,116
81.56	50.0	14,486
81.57	51.2	14,860
81.58	52.5	15,239
81.59	53.9	15,621
81.60	55.2	16,008
81.61	56.5	16,399
81.62	57.9	16,793
81.63	59.3	17,192
81.64	60.7	17,595
81.65	62.1	18,002
81.66	63.5	18,413
81.67	64.9	18,828
81.68	66.4	19,247
81.69	67.8	19,670
81.70	69.3	20,097
81.71	70.8	20,528
81.72	72.3	20,964
81.73	73.8	21,403
81.74	75.3	21,846
81.75	76.9	22,294
81.76	78.4	22,745
81.77	80.0	23,201
81.78	81.6	23,661
81.79	83.2	24,124
81.80	84.8	24,592
81.81	86.4	25,064
81.82	88.1	25,540
81.83	89.7	26,020
81.84	91.4	26,504
81.85	93.1	26,992
81.86	94.8	27,484
81.87	96.5	27,980
81.88	98.2	28,480
81.89	99.9	28,985
81.90	101.7	29,493
81.91	103.5	30,005
81.92	105.2	30,522
81.93	107.0	31,042
81.94	108.9	31,567
81.95	110.7	32,096
81.96	112.5	32,628
81.97	114.4	33,165
81.98	116.2	33,706
81.99	118.1	34,251
82.00	**120.0**	**34,800**

Summary for Reach 12.0R:

Inflow Area = 1.290 ac, 48.58% Impervious, Inflow Depth > 3.95" for 25-YR event
Inflow = 4.14 cfs @ 12.31 hrs, Volume= 0.425 af
Outflow = 2.46 cfs @ 12.59 hrs, Volume= 0.418 af, Atten= 41%, Lag= 17.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.36 fps, Min. Travel Time= 25.5 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 82.9 min

Peak Storage= 3,765 cf @ 12.59 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 143.08 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 547.0' Slope= 0.0119 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'

‡

Stage-Area-Storage for Reach 12.0R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
85.00	0.0	0
85.01	0.5	277
85.02	1.0	562
85.03	1.6	855
85.04	2.1	1,155
85.05	2.7	1,463
85.06	3.3	1,779
85.07	3.8	2,102
85.08	4.4	2,433
85.09	5.1	2,772
85.10	5.7	3,118
85.11	6.3	3,472
85.12	7.0	3,833
85.13	7.7	4,203
85.14	8.4	4,579
85.15	9.1	4,964
85.16	9.8	5,356
85.17	10.5	5,756
85.18	11.3	6,164
85.19	12.0	6,579
85.20	12.8	7,002
85.21	13.6	7,432
85.22	14.4	7,870
85.23	15.2	8,316
85.24	16.0	8,770
85.25	16.9	9,231
85.26	17.7	9,699
85.27	18.6	10,176
85.28	19.5	10,660
85.29	20.4	11,152
85.30	21.3	11,651
85.31	22.2	12,158
85.32	23.2	12,673
85.33	24.1	13,195
85.34	25.1	13,725
85.35	26.1	14,263
85.36	27.1	14,808
85.37	28.1	15,361
85.38	29.1	15,922
85.39	30.1	16,490
85.40	31.2	17,066
85.41	32.3	17,650
85.42	33.3	18,241
85.43	34.4	18,840
85.44	35.6	19,447
85.45	36.7	20,061
85.46	37.8	20,683
85.47	39.0	21,313
85.48	40.1	21,950
85.49	41.3	22,595
85.50	42.5	23,248
85.51	43.7	23,908
85.52	44.9	24,576
85.53	46.2	25,251
85.54	47.4	25,934
85.55	48.7	26,625
85.56	50.0	27,324
85.57	51.2	28,030
85.58	52.5	28,744
85.59	53.9	29,465
85.60	55.2	30,194
85.61	56.5	30,931
85.62	57.9	31,676
85.63	59.3	32,428
85.64	60.7	33,188
85.65	62.1	33,955
85.66	63.5	34,730
85.67	64.9	35,513
85.68	66.4	36,303
85.69	67.8	37,101
85.70	69.3	37,907
85.71	70.8	38,720
85.72	72.3	39,542
85.73	73.8	40,370
85.74	75.3	41,207
85.75	76.9	42,051
85.76	78.4	42,902
85.77	80.0	43,762
85.78	81.6	44,629
85.79	83.2	45,503
85.80	84.8	46,386
85.81	86.4	47,276
85.82	88.1	48,173
85.83	89.7	49,078
85.84	91.4	49,991
85.85	93.1	50,912
85.86	94.8	51,840
85.87	96.5	52,776
85.88	98.2	53,720
85.89	99.9	54,671
85.90	101.7	55,630
85.91	103.5	56,596
85.92	105.2	57,571
85.93	107.0	58,553
85.94	108.9	59,542
85.95	110.7	60,539
85.96	112.5	61,544
85.97	114.4	62,557
85.98	116.2	63,577
85.99	118.1	64,605
86.00	**120.0**	**65,640**

Summary for Reach 13.0R:

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.86 cfs @ 12.31 hrs, Volume= 0.183 af
Outflow = 0.48 cfs @ 12.85 hrs, Volume= 0.183 af, Atten= 44%, Lag= 32.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.20 fps, Min. Travel Time= 43.2 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 94.8 min

Peak Storage= 1,253 cf @ 12.85 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 146.05 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 525.0' Slope= 0.0124 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'

‡

Stage-Area-Storage for Reach 13.0R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
85.00	0.0	0
85.01	0.5	266
85.02	1.0	540
85.03	1.6	821
85.04	2.1	1,109
85.05	2.7	1,404
85.06	3.3	1,707
85.07	3.8	2,018
85.08	4.4	2,335
85.09	5.1	2,660
85.10	5.7	2,993
85.11	6.3	3,332
85.12	7.0	3,679
85.13	7.7	4,034
85.14	8.4	4,395
85.15	9.1	4,764
85.16	9.8	5,141
85.17	10.5	5,525
85.18	11.3	5,916
85.19	12.0	6,314
85.20	12.8	6,720
85.21	13.6	7,133
85.22	14.4	7,554
85.23	15.2	7,982
85.24	16.0	8,417
85.25	16.9	8,859
85.26	17.7	9,309
85.27	18.6	9,767
85.28	19.5	10,231
85.29	20.4	10,703
85.30	21.3	11,183
85.31	22.2	11,669
85.32	23.2	12,163
85.33	24.1	12,665
85.34	25.1	13,173
85.35	26.1	13,689
85.36	27.1	14,213
85.37	28.1	14,744
85.38	29.1	15,282
85.39	30.1	15,827
85.40	31.2	16,380
85.41	32.3	16,940
85.42	33.3	17,508
85.43	34.4	18,083
85.44	35.6	18,665
85.45	36.7	19,254
85.46	37.8	19,851
85.47	39.0	20,456
85.48	40.1	21,067
85.49	41.3	21,686
85.50	42.5	22,313
85.51	43.7	22,946
85.52	44.9	23,587
85.53	46.2	24,236
85.54	47.4	24,891
85.55	48.7	25,554
85.56	50.0	26,225
85.57	51.2	26,903
85.58	52.5	27,588
85.59	53.9	28,280
85.60	55.2	28,980
85.61	56.5	29,687
85.62	57.9	30,402
85.63	59.3	31,124
85.64	60.7	31,853
85.65	62.1	32,589
85.66	63.5	33,333
85.67	64.9	34,085
85.68	66.4	34,843
85.69	67.8	35,609
85.70	69.3	36,383
85.71	70.8	37,163
85.72	72.3	37,951
85.73	73.8	38,747
85.74	75.3	39,549
85.75	76.9	40,359
85.76	78.4	41,177
85.77	80.0	42,002
85.78	81.6	42,834
85.79	83.2	43,673
85.80	84.8	44,520
85.81	86.4	45,374
85.82	88.1	46,236
85.83	89.7	47,105
85.84	91.4	47,981
85.85	93.1	48,864
85.86	94.8	49,755
85.87	96.5	50,654
85.88	98.2	51,559
85.89	99.9	52,472
85.90	101.7	53,393
85.91	103.5	54,320
85.92	105.2	55,255
85.93	107.0	56,198
85.94	108.9	57,147
85.95	110.7	58,104
85.96	112.5	59,069
85.97	114.4	60,041
85.98	116.2	61,020
85.99	118.1	62,006
86.00	**120.0**	**63,000**

Summary for Reach 13.1R:

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.89 cfs @ 12.29 hrs, Volume= 0.181 af
Outflow = 0.56 cfs @ 12.47 hrs, Volume= 0.181 af, Atten= 37%, Lag= 11.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.22 fps, Min. Travel Time= 23.5 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 52.8 min

Peak Storage= 791 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 156.88 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 315.0' Slope= 0.0143 '/'
Inlet Invert= 83.00', Outlet Invert= 78.50'

‡

Stage-Area-Storage for Reach 13.1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
83.00	0.0	0
83.01	0.5	160
83.02	1.0	324
83.03	1.6	492
83.04	2.1	665
83.05	2.7	843
83.06	3.3	1,024
83.07	3.8	1,211
83.08	4.4	1,401
83.09	5.1	1,596
83.10	5.7	1,796
83.11	6.3	1,999
83.12	7.0	2,208
83.13	7.7	2,420
83.14	8.4	2,637
83.15	9.1	2,859
83.16	9.8	3,084
83.17	10.5	3,315
83.18	11.3	3,549
83.19	12.0	3,789
83.20	12.8	4,032
83.21	13.6	4,280
83.22	14.4	4,532
83.23	15.2	4,789
83.24	16.0	5,050
83.25	16.9	5,316
83.26	17.7	5,586
83.27	18.6	5,860
83.28	19.5	6,139
83.29	20.4	6,422
83.30	21.3	6,710
83.31	22.2	7,002
83.32	23.2	7,298
83.33	24.1	7,599
83.34	25.1	7,904
83.35	26.1	8,214
83.36	27.1	8,528
83.37	28.1	8,846
83.38	29.1	9,169
83.39	30.1	9,496
83.40	31.2	9,828
83.41	32.3	10,164
83.42	33.3	10,505
83.43	34.4	10,850
83.44	35.6	11,199
83.45	36.7	11,553
83.46	37.8	11,911
83.47	39.0	12,273
83.48	40.1	12,640
83.49	41.3	13,012
83.50	42.5	13,388
83.51	43.7	13,768
83.52	44.9	14,152
83.53	46.2	14,541
83.54	47.4	14,935
83.55	48.7	15,333
83.56	50.0	15,735
83.57	51.2	16,142
83.58	52.5	16,553
83.59	53.9	16,968
83.60	55.2	17,388
83.61	56.5	17,812
83.62	57.9	18,241
83.63	59.3	18,674
83.64	60.7	19,112
83.65	62.1	19,554
83.66	63.5	20,000
83.67	64.9	20,451
83.68	66.4	20,906
83.69	67.8	21,366
83.70	69.3	21,830
83.71	70.8	22,298
83.72	72.3	22,771
83.73	73.8	23,248
83.74	75.3	23,730
83.75	76.9	24,216
83.76	78.4	24,706
83.77	80.0	25,201
83.78	81.6	25,700
83.79	83.2	26,204
83.80	84.8	26,712
83.81	86.4	27,225
83.82	88.1	27,741
83.83	89.7	28,263
83.84	91.4	28,788
83.85	93.1	29,319
83.86	94.8	29,853
83.87	96.5	30,392
83.88	98.2	30,936
83.89	99.9	31,483
83.90	101.7	32,036
83.91	103.5	32,592
83.92	105.2	33,153
83.93	107.0	33,719
83.94	108.9	34,288
83.95	110.7	34,863
83.96	112.5	35,441
83.97	114.4	36,024
83.98	116.2	36,612
83.99	118.1	37,204
84.00	**120.0**	**37,800**

Summary for Pond 10.1P: Culvert

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.92 cfs @ 12.33 hrs, Volume= 0.789 af
Outflow = 6.90 cfs @ 12.35 hrs, Volume= 0.789 af, Atten= 0%, Lag= 1.3 min
Primary = 6.90 cfs @ 12.35 hrs, Volume= 0.789 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.81' @ 12.35 hrs Surf.Area= 224 sf Storage= 137 cf
Flood Elev= 93.00' Surf.Area= 500 sf Storage= 558 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (832.2 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.00'	3,993 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.00	115	0	0
92.00	250	183	183
93.00	500	375	558
94.00	2,580	1,540	2,098
94.50	5,000	1,895	3,993

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**18.0" Round 18" PIPE** L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 88.00' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	93.00'	**40.0' long x 2.0' breadth Overflow at Driveway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=6.90 cfs @ 12.35 hrs HW=91.81' TW=89.19' (Dynamic Tailwater)
↑—**1=18" PIPE** (Inlet Controls 6.90 cfs @ 3.91 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.00' TW=89.00' (Dynamic Tailwater)
↑—**2=Overflow at Driveway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 10.1P: Culvert

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
91.00	115	0
91.05	122	6
91.10	128	12
91.15	135	19
91.20	142	26
91.25	149	33
91.30	155	41
91.35	162	49
91.40	169	57
91.45	176	65
91.50	183	74
91.55	189	84
91.60	196	93
91.65	203	103
91.70	210	114
91.75	216	124
91.80	223	135
91.85	230	147
91.90	237	158
91.95	243	170
92.00	250	183
92.05	262	195
92.10	275	209
92.15	288	223
92.20	300	238
92.25	313	253
92.30	325	269
92.35	337	285
92.40	350	303
92.45	363	320
92.50	375	339
92.55	387	358
92.60	400	377
92.65	413	398
92.70	425	419
92.75	438	440
92.80	450	462
92.85	462	485
92.90	475	509
92.95	488	533
93.00	500	558
93.05	604	585
93.10	708	618
93.15	812	656
93.20	916	699
93.25	1,020	748
93.30	1,124	801
93.35	1,228	860
93.40	1,332	924
93.45	1,436	993
93.50	1,540	1,068
93.55	1,644	1,147
93.60	1,748	1,232
93.65	1,852	1,322
93.70	1,956	1,417
93.75	2,060	1,518
93.80	2,164	1,623
93.85	2,268	1,734
93.90	2,372	1,850
93.95	2,476	1,971
94.00	2,580	2,098
94.05	2,822	2,233
94.10	3,064	2,380
94.15	3,306	2,539
94.20	3,548	2,710
94.25	3,790	2,894
94.30	4,032	3,089
94.35	4,274	3,297
94.40	4,516	3,517
94.45	4,758	3,749
94.50	**5,000**	**3,993**

Summary for Pond 11.0P: GW-1

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth = 4.35" for 25-YR event
Inflow = 11.79 cfs @ 12.17 hrs, Volume= 1.118 af
Outflow = 5.98 cfs @ 12.44 hrs, Volume= 0.941 af, Atten= 49%, Lag= 16.1 min
Primary = 5.98 cfs @ 12.44 hrs, Volume= 0.941 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 83.42' @ 12.44 hrs Surf.Area= 9,949 sf Storage= 19,185 cf
Flood Elev= 84.80' Surf.Area= 10,850 sf Storage= 25,208 cf

Plug-Flow detention time= 210.1 min calculated for 0.941 af (84% of inflow)
Center-of-Mass det. time= 143.5 min (940.3 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	81.00'	25,208 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.00	6,175	0	0
82.00	7,400	6,788	6,788
83.00	9,295	8,348	15,135
84.00	10,850	10,073	25,208

Device	Routing	Invert	Outlet Devices
#1	Primary	80.67'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.67' / 80.50' S= 0.0085 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	80.67'	**1.6" Vert. Orifice** C= 0.600
#3	Device 1	82.50'	**36.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#4	Secondary	83.50'	**25.0' long x 6.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.98 cfs @ 12.44 hrs HW=83.42' TW=81.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.98 cfs of 8.62 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.10 cfs @ 7.19 fps)
  └**3=WQV Orifice** (Orifice Controls 5.88 cfs @ 3.92 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=81.00' TW=81.00' (Dynamic Tailwater)
└**4=Emergency Spillway** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 11.0P: GW-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
81.00	6,175	0
81.05	6,236	310
81.10	6,297	624
81.15	6,359	940
81.20	6,420	1,260
81.25	6,481	1,582
81.30	6,542	1,908
81.35	6,604	2,236
81.40	6,665	2,568
81.45	6,726	2,903
81.50	6,788	3,241
81.55	6,849	3,582
81.60	6,910	3,925
81.65	6,971	4,273
81.70	7,033	4,623
81.75	7,094	4,976
81.80	7,155	5,332
81.85	7,216	5,691
81.90	7,278	6,054
81.95	7,339	6,419
82.00	7,400	6,788
82.05	7,495	7,160
82.10	7,589	7,537
82.15	7,684	7,919
82.20	7,779	8,305
82.25	7,874	8,697
82.30	7,968	9,093
82.35	8,063	9,494
82.40	8,158	9,899
82.45	8,253	10,309
82.50	8,348	10,724
82.55	8,442	11,144
82.60	8,537	11,569
82.65	8,632	11,998
82.70	8,727	12,432
82.75	8,821	12,870
82.80	8,916	13,314
82.85	9,011	13,762
82.90	9,106	14,215
82.95	9,200	14,673
83.00	9,295	15,135
83.05	9,373	15,602
83.10	9,450	16,072
83.15	9,528	16,547
83.20	9,606	17,025
83.25	9,684	17,507
83.30	9,761	17,993
83.35	9,839	18,483
83.40	9,917	18,977
83.45	9,995	19,475
83.50	10,073	19,977
83.55	10,150	20,482
83.60	10,228	20,992
83.65	10,306	21,505
83.70	10,384	22,022
83.75	10,461	22,544
83.80	10,539	23,069
83.85	10,617	23,597
83.90	10,695	24,130
83.95	10,772	24,667
84.00	**10,850**	**25,208**
84.05	10,850	25,208
84.10	10,850	25,208
84.15	10,850	25,208
84.20	10,850	25,208
84.25	10,850	25,208
84.30	10,850	25,208
84.35	10,850	25,208
84.40	10,850	25,208
84.45	10,850	25,208
84.50	10,850	25,208
84.55	10,850	25,208
84.60	10,850	25,208
84.65	10,850	25,208
84.70	10,850	25,208
84.75	10,850	25,208
84.80	10,850	25,208

Summary for Pond 11.1P: Culvert

Inflow Area = 0.537 ac, 0.00% Impervious, Inflow Depth = 3.21" for 25-YR event
Inflow = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af
Outflow = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.25 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 84.37' @ 12.27 hrs
Flood Elev= 87.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	83.70'	**12.0" Round 12" PIPE** L= 146.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 83.70' / 82.50' S= 0.0082 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 12.25 hrs HW=84.37' TW=83.28' (Dynamic Tailwater)
↑└**1=12" PIPE** (Outlet Controls 1.42 cfs @ 3.60 fps)

Stage-Area-Storage for Pond 11.1P: Culvert

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
83.70	**0**	86.30	0
83.75	0	86.35	0
83.80	0	86.40	0
83.85	0	86.45	0
83.90	0	86.50	0
83.95	0	86.55	0
84.00	0	86.60	0
84.05	0	86.65	0
84.10	0	86.70	0
84.15	0	86.75	0
84.20	0	86.80	0
84.25	0	86.85	0
84.30	0	86.90	0
84.35	0	86.95	0
84.40	0	87.00	0
84.45	0		
84.50	0		
84.55	0		
84.60	0		
84.65	0		
84.70	0		
84.75	0		
84.80	0		
84.85	0		
84.90	0		
84.95	0		
85.00	0		
85.05	0		
85.10	0		
85.15	0		
85.20	0		
85.25	0		
85.30	0		
85.35	0		
85.40	0		
85.45	0		
85.50	0		
85.55	0		
85.60	0		
85.65	0		
85.70	0		
85.75	0		
85.80	0		
85.85	0		
85.90	0		
85.95	0		
86.00	0		
86.05	0		
86.10	0		
86.15	0		
86.20	0		
86.25	0		

Summary for Pond 12.0P: UDSF-1

Inflow Area = 1.290 ac, 48.58% Impervious, Inflow Depth = 4.33" for 25-YR event
Inflow = 4.58 cfs @ 12.23 hrs, Volume= 0.465 af
Outflow = 4.14 cfs @ 12.31 hrs, Volume= 0.425 af, Atten= 10%, Lag= 4.7 min
Primary = 4.14 cfs @ 12.31 hrs, Volume= 0.425 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 89.47' @ 12.31 hrs Surf.Area= 3,386 sf Storage= 5,242 cf
Flood Elev= 90.80' Surf.Area= 4,200 sf Storage= 9,144 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 144.1 min (950.4 - 806.3)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	9,144 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
87.50	1,955	0	0
88.00	2,304	1,065	1,065
89.00	3,050	2,677	3,742
90.00	3,770	3,410	7,152
90.50	4,200	1,993	9,144

Device	Routing	Invert	Outlet Devices
#1	Primary	85.30'	**12.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 84.30' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	85.30'	**1.0" Vert. Controlling Orifice** C= 0.600
#3	Device 2	85.30'	**4.0" Round UD Header** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 85.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 1	89.00'	**48.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#5	Secondary	89.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.14 cfs @ 12.31 hrs HW=89.47' TW=85.08' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.14 cfs of 5.72 cfs potential flow)
  - **2=Controlling Orifice** (Orifice Controls 0.05 cfs @ 9.78 fps)
    - **3=UD Header** (Passes 0.05 cfs of 0.36 cfs potential flow)
  - **4=WQV Orifice** (Orifice Controls 4.09 cfs @ 2.19 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=87.50' TW=85.00' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 12.0P: UDSF-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
87.50	1,955	0
87.55	1,990	99
87.60	2,025	199
87.65	2,060	301
87.70	2,095	405
87.75	2,130	511
87.80	2,164	618
87.85	2,199	727
87.90	2,234	838
87.95	2,269	950
88.00	2,304	1,065
88.05	2,341	1,181
88.10	2,379	1,299
88.15	2,416	1,419
88.20	2,453	1,540
88.25	2,491	1,664
88.30	2,528	1,790
88.35	2,565	1,917
88.40	2,602	2,046
88.45	2,640	2,177
88.50	2,677	2,310
88.55	2,714	2,445
88.60	2,752	2,581
88.65	2,789	2,720
88.70	2,826	2,860
88.75	2,864	3,003
88.80	2,901	3,147
88.85	2,938	3,293
88.90	2,975	3,440
88.95	3,013	3,590
89.00	3,050	3,742
89.05	3,086	3,895
89.10	3,122	4,050
89.15	3,158	4,207
89.20	3,194	4,366
89.25	3,230	4,527
89.30	3,266	4,689
89.35	3,302	4,853
89.40	3,338	5,019
89.45	3,374	5,187
89.50	3,410	5,357
89.55	3,446	5,528
89.60	3,482	5,701
89.65	3,518	5,876
89.70	3,554	6,053
89.75	3,590	6,232
89.80	3,626	6,412
89.85	3,662	6,594
89.90	3,698	6,778
89.95	3,734	6,964
90.00	3,770	7,152
90.05	3,813	7,341
90.10	3,856	7,533
90.15	3,899	7,727
90.20	3,942	7,923
90.25	3,985	8,121
90.30	4,028	8,321
90.35	4,071	8,524
90.40	4,114	8,729
90.45	4,157	8,935
90.50	**4,200**	**9,144**
90.55	4,200	9,144
90.60	4,200	9,144
90.65	4,200	9,144
90.70	4,200	9,144
90.75	4,200	9,144
90.80	4,200	9,144

Summary for Pond 13.0P: Dripedge 1

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.24 cfs @ 12.08 hrs, Volume= 0.183 af
Outflow = 0.86 cfs @ 12.31 hrs, Volume= 0.183 af, Atten= 62%, Lag= 13.6 min
Primary = 0.51 cfs @ 12.31 hrs, Volume= 0.178 af
Secondary = 0.35 cfs @ 12.31 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 101.01' @ 12.31 hrs Surf.Area= 3,843 sf Storage= 2,064 cf
Flood Elev= 101.20' Surf.Area= 10,000 sf Storage= 2,660 cf

Plug-Flow detention time= 40.4 min calculated for 0.183 af (100% of inflow)
Center-of-Mass det. time= 40.1 min (785.7 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	2,660 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	2,850	0.0	0	0
98.51	2,850	20.0	6	6
99.00	2,850	20.0	279	285
99.99	2,850	20.0	564	849
100.00	2,850	40.0	11	861
100.99	2,850	40.0	1,129	1,989
101.00	2,850	100.0	29	2,018
101.10	10,000	100.0	642	2,660

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**4.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.50' / 82.30' S= 0.5400 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	101.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.51 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.51 cfs @ 5.82 fps)

Secondary OutFlow Max=0.35 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.35 cfs @ 0.32 fps)

Stage-Area-Storage for Pond 13.0P: Dripedge 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
98.50	2,850	0
98.55	2,850	28
98.60	2,850	57
98.65	2,850	86
98.70	2,850	114
98.75	2,850	143
98.80	2,850	171
98.85	2,850	199
98.90	2,850	228
98.95	2,850	257
99.00	2,850	285
99.05	2,850	313
99.10	2,850	342
99.15	2,850	371
99.20	2,850	399
99.25	2,850	428
99.30	2,850	456
99.35	2,850	484
99.40	2,850	513
99.45	2,850	542
99.50	2,850	570
99.55	2,850	598
99.60	2,850	627
99.65	2,850	656
99.70	2,850	684
99.75	2,850	713
99.80	2,850	741
99.85	2,850	769
99.90	2,850	798
99.95	2,850	827
100.00	2,850	861
100.05	2,850	918
100.10	2,850	975
100.15	2,850	1,032
100.20	2,850	1,089
100.25	2,850	1,146
100.30	2,850	1,203
100.35	2,850	1,260
100.40	2,850	1,317
100.45	2,850	1,374
100.50	2,850	1,431
100.55	2,850	1,488
100.60	2,850	1,545
100.65	2,850	1,602
100.70	2,850	1,659
100.75	2,850	1,716
100.80	2,850	1,773
100.85	2,850	1,830
100.90	2,850	1,887
100.95	2,850	1,944
101.00	2,850	2,018
101.05	6,425	2,250
101.10	**10,000**	**2,660**
101.15	10,000	2,660
101.20	10,000	2,660

Summary for Pond 13.1P: Dripedge 2

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.21 cfs @ 12.08 hrs, Volume= 0.181 af
Outflow = 0.89 cfs @ 12.29 hrs, Volume= 0.181 af, Atten= 60%, Lag= 12.5 min
Primary = 0.37 cfs @ 12.27 hrs, Volume= 0.172 af
Secondary = 0.52 cfs @ 12.29 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.02' @ 12.29 hrs Surf.Area= 3,810 sf Storage= 1,791 cf
Flood Elev= 88.20' Surf.Area= 10,000 sf Storage= 2,357 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.9 min (770.6 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	85.50'	2,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.50	2,450	0.0	0	0
85.51	2,450	20.0	5	5
86.00	2,450	20.0	240	245
86.99	2,450	20.0	485	730
87.00	2,450	40.0	10	740
87.99	2,450	40.0	970	1,710
88.00	2,450	100.0	25	1,735
88.10	10,000	100.0	622	2,357

Device	Routing	Invert	Outlet Devices
#1	Primary	84.00'	**4.0" Round Culvert** L= 135.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 84.00' / 80.70' S= 0.0244 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	88.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.37 cfs @ 12.27 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.37 cfs @ 4.28 fps)

Secondary OutFlow Max=0.52 cfs @ 12.29 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.52 cfs @ 0.36 fps)

Stage-Area-Storage for Pond 13.1P: Dripedge 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
85.50	2,450	0
85.55	2,450	24
85.60	2,450	49
85.65	2,450	74
85.70	2,450	98
85.75	2,450	123
85.80	2,450	147
85.85	2,450	171
85.90	2,450	196
85.95	2,450	221
86.00	2,450	245
86.05	2,450	269
86.10	2,450	294
86.15	2,450	319
86.20	2,450	343
86.25	2,450	368
86.30	2,450	392
86.35	2,450	416
86.40	2,450	441
86.45	2,450	466
86.50	2,450	490
86.55	2,450	514
86.60	2,450	539
86.65	2,450	564
86.70	2,450	588
86.75	2,450	613
86.80	2,450	637
86.85	2,450	661
86.90	2,450	686
86.95	2,450	711
87.00	2,450	740
87.05	2,450	789
87.10	2,450	838
87.15	2,450	887
87.20	2,450	936
87.25	2,450	985
87.30	2,450	1,034
87.35	2,450	1,083
87.40	2,450	1,132
87.45	2,450	1,181
87.50	2,450	1,230
87.55	2,450	1,279
87.60	2,450	1,328
87.65	2,450	1,377
87.70	2,450	1,426
87.75	2,450	1,475
87.80	2,450	1,524
87.85	2,450	1,573
87.90	2,450	1,622
87.95	2,450	1,671
88.00	2,450	1,735
88.05	6,225	1,951
88.10	**10,000**	**2,357**
88.15	10,000	2,357
88.20	10,000	2,357

Summary for Link SP-1:

Inflow Area = 12.330 ac, 29.66% Impervious, Inflow Depth > 3.73" for 25-YR event
Inflow = 24.66 cfs @ 12.47 hrs, Volume= 3.831 af
Primary = 24.66 cfs @ 12.47 hrs, Volume= 3.831 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link SP-2:

Inflow Area = 0.278 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.60 cfs @ 12.26 hrs, Volume= 0.061 af
Primary = 0.60 cfs @ 12.26 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link SP-3:

Inflow Area = 0.850 ac, 0.00% Impervious, Inflow Depth = 2.92" for 25-YR event
Inflow = 2.14 cfs @ 12.22 hrs, Volume= 0.207 af
Primary = 2.14 cfs @ 12.22 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Pond 11.0P: GW-1

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth = 6.55" for 100-YR event
Inflow = 17.44 cfs @ 12.17 hrs, Volume= 1.684 af
Outflow = 16.28 cfs @ 12.22 hrs, Volume= 1.226 af, Atten= 7%, Lag= 3.1 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 16.28 cfs @ 12.22 hrs, Volume= 1.226 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 83.91' @ 12.22 hrs Surf.Area= 10,704 sf Storage= 24,196 cf
Flood Elev= 84.80' Surf.Area= 10,850 sf Storage= 25,208 cf

Plug-Flow detention time= 160.6 min calculated for 1.226 af (73% of inflow)
Center-of-Mass det. time= 71.7 min (858.7 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1	81.00'	25,208 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.00	6,175	0	0
82.00	7,400	6,788	6,788
83.00	9,295	8,348	15,135
84.00	10,850	10,073	25,208

Device	Routing	Invert	Outlet Devices
#1	Primary	80.67'	**15.0" Round Culvert X 0.00** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.67' / 80.50' S= 0.0085 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	80.67'	**1.6" Vert. Orifice** C= 0.600
#3	Device 1	82.50'	**36.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#4	Secondary	83.50'	**25.0' long x 6.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=81.00' TW=81.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  └**2=Orifice** (Controls 0.00 cfs)
  └**3=WQV Orifice** (Controls 0.00 cfs)

Secondary OutFlow Max=16.28 cfs @ 12.22 hrs HW=83.91' TW=81.27' (Dynamic Tailwater)
└**4=Emergency Spillway** (Weir Controls 16.28 cfs @ 1.60 fps)

Summary for Pond 12.0P: UDSF-1

Inflow Area = 1.290 ac, 48.58% Impervious, Inflow Depth = 6.55" for 100-YR event
Inflow = 6.80 cfs @ 12.23 hrs, Volume= 0.704 af
Outflow = 6.60 cfs @ 12.27 hrs, Volume= 0.581 af, Atten= 3%, Lag= 2.3 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 6.60 cfs @ 12.27 hrs, Volume= 0.581 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 89.90' @ 12.27 hrs Surf.Area= 3,700 sf Storage= 6,789 cf
Flood Elev= 90.80' Surf.Area= 4,200 sf Storage= 9,144 cf

Plug-Flow detention time= 119.9 min calculated for 0.581 af (83% of inflow)
Center-of-Mass det. time= 50.0 min (845.1 - 795.1)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	9,144 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
87.50	1,955	0	0
88.00	2,304	1,065	1,065
89.00	3,050	2,677	3,742
90.00	3,770	3,410	7,152
90.50	4,200	1,993	9,144

Device	Routing	Invert	Outlet Devices
#1	Primary	85.30'	**12.0" Round Culvert X 0.00** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 84.30' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	85.30'	**1.0" Vert. Controlling Orifice** C= 0.600
#3	Device 2	85.30'	**4.0" Round UD Header** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 85.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 1	89.00'	**48.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#5	Secondary	89.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=87.50' TW=85.00' (Dynamic Tailwater)
- **1=Culvert** (Controls 0.00 cfs)
  - **2=Controlling Orifice** (Passes 0.00 cfs of 0.04 cfs potential flow)
    - **3=UD Header** (Passes 0.00 cfs of 0.25 cfs potential flow)
  - **4=WQV Orifice** (Controls 0.00 cfs)

Secondary OutFlow Max=6.60 cfs @ 12.27 hrs HW=89.90' TW=85.14' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Weir Controls 6.60 cfs @ 1.64 fps)

Appendix 4

Inspection, Maintenance and Housekeeping Plan

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

FALLBROOK COMMONS
PORTLAND, MAINE

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site by the contractor during construction and by the owner/homeowner association after construction. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section and the erosion and sedimentation control plan for the project. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Correction action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or

washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation. A Spill, Prevention, Control and Countermeasures Plan is created for the project and is to be kept onsite at all times.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from

trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the owner or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

   A. Vegetated Areas:

   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Winter Sanding:

   - Clear accumulations of winter sand along access road at least once a year, preferably in the spring.
   - Accumulations of sand along road shoulders may be removed by grading excess

sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Underdrained Soil Filters:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. Removed sediments should be disposed of in an acceptable manner.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Mowing: If mowing is desired, only handheld string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.

F. Level Spreader:

- The level spreader pool should be inspected after rainfall events for sediment accumulation and debris that may reduce its capacity. Sediment and debris buildup should be removed once the volume of the pool has been reduced by 25%. The level berm must be constructed so that flows slowly seep across the berm as

sheet flow to the receiving downstream drainage way. Repair or reconstruction of the berm is required when flow from the spreader becomes channelized.

G. Gravel Wetland:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good vegetative cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The gravel wetland should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
- Removal any decaying vegetation, litter, and debris that may be found.
- Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.
- Plant biomass shall be harvested annually.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 2 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. Duration of Maintenance: Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Stormwater Inspection and Maintenance Log Form

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

FALLBROOK COMMONS
PORTLAND, MAINE

This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the proposed Institute for Local Food Systems Innovation. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the municipality. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Level Spreader			
Remove sediment			Monthly
Check for evidence of channelized flow over berm			Monthly
Erosion (side slopes, embankment)			Monthly
Mowed			Semi-Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

Underdrained Soil Filters				
	Remove sediment & debris			Monthly
	Remove weeds			Monthly (during growing season)
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
Gravel Wetland				
	Remove sediment & debris			Monthly
	Check and clean the risers			Monthly
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
	Remove decaying vegetation, litter and debris			As-needed

Appendix 5

Web Soil Survey

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine
(18347 Fallbrook Commons - Web Soil Survey)

Map Scale: 1:2,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	C	4.2	15.4%
BuB	Lamoine silt loam, 3 to 8 percent slopes	C/D	3.0	11.0%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	D	2.2	8.1%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	D	6.0	22.0%
HsB	Lyman-Abram complex, 0 to 8 percent slopes, very rocky	D	2.3	8.6%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	9.6	35.0%
Totals for Area of Interest			**27.3**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix 6

FEMA Map

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** To be protected from 100-year flood by federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside 500-year flood plain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 Base Flood Elevation Line; Elevation in Feet*

(EL. 987) Base Flood Elevation in Feet Where Uniform Within Zone*

BM 7 Elevation Reference Mark

M1.5 River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated or additional flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross-sections and interpolated between cross-sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY:
City of Portland Zoning and Building Inspection Office, 389 Congress Street,Room 315, Portland, Maine 04101 (Maps available for reference only; not for distribution.)

INITIAL IDENTIFICATION:
APRIL 26, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 17, 1989

FLOOD INSURANCE RATE MAP REVISIONS:
December 8, 1998 – to change Base Flood elevations, to add base flood elevations, to change zone designations, to update map format, and to change floodways.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE
400 0 400/800

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 2 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0002 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

Appendix 7

Form F: Soil Profile/Classification Information

FORM F 18347

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-101** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
SILT LOAM		5Y 4/1 DARK GRAY	
SILTY CLAY LOAM	VERY FIRM	5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 96"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	10"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-102** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM		
SILTY CLAY LOAM	VERY FIRM	5Y 4/2	

LIMIT OF EXCAVATION = 84"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	7"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-103** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 3/2 VERY DARK GRAYISH BROWN	
SILTY CLAY LOAM		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
	VERY FIRM		

LIMIT OF EXCAVATION = 84"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	9"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-104** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
VERY FINE SANDY LOAM		5Y 5/2 OLIVE GRAY	
			COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/1 DARK GRAY	
LOAMY VERY FINE SAND	FRIABLE	2.5Y 5/2 GRAYISH BROWN	

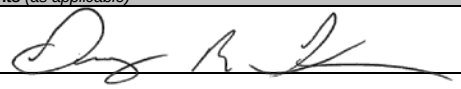
LIMIT OF EXCAVATION = 96"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	16"	

C.S.S. Soil Series / phase name: **NICHOLVILLE** — **MWD** Drainage Class — **B** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature: 

Date: **11/7/19**

name printed/typed: **Gary M. Fullerton**

Lic.#: **462**

L.S.E. signature:

Date:

name printed/typed:

Lic.#:

affix professional seal

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-105 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
			COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM	5Y 5/2 OLIVE GRAY	
LEDGE @ 33"			

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	12"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ROUNDABOUT VARIANT — SWPD Drainage Class — D Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-106 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
SILT LOAM		5Y 5/2 OLIVE GRAY	
	FIRM		COMMON, MEDIUM, DISTINCT
LEDGE @ 23"			

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	16"	■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: NICHOLVILLE VARIANT — MWD Drainage Class — B Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric	Slope %	Limiting factor	☐ ground water
☐ non-hydric	_____	_____	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class — _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric	Slope %	Limiting factor	☐ ground water
☐ non-hydric	_____	_____	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class — _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 11/7/19
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature:	Date:
	name printed/typed:	Lic.#:

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

affix professional seal

Section 13

Urban Impaired Stream Submissions

Section 13

Urban Impaired Stream Standard

Not applicable. The proposed project is within the watershed of an unnamed stream that is a tributary of the Presumpscot River, which is not classified as most-at-risk in the Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development, And Urban Impaired Streams. Chapter 500 Stormwater Phosphorus Standards do not apply.

Section 14

Basic Standards Submissions

Section 14

Basic Standards

Erosion & Sediment Control

The design of the Fallbrook Commons facility has incorporated best management practices to minimize the potential for erosion and the transport of sediments from the construction activities. An Erosion and Sediment Control Plan has been prepared and is included in this section of the application and includes provisions for inspection, maintenance, and winter erosion control measures. Specific erosion control measures and their associated construction details are included on the design plans for the proposed development.

The site contractor for the project will be responsible for the maintenance of all erosion and sedimentation control measures during the construction of the project, and the keeping of records. At a minimum, the appropriate and relevant activities for each of the erosion and sedimentation control measures will be performed on the prescribed schedule.

A. Siltation fencing needs to be inspected every seven days or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Any breeches in the siltation fencing should be repaired immediately. Any sediment which leaves the project site must be removed immediately. Siltation fencing shall be repaired in accordance with installation instruction shown on the project plan set.

B. Stabilized construction entrances shall be maintained in a condition which will prevent tacking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled dropped washed or tracked onto public right-of-way must be removed immediately.

C. Following the temporary and/or final seeding the contractor shall inspect the work area semimonthly until the seeding has been established. Established means a minimum 85%-90% of areas vegetated with vigorous growth. Reseeding shall be carried out by the contractor with follow-up inspections in the event of any failures until vegetation is adequately established.

D. The contractor must install any added measures which may be necessary to control erosion/sedimentation from the site dependent on the site and actual weather conditions.

E. Maintenance measures shall be applied as needed during the entire construction cycle. After each rainfall, snow storm or period of thawing and runoff or at least every seven days, the contractor shall perform a visual inspection of all installed erosion control measures. The contractor shall perform repairs as needed to allow continued and proper functioning of the erosion control measure. The contractor shall provide the necessary regulating agencies with written documentation describing dates of inspections and any necessary follow up work to maintain erosion control measures meeting the requirements of the plan set.

F. Care should be taken not to disturb erosion control measures during snowplowing. Any damage to erosion control measures during plowing should be repaired immediately.

Section 15

Groundwater

Section 15

Groundwater

A. Narrative and Report

1. Location

   See this Section for a copy of a Bedrock & Surficial Geology map and a Sand & Gravel Aquifers map with the project location depicted.

2. Quantity

   There will be no groundwater use or underground wastewater disposal. Potable water will be provided by the Portland Water District. It is estimated that approximately 16,000 gallons per day (gpd) will be required to service this facility.

3. Sources

   The project does not involve any new facilities that would result in an increase in quantities of wastewater, solid waste, fuel or solvents to the project area groundwater. The project will be serviced by municipal sewer and no discharging to the groundwater is proposed other than from stormwater runoff and discharge from infiltration basins.

4. Measures to Prevent Degradation

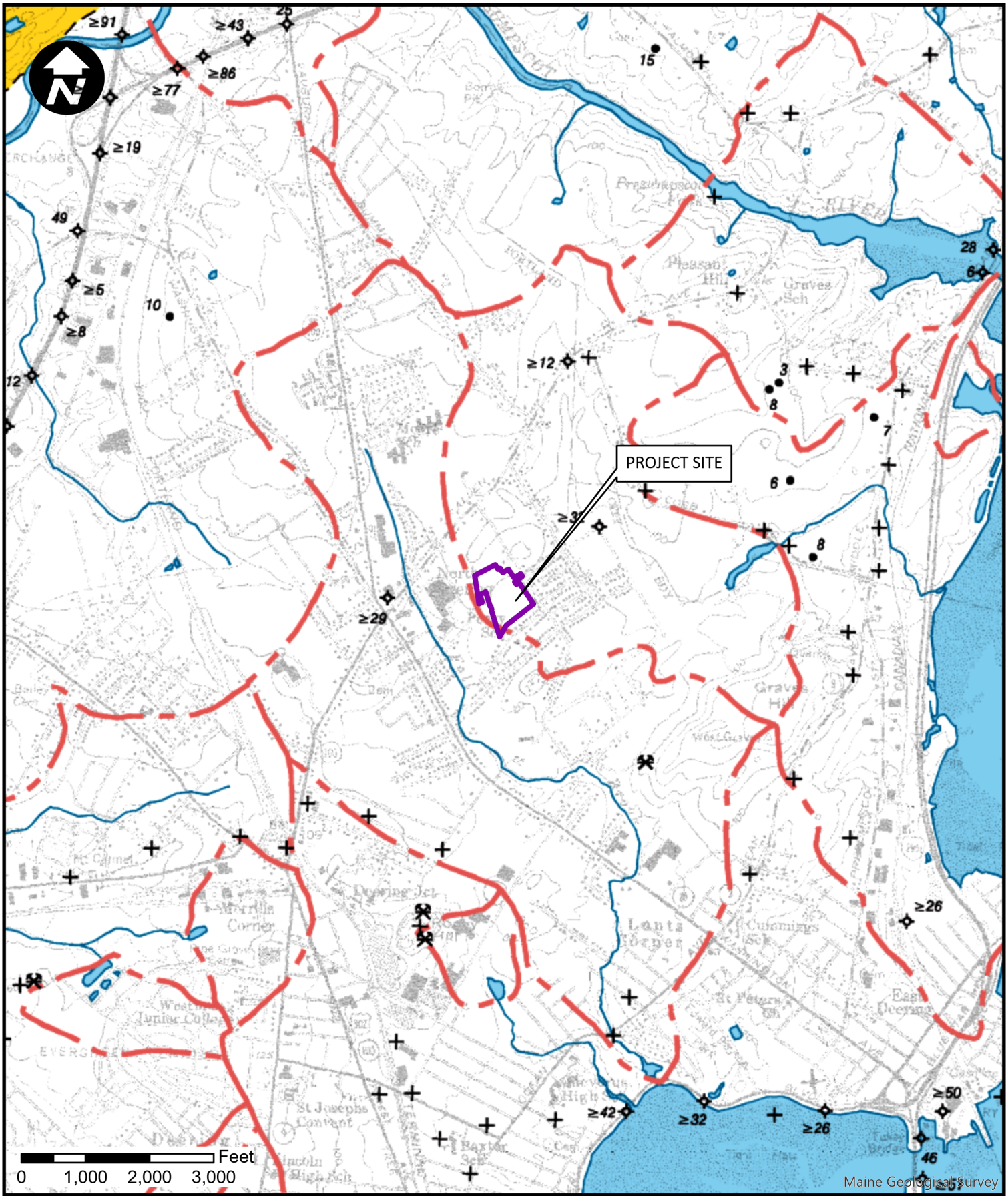
   All impervious drainage areas associated with streets, drives and walkways are directed to stormwater management facilities designed to current DEP treatment standards. Please see the plan set for more detailed information.

B. Groundwater Protection Plan

There are no development plans to store or use petroleum products, pesticides, herbicides, road salt, solvents, acids or other materials with the potential to contaminate groundwater.

C. Monitoring Plan

Not applicable.



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South Portland, ME 04106
Tel. 207-200-2100

SIGNIFICANT SAND AND GRAVEL AQUIFERS MAP
FOR: FALLBROOK NURSING CENTER

SCALE: 1:24,000

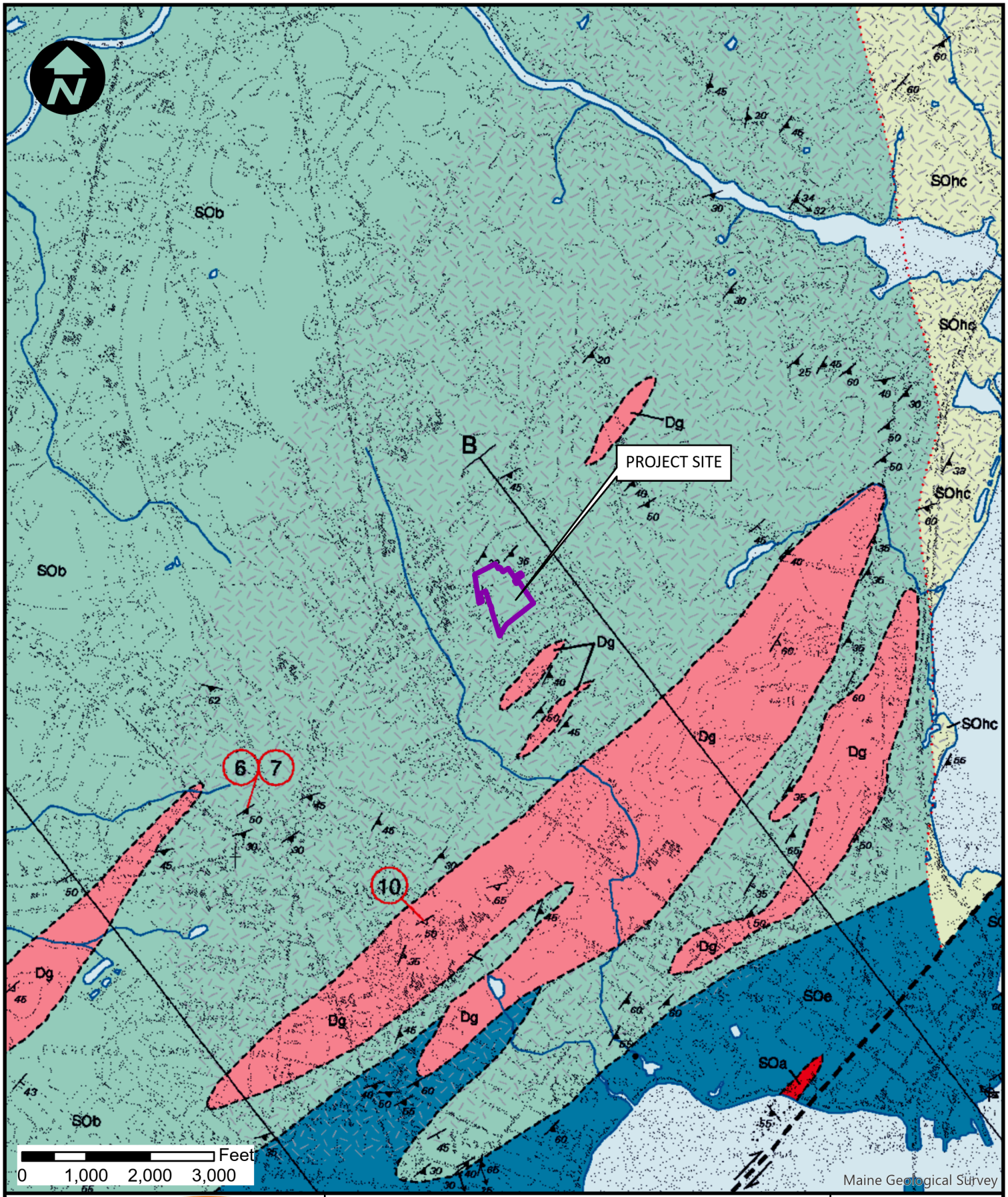
DATE: 11/21/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
Maine Geological Survey_
Significant Sand and Gravel Aquifer Maps: Portland West Quad

18347_LocationMap.aprx

PROJECT NUMBER: 18347



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Tel. 207-200-2100

BEDROCK GEOLOGY MAP
FOR: FALLBROOK NURSING CENTER

SCALE: 1:24,000

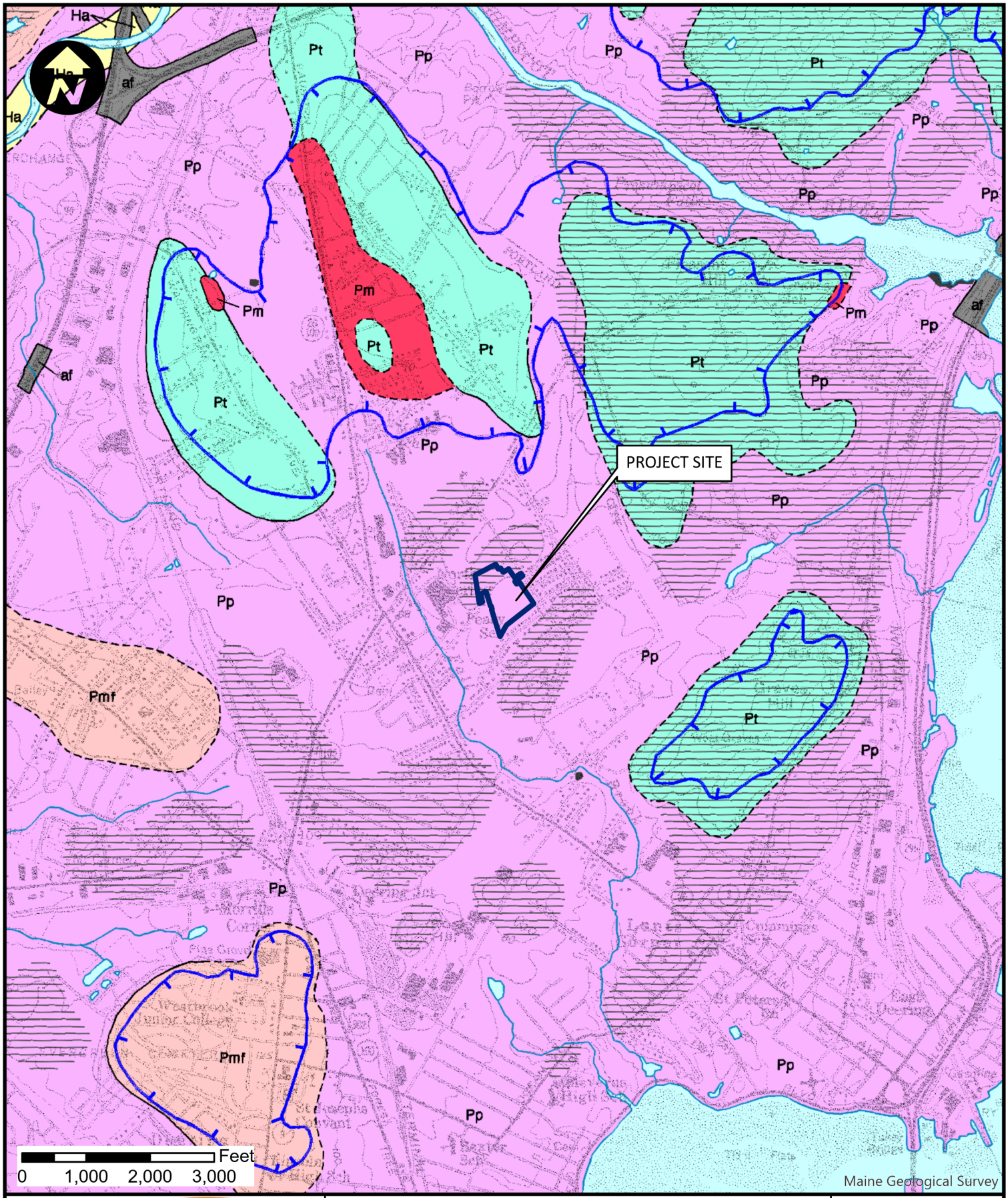
DATE: 11/21/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
Maine Geological Survey_
Bedrock Geology Maps: Portland West Quad

18347_LocationMap.aprx

PROJECT NUMBER: 18347



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South Portland, ME 04106
Tel. 207-200-2100

SURFICIAL GEOLOGY MAP
FOR: FALLBROOK NURSING CENTER

SCALE: 1:24,000

DATE: 11/21/2019

LOCATION:
60 MERRYMEETING DRIVE
PORTLAND, ME

INFORMATION:
Maine Geological Survey_
Surficial Geology Maps: Portland West Quad

18347_LocationMap.aprx

PROJECT NUMBER: 18347

Section 16

Water Supply

Section 16

Water Supply

A. **Water Supply Method**

The development will be serviced by municipal water supplied by the Portland Water District. It is anticipated that the facility will require approximately 16,000 gpd of water.

The Portland Water District has been contacted for confirmation of capacity. Please see this Section for the correspondence to the Portland Water District.

B. Subsurface Wastewater Disposal

Not applicable. The development will be serviced by municipal sanitary sewer.

C. Total Usage

The proposed improvements will result in approximately 16,000 gpd total water usage for the site.

D. Other

Not applicable.

October 2019
18347

MEANS
Portland Water District
225 Douglas Street
PO Box 3553
Portland, ME 04104

Request for Ability to Serve Letter
MEANS, Portland, Maine

Dear MEANS,

Sebago Technics has been retained as the civil engineer and landscape architect for a senior care facility in Portland named Fallbrook Health Center. This licensed facility will provide services in an assisted living environment. As depicted on the attached location map, the project site is located on Ray Street next to Fallbrook Woods assisted living facility. We anticipate extending the water main under Merrymeeting drive, to serve our project.

I am writing to request a capacity to serve letter for this project to submit to the Portland Planning Board as part of our site plan review application. The design flow for the new facility is expected to produce approximately 16,000 Gallons Per Day.

Please let me know if you have any questions or concerns; we look forward to working with the District as the project moves forward. Thank you.

Sincerely,

SEBAGO TECHNICS, Inc.

Daniel M. Danvers, RLA
Maine Licensed Landscape Architect

DMD/llg
Enc.

cc: Daniel Maguire, Sandy River II

Section 17

Wastewater Disposal

Section 17

Wastewater Disposal

A. On-Site Subsurface Wastewater Disposal Systems

Not applicable. The project will not be serviced by individual on-site sewage disposal systems.

B. Nitrate-Nitrogen Impact Assessment

Not applicable. As no individual or common subsurface sewage disposal systems are proposed for this project, no hydrogeological or nitrate-nitrogen impact assessment is required.

C. Municipal Facility or Utility Company Letter

The proposed project involves the construction of a 90-bed nursing care canter. The project site has not been previously developed. It is anticipated that the proposed development will require wastewater disposal needs of approximately 16,000 gpd.

The City of Portland has been contacted. Please see this Section for a copy of the correspondence to date and for the proposed pump station design

D. Wastewater Discharge Information

The proposed development will not discharge any liquid waste into any stream, river, pond, lake or other body of water.

E. Storage or Treatment Lagoons

The proposed development will not include any lagoons, impoundments, ponds or similar structures for storage involving liquid waste other than stormwater.

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75 John Roberts Road, Suite 4A
South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB Fallbrook Nursing
SHEET NO. 1 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

Pump Station Design

Building/Phase	Type of Use	# of units/SF	flow/unit	Total
Site				
	50	employees	12 gpd/employee	600 gpd
	90 beds		125 gpd/bed	11,250 gpd
			Total	11,850 gpd
	Project flow from Mechanical Engineer			16,000 gpd
	Higher Total Flow			16,000 gpd
	Peak Factor, Peak Day			3.0
	Peak Day = 3.0 x Average Daily Flow (ADF) =			48,000 gpd
	Peak Factor, Peak Hour			5.6
	Operating hours per day			16 hr
	Peak Hour = 5.6 x ADF/ 720 min/day (16 hour day) =			93.3333 gpm
	Inflow/ Infiltration (I/I) Allowance			
	Gravity main size:	8 inches		
	Approximately	0 linear feet (0 miles) of 8" sewer line		
	I/I allowance	= 250 gpd/inch diameter of pipe in inches/mile of sewer		
			Flow from Inflow/Infiltration =	0 gpd
			Peak Hour =	0.00 gpm

STATE OF MAINE
ROBERT A. McSORLEY
No. 8588
LICENSED PROFESSIONAL ENGINEER

11/1/19

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South Portland, Maine 04106
(207) 200-2100 FAX (207) 856-2206

JOB Fallbrook Nursing
SHEET NO. 2 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

Cycle times for given flow rates and wetwell size: Buildout

		Average wastewater flow =			16,000	GPD, or	16.67	GPM					
		Peak Flow =			100.00	GPM =	6000	GPH					
		Minimum Flow =			2.3	GPM =	140	GPH					
	Proposed Forcemain size =			4	inches	HPDE DR 11			minimum velocity			3	fps
Min. pump rate (larger of 1.50 x peak or min fm flow) =						GPM	150	GPM					
						Use	150	GPM	50%	more than peak			
	Diameter of wet well =				6	feet, so radius=		3	ft				
	Travel (pump on to pump off) =				24	inches, or		2	ft				
		So working volume =			56.5	cubic feet, or		423.0	gal.				
	Is pump station for a septic field?			**no**									
	For average design flow:												
		Effective pumping rate =		150	gpm -	16.67	gpm =	133.33	gpm				
		Pump cycle =		423.0	gal /	133.3	gpm =	3.17	min				
		Fill time =		423.0	gal /	16.67	gpm =	25.38	min				
					Total cycle =			28.56	min or	0.48	hours		
		Summary: Pump starts 2x/hour. Using alternating pumps											
	Peak on Maximum Day (Average x 6.0)												
		Effective pumping rate =		150	gpm -	100.00	gpm =	50.00	gpm				
		Pump cycle =		423.0	gal /	50.0	gpm =	8.46	min				
		Fill time =		423.0	gal /	100.00	gpm =	4.23	min				
					Total cycle =			12.69	min or	0.21	hours		
	Extreme minimum on minimum day (Average x 0.14)												
		Effective pumping rate =		150	gpm -	2.33	gpm =	147.67	gpm				
		Pump cycle =		423.0	gal /	147.7	gpm =	2.86	min				
		Fill time =		423.0	gal /	2.33	gpm =	181.30	min				
					Total cycle =			184.17	min or	3.07	hours		

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JOB Fallbrook Nursing
SHEET NO. 3 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

HAZEN-WILLIAMS COEFFICIENTS

100	Average 15 year old cast iron pipe	140	Very straight & smooth cast iron pipe
110	Vitrified sewer pipe	140	New steel pipe; cement asbestos pipe
120	New wrought iron pipe	150	New cl pipe w/cent. Bituminous lining
120	Average 5 year old cast iron pipe	150	Schedule 40 PVC pipe & HDPE
130	Average new cast iron pipe		

EQUIVALENT LENGTHS (NOTE: Enter # of each fitting, d is smaller diameter)

SIZE(IN)	1.25	1.5	2	2.5	3	4	6	8
Gate valve					1			
Butterfly valve	X	X						
Globe Valve								
90° elbow					3			
45° elbow or long sweep 90° elbow					1			
Tee, thru								
Tee, branch					1			
Reducer, d/D = 0.5								
Reducer, d/D = 0.75								
Increaser, d/D = 0.5								
Increaser, d/D = 0.75					1			
Check Valve					1			
TOTAL	0	0	0	0	73	0	0	0

Flow: 150 gpm

Additional flow in forcemain? N

Use standard pressure value for minor loses, H_{SL}? Y

H_{SL}: 3 ft

Highest Forcemain Elevation: 90.3

H_{ST}: 11.8 ft

Discharge Elevation: 85

Wet Well Low Elevation: 78.5

Tie in Pressure, H_{EX}: 0 ft

Size (in)	Pipe Type	C	Length (ft)	Add Eq. Length	Eq. Length (ft)	Add. Flow	H_f (ft) 0.50xQ 75	0.75xQ 112.5	1.00xQ 150	1.25xQ 187.5	1.50xQ 225	1.75xQ 262.5	2.00xQ 300	2.25xQ 337.5
3	Sch. 80 PVC	130	6.50	y	73	n	1.68	3.55	6.05	9.14	12.81	17.03	21.81	27.12
4	HPDE DR 11	130	475	n		n	3.37	7.13	12.14	18.35	25.71	34.20	43.78	54.44
					H_{TOTAL}:		19.8	25.5	33.0	42.3	53.3	66.0	80.4	96.4
					$H_{TOTAL\ (PSI)}$:		8.6	11.0	14.3	18.3	23.1	28.6	34.9	41.8
					Velocity, V:		3.40	5.11	6.81	8.51	10.21	11.92	13.62	15.32

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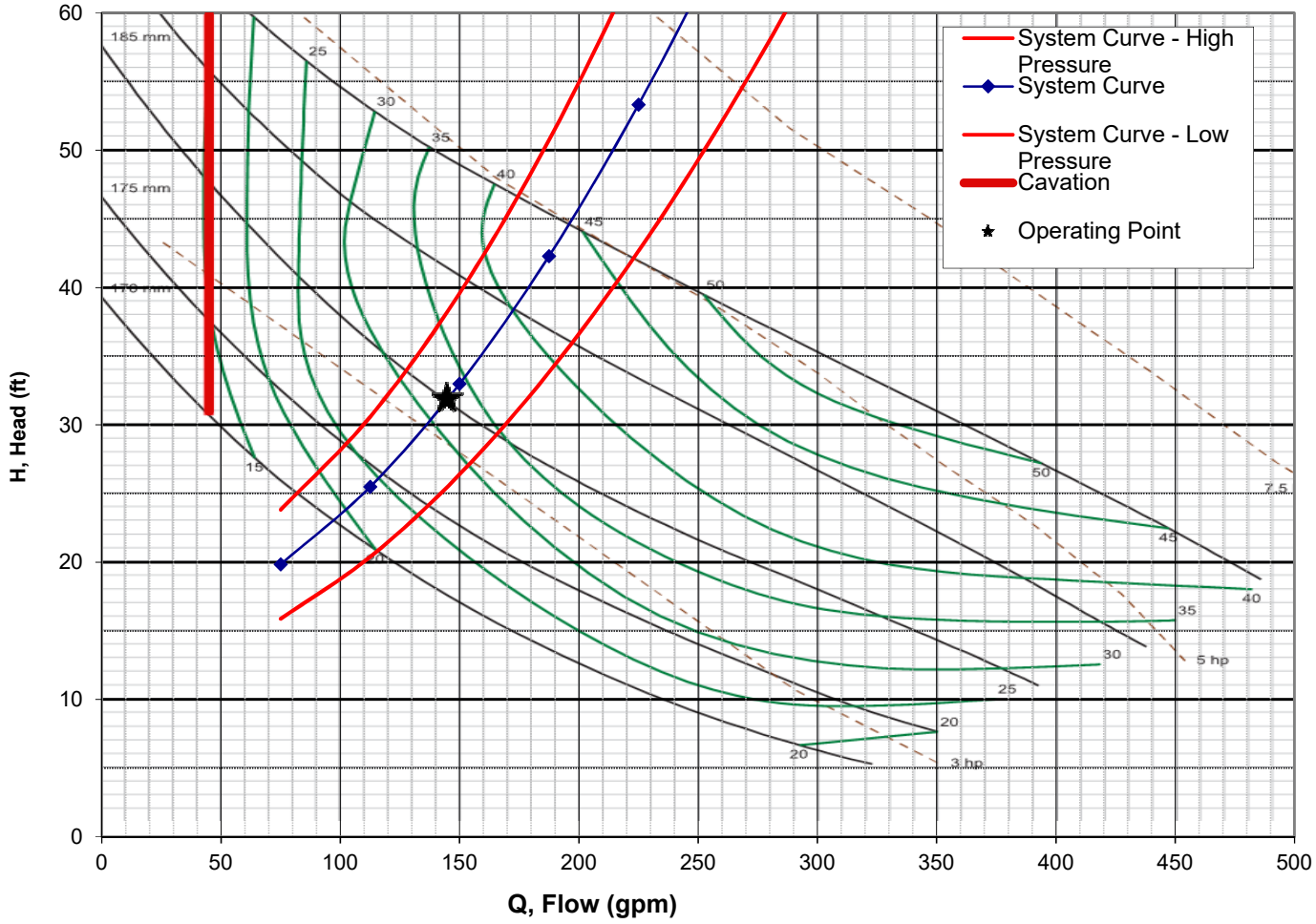
JOB	Fallbrook Nursing		
SHEET NO.	4	OF	5
CALCULATED BY	BAW	DATE	10/30/2019
CHECKED BY	RAM	DATE	10/30/2019
FILE NAME	18347 Pump Station 2019-10-30		

Fallbrook Nursing



Duplex Barnes Sithe chopper, Model 3XSCMPA50N4, pump will flow **145** gpm at **32** ft TDH

5.0 H.P., 15.0 A, 230 Volt, 3 Phase, 60 Hz motor operating at 1750 RPM with 185mm impellor.

Velocity in **4** (in) HPDE DR 11 force main will be 4.5 ft/s

Flow	Pump	Fill	Total			
Low	2.97	181.3	184.3	min	3.07	hrs
Avg	3.30	25.38	28.68	min	0.48	hrs
Peak	9.40	4.23	13.63	min	0.23	hrs

Check cycle times

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JOB Fallbrook Nursing
SHEET NO. 5 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

FLOATATION CALCULATIONS

PARAMETERS:

1.	STATION TYPE(TREMIE/MONO/PACKAGE) =	MONO	
2.	DENSITY OF CONCRETE =	150.00	#/C.F.
3.	GRANULAR BACKFILL =	120.00	#/C.F.
4.	WETWELL DIAMETER =	6.00	FEET
5.	WALL THICKNESS =	7.00	INCHES
6.	TOP OF STATION ELEVATION =	90.50	N.A.V.D.
7.	FINISHED GROUND ELEVATION (-8")=	89.83	N.A.V.D.
8.	TOP OF BASE ELEVATION =	77.00	N.A.V.D.
9.	THICKNESS OF TOP =	8.00	INCHES
10.	THICKNESS OF BASE(MONO/PACKAGE) =	8.00	INCHES
11.	WIDTH OF MONO SLAB = 12.00 IN BASE DIAMETER =	110.00	INCHES
12.	THICKNESS OF TREMIE/FLOOR =		INCHES
13.	AREA OF HATCH =	10.00	SQ. FEET

BOUYANCY OF STRUCTURE:

CYLINDER =	544.58	CUBIC FEET
BASE =	44.00	CUBIC FEET
TOTAL =	588.57	CUBIC FEET

BOUYANCY FORCE = VOLUME OF STRUCTURE x WEIGHT OF WATER(62.4 #/C.F.)

BOUYANCY FORCE = 36,726.91 POUNDS

WEIGHT OF STRUCTURE:

BASE/TREMIE =	44.00	CUBIC FEET
CYLINDER =	154.83	CUBIC FEET
FILLET =	20.55	CUBIC FEET
TOP =	26.89	CUBIC FEET
HATCH =	-6.67	CUBIC FEET
TOTAL =	239.60	CUBIC FEET

WEIGHT OF STRUCTURE = VOLUME OF CONCRETE x WEIGHT OF CONCRETE(150 #/C.F.)

WEIGHT OF STRUCTURE = 35,940.44 POUNDS

WEIGHT OF OVERBURDEN:

VOLUME OF OVERBURDEN = 329.26 CUBIC FEET

WEIGHT OF OVERBURDEN = VOLUME OF OVERBURDEN x DRY WEIGHT OF SOIL(120 #/C.F.)

WEIGHT OF OVERBURDEN = 18,965.17 POUNDS

TOTAL DOWNWARD FORCES = 54,905.61 POUNDS

FACTOR OF SAFETY = 1.49 OK

Section 18

Solid Waste

Section 18

Solid Waste

A. Estimated Quantities of Solid Waste

The proposed development involves the construction of a 90-bed nursing care center. The proposed facility is expected to generate average quantities of waste as follows:

Construction Phase: The proposed improvements will result in approximately 488.85 c.y. of construction waste.

58,197 s.f. facility X 4.2 lbs waste = 244,427 lbs of waste
244,427 lbs/500 lbs = 488.85 c.y. of waste

Municipal Solid Waste: Municipal solid waste (MSW) will be collected by a private hauler. The proposed facility has been designed to accommodate 90-beds and is anticipated to generate approximately 450 lbs of MSW a day.

Proposed solid waste:
90 beds x 5 lbs per day = 450 lbs of waste per day.

Source - National Solid Waste Management Association
https://www.wastecare.com/usefulinfo/Waste_Generated_by_Industry.htm

B. Off-Site Disposal of Construction/Demolition Debris

Construction debris associated with building construction, including clean wood, material packaging, cardboard, etc. will be collected in onsite construction dumpsters. It is recommended that the contractor separate waste into 3 or 4 roll-off dumpsters. The waste material should be separated into the following types: wood, metal, all other material, and possibly cardboard (for recycling). Construction debris, waste generation is anticipated to be approximately 488.85 cubic yards. It will be the responsibility of the site contractor to remove this building waste from the site during construction. All construction waste will be transported and disposed of off-site by a licensed hauler to a local construction material recycling facility.

C. On-Site Disposal of Wood Waste/Land Clearing Debris

Any stumps or grubbing from the site will be ground on-site by a portable stump grinder and used as mulch in the stabilization of back slopes and for erosion control. It is acknowledged that the grinding must be completed within a 30-day time period if a DEP permit has not been obtained. Material that has been ground and is not being used on-site must be hauled off-site within a time-period of 30 days from the end of the grinding process by a licensed Non-Hazardous Waste Transporter.

D. **Special or Hazardous Waste**

Not applicable. Past use of the site does not indicate that contaminated soils or other potential hazards to human health or the environment will be found during grading and excavation of the site, nor were any hazards visually apparent during the environmental site assessment field visits. Any hazardous material used during construction should be disposed of per applicable Federal and State laws regarding the detection, identification, handling, storage, transportation and disposal of special wastes and hazardous wastes.

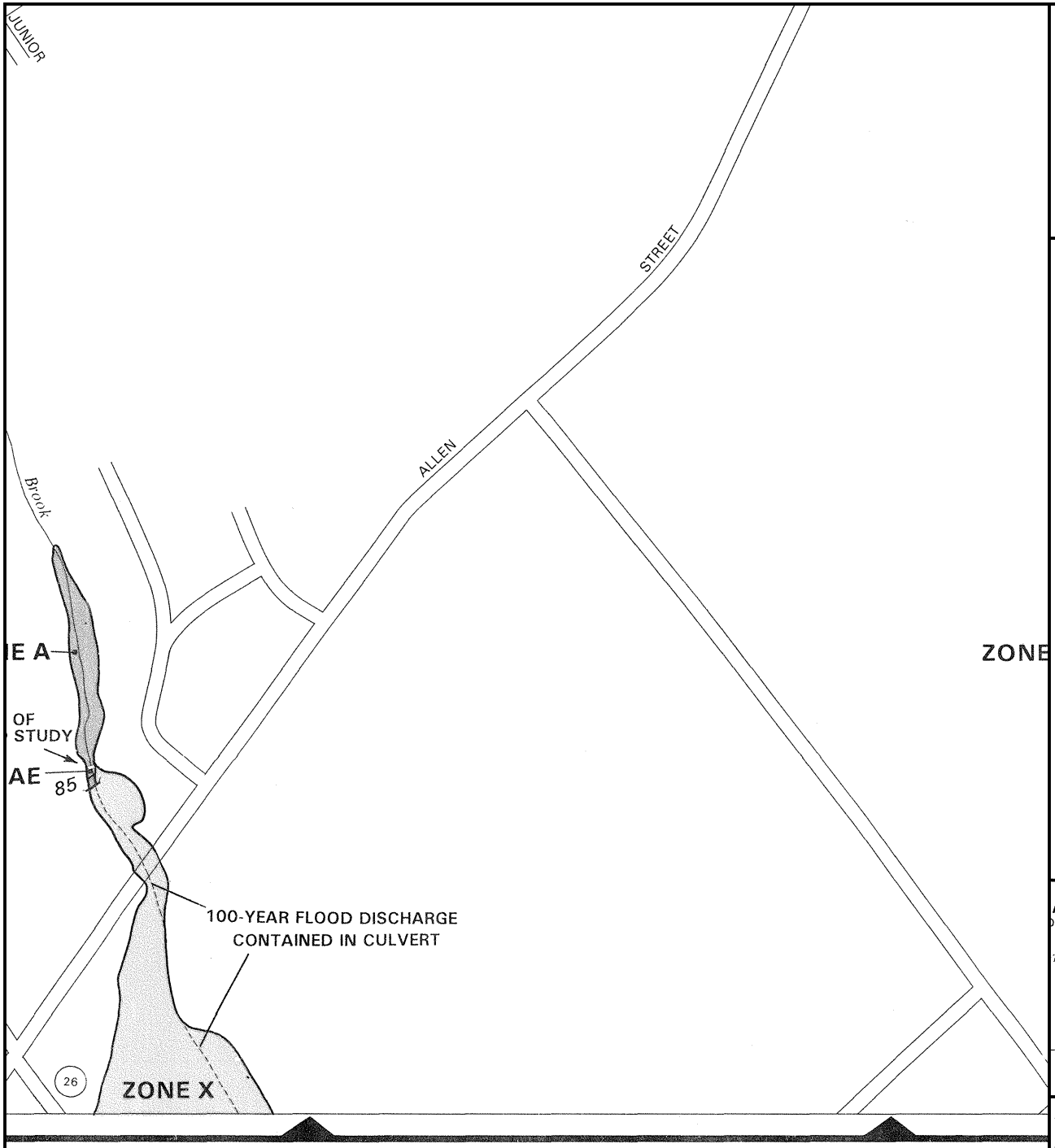
Section 19

Flooding

Section 19

Flooding

The Flood Insurance Rate Map (FIRM) for the City of Portland (Community Panel 230051 0002C, dated December 8, 1998) identifies the majority of the project site to be in an area of minimal flooding. It is not anticipated that the proposed project will cause or increase flooding, or create any flood hazard areas.



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 2 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0002 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Section 20

Blasting

Section 20

Blasting

Given the nature of the site it is anticipated that blasting will be required. Should ledge be encountered during construction, a blasting plan will be submitted for approval that has been developed to be in compliance with the accepted limit for safe levels of blasting vibrations as developed by the U.S. Bureau of Mines as presented in Appendix B of the U.S. Bureau of Mines, RI 8507.

Blasting Requirements

Should blasting be necessary, we recommend that the following controls be implemented for the project:

The Contractor should comply with all applicable laws, rules, ordinances, and regulations of the federal government, the State of Maine, and the City of Portland governing transportation, storage, handling and use of explosives.

Prior to the start of rock excavation or blasting work, notices should be sent to residents and businesses in the area describing the blasting and rock excavation work, indicating the approximate schedule of work, and describing blasting procedures, mitigation measures, and blast warning signals.

Prior to the start of blasting work, pre-blast condition surveys should be conducted of all existing structures and conditions on the site, adjacent to the site, or in the vicinity of the site. These surveys should extend to such structures, wells, or an item that may be affected by the Contractor's blasting operations. As a minimum, condition surveys should be performed on all structures within a half-mile of anticipated blasting areas.

Prior to the start of blasting work, the Contractor should submit to the engineer for review a blasting plan containing details of proposed blasting and construction operations including:

A. Sequence and schedule of blasting rounds including the general sequence of drilling, blasting, excavating, etc.

B. Specifics of typical blast rounds and open cut blast rounds in deepest rock cut areas and areas closest to existing structures.

C. In each area specified, include the following blast round details:

- Diameter, spacing, burden, depth and orientation of each blast hole for each round design.
- Nomenclature and amount (in terms of weight and number of cartridges) of explosives and distribution of charge to be used within each hole, on each delay,

and the total for the blast.

- Nomenclature and type of detonators and delay pattern for the round.
- Type and location of stemming to be used in holes.
- Calculations of anticipated vibration levels at nearest adjacent structure or well.

D. Specifics of Test Blasts to check effectiveness and vibration characteristics of typical trench and open cut blasting rounds.

E. Methods of matting or covering the blast area to prevent fly rock and excessive air blast overpressure.

F. Name and qualifications of licensed blaster who will be on site at all times directly supervising the loading and detonation of each blast.

G. Name and qualifications of the person responsible for conducting pre-blast condition surveys.

H. Name and qualifications of the person responsible for monitoring and reporting blast vibrations.

I. Details of an audible advance signal system to be employed at the job site as a means of informing workers, Engineer, Architect, Owner, and the general public that a blast is about to occur. Details of access control during blasting.

The Contractor should conduct all blasting activity in such a manner that the peak particle velocity of ground vibration measured at the locations of the nearest structures or wells to the blast does not exceed the "safe limits" recommended by the U.S. Bureau of Mines as presented in Figure B-1 of Appendix B of U.S. Bureau of Mines, RI 8507.

The Contractor should conduct all blasting activities in such a way that sound levels from blasting shall not exceed the limits given in the Maine Department of Environmental Protection Rules, Chapter 375.10 (c)(4)(c).

# of Blasts Per Day	Sound Level Limit
1	129 dBL
2	126 dBL
3	124 dBL
4	123 dBL

Blast monitoring should be conducted by an independent firm trained in the use of a seismograph, and records should be analyzed and results reported by persons familiar with analyzing and reporting the frequency content of a seismograph record. A minimum of two (2) engineering seismographs shall be used for each blast, one each adjacent to the nearest off-site structures or wells which lie within a 300-foot radius of blasting activities.

Blast Monitoring Equipment: All instrumentation proposed for use on the project shall have been calibrated within the previous six (6) months to a standard traceable to the National Bureau of Standards. Characteristics of required instrumentation are listed below:

- Measure the three (3) mutually perpendicular components of particle velocity in the directions vertical, radial and perpendicular to the vibration source.

- Measure and display the maximum peak particle velocity component and air blast overpressure. These readings must be displayed and be able to be read in the field, immediately after each blast.

- Furnish a permanent time history record of particle velocity waveforms and air blast overpressure waveforms, so that frequency and time of maximum peak particle velocity or air blast overpressure can be determined.

Blast Monitoring Reports: Within 24 hours following each blast, the Contractor should submit to the Engineer a Blast Monitoring Report. Each Blast Monitoring Report should include all of the following applicable items:

- Blast round design data, as indicate in Section C of the Blasting Requirements.

- Blast Monitoring Location Plan, indicating the location of the blast, the monitoring locations, and the distances from the blast to monitoring locations.

- Vibration and air blast overpressure data from each seismograph, including a copy of the strip chart (or other permanent record of velocity/time waveform) with calibration and monitoring record marked with the date, time and location of the blast.

- In the event that the Contractor's design round results in ground vibrations and/or air blast overpressures exceed the blasting limit criteria presented herein, the Contractor should immediately revise the round design appropriately and submit the revised round design to the Engineer for review. Allow sufficient time for review.

- The Contractor should report to the Engineer in writing all blasting complaints received by the Contractor within 24 hours of receipt. Each blast complaint report should include the name and address of the complaint, time received, date and time of blast complained about, and a description of the circumstances, which led to the complaint. Upon receipt of a written complaint from a resident alleging damage from the blasting, the Contractor's representative or a representative of the Blaster's Insurance Company should investigate the claim and a written report should be issued to the homeowner, with a copy to the Engineer, of the results of the investigation and the response of the Contractor. This written report should be received by the resident and the Engineer within 15 work days of receipt of the written complaint.

Review by the owner and the owner's consultant of the blast designs and techniques shall not relieve the Contractor of his responsibility for the accuracy, adequacy and safety of the blasting, exercising proper supervision and field judgment and producing the results within the blasting limits required by the requirements.

Blasting shall be limited to between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

Blasting mats shall be utilized for all blast rounds detonated to prevent the throw of fly rock from the blasting area, unless the Contractor's independent professional engineer/seismologist determines that the overburden is sufficient enough to prevent fly rock.

Ammonium Nitrate Fuel Oil (ANFO) shall not be permitted for blasting.

At the start of blasting, the Contractor shall perform a series of test blast to establish a site-specific relationship between the charge weight per millisecond delay and peak ground vibration levels at various distances from the blast. The results of the test blasts will form the basis for selection of maximum permissible charge weights during production blasting.

Section 21

Air Emissions

Section 21

Air Emissions

The proposed development is not anticipated to generate adverse air emissions which could impact the developed area or abutting properties. Temporary emissions may occur during the construction of the project due to earth moving activities and construction equipment. These emissions are expected to be limited in nature and of short duration. Provisions for dust control, if needed during construction, have been included in the Erosion and Sediment Control Plan attached to Section 14 of this application.

Section 22

Odors

Section 22

Odors

Odor generation is expected to be insignificant and consistent with surrounding areas. Temporary limited odors may arise during construction as a result of construction equipment working on the site. This odor potential is short-term and also not expected to be significant.

Section 23

Water Vapor

Section 23

Water Vapor

This proposed site improvements will not generate water vapor emissions impacting the developed area or abutting properties.

Section 24

Sunlight

Section 24

Sunlight

The proposed project will not result in a sunlight impact to abutting properties.

Section 25

Notices

Section 25

Notices

A. <u>Evidence That a Notice Has Been Sent</u>

Please see this Section for a copy of Form B.

The public notice was published in the Portland Press Herald on February 3, 2020.

A public informational meeting was held on February 18, 2020.

Please see this Section for a copy of Form C.

B. <u>List of Abutters</u>

See attached.

Public Notice
Notice of Intent to File

Please take notice that Fallbrook Senior Care Development, LLC is intending to file a Natural Resource Protection Act and an amended Site Location of Development Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 480-A thru 480-BB and §§ 481 thru 490 on or about February 20, 2020.

A Public Informational Meeting will be held at **6 P.M** on **February 18th** at **Fallbrook Woods, 60 Merrymeeting Drive, Portland**.

The applicant is proposing to construct a new two-story 58,197 s.f. senior care facility. Improvements will result in approximately 37,787 s.f of wetland impacts, the creation of approximately 2.7 acres of new impervious surface, and 5.6 acres of developed area.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in Portland during normal working hours. A copy of the application may also be seen at the City of Portland municipal offices.

Written public comments may be sent to the Southern Maine Regional Office in Portland at MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103 where the application is filed for public inspection.

FORM C

PUBLIC NOTICE FILING AND CERTIFICATION

The DEP Rules, Chapter 2, require an applicant to provide public notice for all Site Location projects with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. **"Abutter"** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.

2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

   ATTACH a list of the names and addresses of the owners of abutting property.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on February 18,2020.
Date

Approximately 30 members of the public attended the Public Informational Meeting.

Signature of Applicant or Authorized Agent

2/20/20
Date

Public Notice

Notice of Intent to File

Please take notice that Fallbrook Senior Care Development, LLC is intending to file a Natural Resource Protection Act and an amended Site Location of Development Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 480-A thru 480-BB and §§ 481 thru 490 on or about February 20, 2020.

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Written public comments may be sent to the Southern Maine Regional Office in Portland at MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103 where the application is filed for public inspection.

From: Lori Gunn <lgunn@sebagotechnics.com>
Sent: Monday, February 03, 2020 9:17 AM
To: Joan Jensen <jjensen@pressherald.com>

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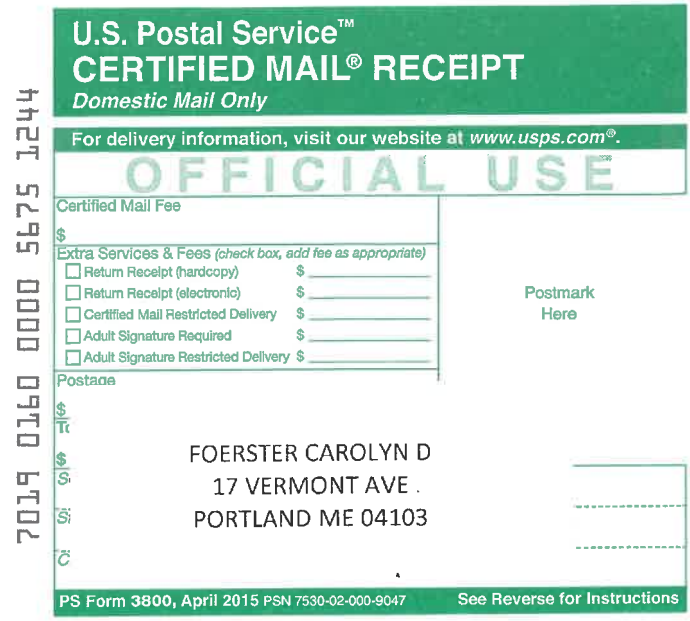
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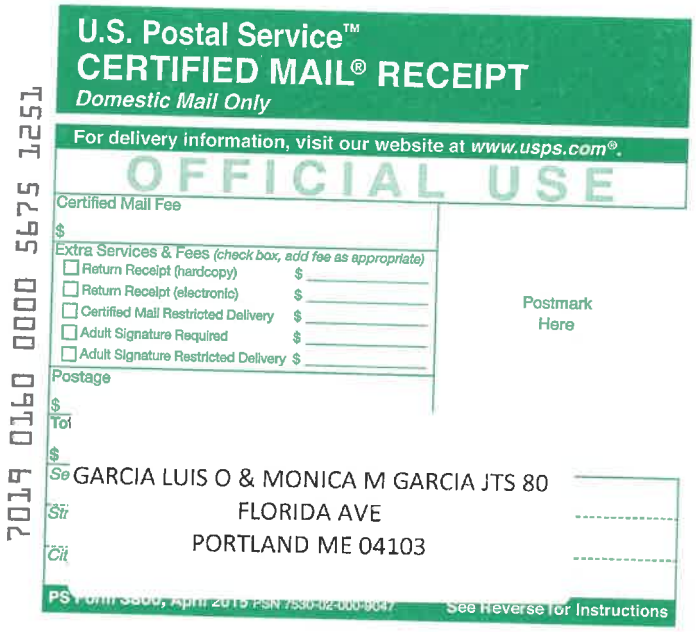
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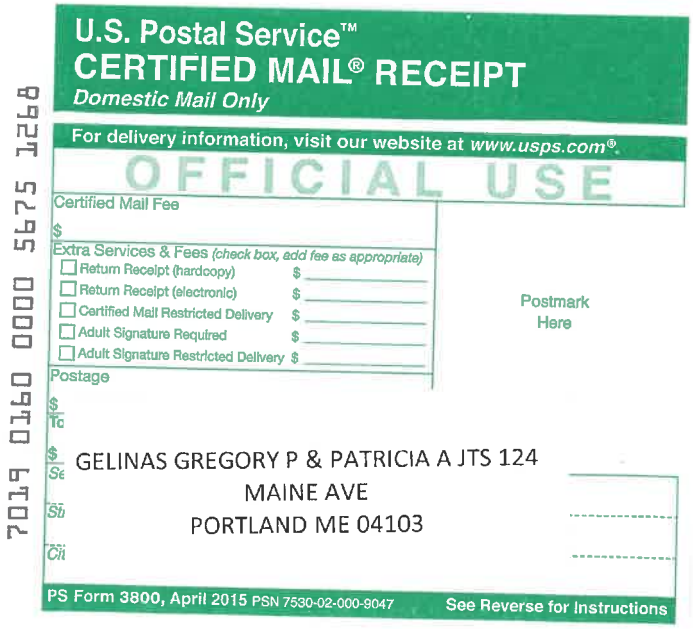
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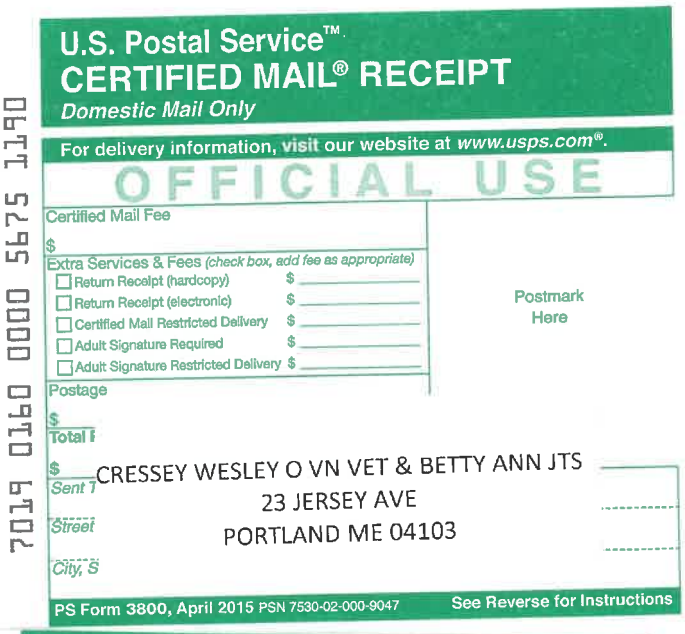
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DEARBORN CAROL A & DAVID L DUMONT JTS
2 MERRYMEETING DR
PORTLAND ME 04103
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Sent To DONOVAN ROBYN J & TIMOTHY P DONOVAN
JTS
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City, Sta PORTLAND ME 04103

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DUKES DAVID A & ROSE HEITHOFF JTS
30 TAYLOR ST
PORTLAND ME 04102

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Ser DUNLAP KYAN JAMES & KAYLA LISA DUNLAP
JTS
Stre 94 SKYARK RD
City PORTLAND ME 04103

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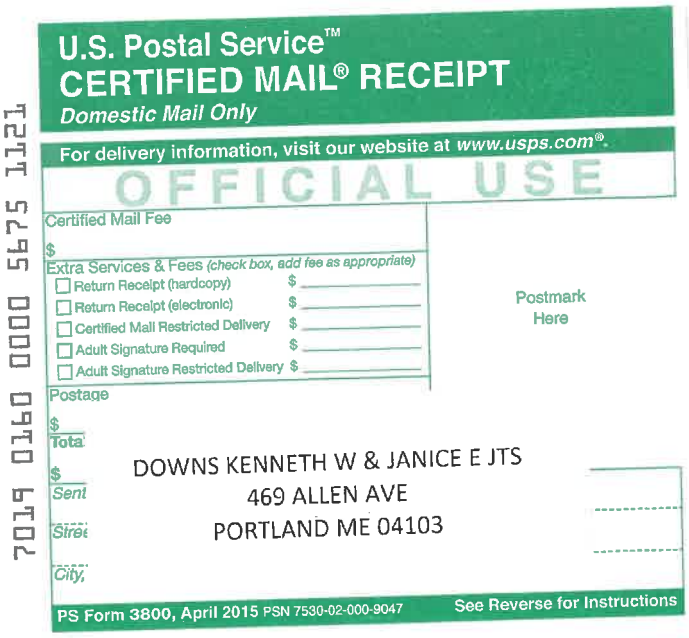
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DOWNS KENNETH W & JANICE E JTS
469 ALLEN AVE
PORTLAND ME 04103
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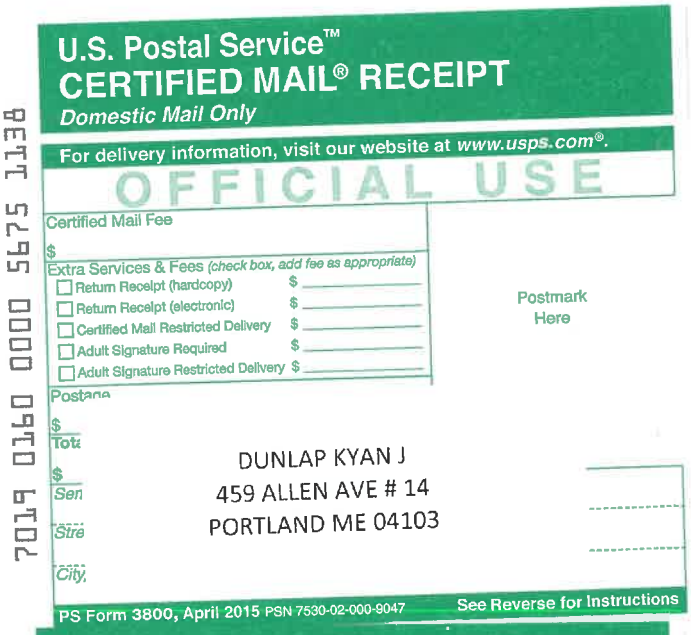
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DUNLAP KYAN J
459 ALLEN AVE # 14
PORTLAND ME 04103
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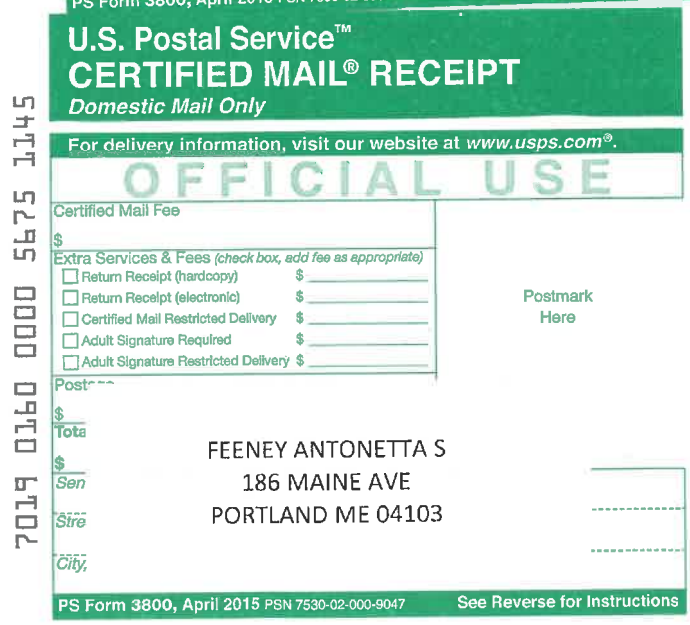
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FEENEY ANTONETTA S
186 MAINE AVE
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7019 0160 0000 5675 1145

7019 0160 0000 5675 1152

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2 WASHINGTON AVE
SCARBOROUGH ME 04074

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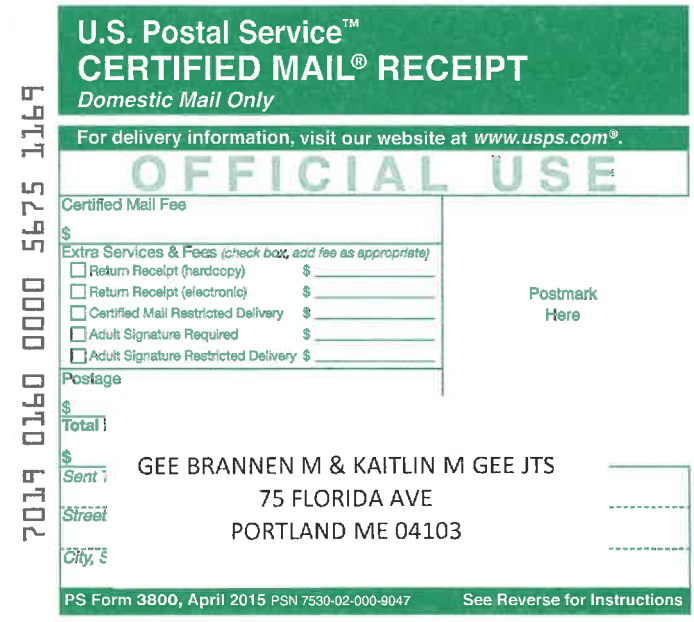

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75 FLORIDA AVE
PORTLAND ME 04103

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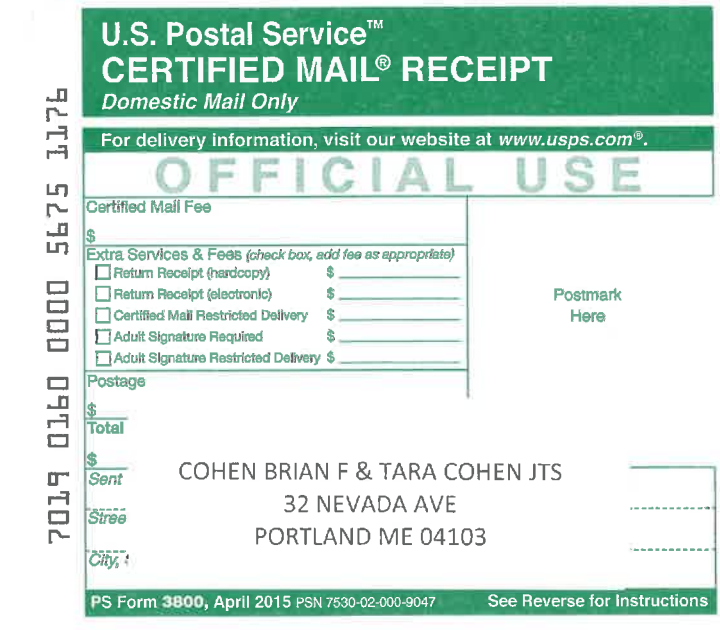

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COHEN BRIAN F & TARA COHEN JTS
32 NEVADA AVE
PORTLAND ME 04103

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CRABTREE VIRGINIA A
152 MAINE AVE
PORTLAND ME 04103

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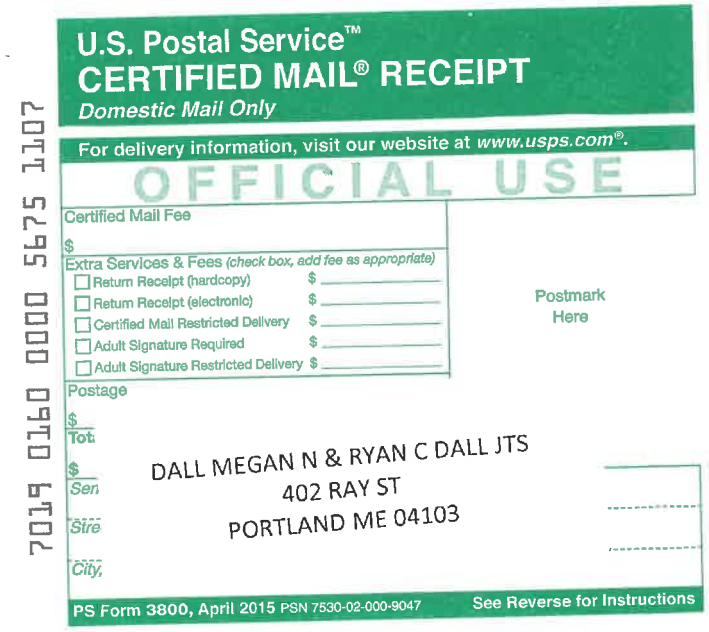

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DALL MEGAN N & RYAN C DALL JTS
402 RAY ST
PORTLAND ME 04103

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DIPIETRO DAVID
326 RAY ST
PORTLAND ME 04103

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CLARKIN REBECCA
8 NEVADA AVE
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CLEALE ELIZABETH & LEO SMITH
25 FLORIDA AVE
PORTLAND ME 04103

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COOMBS PATRICIA L
459 ALLEN AVE APT 24
PORTLAND ME 04103

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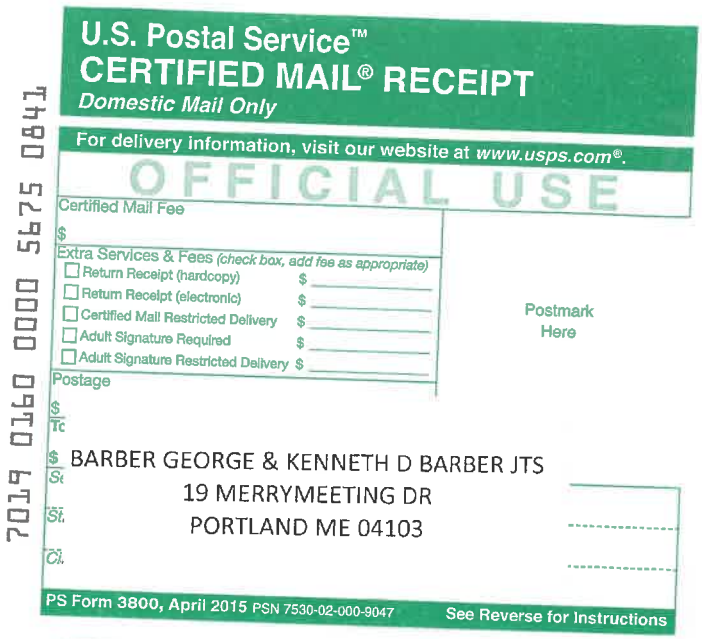
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BARBER GEORGE & KENNETH D BARBER JTS
19 MERRYMEETING DR
PORTLAND ME 04103
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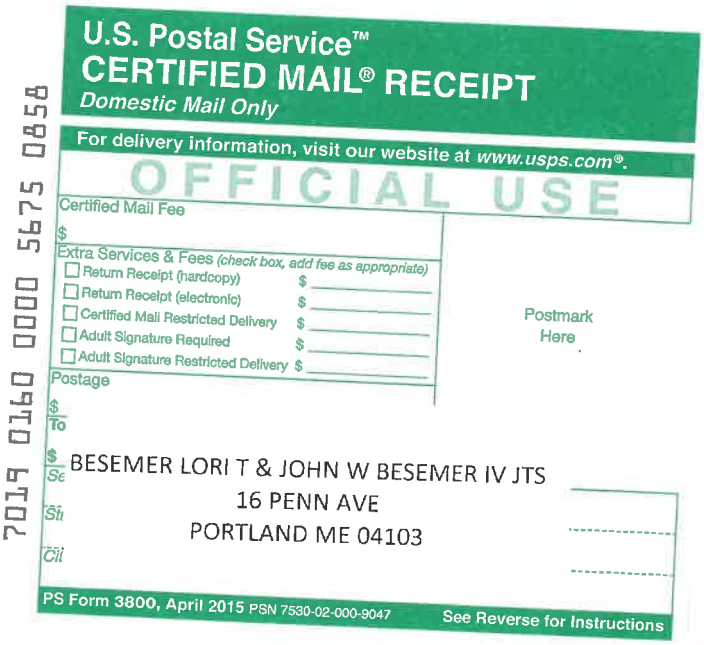
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BESEMER LORI T & JOHN W BESEMER IV JTS
16 PENN AVE
PORTLAND ME 04103
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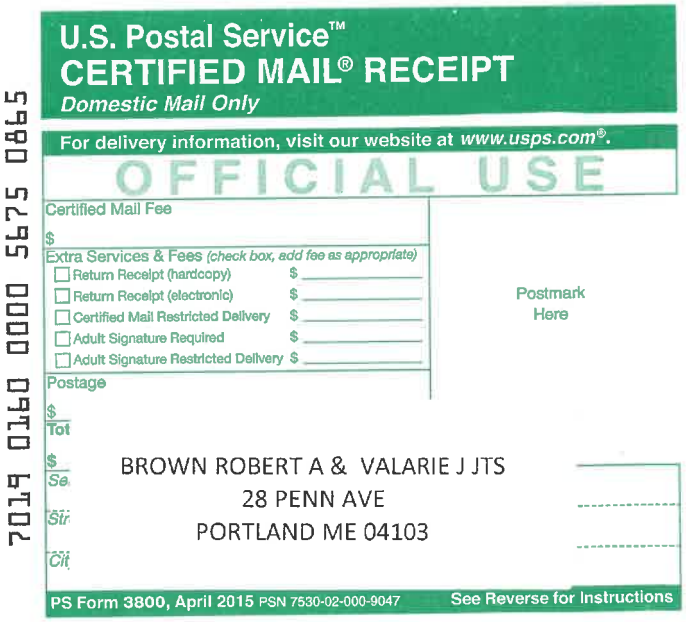
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BROWN ROBERT A & VALARIE J JTS
28 PENN AVE
PORTLAND ME 04103
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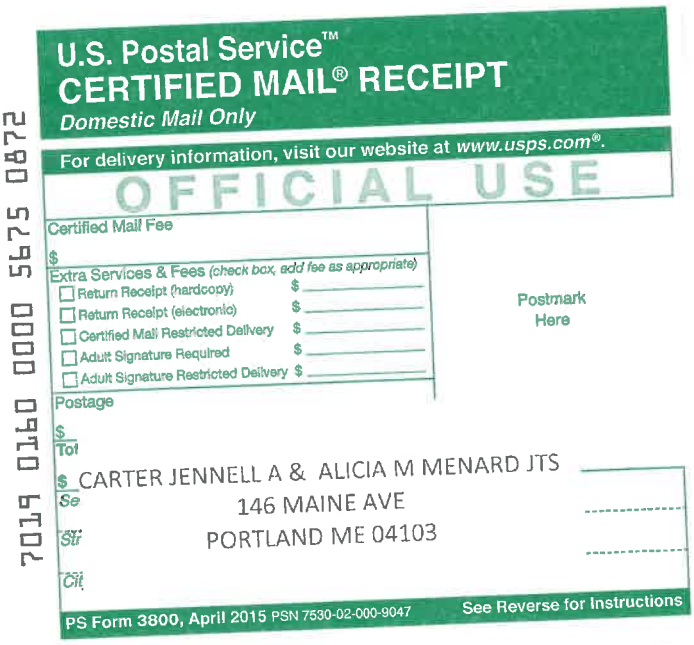

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CARTER JENNELL A & ALICIA M MENARD JTS
146 MAINE AVE
PORTLAND ME 04103

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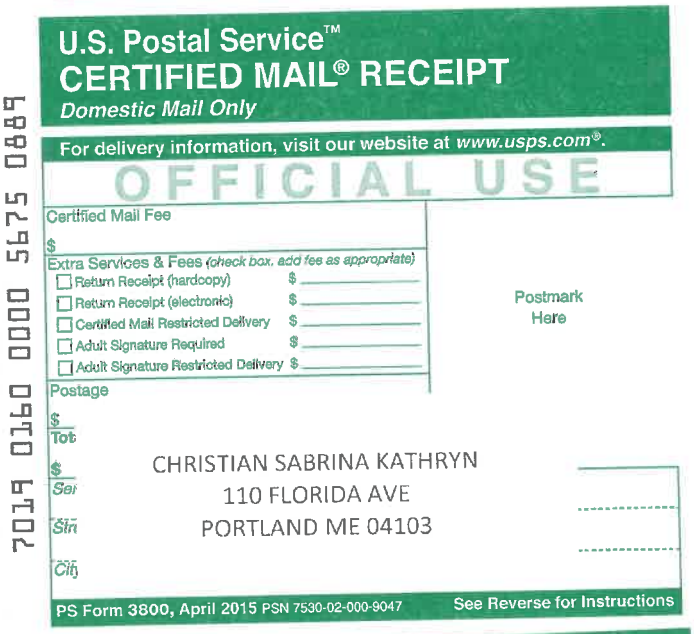

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CHRISTIAN SABRINA KATHRYN
110 FLORIDA AVE
PORTLAND ME 04103

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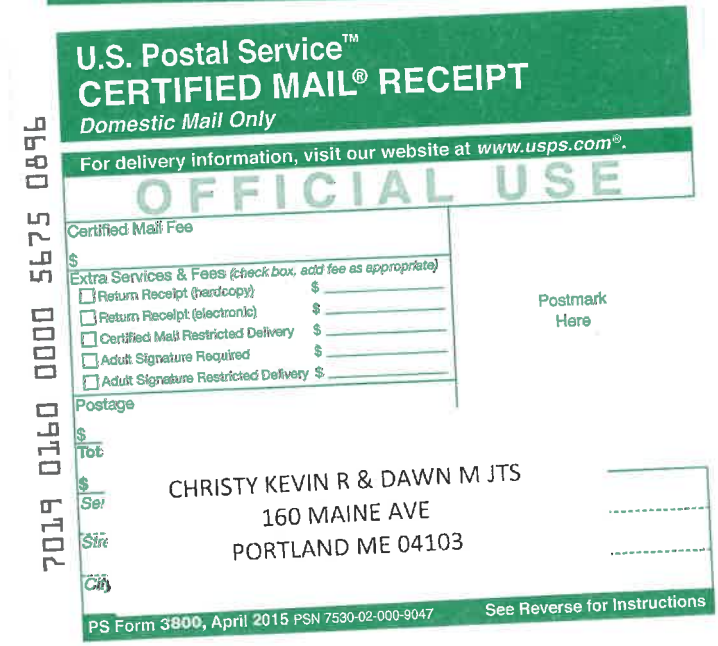

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CHRISTY KEVIN R & DAWN M JTS
160 MAINE AVE
PORTLAND ME 04103

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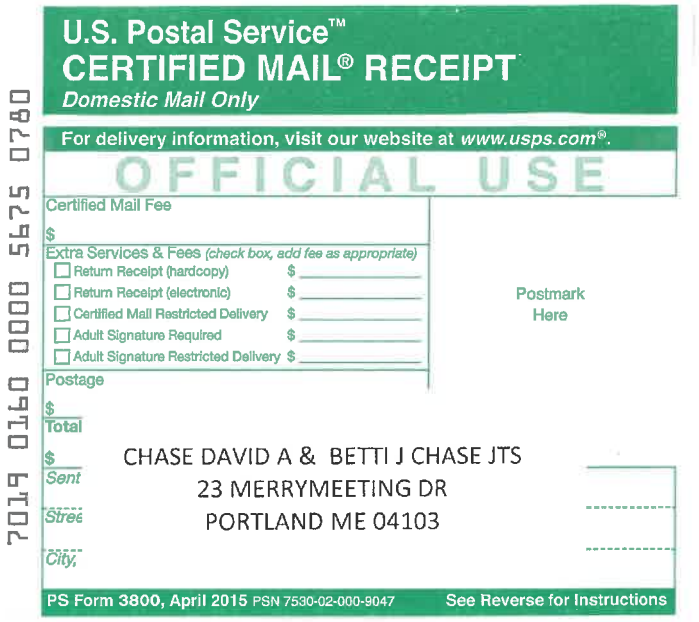

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CHASE DAVID A & BETTI J CHASE JTS
23 MERRYMEETING DR
PORTLAND ME 04103

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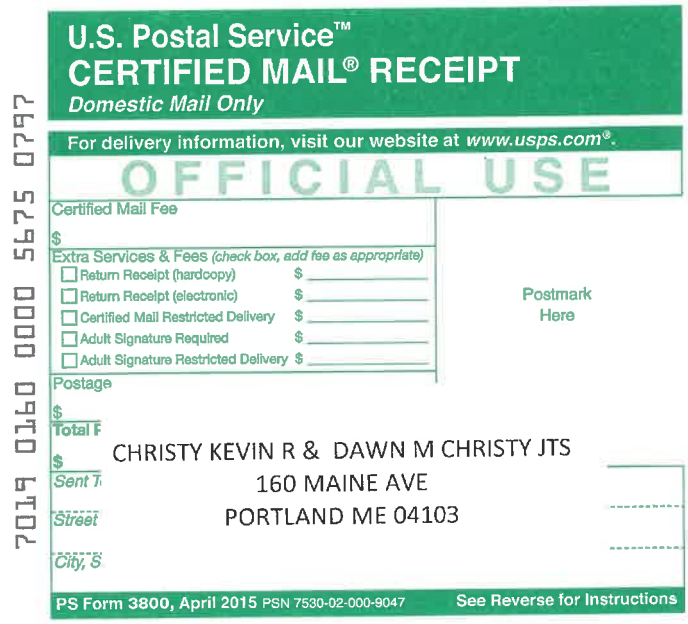

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7019 0160 0000 5675 0797

CHRISTY KEVIN R & DAWN M CHRISTY JTS
160 MAINE AVE
PORTLAND ME 04103

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7019 0160 0000 5675 0803

CLARK LESLIE M
12 TEXAS ST
PORTLAND ME 04103

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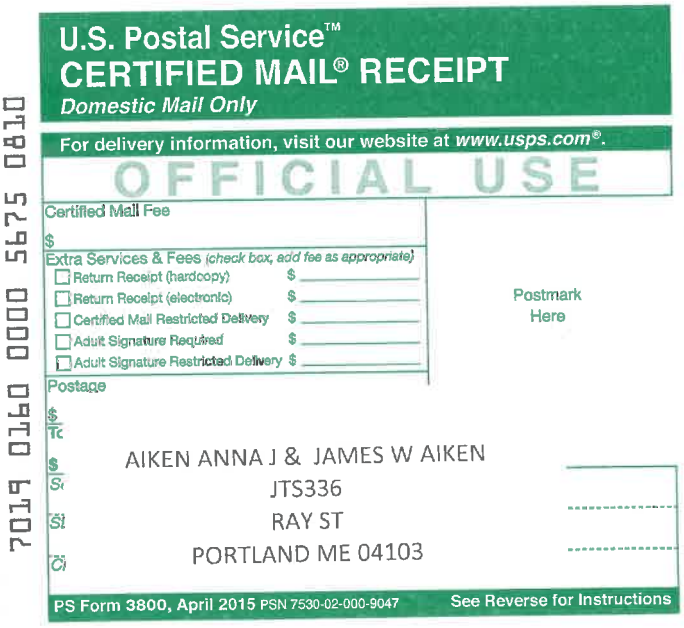

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AIKEN ANNA J & JAMES W AIKEN
JTS336
RAY ST
PORTLAND ME 04103

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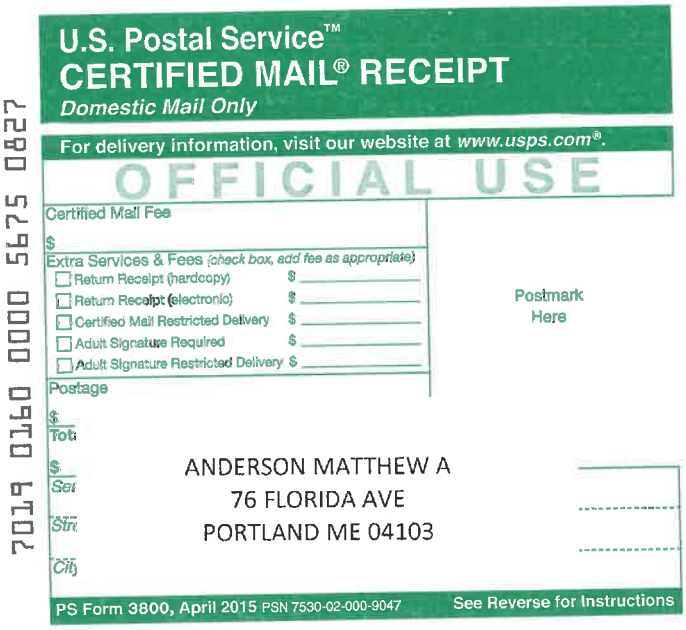

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7019 0160 0000 5675 0827

ANDERSON MATTHEW A
76 FLORIDA AVE
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ANDERSON-CHRISTIE SUZAN F & MARGERY C
SUDBAY JTS
21 MERRYMEETING DR
PORTLAND ME 04103

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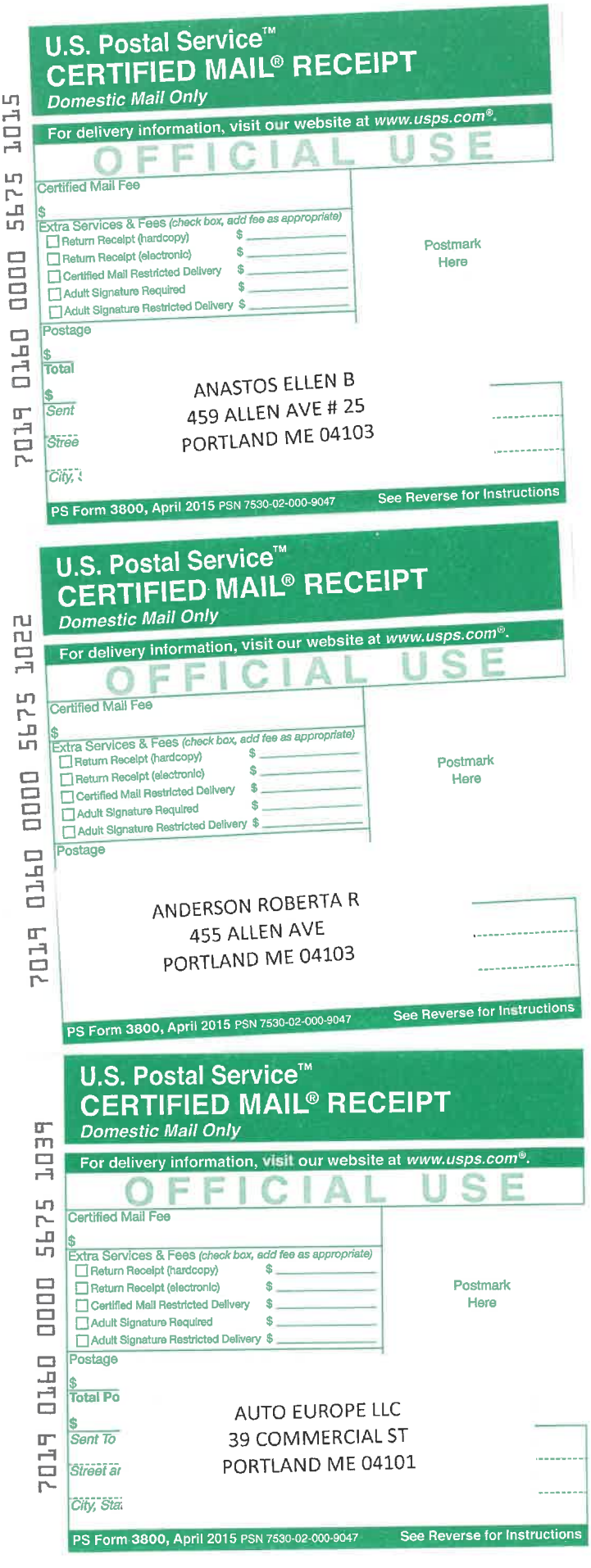

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ANASTOS ELLEN B
459 ALLEN AVE # 25
PORTLAND ME 04103

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ANDERSON ROBERTA R
455 ALLEN AVE
PORTLAND ME 04103

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AUTO EUROPE LLC
39 COMMERCIAL ST
PORTLAND ME 04101

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JTS
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459 ALLEN AVE # 4
City, S
PORTLAND ME 04103

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BORLAWSKY JOY M & MICHAEL J SR
62 FLORIDA AVE
PORTLAND ME 04103

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CARR HILARY
11 QUAIL TRL
BUXTON ME 04093

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BLUE WAGON LLC
41 GORE RD
RAYMOND ME 04071

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CAETANO VASCO
3 MERRYMEETING DR
PORTLAND ME 04103

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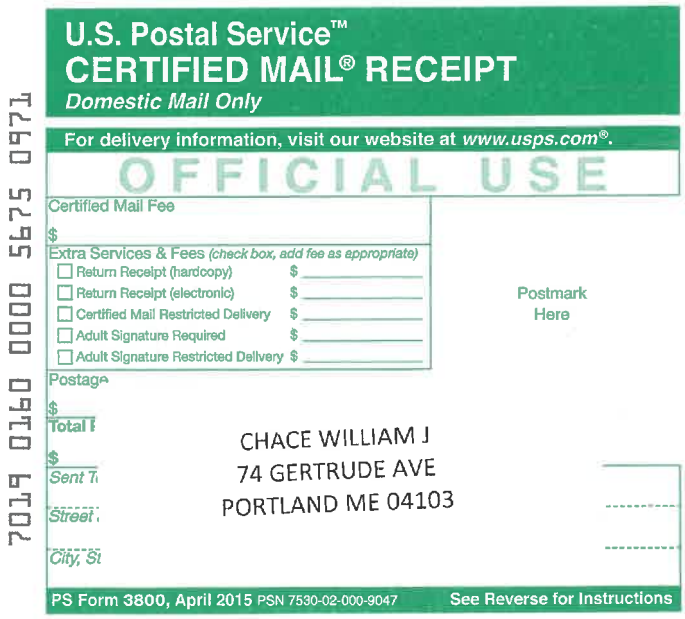

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CHACE WILLIAM J
74 GERTRUDE AVE
PORTLAND ME 04103

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CHRISTY ALEXIA L
156 MAINE AVE
PORTLAND ME 04103

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CHURCH RONALD C & DONNA I JTS
325 RAY ST
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ACHESON ANN W & JAMES M ACHESON
JTS28
MERRYMEETING DR
PORTLAND ME 04103

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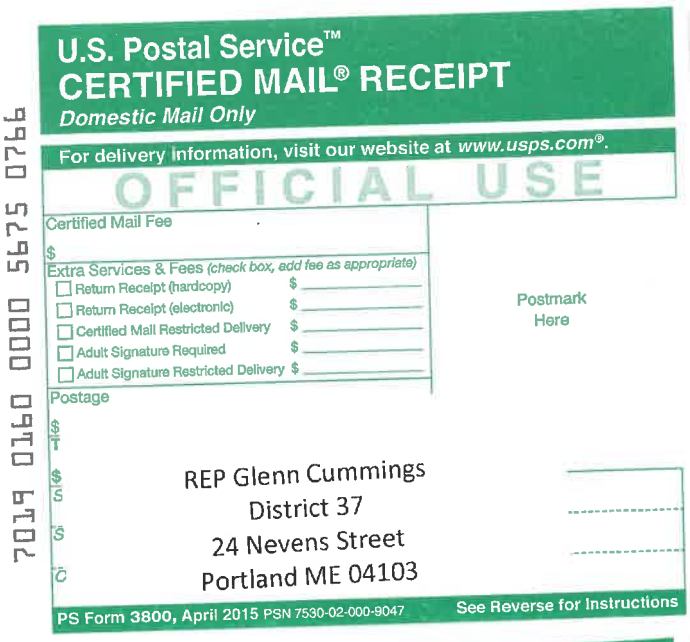

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REP Glenn Cummings
District 37
24 Nevens Street
Portland ME 04103

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9 NEVADA LLC
111 POND RD
NEW GLOUCESTER ME 04260

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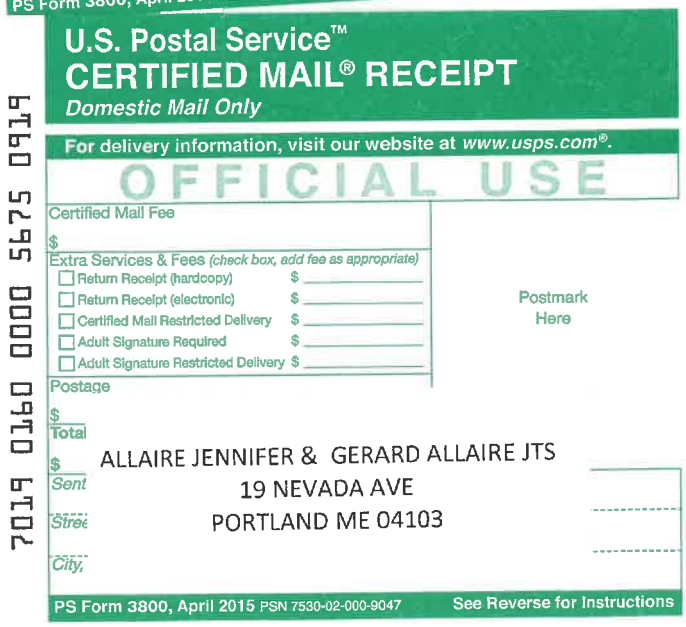

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ALLAIRE JENNIFER & GERARD ALLAIRE JTS
19 NEVADA AVE
PORTLAND ME 04103

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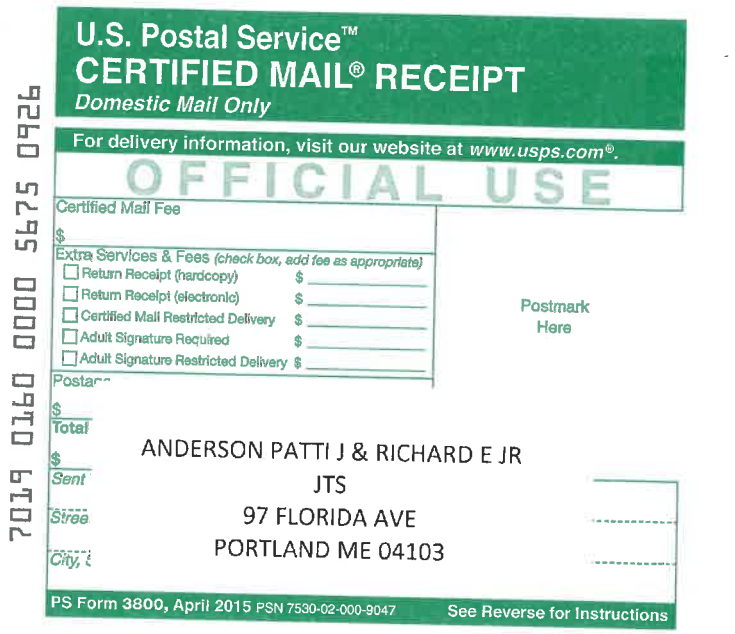

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ANDERSON PATTI J & RICHARD E JR
JTS
97 FLORIDA AVE
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7019 0160 0000 5675 0933

ATTIX LEE & SUSAN ROWAN JTS
18 MERRYMEETING DR
PORTLAND ME 04103

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BASSETT SANDRA J
12 VERMONT AVE
PORTLAND ME 04103

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Janice Carpenter
9 W. Commonwealth Drive
Portland ME 04103

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Len Anderson
543 Allen Avenue
Portland ME 04103

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Vahan Tufankijan
Seaside Healthcare
850 Baxter Boulevard
Portland ME 04103
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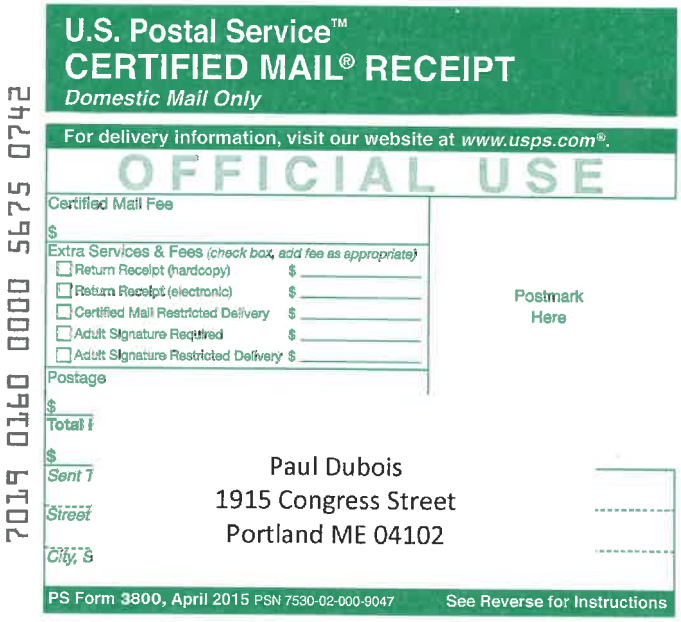
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Paul Dubois
1915 Congress Street
Portland ME 04102
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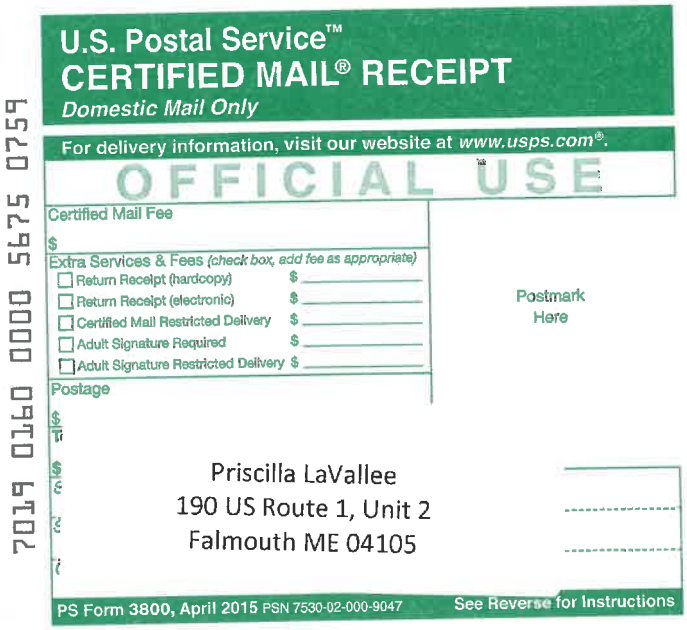
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Priscilla LaVallee
190 US Route 1, Unit 2
Falmouth ME 04105
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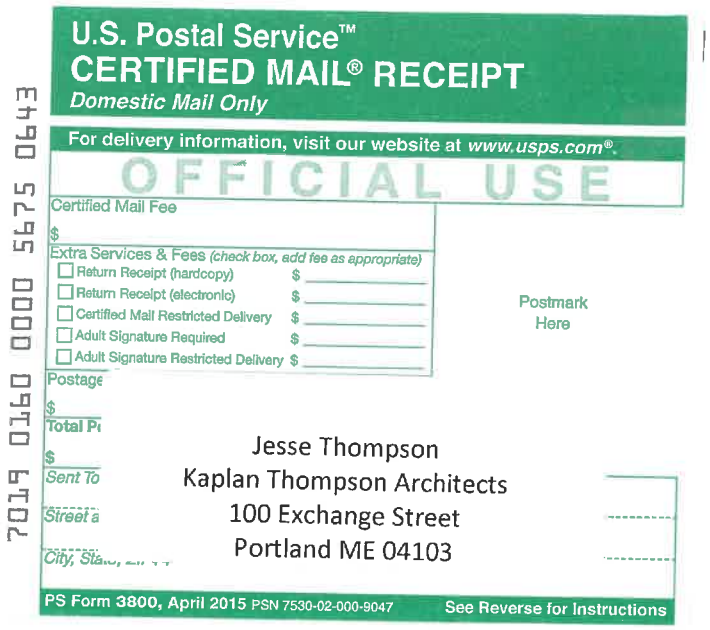
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Jesse Thompson
Kaplan Thompson Architects
100 Exchange Street
Portland ME 04103
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7019 0160 0000 5675 0643

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Mary Griffity
6 E. Prom, Unit #2
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
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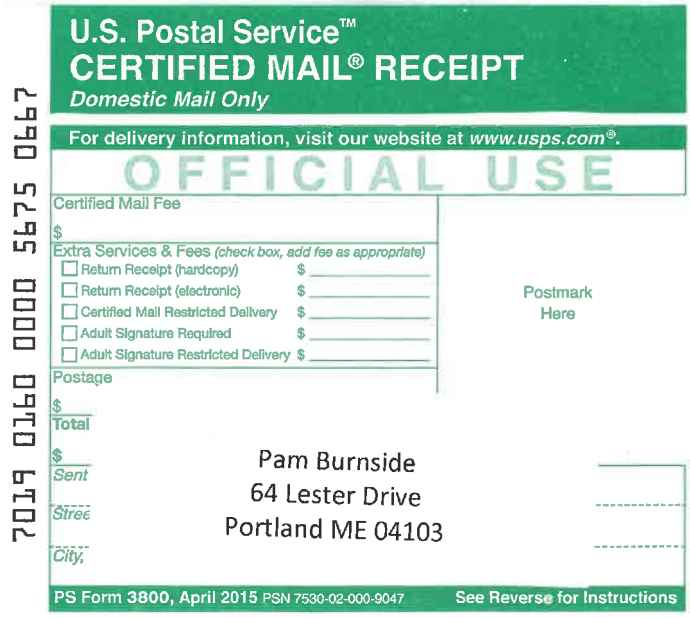
7019 0160 0000 5675 0650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Pam Burnside
64 Lester Drive
Portland ME 04103
PS Form 3800, April 2015 PSN 7530-02-000-9047
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7019 0160 0000 5675 0674

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Philip Haughey
1660 Soldiers Field Road
Boston MA 02135

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REP Benjamin Dudley III
District 30
9 Ponce Street
Portland ME 04101

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Chris Castelsky
Fairpoint Communications
521 East Morehead Street
Charlotte NC 28202

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7019 0160 0000 5675 0582

Peggy Morin
66 Farnham Street
Portland ME 04101

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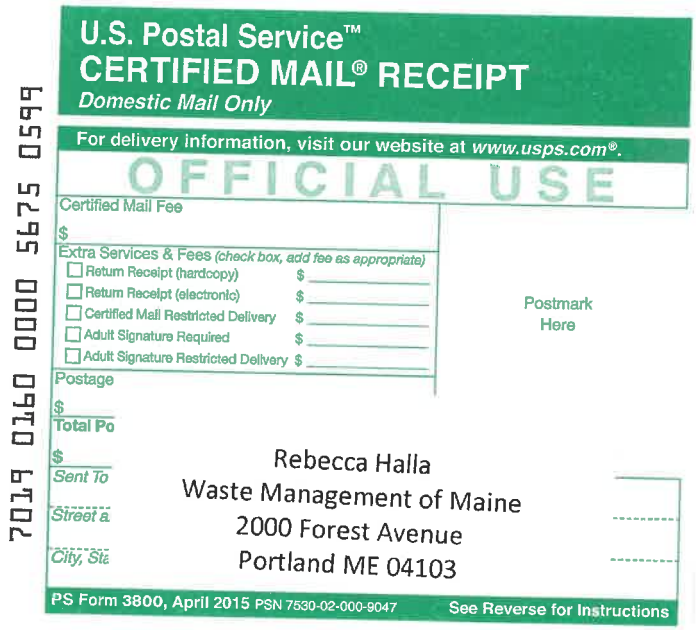

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Rebecca Halla
Waste Management of Maine
2000 Forest Avenue
Portland ME 04103

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Robert Hains
250 Holm Avenue
Portland ME 04102-1208

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Barbara Wood
125 Emery Street
Portland ME 04102

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Deb Keenan
28 Dorothy Street
Portland ME 04103

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Greater Portland Council of Governments
970 Baxter Blvd., 2nd Floor
Portland ME 04103

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Anthony Donovan
27 Riverview Street
Portland ME 04102
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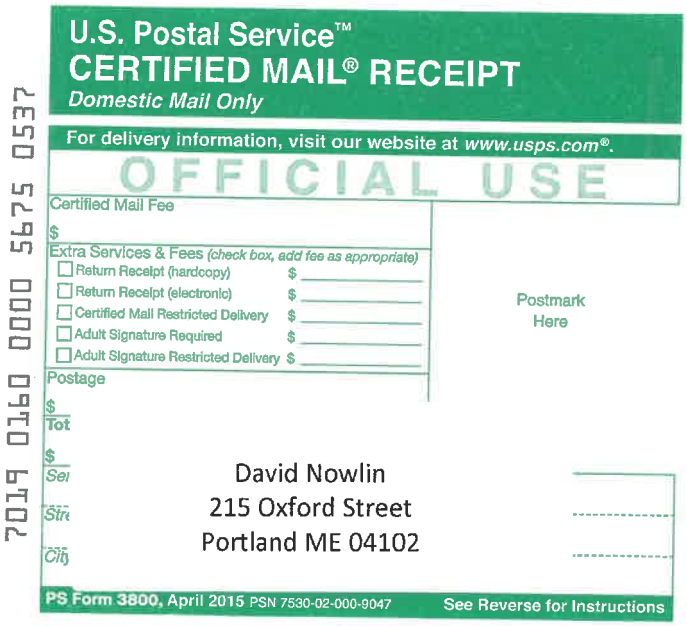
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David Nowlin
215 Oxford Street
Portland ME 04102
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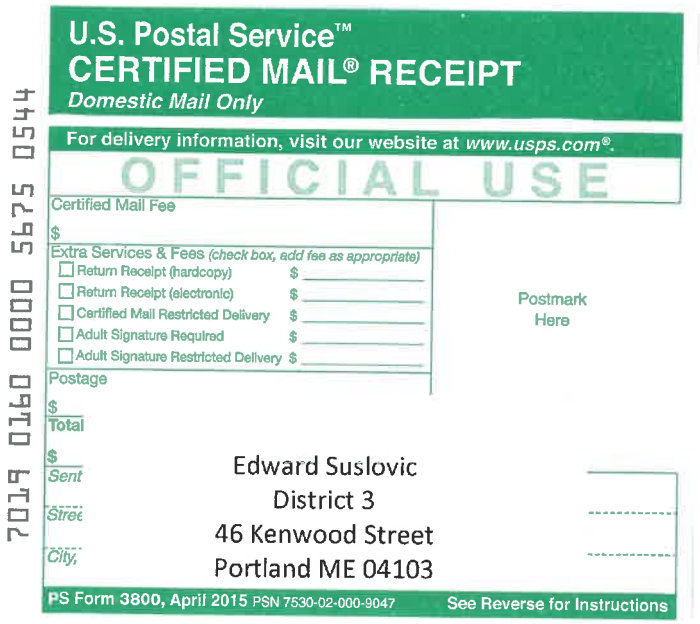
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7019 0160 0000 5675 0544
Edward Suslovic
District 3
46 Kenwood Street
Portland ME 04103
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Jennifer Munson
City of Portland
389 Congress Street
Portland ME 04101
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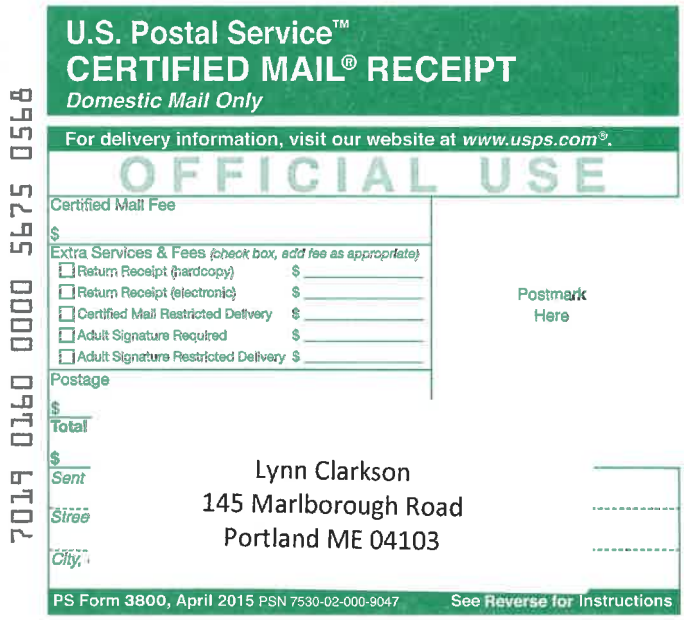
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7019 0160 0000 5675 0568
Lynn Clarkson
145 Marlborough Road
Portland ME 04103
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7019 0160 0000 5675 0575
Nancy Bartlett
PO Box 7965
Portland ME 04112
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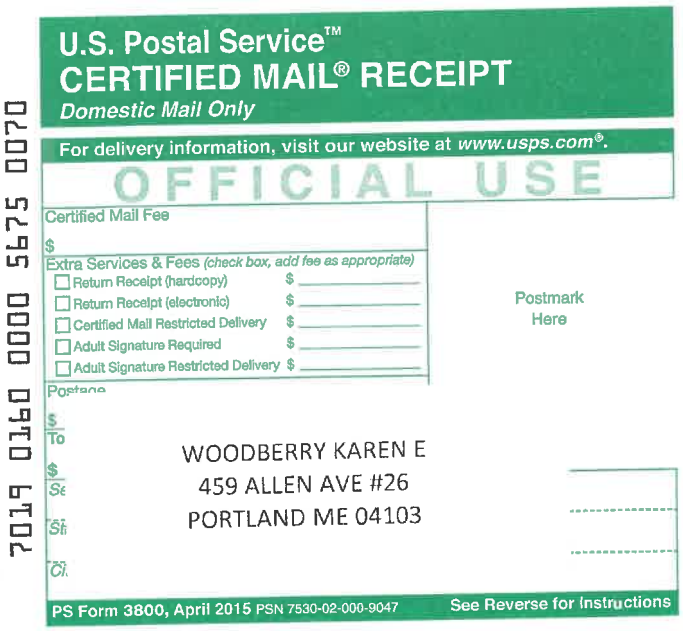
7019 0160 0000 5675 0070



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WOODBERRY KAREN E
459 ALLEN AVE #26
PORTLAND ME 04103

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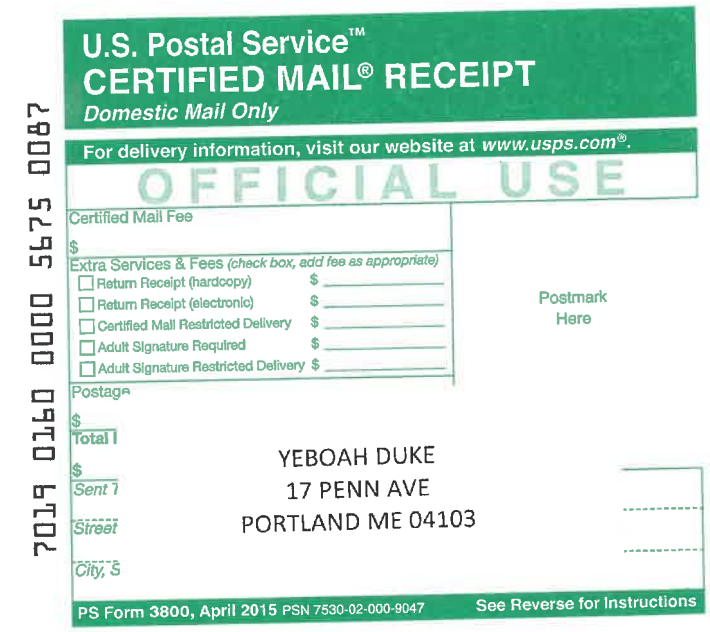

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YEBOAH DUKE
17 PENN AVE
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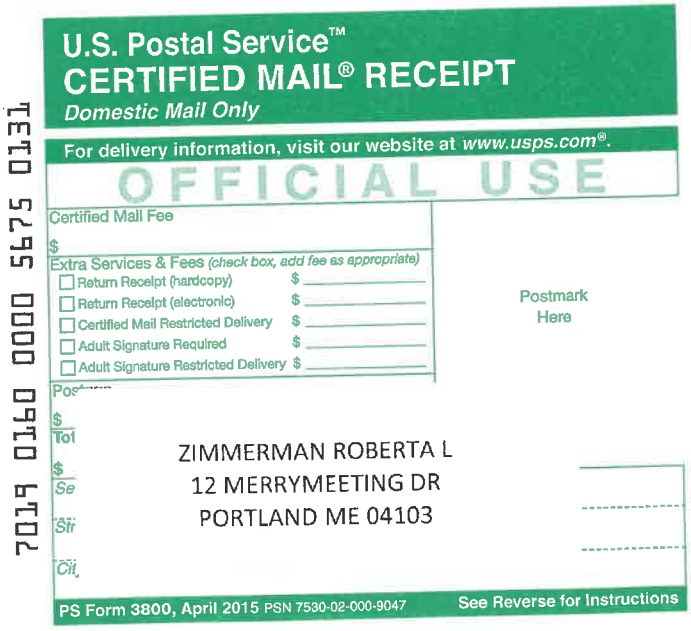

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12 MERRYMEETING DR
PORTLAND ME 04103

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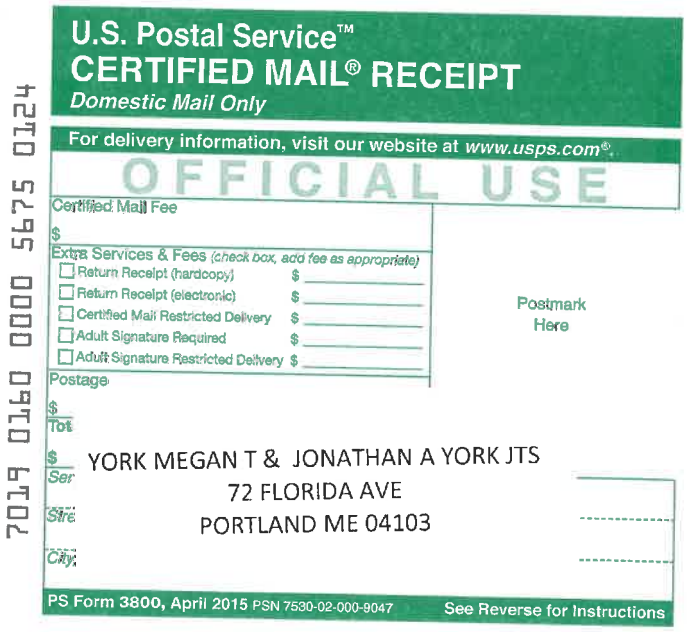

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YORK MEGAN T & JONATHAN A YORK JTS
72 FLORIDA AVE
PORTLAND ME 04103

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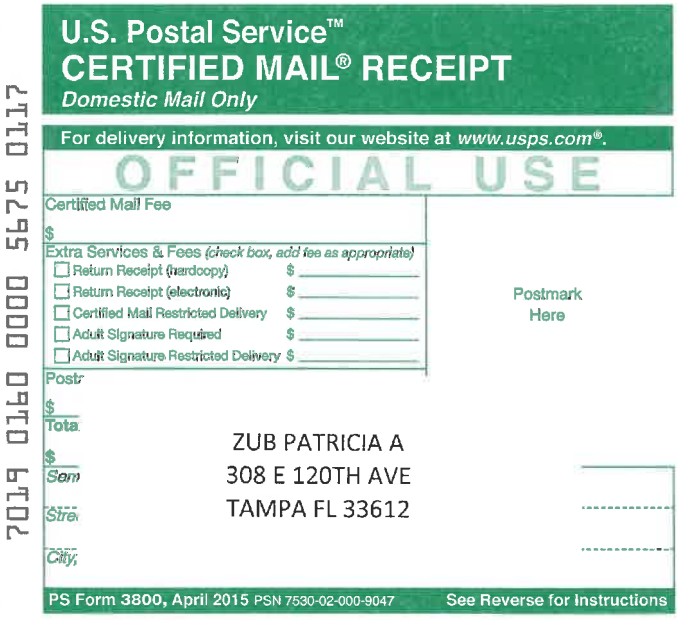

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ZUB PATRICIA A
308 E 120TH AVE
TAMPA FL 33612

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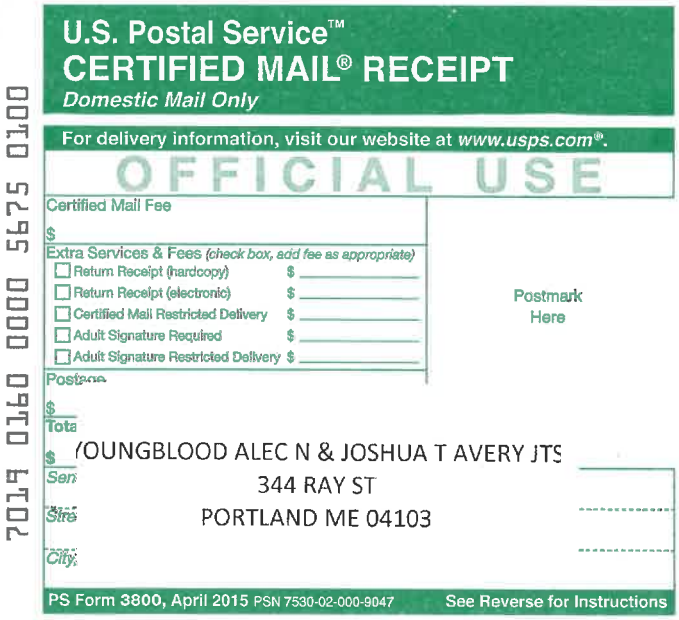

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YOUNGBLOOD ALEC N & JOSHUA T AVERY JTS
344 RAY ST
PORTLAND ME 04103

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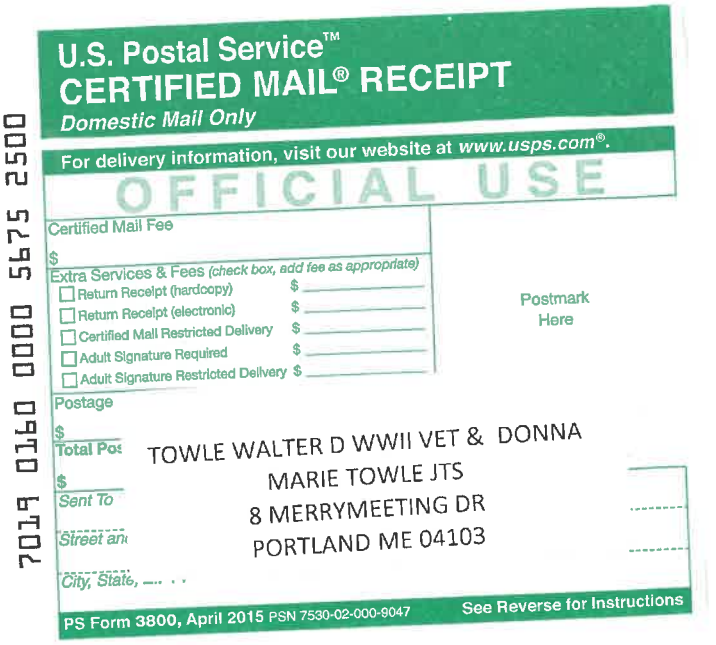

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TOWLE WALTER D WWII VET & DONNA
MARIE TOWLE JTS
8 MERRYMEETING DR
PORTLAND ME 04103

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TUTOR THOMAS L
20 VERMONT AVE
PORTLAND ME 04103

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WAGNER THERESA
65 WHITNEY FARM RD
NORTH YARMOUTH ME 04097

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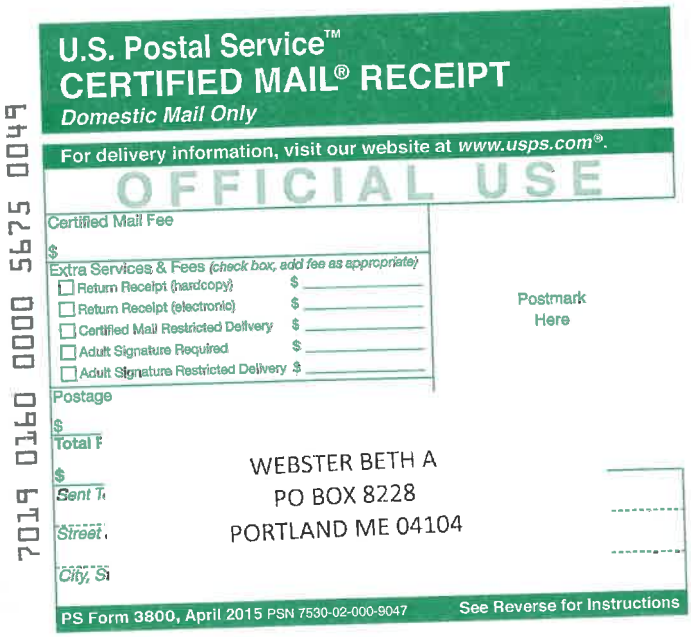

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WEBSTER BETH A
PO BOX 8228
PORTLAND ME 04104

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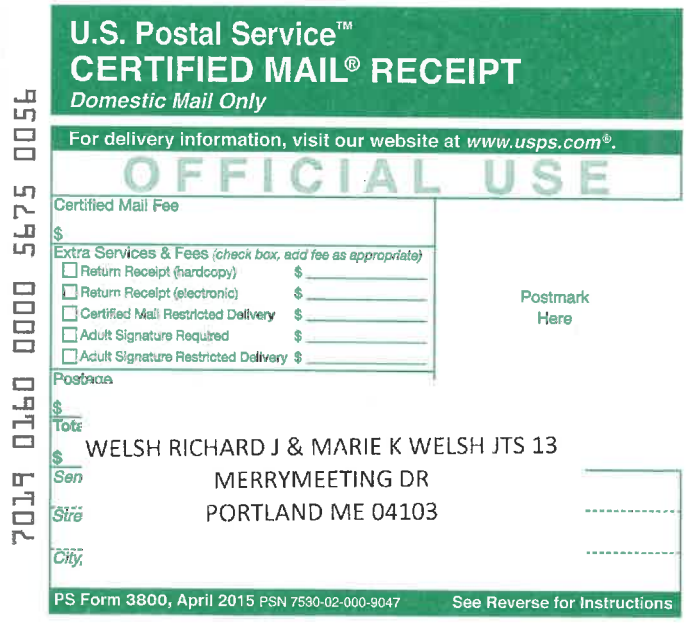

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WELSH RICHARD J & MARIE K WELSH JTS 13
MERRYMEETING DR
PORTLAND ME 04103

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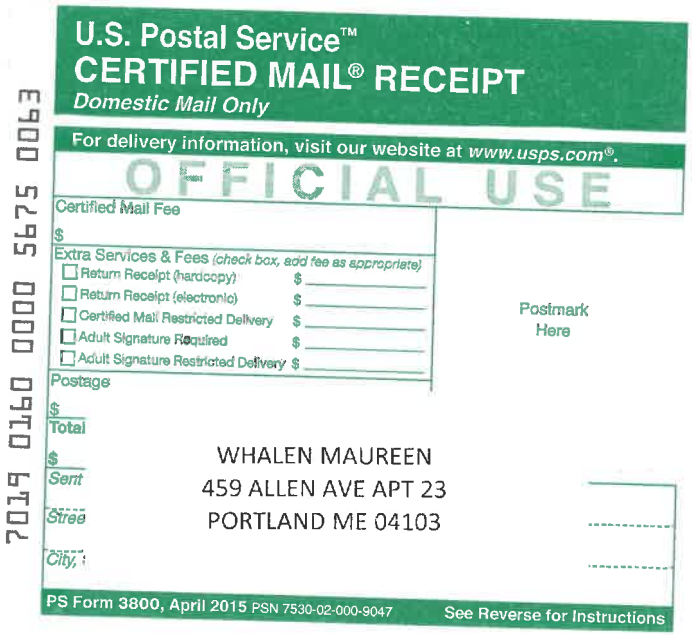

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WHALEN MAUREEN
459 ALLEN AVE APT 23
PORTLAND ME 04103

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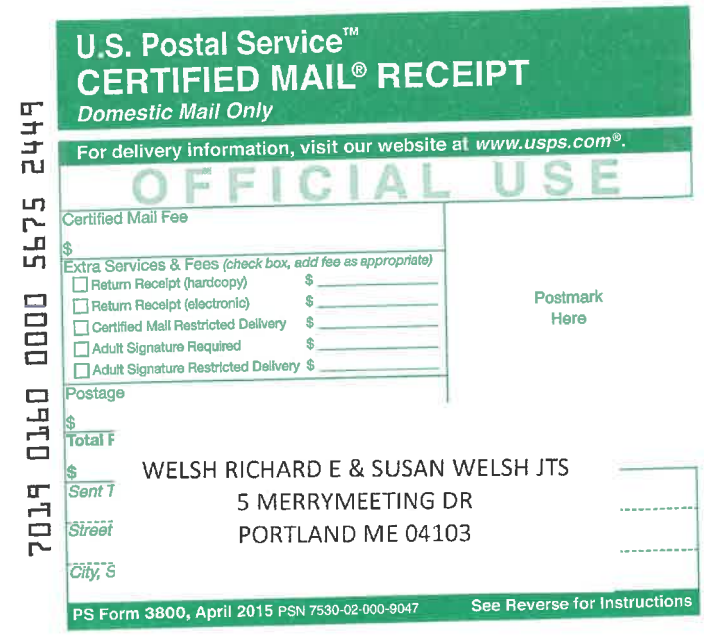

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WELSH RICHARD E & SUSAN WELSH JTS
5 MERRYMEETING DR
PORTLAND ME 04103

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WGME INC
81 NORTHPORT DR
PORTLAND ME 04103

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7019 0160 0000 5675 2463

WHITNEY LEE ANN
1 MERRYMEETING DR
PORTLAND ME 04103

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SNOW CORY & SHEILA J SULLIVAN JTS
398 RAY ST
PORTLAND ME 04103

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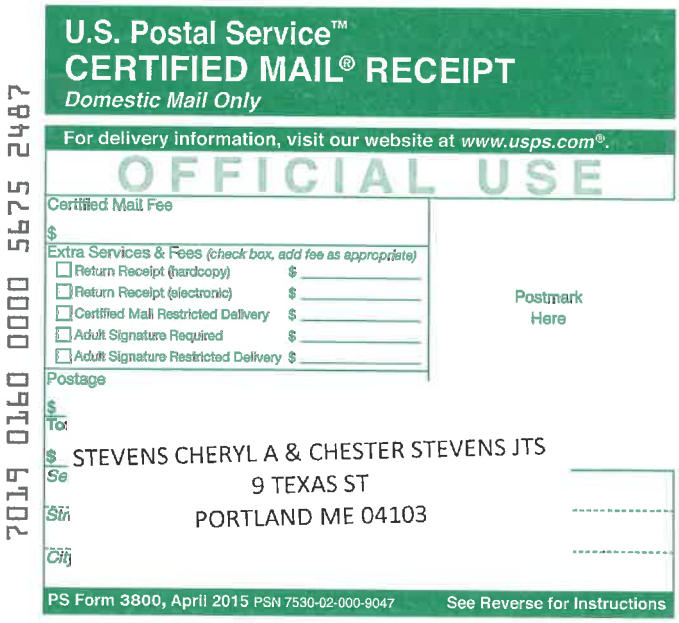

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STEVENS CHERYL A & CHESTER STEVENS JTS
9 TEXAS ST
PORTLAND ME 04103

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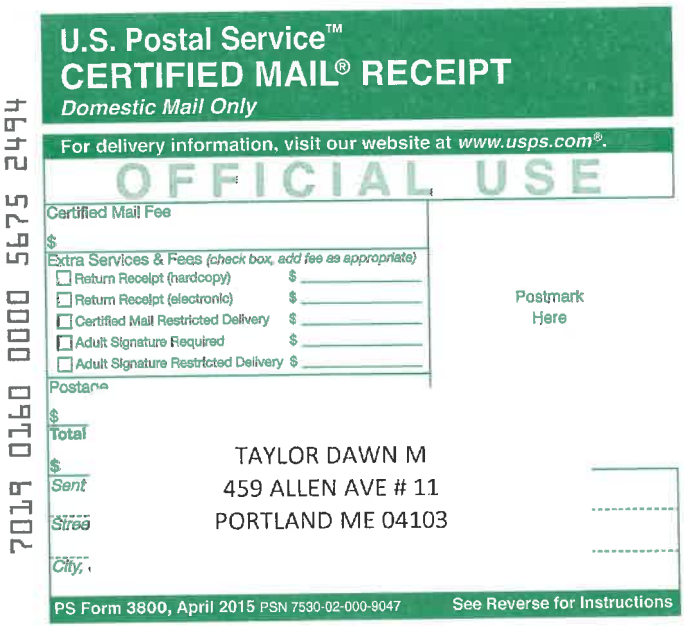

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TAYLOR DAWN M
459 ALLEN AVE # 11
PORTLAND ME 04103

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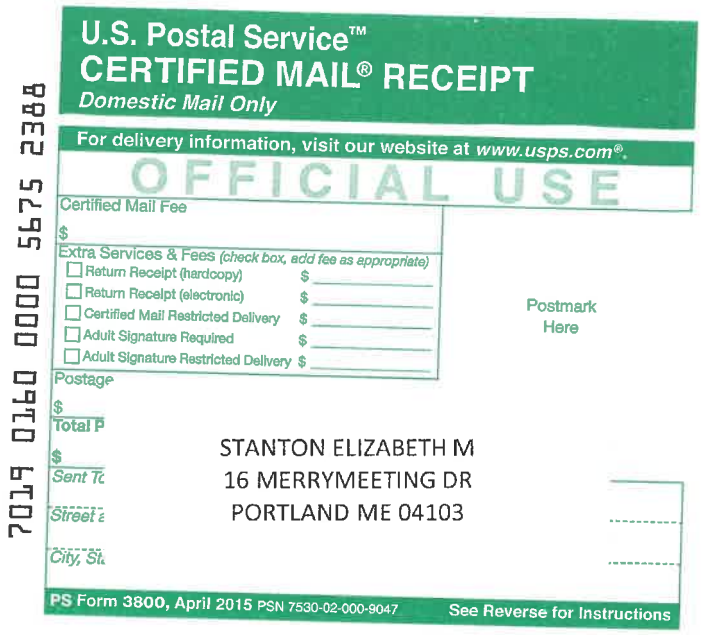

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STANTON ELIZABETH M
16 MERRYMEETING DR
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TALBOT JOSEPH F & JUDITH A HARRIS JTS
16 NEVADA AVE
PORTLAND ME 04103

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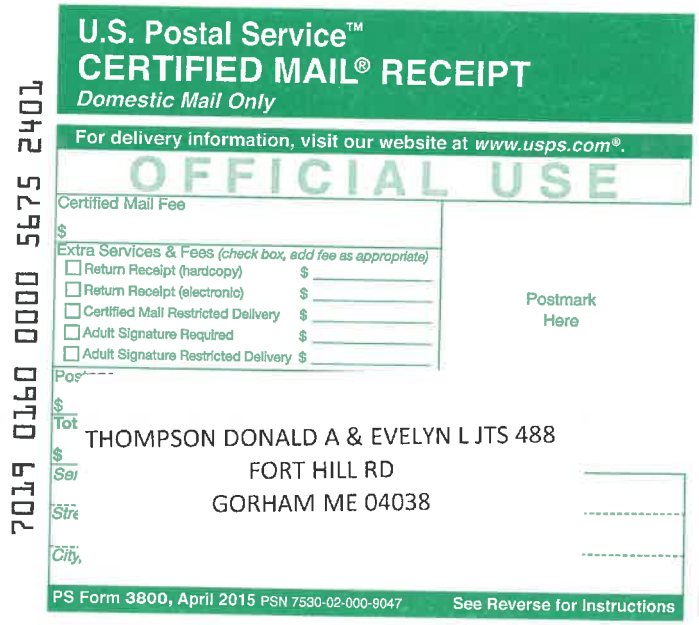

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THOMPSON DONALD A & EVELYN L JTS 488
FORT HILL RD
GORHAM ME 04038

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TURNER CAROL A & SUSAN C VILLETTA JTS
18 WISEMAN ST
NEWPORT ME 04953

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URBACH PAULA M
92 FLORIDA AVE
PORTLAND ME 04103

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WEBB MARILYN D
340 RAY ST
PORTLAND ME 04103

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To
UMBEL WILLIAM R
122 GERTRUDE AVE
PORTLAND ME 04103

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To
WARREN JARED P
459 ALLEN AVE #7 P
ORTLAND ME 04103

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To
WEISS LISA KOCH & LAURA JEAN WEISS JTS
35 HAMMOND ST
PORTLAND ME 04101

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WELTY MARTHA & CHARLES WELTY JTS
4 MERRYMEETING DR
PORTLAND ME 04103

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WHIPKEY RENEE & RYAN WHIPKEY JTS
22 PENN AVE P
ORTLAND ME 04103

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SMITH JASON D & LAURIE R SMITH JTS 354
RAY ST
PORTLAND ME 04103

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RODNEY ROBERT J II & CHRISTINE A RODNEY
JTS
121 WALTON ST
PORTLAND ME 04103

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ROY KIMBERLY A
459 ALLEN AVE # 2
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SCHOLZ JOHN M
334 RAY ST
PORTLAND ME 04103

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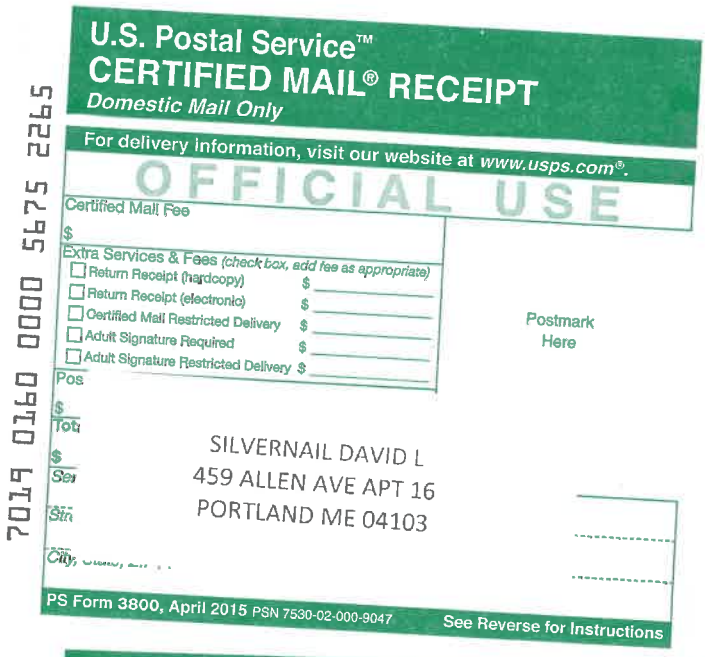

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SILVERNAIL DAVID L
459 ALLEN AVE APT 16
PORTLAND ME 04103

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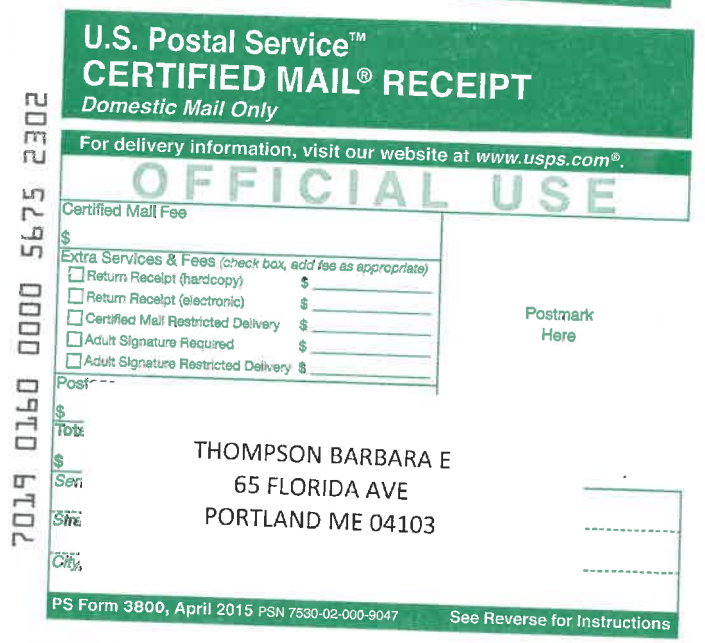

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THOMPSON BARBARA E
65 FLORIDA AVE
PORTLAND ME 04103

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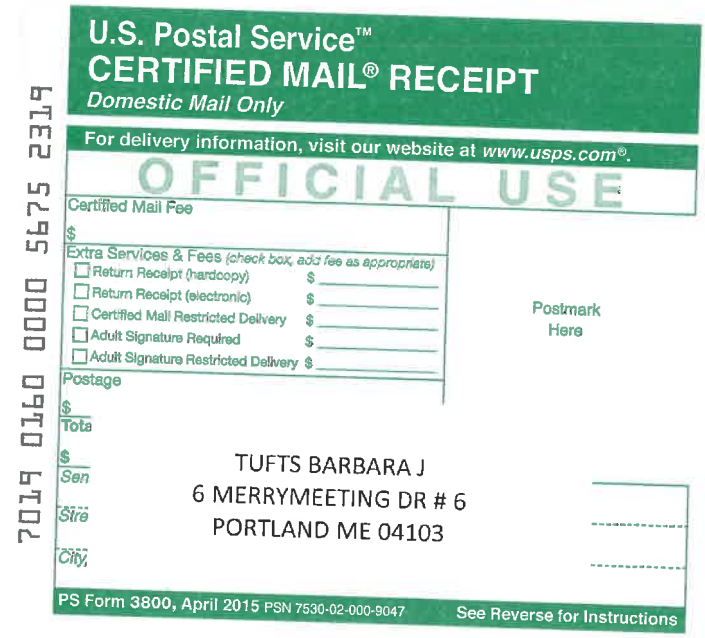

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TUFTS BARBARA J
6 MERRYMEETING DR # 6
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34 JERSEY AVE
PORTLAND ME 04103

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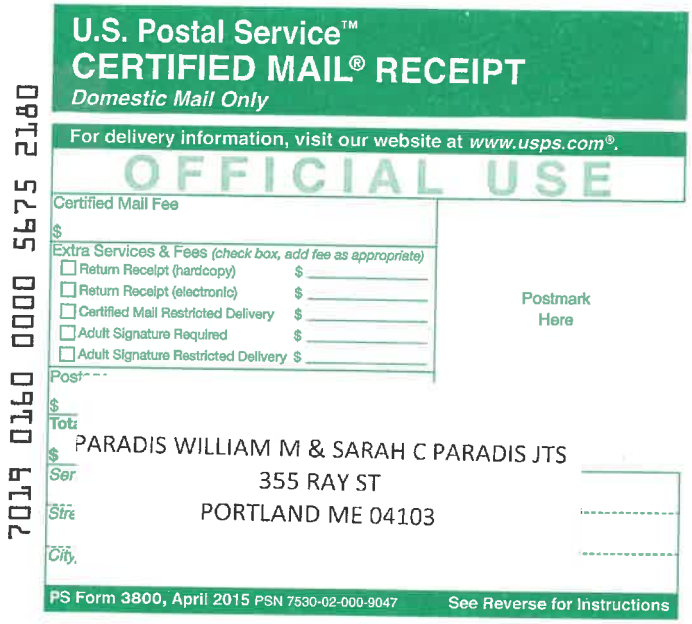

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PARADIS WILLIAM M & SARAH C PARADIS JTS
355 RAY ST
PORTLAND ME 04103

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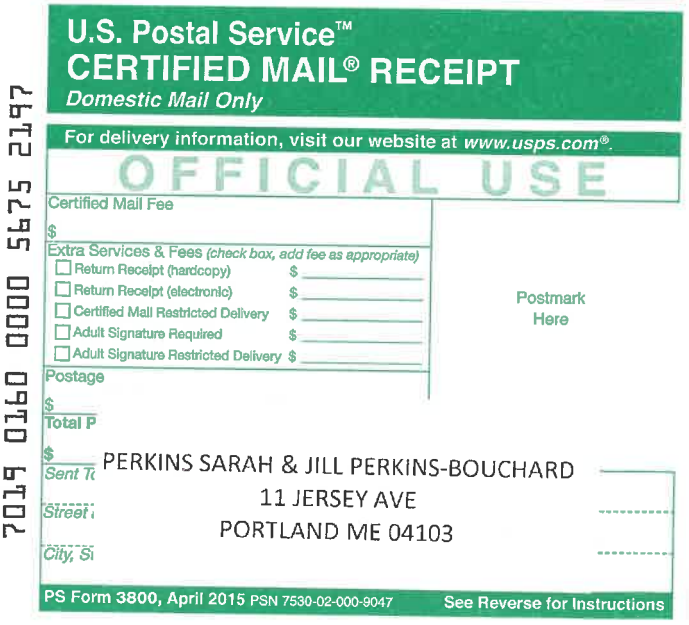

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PERKINS SARAH & JILL PERKINS-BOUCHARD
11 JERSEY AVE
PORTLAND ME 04103

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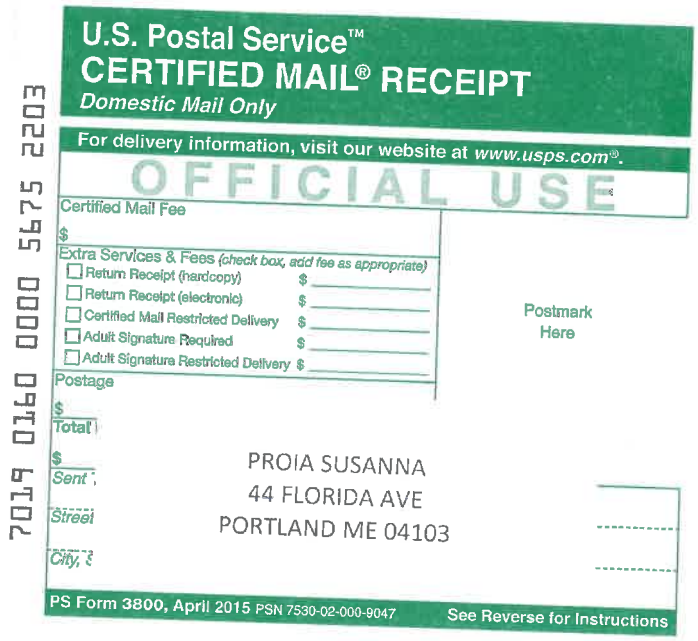

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PROIA SUSANNA
44 FLORIDA AVE
PORTLAND ME 04103

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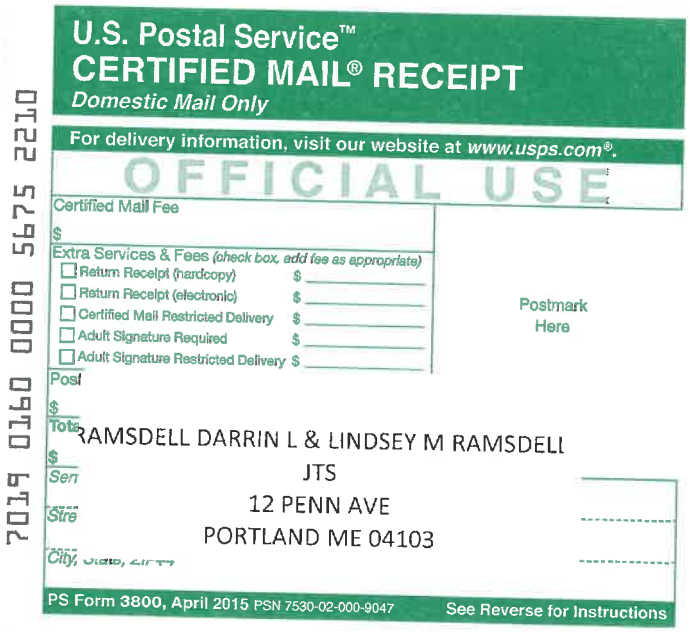

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RAMSDELL DARRIN L & LINDSEY M RAMSDELL
JTS
12 PENN AVE
PORTLAND ME 04103

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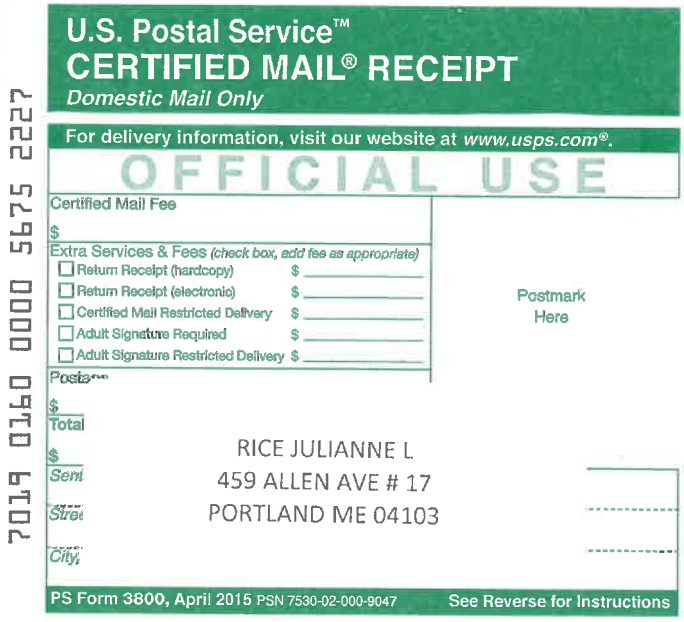

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RICE JULIANNE L
459 ALLEN AVE # 17
PORTLAND ME 04103

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7019 0160 0000 5675 2128

REGAN BRENDAN S
114 FLORIDA AVE
PORTLAND ME 04103

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QUINN SUSAN LOUISE
35 NEVADA AVE
PORTLAND ME 04103

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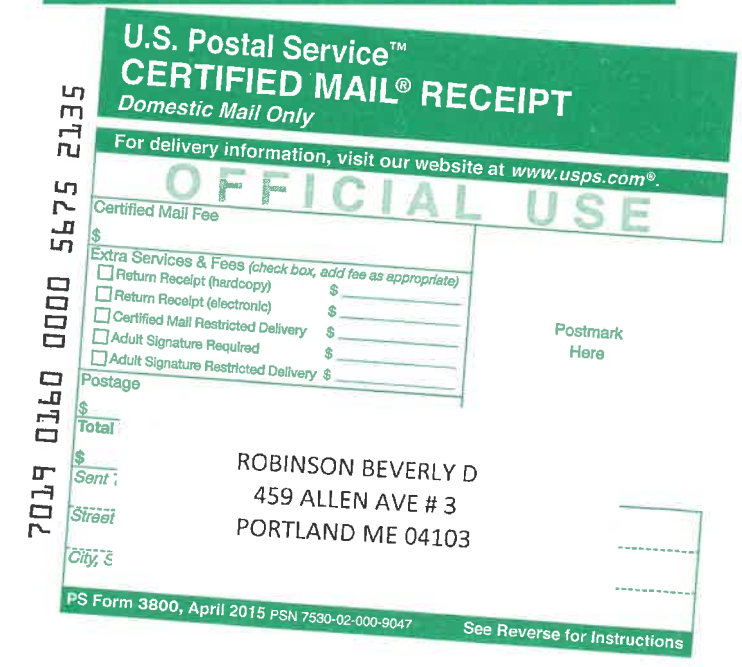

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459 ALLEN AVE # 3
PORTLAND ME 04103

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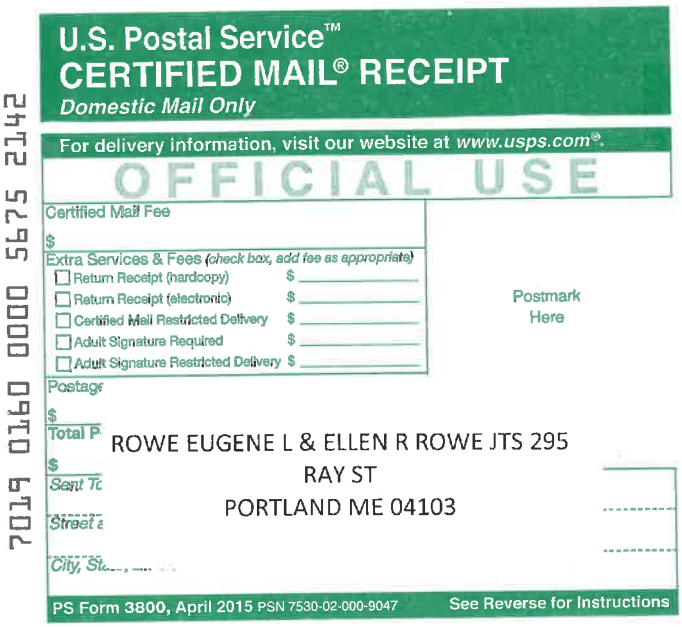

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ROWE EUGENE L & ELLEN R ROWE JTS 295
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PORTLAND ME 04103

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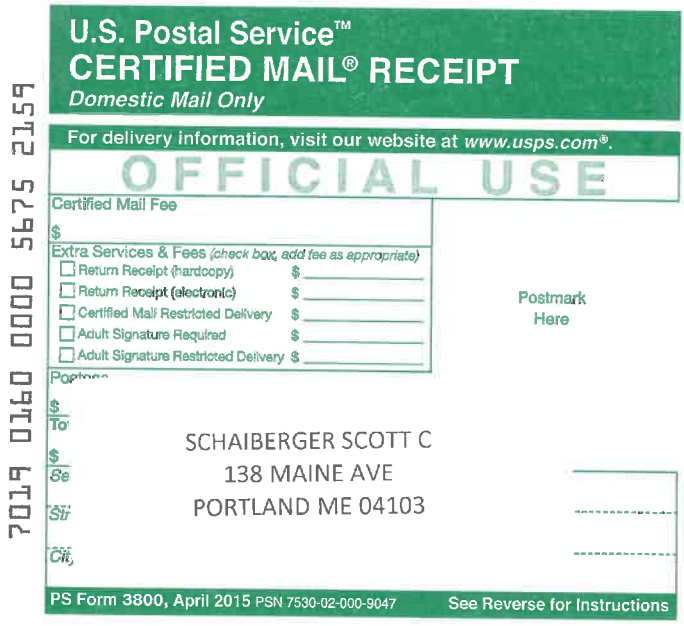

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SCHAIBERGER SCOTT C
138 MAINE AVE
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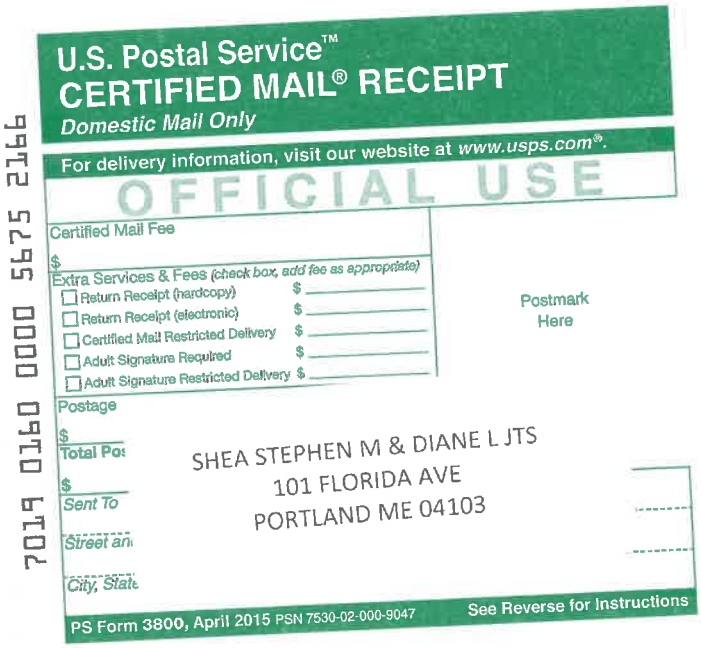

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SHEA STEPHEN M & DIANE L JTS
101 FLORIDA AVE
PORTLAND ME 04103

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RUTHERFORD PATRIIA A
28 JERSEY AVE
PORTLAND ME 04103

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SENDZE KATIE
459 ALLEN AVE # 21
PORTLAND ME 04103

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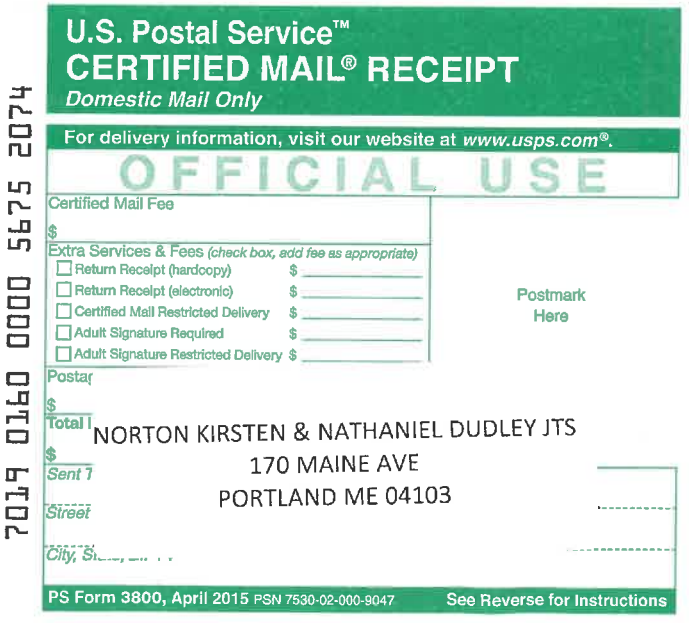

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NORTON KIRSTEN & NATHANIEL DUDLEY JTS
170 MAINE AVE
PORTLAND ME 04103

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PACKARD MARY A & AMANDA M & ALICIA L
PACKARD
106 FLORIDA AVE
PORTLAND ME 04103

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PELLETIER ANGELA M
128 MAINE AVE
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PRESTON SHANNON R & RYAN VICTOR
JAROCHYM JTS
12 JERSEY AVE
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O'SULLIVAN PADRAIG N & SARAH E GODFREY
JTS 406 RAY ST ~~PORTLAND ME 04103~~
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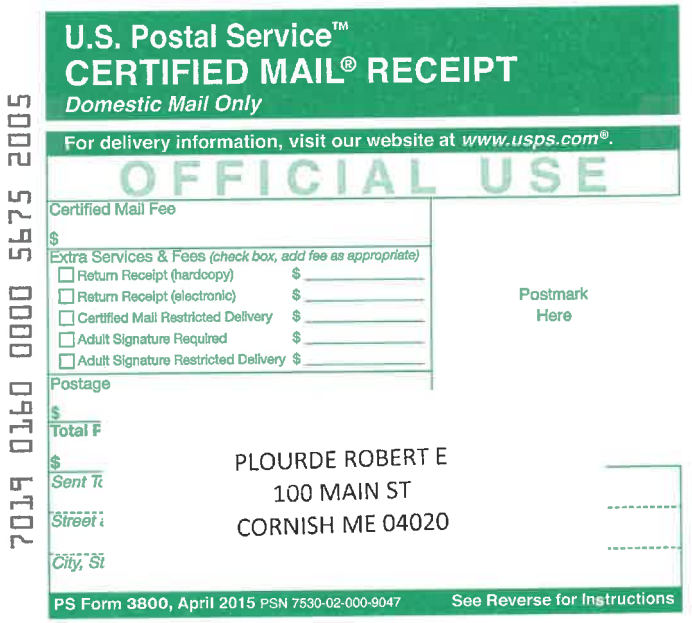

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PLOURDE ROBERT E
100 MAIN ST
CORNISH ME 04020

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PURCELL LINNEA J
24 VERMONT AVE
PORTLAND ME 04103

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REEDER SUSAN W
24 JERSEY AVE
PORTLAND ME 04103

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ROBERTS LEANNE
459 ALLEN AVE # 1
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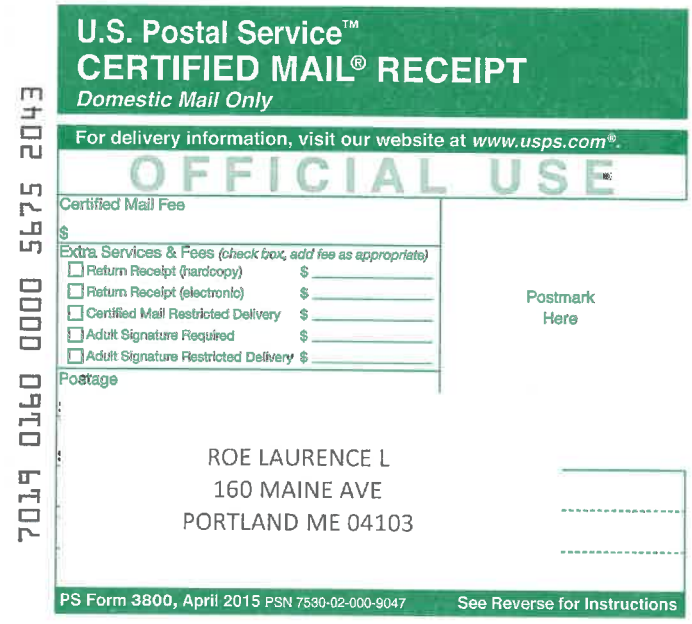

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ROE LAURENCE L
160 MAINE AVE
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MORGAN DEBORA
D3 52 RAY ST
PORTLAND ME 04103

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MURPHY JANICE E
459 ALLEN AVE # 8
PORTLAND ME 04103

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NEILL DONALD L & LINDA H LORD JTS
17 MERRYMEETING DR
PORTLAND ME 04103

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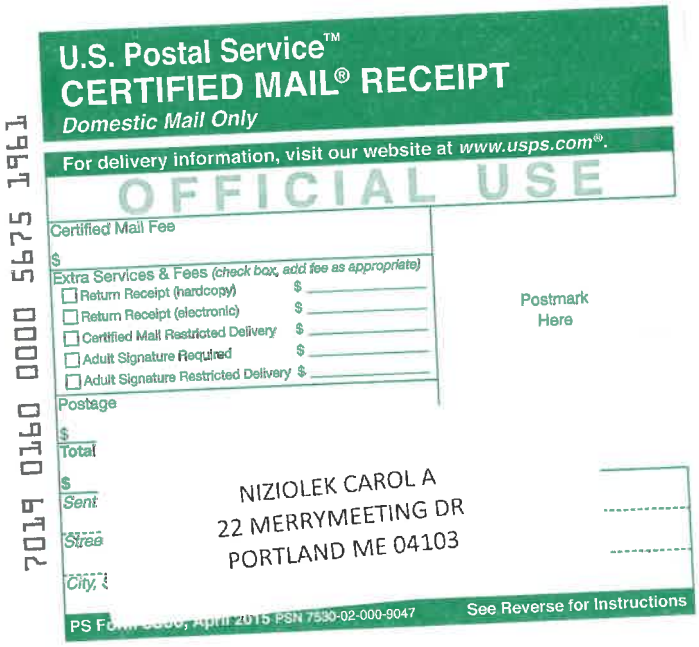

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PARE MATTHEW P
142 MAINE AVE
PORTLAND ME 04103

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LIBBY CHRISTINE A
19 JERSEY AVE
PORTLAND ME 04103
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LITVAK PROPERTIES LLC
66 PYA RD
PORTLAND ME 04103
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LPS PROPERTIES LLC
117 FLORIDA AVE
PORTLAND ME 04103
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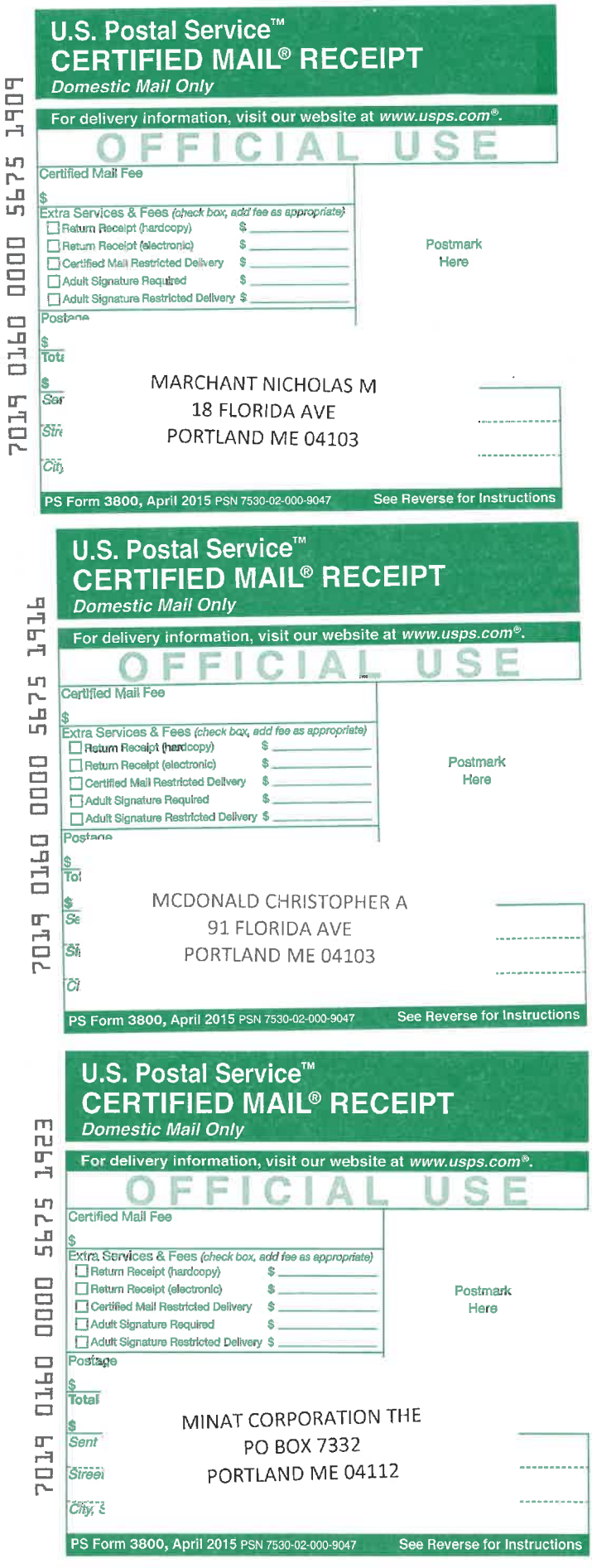

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7019 0160 0000 5675 1909

MARCHANT NICHOLAS M
18 FLORIDA AVE
PORTLAND ME 04103

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7019 0160 0000 5675 1916

MCDONALD CHRISTOPHER A
91 FLORIDA AVE
PORTLAND ME 04103

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7019 0160 0000 5675 1923

MINAT CORPORATION THE
PO BOX 7332
PORTLAND ME 04112

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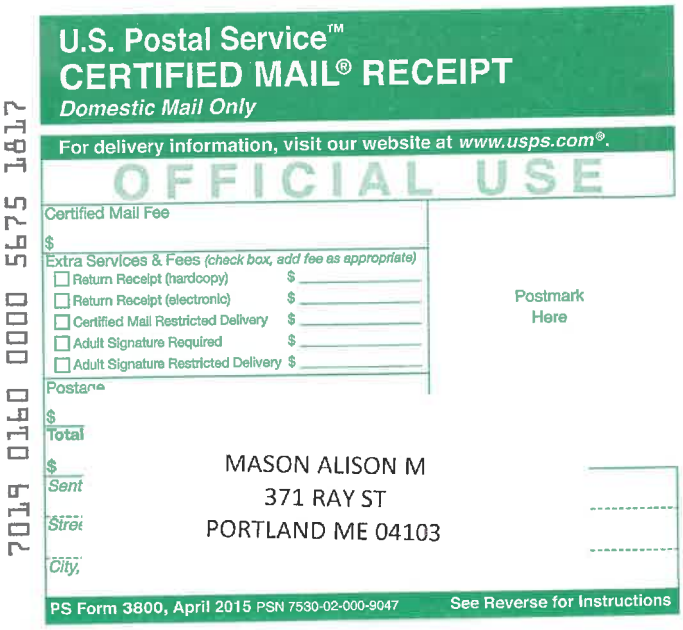

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MASON ALISON M
371 RAY ST
PORTLAND ME 04103

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MINAT CORPORATION
PO BOX 7332 PORTLAND ME 04112

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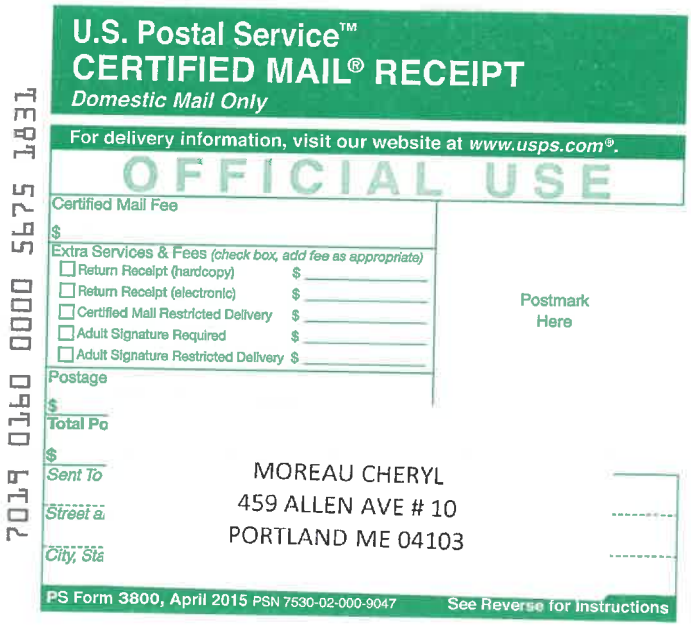

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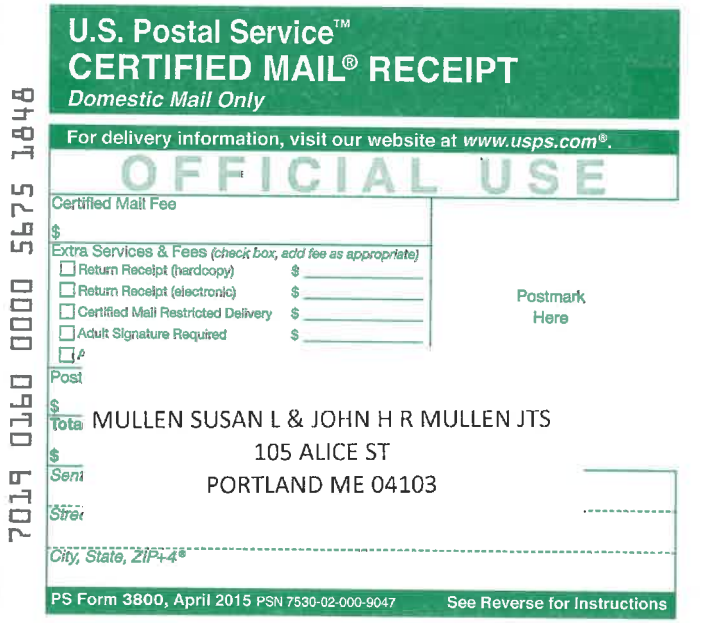

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MULLEN SUSAN L & JOHN H R MULLEN JTS
105 ALICE ST
PORTLAND ME 04103

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459 ALLEN AVE # 18
PORTLAND ME 04103

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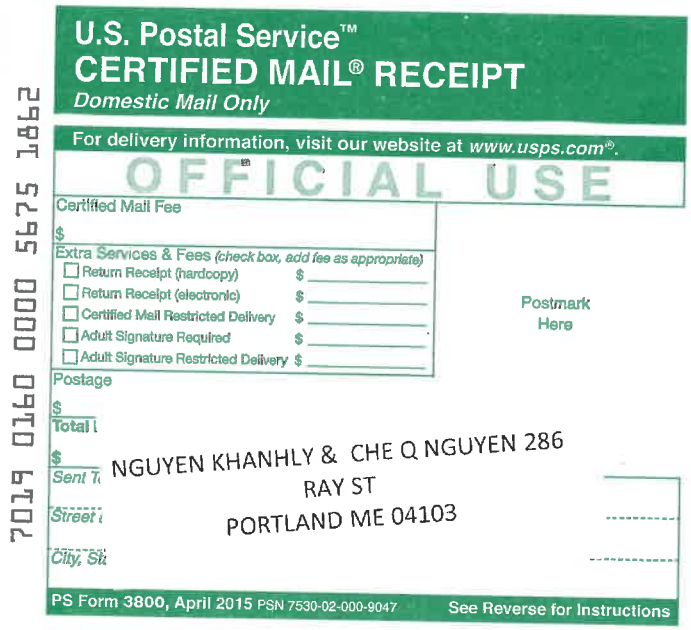

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NGUYEN KHANHLY & CHE Q NGUYEN 286
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PORTLAND ME 04103

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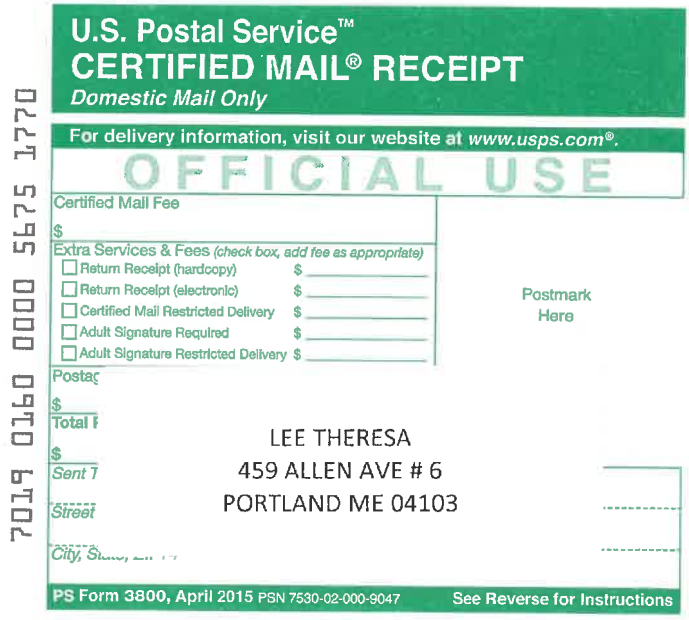

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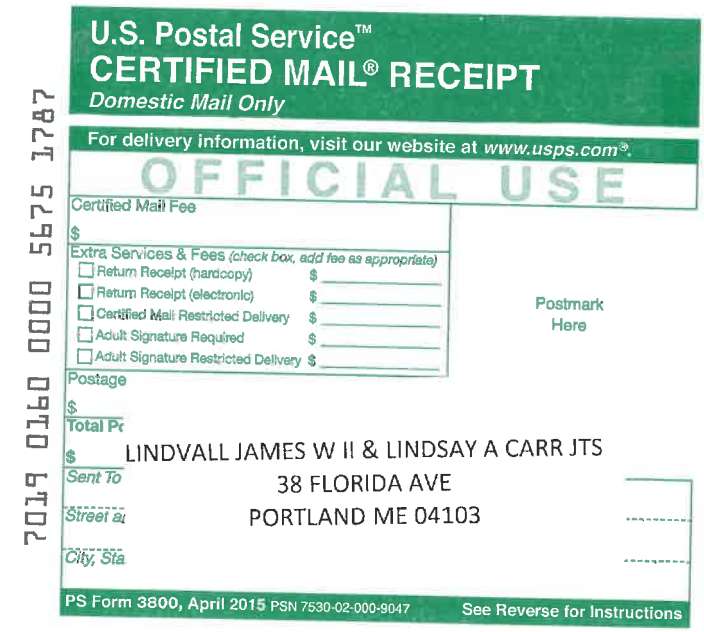
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LINDVALL JAMES W II & LINDSAY A CARR JTS
38 FLORIDA AVE
PORTLAND ME 04103
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LL BEAN INC
15 CASCO ST
FREEPORT ME 04033
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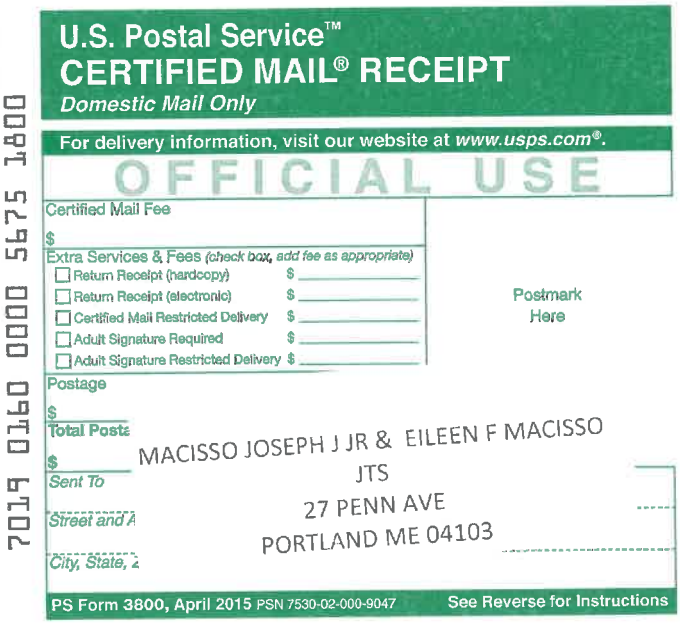
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MACISSO JOSEPH J JR & EILEEN F MACISSO
JTS
27 PENN AVE
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LITVAK PROPERTIES LLC
PO BOX 7332
PORTLAND ME 04112

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LUTTON LAURA J
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MARTIN'S POINT HEALTH CARE INC
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MCDONALD PATRICIA A
368 RAY ST ~~PORTLAND ME 04103~~
Portland ME 04103

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MINVIELLE PETER M VN VET
25 MERRYMEETING DR
PORTLAND ME 04103

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MORIN TERESA R
29 JERSEY AVE
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LAGERSTROM LYNN C
57 FLORIDA AVE
PORTLAND ME 04103

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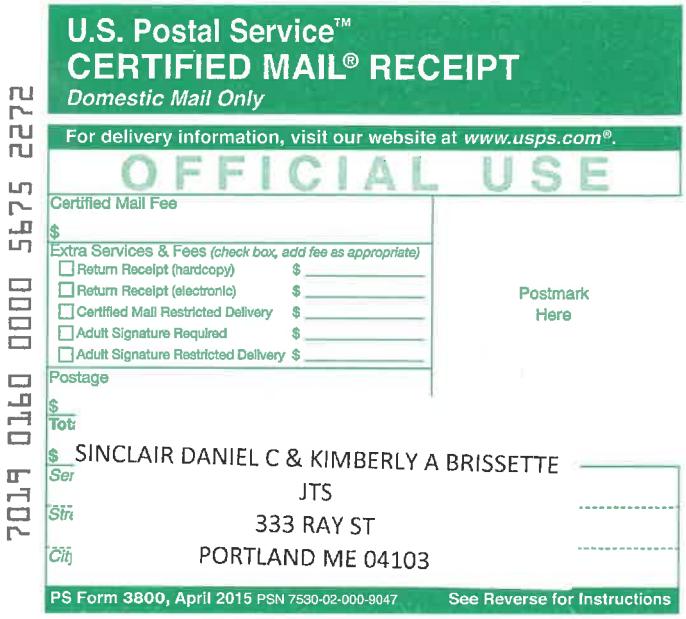

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SINCLAIR DANIEL C & KIMBERLY A BRISSETTE
JTS
333 RAY ST
PORTLAND ME 04103

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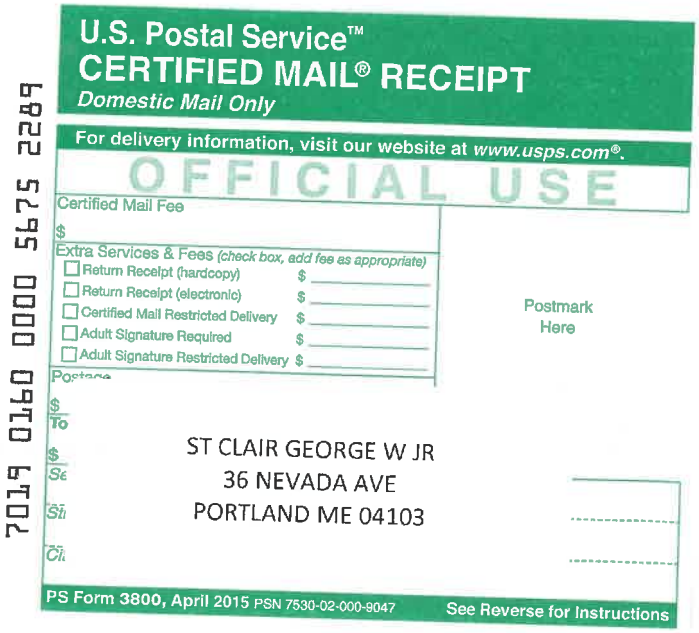

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ST CLAIR GEORGE W JR
36 NEVADA AVE
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SULLIVAN JAMES A JR
83 FLORIDA AVE
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LAPLANTE CAROLE ANN
105 FLORIDA AVE
PORTLAND ME 04103

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LIBBY RANDOLPH
17 LARCHWOOD RD
SOUTH PORTLAND ME 04106

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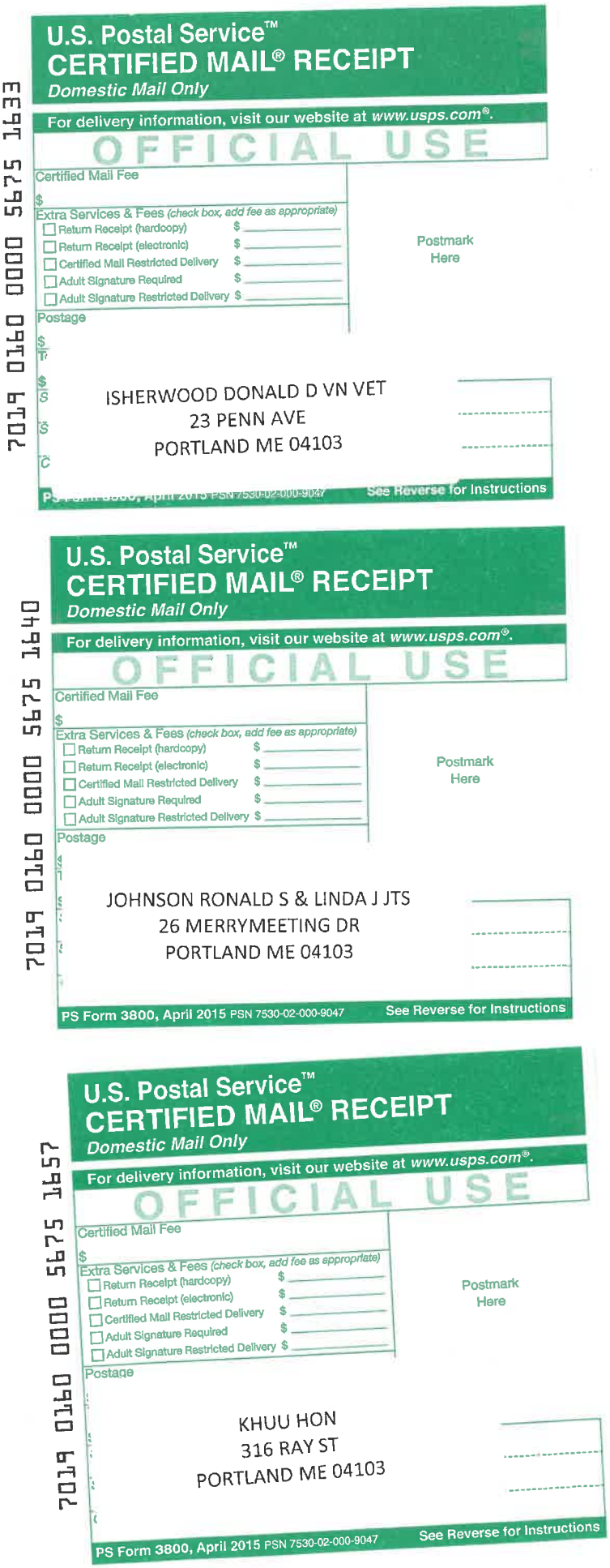

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ISHERWOOD DONALD D VN VET
23 PENN AVE
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JOHNSON RONALD S & LINDA J JTS
26 MERRYMEETING DR
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KHUU HON
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7019 0160 0000 5675 1602

HEROUX KAREN J
304 RAY ST
PORTLAND ME 04103

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HOLMES MARK A & LORI A HOLMES JTS 56
QUALEY RD
GRAY ME 04039

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HOWARD SUSAN
10 MERRYMEETING DR
PORTLAND ME 04103

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To
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JTS
118 MAINE AVE
PORTLAND ME 04103

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KANTROVITZ LARISA
166 MAINE AVE
PORTLAND ME 04103

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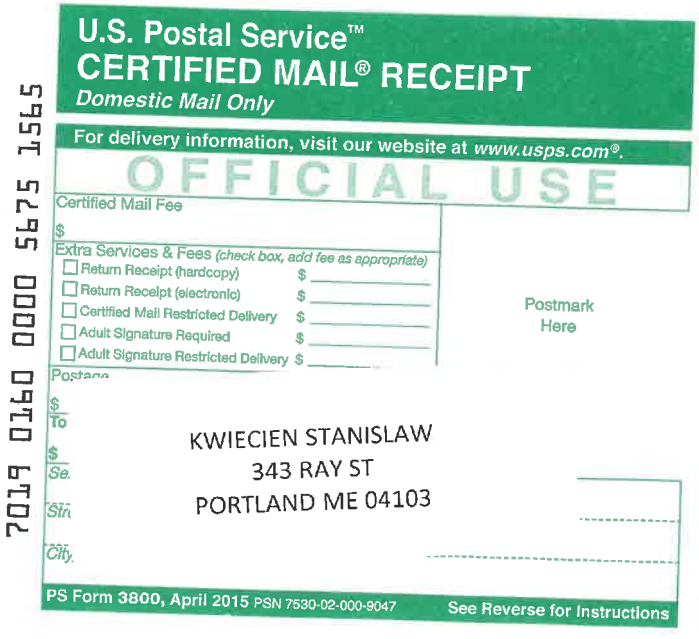

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To
KWIECIEN STANISLAW
343 RAY ST
PORTLAND ME 04103

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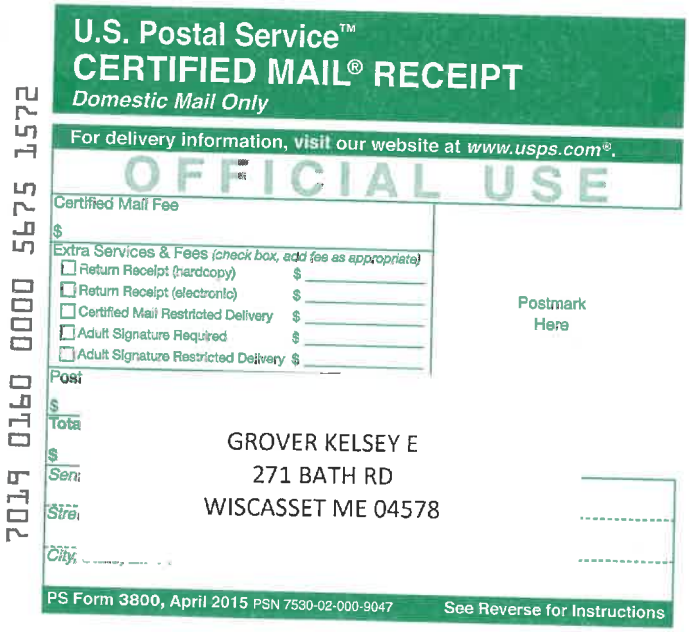
7019 0160 0000 5675 1565

7019 0160 0000 5675 1572



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GROVER KELSEY E
271 BATH RD
WISCASSET ME 04578

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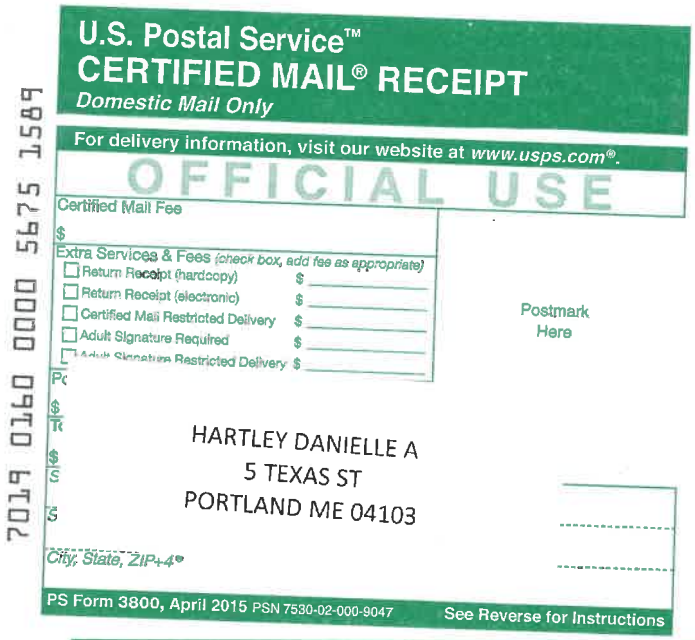
7019 0160 0000 5675 1589



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HARTLEY DANIELLE A
5 TEXAS ST
PORTLAND ME 04103

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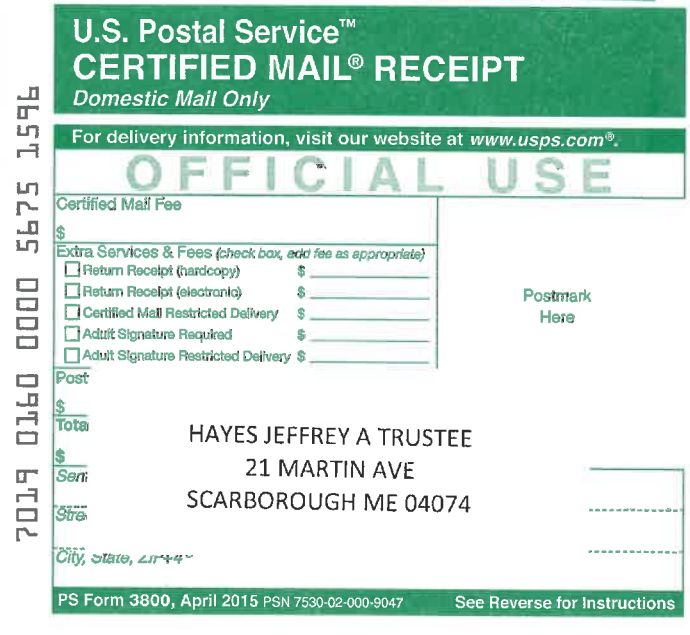
7019 0160 0000 5675 1596



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HAYES JEFFREY A TRUSTEE
21 MARTIN AVE
SCARBOROUGH ME 04074

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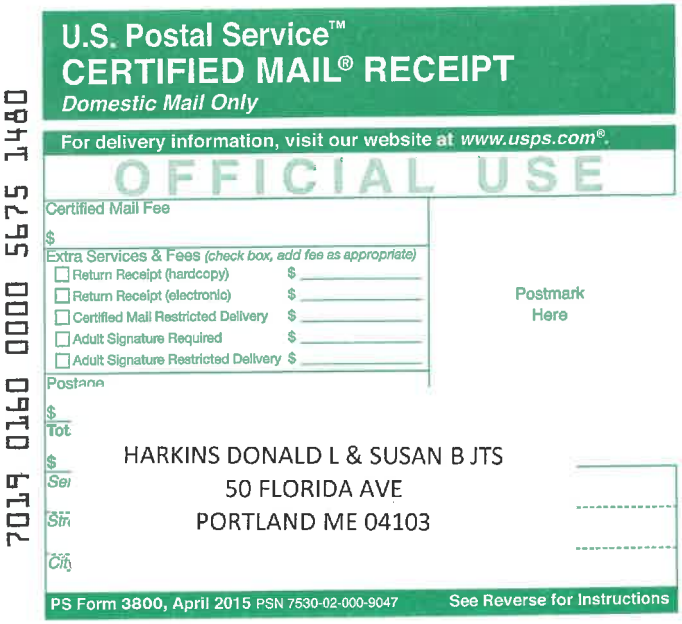
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HARKINS DONALD L & SUSAN B JTS
50 FLORIDA AVE
PORTLAND ME 04103
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HASSON HAYLEE E
100 FLORIDA AVE
PORTLAND ME 04103
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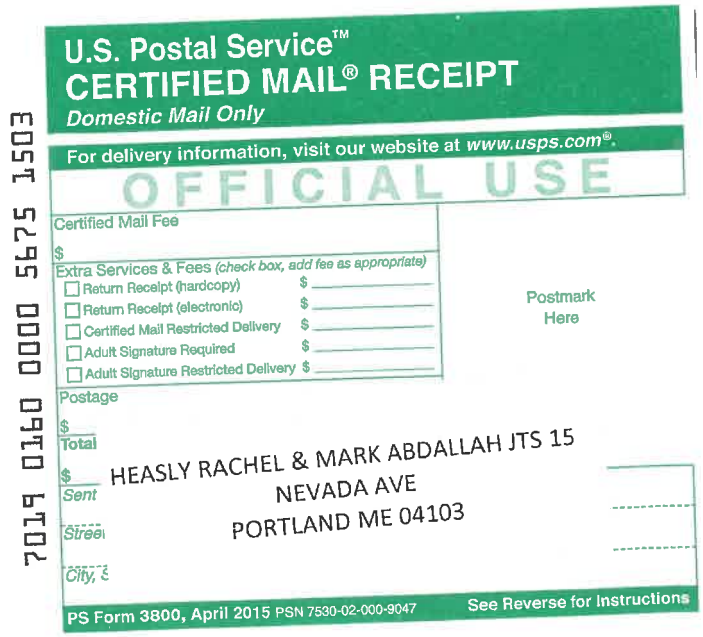
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HEASLY RACHEL & MARK ABDALLAH JTS 15
NEVADA AVE
PORTLAND ME 04103
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HITZROT ANN H
459 ALLEN AVE # 13
PORTLAND ME 04103

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HOUSES OF HOGWARTS LLC
86 CRAIGIE ST
PORTLAND ME 04102

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HUNTLEY KENNETH VN VET & ELIZABETH A
HUNTLEY JTS
31 NEVADA AVE
PORTLAND ME 04103

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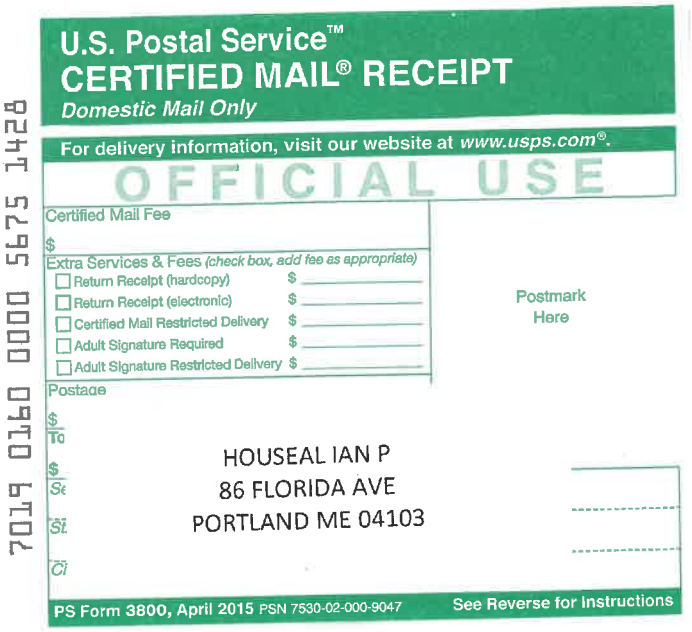

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HOUSEAL IAN P
86 FLORIDA AVE
PORTLAND ME 04103

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HUNT DANIEL P
20 MERRYMEETING DR
PORTLAND ME 04103

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JANCO SCOTT J
70 GERTRUDE AVE
PORTLAND ME 04103

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To
JUDKINS BERTHA L
127 PINE TREE LN
FARMINGTON ME 04938

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KONAN VIRGINIA J
22 NEVADA AVE
PORTLAND ME 04103

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GRIFFIN MAUREEN H
15 MERRYMEETING DR
PORTLAND ME 04103

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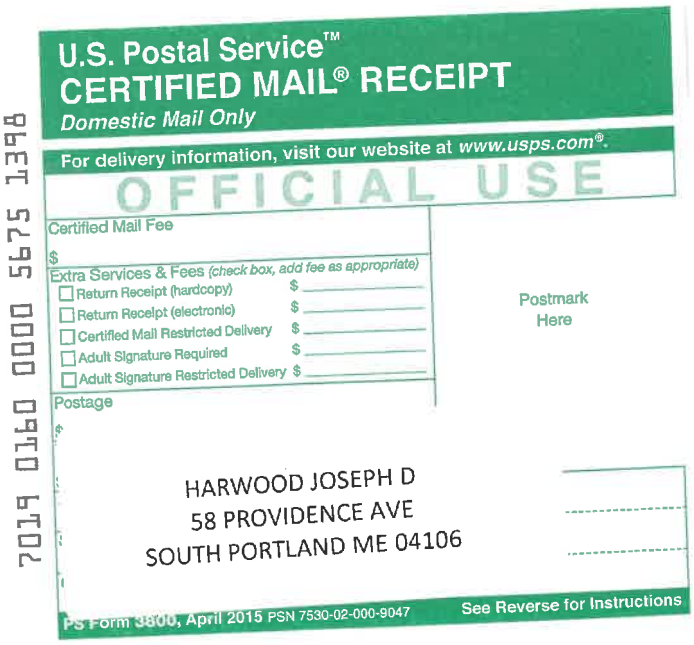

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HARWOOD JOSEPH D
58 PROVIDENCE AVE
SOUTH PORTLAND ME 04106

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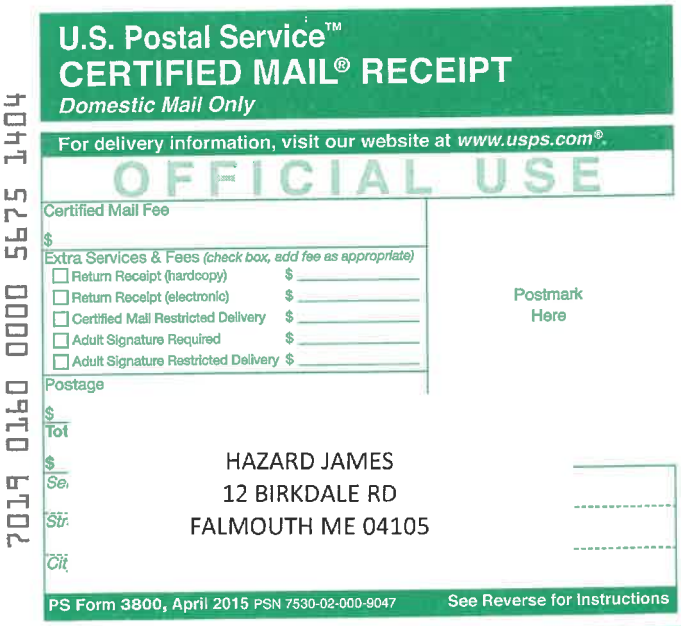

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HAZARD JAMES
12 BIRKDALE RD
FALMOUTH ME 04105

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HILTZ JAIME L
11 BUNKER HILL TER
SCARBOROUGH ME 04074

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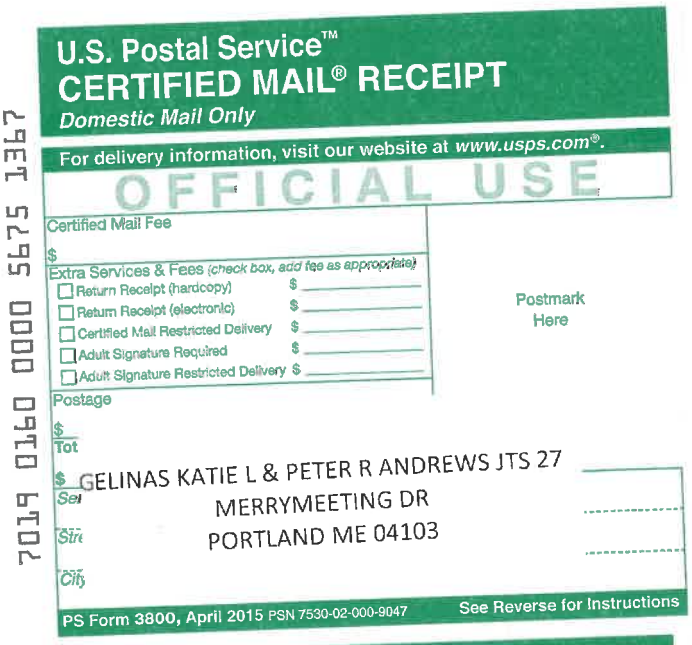

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GELINAS KATIE L & PETER R ANDREWS JTS 27
MERRYMEETING DR
PORTLAND ME 04103

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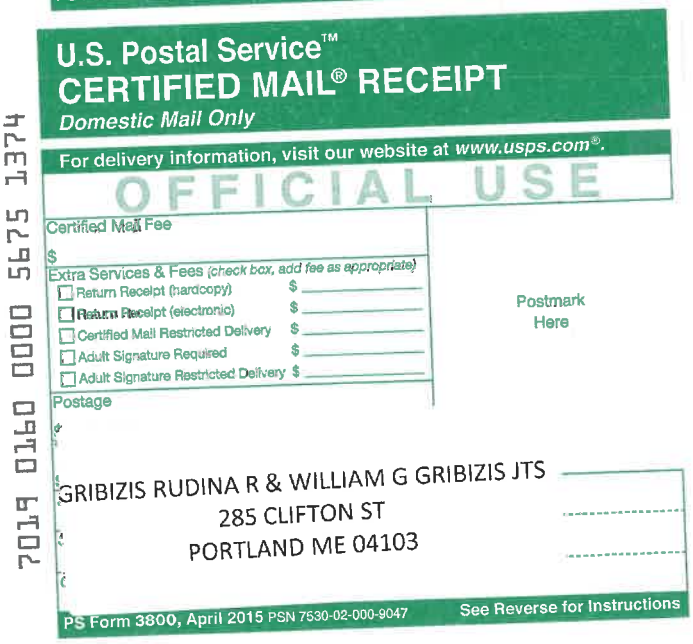

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GRIBIZIS RUDINA R & WILLIAM G GRIBIZIS JTS
285 CLIFTON ST
PORTLAND ME 04103

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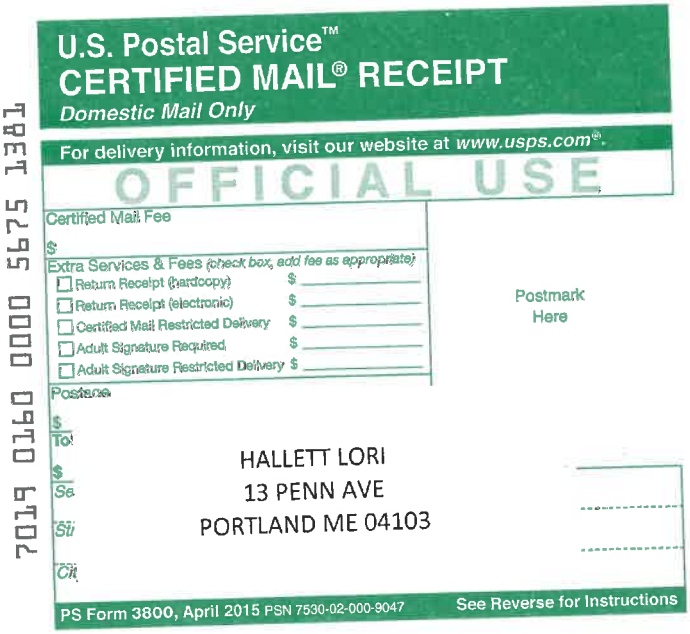

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HALLETT LORI
13 PENN AVE
PORTLAND ME 04103

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298 RAY LLC
LEIGHTON AVE
PORTLAND ME 04103

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Anthony Donovan
27 Riverview Street
Portland ME 04102

Barbara Wood
125 Emery Street
Portland ME 04102

Chris Castelsky
Fairpoint Communications
521 East Morehead Street
Charlotte NC 28202

David Nowlin
215 Oxford Street
Portland ME 04102

Deb Keenan
28 Dorothy Street
Portland ME 04103

Devon Platte
26 North Street, #3
Portland ME 04101

Edward Suslovic
District 3
46 Kenwood Street
Portland ME 04103

Greater Portland Council of Governments
970 Baxter Blvd., 2nd Floor
Portland ME 04103

Janice Carpenter
9 W. Commonwealth Drive
Portland ME 04103

Jennifer Munson
City of Portland
389 Congress Street
Portland ME 04101

Jesse Thompson
Kaplan Thompson Architects
100 Exchange Street
Portland ME 04103

Len Anderson
543 Allen Avenue
Portland ME 04103

Lynn Clarkson
145 Marlborough Road
Portland ME 04103

Mary Griffity
6 E. Prom, Unit #2
Portland ME 04103

Vahan Tufankijan
Seaside Healthcare
850 Baxter Boulevard
Portland ME 04103

Nancy Bartlett
PO Box 7965
Portland ME 04112

Pam Burnside
64 Lester Drive
Portland ME 04103

Paul Dubois
1915 Congress Street
Portland ME 04102

Peggy Morin
66 Farnham Street
Portland ME 04101

Philip Haughey
1660 Soldiers Field Road
Boston MA 02135

Priscilla LaVallee
190 US Route 1, Unit 2
Falmouth ME 04105

Rebecca Halla
Waste Management of Maine
2000 Forest Avenue
Portland ME 04103

REP Benjamin Dudley III
District 30
9 Ponce Street
Portland ME 04101

REP Glenn Cummings
District 37
24 Nevens Street
Portland ME 04103

Robert Hains
250 Holm Avenue
Portland ME 04102-1208

9 NEVADA LLC
111 POND RD
NEW GLOUCESTER ME 04260

ACHESON ANN W & JAMES M ACHESON JTS28
MERRYMEETING DR
PORTLAND ME 04103

AIKEN ANNA J & JAMES W AIKEN JTS336
RAY ST
PORTLAND ME 04103

ALLAIRE JENNIFER & GERARD ALLAIRE JTS
19 NEVADA AVE
PORTLAND ME 04103

ANASTOS ELLEN B
459 ALLEN AVE # 25
PORTLAND ME 04103

ANDERSON MATTHEW A
76 FLORIDA AVE
PORTLAND ME 04103

ANDERSON PATTI J & RICHARD E JR JTS
97 FLORIDA AVE
PORTLAND ME 04103

ANDERSON ROBERTA R
455 ALLEN AVE
PORTLAND ME 04103

ANDERSON-CHRISTIE SUZAN F & MARGERY C SUDBAY JTS
21 MERRYMEETING DR
PORTLAND ME 04103

ATTIX LEE & SUSAN ROWAN JTS
18 MERRYMEETING DR
PORTLAND ME 04103

AUTO EUROPE LLC
39 COMMERCIAL ST
PORTLAND ME 04101

BARBER GEORGE & KENNETH D BARBER JTS
19 MERRYMEETING DR
PORTLAND ME 04103

BASSETT SANDRA J
12 VERMONT AVE
PORTLAND ME 04103

BEAUPRE JOHN D & TRACY ALLEN BEAUPRE JTS
459 ALLEN AVE # 4
PORTLAND ME 04103

BESEMER LORI T & JOHN W BESEMER IV JTS
16 PENN AVE
PORTLAND ME 04103

BLUE WAGON LLC
41 GORE RD
RAYMOND ME 04071

BORLAWSKY JOY M & MICHAEL J SR
62 FLORIDA AVE
PORTLAND ME 04103

BROWN ROBERT A & VALARIE J JTS
28 PENN AVE
PORTLAND ME 04103

CAETANO VASCO
3 MERRYMEETING DR
PORTLAND ME 04103

CARR HILARY
11 QUAIL TRL
BUXTON ME 04093

CARTER JENNELL A & ALICIA M MENARD JTS
146 MAINE AVE
PORTLAND ME 04103

CHACE WILLIAM J
74 GERTRUDE AVE
PORTLAND ME 04103

CHASE DAVID A & BETTI J CHASE JTS
23 MERRYMEETING DR
PORTLAND ME 04103

CHRISTIAN SABRINA KATHRYN
110 FLORIDA AVE
PORTLAND ME 04103

CHRISTY ALEXIA L
156 MAINE AVE
PORTLAND ME 04103

CHRISTY KEVIN R & DAWN M CHRISTY JTS
160 MAINE AVE
PORTLAND ME 04103

CHRISTY KEVIN R & DAWN M JTS
160 MAINE AVE
PORTLAND ME 04103

CHURCH RONALD C & DONNA I JTS
325 RAY ST
PORTLAND ME 04103

CLARK LESLIE M
12 TEXAS ST
PORTLAND ME 04103

CLARKIN REBECCA
8 NEVADA AVE
PORTLAND ME 04103

CLEALE ELIZABETH & LEO SMITH
25 FLORIDA AVE
PORTLAND ME 04103

COHEN BRIAN F & TARA COHEN JTS
32 NEVADA AVE
PORTLAND ME 04103

CONNELLY AMANDA J
356 RAY ST
PORTLAND ME 04103

COOMBS PATRICIA L
459 ALLEN AVE APT 24
PORTLAND ME 04103

COTE ELIZABETH M
14 MERRYMEETING DR
PORTLAND ME 04103

COURNOYER PAUL B & KYMBERLEY T COURNOYER JTS
24 MERRYMEETING DR
PORTLAND ME 04103

CRABTREE VIRGINIA A
152 MAINE AVE
PORTLAND ME 04103

CRESSEY WESLEY O VN VET & BETTY ANN JTS
23 JERSEY AVE
PORTLAND ME 04103

CROSBY RONALD H SR
18 JERSEY AVE
PORTLAND ME 04103

DALL MEGAN N & RYAN C DALL JTS
402 RAY ST
PORTLAND ME 04103

DEARBORN CAROL A & DAVID L DUMONT JTS
2 MERRYMEETING DR
PORTLAND ME 04103

DENBOW DEBRA A
69 FLORIDA AVE
PORTLAND ME 04103

DIPIETRO DAVID
326 RAY ST
PORTLAND ME 04103

DONOVAN ROBYN J & TIMOTHY P DONOVAN JTS
378 RAY ST
PORTLAND ME 04103

DOUGHTY BEN HILTON & CAROL N DOUGHTY JTS
54 FLORIDA AVE
PORTLAND ME 04103

DOWNS KENNETH W & JANICE E JTS
469 ALLEN AVE
PORTLAND ME 04103

DUKES DAVID A & ROSE HEITHOFF JTS
30 TAYLOR ST
PORTLAND ME 04102

DUNCAN JORDAN TYLER & KATHERINE ELISE DUNCAN JTS
365 RAY ST
PORTLAND ME 04103

DUNLAP KYAN J
459 ALLEN AVE # 14
PORTLAND ME 04103

DUNLAP KYAN JAMES & KAYLA LISA DUNLAP JTS
94 SKYARK RD
PORTLAND ME 04103

FALLBROOK PROPERTIES LLC
418 RAY ST
PORTLAND ME 04103

FEENEY ANTONETTA S
186 MAINE AVE
PORTLAND ME 04103

FOERSTER CAROLYN D
17 VERMONT AVE
PORTLAND ME 04103

FORSDICK LESLIE
114 MAINE AVE
PORTLAND ME 04103

FROZEN PIPE PROPERTY LLC
2 WASHINGTON AVE
SCARBOROUGH ME 04074

GARCIA LUIS O & MONICA M GARCIA JTS 80 FLORIDA AVE
PORTLAND ME 04103

GAUDET MONIQUE R
59 GERTRUDE AVE
PORTLAND ME 04103

GEE BRANNEN M & KAITLIN M GEE JTS
75 FLORIDA AVE
PORTLAND ME 04103

GELINAS GREGORY P & PATRICIA A JTS 124 MAINE AVE
PORTLAND ME 04103

GELINAS KATIE L & PETER R ANDREWS JTS 27 MERRYMEETING DR
PORTLAND ME 04103

GRIBIZIS RUDINA R & WILLIAM G GRIBIZIS JTS
285 CLIFTON ST
PORTLAND ME 04103

GRIFFIN MAUREEN H
15 MERRYMEETING DR
PORTLAND ME 04103

GROVER KELSEY E
271 BATH RD
WISCASSET ME 04578

HALLETT LORI
13 PENN AVE
PORTLAND ME 04103

HARKINS DONALD L & SUSAN B JTS
50 FLORIDA AVE
PORTLAND ME 04103

HARTLEY DANIELLE A
5 TEXAS ST
PORTLAND ME 04103

HARWOOD JOSEPH D
58 PROVIDENCE AVE
SOUTH PORTLAND ME 04106

HASSON HAYLEE E
100 FLORIDA AVE
PORTLAND ME 04103

HAYES JEFFREY A TRUSTEE
21 MARTIN AVE
SCARBOROUGH ME 04074

HAZARD JAMES
12 BIRKDALE RD
FALMOUTH ME 04105

HEASLY RACHEL & MARK ABDALLAH JTS 15
NEVADA AVE
PORTLAND ME 04103

HEROUX KAREN J
304 RAY ST
PORTLAND ME 04103

HILTZ JAIME L
11 BUNKER HILL TER
SCARBOROUGH ME 04074

HITZROT ANN H
459 ALLEN AVE # 13
PORTLAND ME 04103

HOLMES MARK A & LORI A HOLMES JTS 56
QUALEY RD
GRAY ME 04039

HOUSEAL IAN P
86 FLORIDA AVE
PORTLAND ME 04103

HOUSES OF HOGWARTS LLC
86 CRAIGIE ST
PORTLAND ME 04102

HOWARD SUSAN
10 MERRYMEETING DR
PORTLAND ME 04103

HUNT DANIEL P
20 MERRYMEETING DR
PORTLAND ME 04103

HUNTLEY KENNETH VN VET & ELIZABETH A
HUNTLEY JTS
31 NEVADA AVE
PORTLAND ME 04103

ISHERWOOD DONALD D VN VET
23 PENN AVE
PORTLAND ME 04103

JANCO SCOTT J
70 GERTRUDE AVE
PORTLAND ME 04103

JOHNSON JOSEPH & CHRISTINA M JOHNSON
JTS
118 MAINE AVE
PORTLAND ME 04103

JOHNSON RONALD S & LINDA J JTS
26 MERRYMEETING DR
PORTLAND ME 04103

JUDKINS BERTHA L
127 PINE TREE LN
FARMINGTON ME 04938

KANTROVITZ LARISA
166 MAINE AVE
PORTLAND ME 04103

KHUU HON
316 RAY ST
PORTLAND ME 04103

KONAN VIRGINIA J
22 NEVADA AVE
PORTLAND ME 04103

KWIECIEN STANISLAW
343 RAY ST
PORTLAND ME 04103

LAGERSTROM LYNN C
57 FLORIDA AVE
PORTLAND ME 04103

LAPLANTE CAROLE ANN
105 FLORIDA AVE
PORTLAND ME 04103

LEE THERESA
459 ALLEN AVE # 6
PORTLAND ME 04103

LIBBY CHRISTINE A
19 JERSEY AVE
PORTLAND ME 04103

LIBBY RANDOLPH
17 LARCHWOOD RD
SOUTH PORTLAND ME 04106

LINDVALL JAMES W II & LINDSAY A CARR JTS
38 FLORIDA AVE
PORTLAND ME 04103

LITVAK PROPERTIES LLC
66 PYA RD
PORTLAND ME 04103

LITVAK PROPERTIES LLC
PO BOX 7332
PORTLAND ME 04112

LL BEAN INC
15 CASCO ST
FREEPORT ME 04033

LPS PROPERTIES LLC
117 FLORIDA AVE
PORTLAND ME 04103

LUTTON LAURA J
26 NEVADA AVE
PORTLAND ME 04103

MACISSO JOSEPH J JR & EILEEN F MACISSO JTS
27 PENN AVE
PORTLAND ME 04103

MARCHANT NICHOLAS M
18 FLORIDA AVE
PORTLAND ME 04103

MARTIN'S POINT HEALTH CARE INC
PO BOX 9746
PORTLAND ME 04112

MASON ALISON M
371 RAY ST
PORTLAND ME 04103

MCDONALD CHRISTOPHER A
91 FLORIDA AVE
PORTLAND ME 04103

MCDONALD PATRICIA A
368 RAY ST PORTLAND ME 04103

MINAT CORPORATION
PO BOX 7332 PORTLAND ME 04112

MINAT CORPORATION THE
PO BOX 7332
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MINVIELLE PETER M VN VET
25 MERRYMEETING DR
PORTLAND ME 04103

MOREAU CHERYL
459 ALLEN AVE # 10
PORTLAND ME 04103

MORGAN DEBORA
D3 52 RAY ST
PORTLAND ME 04103

MORIN TERESA R
29 JERSEY AVE
PORTLAND ME 04103

MULLEN SUSAN L & JOHN H R MULLEN JTS
105 ALICE ST
PORTLAND ME 04103

MURPHY JANICE E
459 ALLEN AVE # 8
PORTLAND ME 04103

MURRAY DAVID & NATALIE MURRAY JTS 53
FLORIDA AVE
PORTLAND ME 04103

NEILAN DAVID M
459 ALLEN AVE # 18
PORTLAND ME 04103

NEILL DONALD L & LINDA H LORD JTS
17 MERRYMEETING DR
PORTLAND ME 04103

NEWMAN PHOEBE J
111 FLORIDA AVE
PORTLAND ME 04103

NGUYEN KHANHLY & CHE Q NGUYEN 286
RAY ST
PORTLAND ME 04103

NIZIOLEK CAROL A
22 MERRYMEETING DR
PORTLAND ME 04103

NORMANDIN ADAM
459 ALLEN AVE # 22
PORTLAND ME 04103

NORTON KIRSTEN & NATHANIEL DUDLEY JTS
170 MAINE AVE
PORTLAND ME 04103

OAKES RYAN E
34 JERSEY AVE
PORTLAND ME 04103

O'SULLIVAN PADRAIG N & SARAH E GODFREY JTS 406 RAY ST PORTLAND ME 04103

PACKARD MARY A & AMANDA M & ALICIA L PACKARD
106 FLORIDA AVE
PORTLAND ME 04103

PARADIS WILLIAM M & SARAH C PARADIS JTS
355 RAY ST
PORTLAND ME 04103

PARE MATTHEW P
142 MAINE AVE
PORTLAND ME 04103

PELLETIER ANGELA M
128 MAINE AVE
PORTLAND ME 04103

PERKINS SARAH & JILL PERKINS-BOUCHARD
11 JERSEY AVE
PORTLAND ME 04103

PLOURDE ROBERT E
100 MAIN ST
CORNISH ME 04020

PRESTON SHANNON R & RYAN VICTOR JAROCHYM JTS
12 JERSEY AVE
PORTLAND ME 04103

PROIA SUSANNA
44 FLORIDA AVE
PORTLAND ME 04103

PURCELL LINNEA J
24 VERMONT AVE
PORTLAND ME 04103

QUINN SUSAN LOUISE
35 NEVADA AVE
PORTLAND ME 04103

RAMSDELL DARRIN L & LINDSEY M RAMSDELL JTS
12 PENN AVE
PORTLAND ME 04103

REEDER SUSAN W
24 JERSEY AVE
PORTLAND ME 04103

REGAN BRENDAN S
114 FLORIDA AVE
PORTLAND ME 04103

RICE JULIANNE L
459 ALLEN AVE # 17
PORTLAND ME 04103

ROBERTS LEANNE
459 ALLEN AVE # 1
PORTLAND ME 04103

ROBINSON BEVERLY D
459 ALLEN AVE # 3
PORTLAND ME 04103

RODNEY ROBERT J II & CHRISTINE A RODNEY JTS
121 WALTON ST
PORTLAND ME 04103

ROE LAURENCE L
160 MAINE AVE
PORTLAND ME 04103

ROWE EUGENE L & ELLEN R ROWE JTS 295 RAY ST
PORTLAND ME 04103

ROY KIMBERLY A
459 ALLEN AVE # 2
PORTLAND ME 04103

RUTHERFORD PATRIIA A
28 JERSEY AVE
PORTLAND ME 04103

SCHAIBERGER SCOTT C
138 MAINE AVE
PORTLAND ME 04103

SCHOLZ JOHN M
334 RAY ST
PORTLAND ME 04103

SENDZE KATIE
459 ALLEN AVE # 21
PORTLAND ME 04103

SHEA STEPHEN M & DIANE L JTS
101 FLORIDA AVE
PORTLAND ME 04103

SILVERNAIL DAVID L
459 ALLEN AVE APT 16
PORTLAND ME 04103

SINCLAIR DANIEL C & KIMBERLY A BRISSETTE JTS
333 RAY ST
PORTLAND ME 04103

SMITH JASON D & LAURIE R SMITH JTS 354 RAY ST
PORTLAND ME 04103

SNOW CORY & SHEILA J SULLIVAN JTS
398 RAY ST
PORTLAND ME 04103

ST CLAIR GEORGE W JR
36 NEVADA AVE
PORTLAND ME 04103

STANTON ELIZABETH M
16 MERRYMEETING DR
PORTLAND ME 04103

STEVENS CHERYL A & CHESTER STEVENS JTS
9 TEXAS ST
PORTLAND ME 04103

SULLIVAN JAMES A JR
83 FLORIDA AVE
PORTLAND ME 04103

TALBOT JOSEPH F & JUDITH A HARRIS JTS
16 NEVADA AVE
PORTLAND ME 04103

TAYLOR DAWN M
459 ALLEN AVE # 11
PORTLAND ME 04103

THOMPSON BARBARA E
65 FLORIDA AVE
PORTLAND ME 04103

THOMPSON DONALD A & EVELYN L JTS 488 FORT HILL RD
GORHAM ME 04038

TOWLE WALTER D WWII VET & DONNA MARIE TOWLE JTS
8 MERRYMEETING DR
PORTLAND ME 04103

TUFTS BARBARA J
6 MERRYMEETING DR # 6
PORTLAND ME 04103

TURNER CAROL A & SUSAN C VILLETTA JTS
18 WISEMAN ST
NEWPORT ME 04953

TUTOR THOMAS L
20 VERMONT AVE
PORTLAND ME 04103

UMBEL WILLIAM R
122 GERTRUDE AVE
PORTLAND ME 04103

URBACH PAULA M
92 FLORIDA AVE
PORTLAND ME 04103

WAGNER THERESA
65 WHITNEY FARM RD
NORTH YARMOUTH ME 04097

WARREN JARED P
459 ALLEN AVE #7 P
ORTLAND ME 04103

WEBB MARILYN D
340 RAY ST
PORTLAND ME 04103

WEBSTER BETH A
PO BOX 8228
PORTLAND ME 04104

WEISS LISA KOCH & LAURA JEAN WEISS JTS
35 HAMMOND ST
PORTLAND ME 04101

WELSH RICHARD E & SUSAN WELSH JTS
5 MERRYMEETING DR
PORTLAND ME 04103

WELSH RICHARD J & MARIE K WELSH JTS 13 MERRYMEETING DR
PORTLAND ME 04103

WELTY MARTHA & CHARLES WELTY JTS
4 MERRYMEETING DR
PORTLAND ME 04103

WGME INC
81 NORTHPORT DR
PORTLAND ME 04103

WHALEN MAUREEN
459 ALLEN AVE APT 23
PORTLAND ME 04103

WHIPKEY RENEE & RYAN WHIPKEY JTS
22 PENN AVE P
ORTLAND ME 04103

WHITNEY LEE ANN
1 MERRYMEETING DR
PORTLAND ME 04103

WOODBERRY KAREN E
459 ALLEN AVE #26
PORTLAND ME 04103

YEBOAH DUKE
17 PENN AVE
PORTLAND ME 04103

YORK MEGAN T & JONATHAN A YORK JTS
72 FLORIDA AVE
PORTLAND ME 04103

YOUNGBLOOD ALEC N & JOSHUA T AVERY JTS
344 RAY ST
PORTLAND ME 04103

ZIMMERMAN ROBERTA L
12 MERRYMEETING DR
PORTLAND ME 04103

ZUB PATRICIA A
308 E 120TH AVE
TAMPA FL 33612

298 RAY LLC
LEIGHTON AVE
PORTLAND ME 04103

Att. M

SEBAGO TECHNICS

CIVIL ENGINEERING ▪ SURVEYING ▪ LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT PLAN

For

FALLBROOK COMMONS
PORTLAND, MAINE

Prepared for

Sandy River Company
217 Commercial Street
Portland, Maine 04112

Revised July 9, 2020

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STORMWATER MANAGEMENT PLAN REPORT
Fallbrook Commons
Portland, Maine

I. Introduction

This Stormwater Management Plan Report has been prepared to present analyses performed to address the potential impacts associated with the project due to proposed modification to stormwater runoff characteristics and land cover changes. The stormwater management controls outlined in this report have been designed to suit the proposed development and to comply with applicable regulatory requirements.

II. Existing Conditions

The project site is comprised of undeveloped land consisting of mostly wooded land coverage with access from Ray Street and Merrymeeting Drive. The site is approximately 12.78 acres and is bounded by Florida Avenue and Ray Street residences to the south and east, Fallbrook Woods senior center to the north, and Topsham Street and undeveloped residential parcels to the west. Paper streets Wadco Street and Ash Street are located to the south and southeast of the site and are currently undeveloped.

Slopes on the site range from flat low-lying easterly wetland areas to undeveloped slopes ranging from 5-40% with exposed ledge areas located in the western portion of the parcel. Site drainage generally travels easterly toward the wetland area nearest the intersection and residences of Ray Street and Florida Avenue and enters a closed drainage system in the Ray Street right of way. Small portions of the site drain west to a wetland in the Topsham Street right of way.

The site is tributary to an unnamed stream draining northeasterly from the site and discharging at the mouth of the Presumpscot River, which is not classified as most-at-risk or urban impaired according to Chapter 502, Direct Watersheds of Lakes Most At-Risk From New Development, and Urban Impaired Stream Standards.

The proposed development area of the site is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Portland, community-panel number 230051 002 C. Please find a copy of the FEMA map attached as Appendix 6.

III. Soils

Soil information for the site was obtained via the USDA United States Department of Agriculture and Natural Resources Conservation Service's Web Soil Survey. The Hydrologic Soil Group (HSG) of the site soils are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Name	Soil Symbol	HSG	Slope (%)
BELGRADE	BgB	C	0-8
BUXTON	BuB	D	3-8
HOLLIS	HrB	C	0-8
HOLLIS	HrC	C	8-15
HOLLIS	HsB	C	0-8
SCANTIC	Sn	D	0-3

Hydrologic Soil Group boundaries are delineated on the Watershed Map. A copy of the Web Soil Survey is included as Appendix 5.

IV. Proposed Site Improvements

The project includes a new senior living facility located next to the existing Fallbrook Woods Assisted Living facility. The development includes the construction of a two story, 37,455 sf building that will house 90 bedrooms, a commercial kitchen, community areas, and two parking areas totaling 84 parking spaces. Fallbrook Health Center proposes an entrance off of Merrymeeting Drive, and an emergency connection off of Ray Street.

This project will happen as one phase, which will involve clearing the vegetation as required, ledge removal, and site preparations for the building, and stormwater BMP's. Construction is expected to commence Summer 2020 and be completed by 2021.

The property is 12.78 acres, exists within the Residential-3 zone, and has frontage along Ray Street. The proposed development will improve approximately 5.6 acres of undeveloped land, as shown on the General Standards worksheet attached as Appendix 2. This includes approximately 2.7 acres of new impervious area.

Improvements to the existing Fallbrook Woods Assisted Living Facility to include 16 new parking spaces, a proposed sidewalk to Merrymeeting Drive, and a sidewalk along Merrymeeting Drive to Ray Street.

V. Pre-Development Conditions Model

The pre-development watershed plan consists of eight subcatchments labeled 1.0S, 1.1S, 2.0S, 3.0S, OS-4.0S, OS-4.1S, OS-5.0S, and OS5.1S in the HydroCAD model. Five locations were identified as Study Points (SP) for comparing peak runoff rates.

SP-1 is located in the easterly corner of the lot where runoff leaves the site via a wetland. Watershed 1.0S directly contributes runoff to this study point with a tributary area of approximately 9.4 acres. Subcatchment 1.1S flows into to 1.0S through an existing 15" culvert with an inlet control structure identified as node 1.1P. The culvert crosses under an existing gravel access road draining an area of approximately 2.7 acres. SP-1 and the

associated drainage area are tributary to an offsite unnamed stream traveling northeasterly from the site and discharging to the Presumpscot River.

SP-2 is located in the undeveloped southerly corner of the lot where runoff leaves the site via overland flow into the paper street right of way of Wadco Street. Subcatchment 2.0S contributes runoff to this study point with a tributary area of approximately 0.4 acres. SP-2 and its associated drainage area drain to an offsite unnamed stream discharging to the Presumpscot River.

SP-3 is located in the westerly corner of the lot that is a majority undeveloped where runoff leaves the site into the undeveloped Topsham Street right of way. A small portion of this area includes previously developed grass and pavement area from the neighboring Fallbrook Woods facility. Watershed 3.0S contributes runoff to this study point with a tributary area of approximately 0.9 acres. SP-3 and the associated drainage area are also tributary to an offsite unnamed stream discharging to the Presumpscot River.

SP-4 is located in the western corner of the lot. A portion of the existing Fallbrook Woods Assisted Living Facility drains across the existing parking lot/access road to a wetland. The wetland drains through two existing 12-inch concrete culverts Watersheds OS-4.0S and OS-4.1S contribute runoff to this study point with tributary areas of approximately 2.13 acres. SP-4 and the associated drainage area are tributary to an offsite unnamed stream traveling westerly from the site and discharging to the Presumpscot River.

SP-5 is located in the northerly corner of the lot This portion of the site includes Merrymeeting Drive and adjacent properties southeasterly of Merrymeeting Drive. Watersheds OS-5.0S and OS-5.2S contribute runoff to this study point with tributary areas of approximately 2.70 acres. SP-5 and the associated drainage area are tributary to an offsite unnamed stream traveling westerly from the site and discharging to the Presumpscot River.

VI. Post-Development Conditions Model

The post-development watershed area consists of the same overall area as the pre-development plan, however, the subcatchments have been broken into smaller areas as a result of the proposed development.

SP-1: Post-development subcatchments 10.0S and 10.1S represent the existing undeveloped and developed land within pre-development subcatchments 1.0S and 1.1S respectively. Subcatchments 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, and 13.1S represent the majority of the proposed developed area including the building, parking areas, and landscaped islands.

Subcatchments 11.0S, 11.1S, and 11.2S represent approximately 3.1 acres of the developed site tributary to a proposed Gravel Wetland (GW-1) modeled as node 11.0P which provides both quantity and quality treatment of the stormwater runoff. Portions of subcatchment

11.1S include developed areas from the neighboring Fallbrook Woods facility and are directed to a proposed replacement culvert modeled as node 11.1P.

Subcatchment 12.0S represents approximately 1.3 acres of the developed area and is tributary to the proposed Underdrained Soil Filter (UDSF-1) modeled as node 12.0P which provides both quantity and quality treatment of the stormwater runoff.

Subcatchments 13.0S and 13.1S are approximately 0.8 acres of the proposed building roofline area and is tributary to the proposed Roof Drip Edge BMPs modeled as nodes 13.0P and 13.1P which provide quality treatment of the stormwater runoff.

SP-2: Post-development subcatchment 20.0S represents the remaining undeveloped land from pre-development subcatchment 2.0S.

SP-3: Post-development subcatchment 30.0S represents the remaining undeveloped land from pre-development subcatchment 3.0S and a small portion of developed landscape and pavement directed via constructed grassed swale and sheet flow to an existing wetland area.

SP-4: Post-development subcatchments OS-40S and OS-41S included proposed parking spaces and a proposed sidewalk to Merrymeeting Drive. Runoff from OS-41S is directed to an existing culvert running under the driveway.

SP-5: Post-development subcatchments OS-50S and OS-51S included the proposed sidewalk along Merrymeeting Drive to Ray Street.

The three Best Management Practices (gravel wetland, underdrained soil filter, and roof drip edge) have been designed and sized in accordance with MDEP BMP standards contained within Chapter 500 and the BMP Manual. The proposed BMPs treat runoff tributary to SP-1. The areas tributary to SP-2, SP-3, SP-4 and SP-5 are reduced in the post-development conditions due to site development. Sizing calculations can be found in Appendix 2.

VII. Stormwater Management

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. The project avoids adverse impacts by implementing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 4) during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply, which require a project's stormwater management system to include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The General Standards require treatment of no less than 95% of the site's created impervious area and no less than 80% of the site's created developed area (landscaped area and impervious area combined).

To mitigate the changes in hydrologic patterns due to the development of this project, an underdrained soil filter, a gravel wetland, and a roof drip edge filters have been included in the stormwater management infrastructure. Filtration BMPs are effective at removing a wide range of pollutants through the use of soil filter media.

BMP sizing and treatment calculations are provided as Appendix 2.

Through the use of the proposed BMP's, 106.5% of new impervious area and 91.8% of new developed area will be receiving treatment. This exceeds the requirements for the Maine DEP General Standards. The project exceeds 100% of the new impervious area treated by directing untreated offsite impervious area to the proposed gravel wetland.

Flooding Standard - Chapter 500, Section 4(F)

Since the planned project will create less than three (3) acres of impervious surface, MDEP Flooding Standards are not required to be met. However, the Flooding Standard has been met as a local requirement. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

A runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500: Stormwater Management (effective date August 2015). Rainfall values for York County are listed in the table below.

Storm Frequency Precipitation (in./24 hr) Cumberland County	
2-year	3.1
10-year	4.6
25-year	5.8

The following table presents the watershed data for pre- and post-development conditions, as delineated for the analysis.

Subcatchment (Watershed)	Pre-Development			Post-Development		
	Area (ac)	Cn	Tc (Min.)	Area (ac)	Cn	Tc (Min.)
1.0S	9.42	77	29.3			
1.1S	2.68	80	23.9			
2.0S	0.44	70	18.7			
3.0S	0.92	72	16.1			
OS-4.0S	1.22	81	9.3			
OS-4.1S	0.98	80	16.2			
OS-5.0S	2.48	78	6.0			
OS-5.1S	0.22	92	6.0			
10.0S				4.54	79	28.5
10.1S				2.63	80	23.9
11.0S				1.93	92	11.7
11.1S				0.54	76	18.0
11.2S				0.62	81	15.0
12.0S				1.32	85	17.2
13.0S				0.40	98	6.0
13.1S				0.39	98	6.0
20.0S				0.24	70	18.0
30.0S				0.85	73	16.1
OS-40S				1.22	83	6.2
OS-41S				0.98	81	15.9
OS-50S				2.48	78	6.0
OS-51S				0.22	92	6.0
Total	**18.37**			**18.37**		

The following table presents the results of the stormwater runoff calculations at the analysis points for the pre-development and post-developed conditions.

Stormwater Runoff Summary Table			
Study Point	**Storm Event**	**Pre-Development (cfs)**	**Post-Development (cfs)**
SP-1	2-year	8.4	6.3
	10-year	19.4	17.0
	25-year	25.9	24.5
SP-2	2-year	0.2	0.2
	10-year	0.7	0.4
	25-year	0.9	0.6
SP-3	2-year	0.6	0.6
	10-year	1.6	1.5
	25-year	2.2	2.1
SP-4	2-year	1.3	1.3
	10-year	2.4	2.4
	25-year	2.9	2.9
SP-5	2-year	4.0	4.0
	10-year	8.3	8.3
	25-year	11.1	11.1

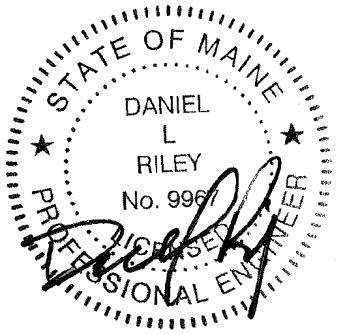
The HydroCAD Data output sheets from this analysis are appended to this report (Appendix 3) along with pre-development and post-development watershed maps (Appendix 1). The model predicts that the peak runoff rates in the post-development condition at Study Points 1, 2, 3, 4 and 5 are at or below pre-development runoff rates for the 2, 10, and 25-year storm events with implementation of the proposed stormwater management practices.

VIII. Summary

The proposed development has been designed to manage stormwater runoff through Best Management Practices approved by MDEP. Stormwater BMP's provide treatment to 100.19% (95% required) of impervious areas, and 89.07% (80% required) of the total developed area. Runoff discharging from the site will be at or below pre-development conditions for the 2, 10 and 25-year storm events at all five study points. Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping procedures have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

Prepared by:

SEBAGO TECHNICS, INC.



Daniel L. Riley, P.E.
Vice President, Engineering

DLR/BAW

07/09/2020

Appendix 1

Watershed Plans

(see plan set)

Appendix 2

Stormwater Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 18347 Fallbrook Commons **Date:** 6/30/2020

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10.0S	197,762	8,676	226	167,582	21,278	21,504	176,258	NO	0	0	0	
10.1S	114,524	24,914	0	85,730	3,880	3,880	110,644	NO	0	0	0	
11.0S	83,879	0	55,667	0	28,212	83,879	0	YES	55,667	28,212	83,879	GW-1
11.1S	23,407	0	0	0	23,407	23,407	0	YES	0	23,407	23,407	GW-1
11.2S	27,173	7,890	700	9,821	8,762	9,462	17,711	YES	8,590	18,583	27,173	GW-1
12.0S	57,628	0	23,776	0	33,852	57,628	0	YES	23,776	33,852	57,628	UDSF-1
13.0S	17,204	0	17,204	0	0	17,204	0	YES	17,204	0	17,204	DL
13.1S	16,974	0	16,974	0	0	16,974	0	YES	16,974	0	16,974	DL
20.0S	10,684	0	0	10,684	0	0	10,684	NO	0	0	0	
30.0S	37,005	0	0	24,501	12,504	12,504	24,501	NO	0	0	0	
OS-40S	53,510	17,041	3,120	33,349	0	3,120	50,390	NO	0	0	0	
OS-41S	39,122	10,996	2,045	26,081	0	2,045	37,077	NO	0	0	0	
OS-50S	107,926	29,442	771	77,713	0	771	107,155	NO	0	0	0	
OS-51S	9,601	4,072	1,485	4,044	0	1,485	8,116	NO	0	0	0	
TOTAL (S.F.)	**796,399**	**103,031**	**121,968**	**439,505**	**131,895**	**253,863**	**542,536**		**122,211**	**104,054**	**226,265**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**121,968**	**TOTAL DEVELOPED AREA (S.F.)**	**253,863**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**122,211**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**226,265**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**100.20%**	**% OF AREA RECEIVING TREATMENT**	**89.13%**

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JOB	18347 Fallbrook Commons		
SHEET NO.	1	OF	1
CALCULATED BY	BAW	DATE	7/9/2020
FILE NAME	18347 WQC.xlsx	PRNT DATE	7/9/2020

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system….holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to GRAVEL WETLAND

Landscaped Area	70,202.0	SF		
Impervious Area	64,257.0	SF		

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	70,202.00	SF	Area	1,404.0	SF	
Total Impervious Area	64,257.00	SF	Area	3,212.9	SF	
Required Minimum Surface Area				4,616.9	SF	
Provided Surface Area				6,175.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	70,202.00	SF	Volume	2,340.1				
Impervious Area	64,257.00	SF	Volume	5,354.8				
Treatment Volume Required				7,694.8	CF	0.177	AF	
Minimum Treatment Cell Volume (45%)				3,462.7	CF	0.079	AF	
Provided Treatment Volume (Bay 1)				4,790.0	CF			
Provided Treatment Volume (Bay 2)				5,860.0	CF			
Total Provided Treatment Volume				10,650.0	CF			
Minimum "Forebay" Cell Volume (10%)				769.5	CF			
Provided Treatment Volume (Forebay)				800.0	CF			

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Gravel Wetland - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 10,650 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.12 \text{ cfs}$$

surface area of filter = 6,175 SF

h = 1.72 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.019 sf = 2.81 sq. in.

Max. Diam = 1.89 in

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CALCULATED BY	BAW						DATE	7/9/2020					
FILE NAME	18347 WQC.xlsx						PRNT DATE	7/9/2020					

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References

1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1
   a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF-1

Landscaped Area	33,852.00	SF				
Impervious Area	23,776.00	SF				

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	33,852.00	SF	Area	677.0	SF	
Total Impervious Area	23,776.00	SF	Area	1,188.8	SF	
Required Minimum Surface Area				1,865.8	SF	
Provided Surface Area				1,955.0	SF	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	33,852.00	SF	Volume	1,128.4				
Impervious Area	23,776.00	SF	Volume	1,981.3				
Treatment Volume Required				3,109.7	CF	0.071	AF	
Provided Treatment Volume				3,730.0	CF	0.086	AF	

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded:	23,776.00	SF						
Sediment Volume	30	CF						
Provided	160	CF	16	Inch Deep Forebay	with area of		120	sf

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Underdrained Soil Filter 1 - Orifice Sizing Calculation

Orifice Equation $Q = CA\sqrt{(2gh)}$

Q = Rate of Discharge (cfs)
A = Orifice Area (sf)
G = Gravitational Constant (32.2 ft/s^2)
h = Depth of water above the flow line (center) of the orifice (ft)
C = Orifice coefficient (usually assumed = 0.6)

Average discharge rate required to drawdown the treatment volume in a desired amount of time is:

$$Q = \frac{TV}{tCF}$$

T = Treatment Volume (cf)
t = Recovery Time (hrs)
CF = Conversion Factor = 3600 sec/hr

TV = 3,730 cf
t = 24 hr

$$Q = \frac{TV}{tCF} = 0.04 \text{ cfs}$$

surface area of filter = 1,955 SF

h = 1.91 ft

$$A = \frac{Q}{C\sqrt{(2gh)}}$$

A = 0.006 sf = 0.93 sq. in.

Max. Diam = 1.09 in

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CALCULATED BY	BAW	DATE	7/9/2020
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FILE NAME	18347 WQC.xlsx	PRINT DATE	7/9/2020

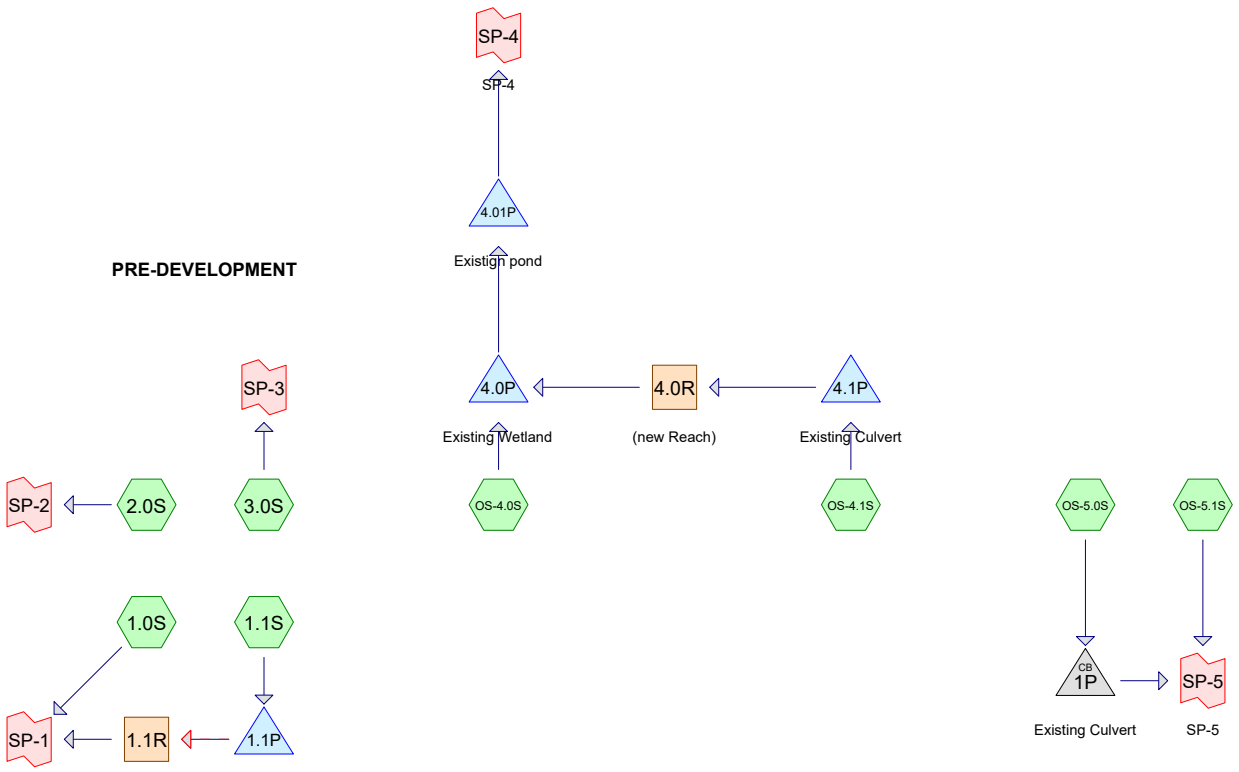
Treatment Calculations for Proposed Roof Drip Edge						
WQV Calculation						
(WQV = Water Quality Volume)						
Total Impervious Area =	34,180	sf				
WQV (MDEP)= 1" x Impervious Area =		2,848.3	cf =	0.065	acre-ft	
Length of Trench=		1510.0	ft.			
Width of Trench=		3.5	ft.			
Depth of Stone		12.0	in.	40% porosity		
Depth of Sand Media=		12.0	in.	20% porosity		
WQV Provided = Area of Trench * (Depth of stone*stone porosity + Depth of sand*sand porosity)						
WQV for first 1" =	2,114.0	cf				
Additional WQV Provided =	1,057.0	cf				
Total WQV Provided =	**3,171.0**	**cf**				

The stone reservoir volume for the drip edge filter was designed to provide the storage required to convey the water quality storm (storm that generates 1" of runoff over the roof) through the filter media under the stone. Additonal water quality is provided in the porosity of the underdrain sand.

Appendix 3

HydroCAD Output
Pre-Development and
Post-Development Models

Appendix 3A
PREDEVELOPMENT



Subcat Reach Pond Link

Routing Diagram for 18347 PRE-DEVELOPMENT
Prepared by {enter your company name here}, Printed 7/9/2020
HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.272	80	1/2 acre lots, 25% imp, HSG C (OS-5.0S)
2.022	74	>75% Grass cover, Good, HSG C (1.0S, 1.1S, 3.0S, OS-4.0S, OS-4.1S)
1.899	80	>75% Grass cover, Good, HSG D (1.0S, 1.1S)
0.139	96	Gravel surface, HSG C (1.0S, 3.0S)
0.063	96	Gravel surface, HSG D (1.0S)
0.581	98	Paved parking, HSG C (1.0S, 1.1S, 3.0S, OS-4.0S, OS-4.1S)
0.046	98	Paved parking, HSG D (1.0S, 1.1S)
0.578	92	Paved roads w/open ditches, 50% imp, HSG C (OS-5.0S, OS-5.1S)
0.587	98	Roofs, HSG C (1.0S, 1.1S, OS-4.0S, OS-4.1S)
0.394	98	Roofs, HSG D (1.0S, 1.1S)
4.754	70	Woods, Good, HSG C (1.0S, 1.1S, 2.0S, 3.0S, OS-4.0S, OS-4.1S, OS-5.0S)
5.947	77	Woods, Good, HSG D (1.0S, 1.1S, 3.0S)
18.282	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
9.933	HSG C	1.0S, 1.1S, 2.0S, 3.0S, OS-4.0S, OS-4.1S, OS-5.0S, OS-5.1S
8.350	HSG D	1.0S, 1.1S, 3.0S
0.000	Other	
18.282		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=1.14"
Flow Length=740' Tc=29.3 min CN=77 Runoff=7.0 cfs 0.895 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.6 cfs 0.296 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.2 cfs 0.028 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=0.87"
Flow Length=292' Tc=16.1 min CN=72 Runoff=0.6 cfs 0.067 af

SubcatchmentOS-4.0S: Runoff Area=53,510 sf 31.85% Impervious Runoff Depth=1.39"
Flow Length=86' Tc=9.3 min CN=81 Runoff=1.8 cfs 0.142 af

SubcatchmentOS-4.1S: Runoff Area=39,122 sf 28.11% Impervious Runoff Depth=1.33"
Flow Length=207' Tc=16.2 min CN=80 Runoff=1.0 cfs 0.099 af

SubcatchmentOS-5.0S: Runoff Area=107,926 sf 20.06% Impervious Runoff Depth=1.20"
Flow Length=543' Tc=6.0 min CN=78 Runoff=3.4 cfs 0.248 af

SubcatchmentOS-5.1S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=2.26"
Flow Length=342' Tc=6.0 min CN=92 Runoff=0.6 cfs 0.041 af

Reach 1.1R: Avg. Flow Depth=0.11' Max Vel=0.44 fps Inflow=2.4 cfs 0.294 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=1.8 cfs 0.294 af

Reach 4.0R: (new Reach) Avg. Flow Depth=0.18' Max Vel=0.46 fps Inflow=1.0 cfs 0.099 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=0.9 cfs 0.099 af

Pond 1.1P: Peak Elev=93.92' Storage=1,040 cf Inflow=2.6 cfs 0.296 af
Primary=2.4 cfs 0.294 af Secondary=0.0 cfs 0.000 af Outflow=2.4 cfs 0.294 af

Pond 1P: Existing Culvert Peak Elev=96.93' Inflow=3.4 cfs 0.248 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=3.4 cfs 0.248 af

Pond 4.01P: Existign pond Peak Elev=106.11' Storage=1,406 cf Inflow=1.6 cfs 0.238 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=1.3 cfs 0.235 af

Pond 4.0P: Existing Wetland Peak Elev=106.51' Storage=2,029 cf Inflow=2.3 cfs 0.242 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=1.6 cfs 0.238 af

Pond 4.1P: Existing Culvert Peak Elev=108.82' Storage=49 cf Inflow=1.0 cfs 0.099 af
15.0" Round Culvert n=0.012 L=38.0' S=0.0042 '/' Outflow=1.0 cfs 0.099 af

Link SP-1: Inflow=8.4 cfs 1.190 af
Primary=8.4 cfs 1.190 af

Link SP-2: Inflow=0.2 cfs 0.028 af
Primary=0.2 cfs 0.028 af

Link SP-3: Inflow=0.6 cfs 0.067 af
Primary=0.6 cfs 0.067 af

Link SP-4: SP-4 Inflow=1.3 cfs 0.235 af
Primary=1.3 cfs 0.235 af

Link SP-5: SP-5 Inflow=4.0 cfs 0.289 af
Primary=4.0 cfs 0.289 af

Total Runoff Area = 18.282 ac Runoff Volume = 1.817 af Average Runoff Depth = 1.19"
87.89% Pervious = 16.068 ac 12.11% Impervious = 2.215 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=2.46"
Flow Length=740' Tc=29.3 min CN=77 Runoff=15.5 cfs 1.928 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.3 cfs 0.606 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.7 cfs 0.070 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.05"
Flow Length=292' Tc=16.1 min CN=72 Runoff=1.6 cfs 0.157 af

SubcatchmentOS-4.0S: Runoff Area=53,510 sf 31.85% Impervious Runoff Depth=2.81"
Flow Length=86' Tc=9.3 min CN=81 Runoff=3.6 cfs 0.288 af

SubcatchmentOS-4.1S: Runoff Area=39,122 sf 28.11% Impervious Runoff Depth=2.72"
Flow Length=207' Tc=16.2 min CN=80 Runoff=2.1 cfs 0.204 af

SubcatchmentOS-5.0S: Runoff Area=107,926 sf 20.06% Impervious Runoff Depth=2.54"
Flow Length=543' Tc=6.0 min CN=78 Runoff=7.4 cfs 0.525 af

SubcatchmentOS-5.1S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=3.89"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.0 cfs 0.072 af

Reach 1.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.2 cfs 0.605 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=4.3 cfs 0.605 af

Reach 4.0R: (new Reach) Avg. Flow Depth=0.28' Max Vel=0.61 fps Inflow=2.1 cfs 0.204 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.0 cfs 0.204 af

Pond 1.1P: Peak Elev=94.16' Storage=1,502 cf Inflow=5.3 cfs 0.606 af
Primary=5.2 cfs 0.605 af Secondary=0.0 cfs 0.000 af Outflow=5.2 cfs 0.605 af

Pond 1P: Existing Culvert Peak Elev=98.91' Inflow=7.4 cfs 0.525 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=7.4 cfs 0.525 af

Pond 4.01P: Existign pond Peak Elev=106.61' Storage=2,783 cf Inflow=3.2 cfs 0.488 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.4 cfs 0.484 af

Pond 4.0P: Existing Wetland Peak Elev=106.86' Storage=3,724 cf Inflow=4.8 cfs 0.491 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=3.2 cfs 0.488 af

Pond 4.1P: Existing Culvert Peak Elev=109.09' Storage=109 cf Inflow=2.1 cfs 0.204 af
15.0" Round Culvert n=0.012 L=38.0' S=0.0042 '/' Outflow=2.1 cfs 0.204 af

Link SP-1: Inflow=19.4 cfs 2.533 af
Primary=19.4 cfs 2.533 af

Link SP-2: Inflow=0.7 cfs 0.070 af
Primary=0.7 cfs 0.070 af

Link SP-3: Inflow=1.6 cfs 0.157 af
Primary=1.6 cfs 0.157 af

Link SP-4: SP-4 Inflow=2.4 cfs 0.484 af
Primary=2.4 cfs 0.484 af

Link SP-5: SP-5 Inflow=8.3 cfs 0.597 af
Primary=8.3 cfs 0.597 af

Total Runoff Area = 18.282 ac Runoff Volume = 3.849 af Average Runoff Depth = 2.53"
87.89% Pervious = 16.068 ac 12.11% Impervious = 2.215 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.0S: Runoff Area=410,291 sf 3.80% Impervious Runoff Depth=3.31"
Flow Length=740' Tc=29.3 min CN=77 Runoff=20.9 cfs 2.594 af

Subcatchment1.1S: Runoff Area=116,561 sf 21.37% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=7.0 cfs 0.803 af

Subcatchment2.0S: Runoff Area=19,260 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=210' Tc=18.7 min CN=70 Runoff=0.9 cfs 0.098 af

Subcatchment3.0S: Runoff Area=40,113 sf 3.67% Impervious Runoff Depth=2.83"
Flow Length=292' Tc=16.1 min CN=72 Runoff=2.2 cfs 0.217 af

SubcatchmentOS-4.0S: Runoff Area=53,510 sf 31.85% Impervious Runoff Depth=3.70"
Flow Length=86' Tc=9.3 min CN=81 Runoff=4.7 cfs 0.379 af

SubcatchmentOS-4.1S: Runoff Area=39,122 sf 28.11% Impervious Runoff Depth=3.60"
Flow Length=207' Tc=16.2 min CN=80 Runoff=2.8 cfs 0.270 af

SubcatchmentOS-5.0S: Runoff Area=107,926 sf 20.06% Impervious Runoff Depth=3.40"
Flow Length=543' Tc=6.0 min CN=78 Runoff=9.9 cfs 0.703 af

SubcatchmentOS-5.1S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=4.87"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.2 cfs 0.090 af

Reach 1.1R: Avg. Flow Depth=0.21' Max Vel=0.63 fps Inflow=6.3 cfs 0.802 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=5.8 cfs 0.802 af

Reach 4.0R: (new Reach) Avg. Flow Depth=0.33' Max Vel=0.67 fps Inflow=2.7 cfs 0.270 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.6 cfs 0.270 af

Pond 1.1P: Peak Elev=94.42' Storage=2,183 cf Inflow=7.0 cfs 0.803 af
Primary=6.3 cfs 0.802 af Secondary=0.0 cfs 0.000 af Outflow=6.3 cfs 0.802 af

Pond 1P: Existing Culvert Peak Elev=100.89' Inflow=9.9 cfs 0.703 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=9.9 cfs 0.703 af

Pond 4.01P: Existign pond Peak Elev=106.89' Storage=3,705 cf Inflow=4.1 cfs 0.645 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.9 cfs 0.641 af

Pond 4.0P: Existing Wetland Peak Elev=107.08' Storage=4,959 cf Inflow=6.4 cfs 0.648 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=4.1 cfs 0.645 af

Pond 4.1P: Existing Culvert Peak Elev=109.24' Storage=168 cf Inflow=2.8 cfs 0.270 af
15.0" Round Culvert n=0.012 L=38.0' S=0.0042 '/' Outflow=2.7 cfs 0.270 af

Link SP-1: Inflow=25.9 cfs 3.396 af
Primary=25.9 cfs 3.396 af

Link SP-2: Inflow=0.9 cfs 0.098 af
Primary=0.9 cfs 0.098 af

Link SP-3: Inflow=2.2 cfs 0.217 af
Primary=2.2 cfs 0.217 af

Link SP-4: SP-4 Inflow=2.9 cfs 0.641 af
Primary=2.9 cfs 0.641 af

Link SP-5: SP-5 Inflow=11.1 cfs 0.792 af
Primary=11.1 cfs 0.792 af

Total Runoff Area = 18.282 ac Runoff Volume = 5.153 af Average Runoff Depth = 3.38"
87.89% Pervious = 16.068 ac 12.11% Impervious = 2.215 ac

Summary for Subcatchment 1.0S:

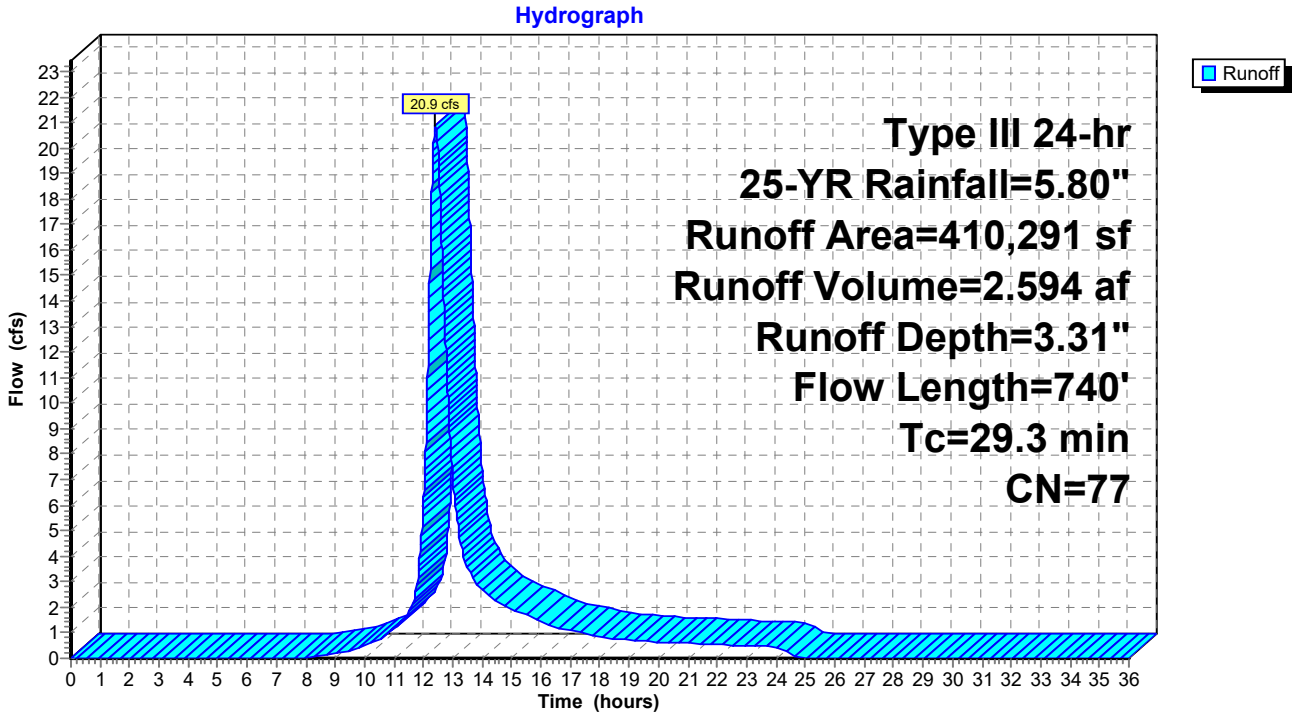
Runoff = 20.9 cfs @ 12.40 hrs, Volume= 2.594 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,649	98	Paved parking, HSG C
1,243	98	Paved parking, HSG D
12,810	74	>75% Grass cover, Good, HSG C
65,319	80	>75% Grass cover, Good, HSG D
5,779	98	Roofs, HSG C
6,933	98	Roofs, HSG D
85,234	70	Woods, Good, HSG C
223,398	77	Woods, Good, HSG D
5,175	96	Gravel surface, HSG C
2,751	96	Gravel surface, HSG D
410,291	77	Weighted Average
394,687		96.20% Pervious Area
15,604		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0930	0.15		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.6	180	0.0550	1.17		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
29.3	740	Total			

Subcatchment 1.0S:



Summary for Subcatchment 1.1S:

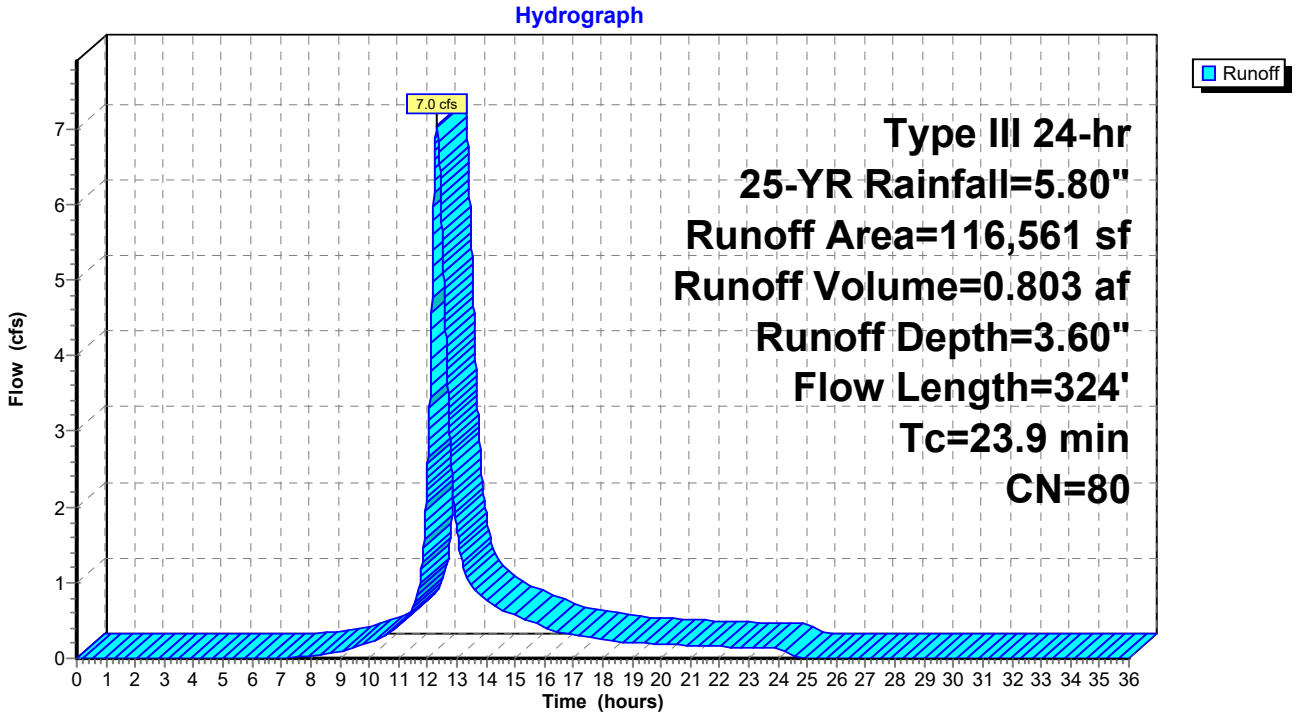
Runoff = 7.0 cfs @ 12.33 hrs, Volume= 0.803 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,275	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,695	74	>75% Grass cover, Good, HSG C
17,419	80	>75% Grass cover, Good, HSG D
11,644	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,088	70	Woods, Good, HSG C
33,453	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
116,561	80	Weighted Average
91,655		78.63% Pervious Area
24,906		21.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Subcatchment 1.1S:



Summary for Subcatchment 2.0S:

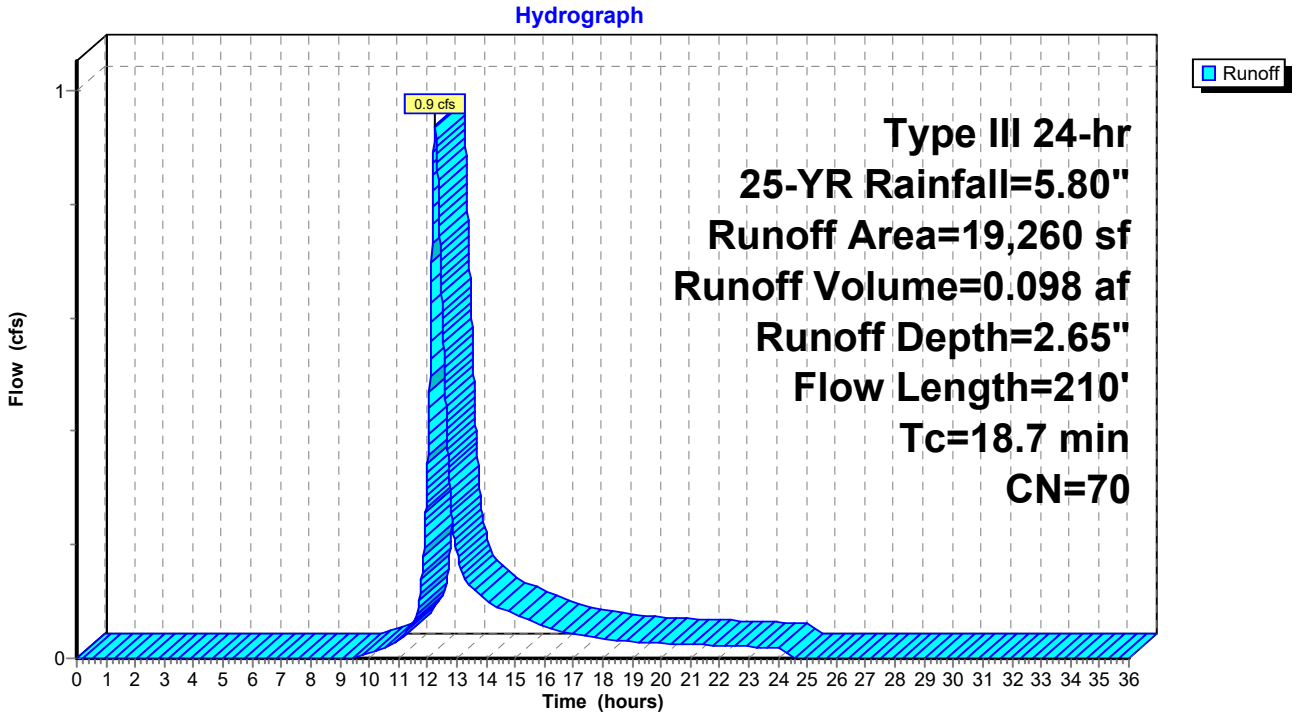
Runoff = 0.9 cfs @ 12.26 hrs, Volume= 0.098 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,260	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
19,260	70	Weighted Average
19,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	100	0.0350	0.10		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.8	110	0.0400	1.00		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
18.7	210	Total			

Subcatchment 2.0S:



Summary for Subcatchment 3.0S:

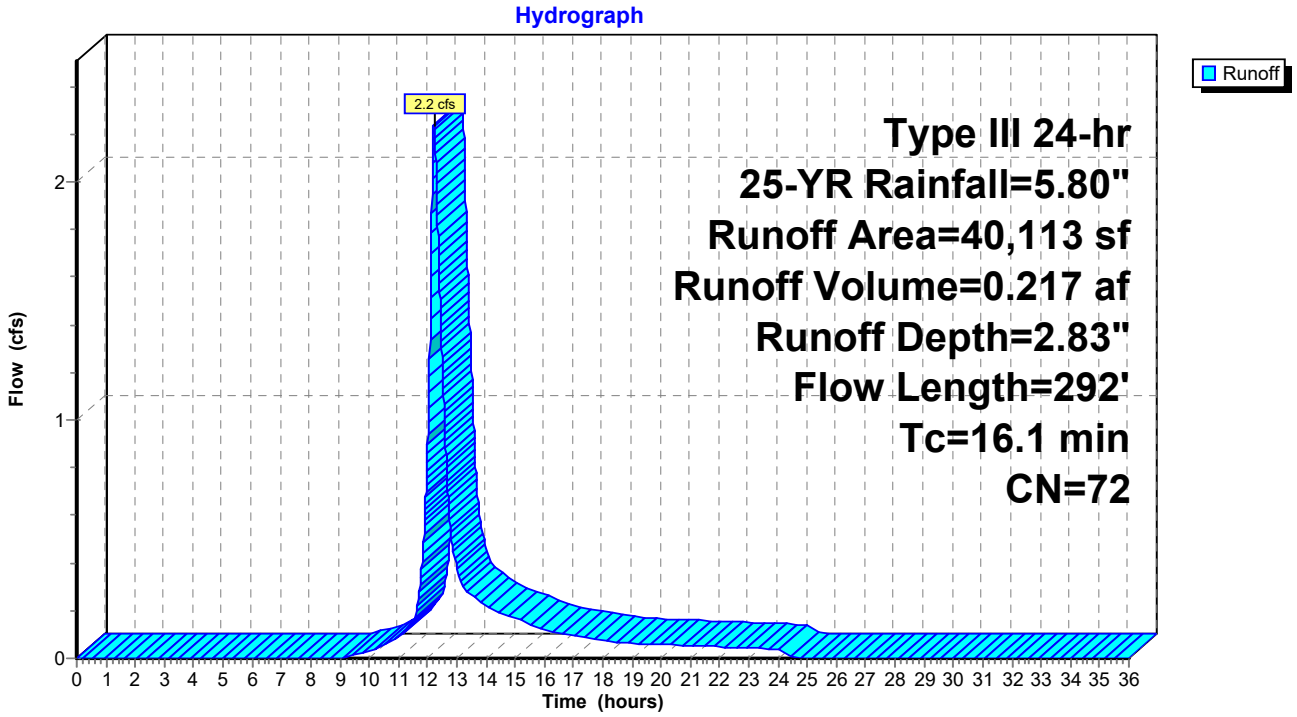
Runoff = 2.2 cfs @ 12.22 hrs, Volume= 0.217 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,473	98	Paved parking, HSG C
0	98	Paved parking, HSG D
4,421	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
31,125	70	Woods, Good, HSG C
2,219	77	Woods, Good, HSG D
875	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
40,113	72	Weighted Average
38,640		96.33% Pervious Area
1,473		3.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Subcatchment 3.0S:



Summary for Subcatchment OS-4.0S:

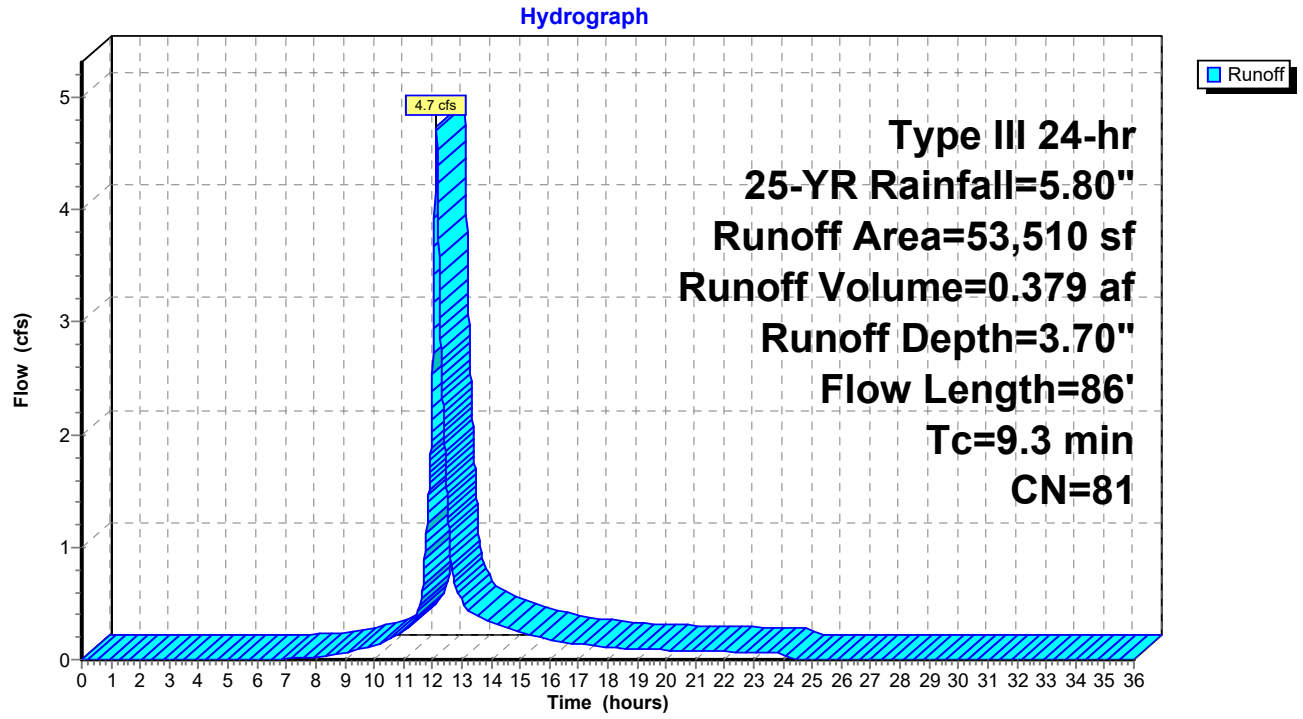
Runoff = 4.7 cfs @ 12.13 hrs, Volume= 0.379 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
13,355	98	Paved parking, HSG C
31,929	74	>75% Grass cover, Good, HSG C
3,686	98	Roofs, HSG C
4,540	70	Woods, Good, HSG C
53,510	81	Weighted Average
36,469		68.15% Pervious Area
17,041		31.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	40	0.0100	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.30"
0.1	17	0.0250	3.21		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.3	29	0.0600	1.71		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
9.3	86	Total			

Subcatchment OS-4.0S:



Summary for Subcatchment OS-4.1S:

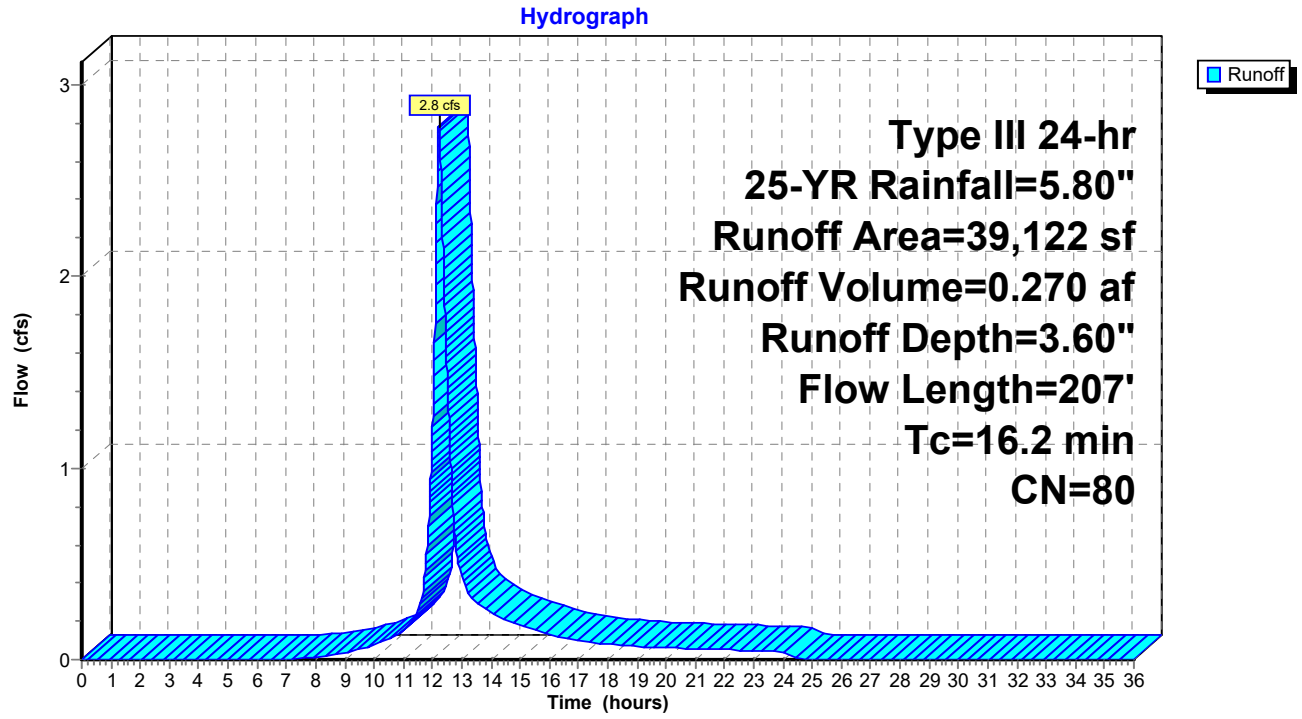
Runoff = 2.8 cfs @ 12.22 hrs, Volume= 0.270 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
6,547	98	Paved parking, HSG C
16,225	74	>75% Grass cover, Good, HSG C
4,449	98	Roofs, HSG C
11,901	70	Woods, Good, HSG C
39,122	80	Weighted Average
28,126		71.89% Pervious Area
10,996		28.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	14	0.2100	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.30"
12.2	86	0.0580	0.12		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.30"
2.3	107	0.0250	0.79		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
16.2	207	Total			

Subcatchment OS-4.1S:



Summary for Subcatchment OS-5.0S:

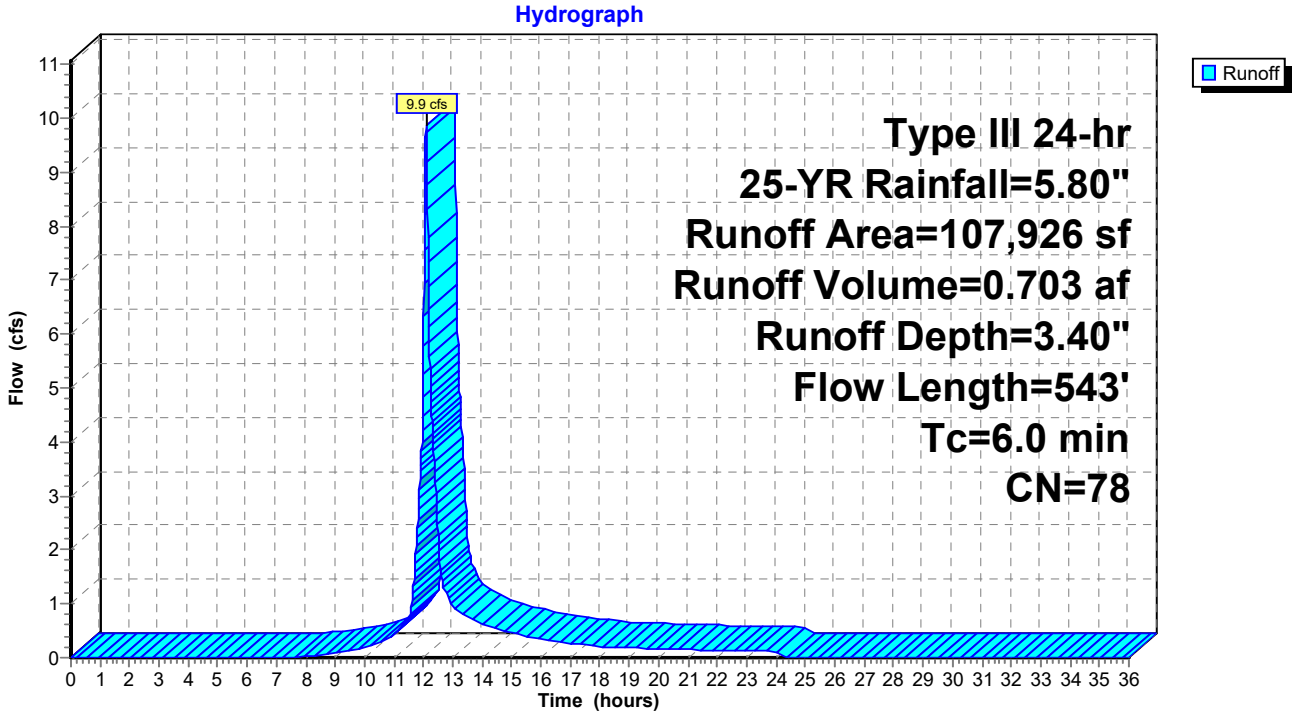
Runoff = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
15,592	92	Paved roads w/open ditches, 50% imp, HSG C
55,403	80	1/2 acre lots, 25% imp, HSG C
36,931	70	Woods, Good, HSG C
107,926	78	Weighted Average
86,279		79.94% Pervious Area
21,647		20.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	477	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.9	66	0.0300	1.21		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
2.8					**Direct Entry,**
6.0	543	Total			

Subcatchment OS-5.0S:



Summary for Subcatchment OS-5.1S:

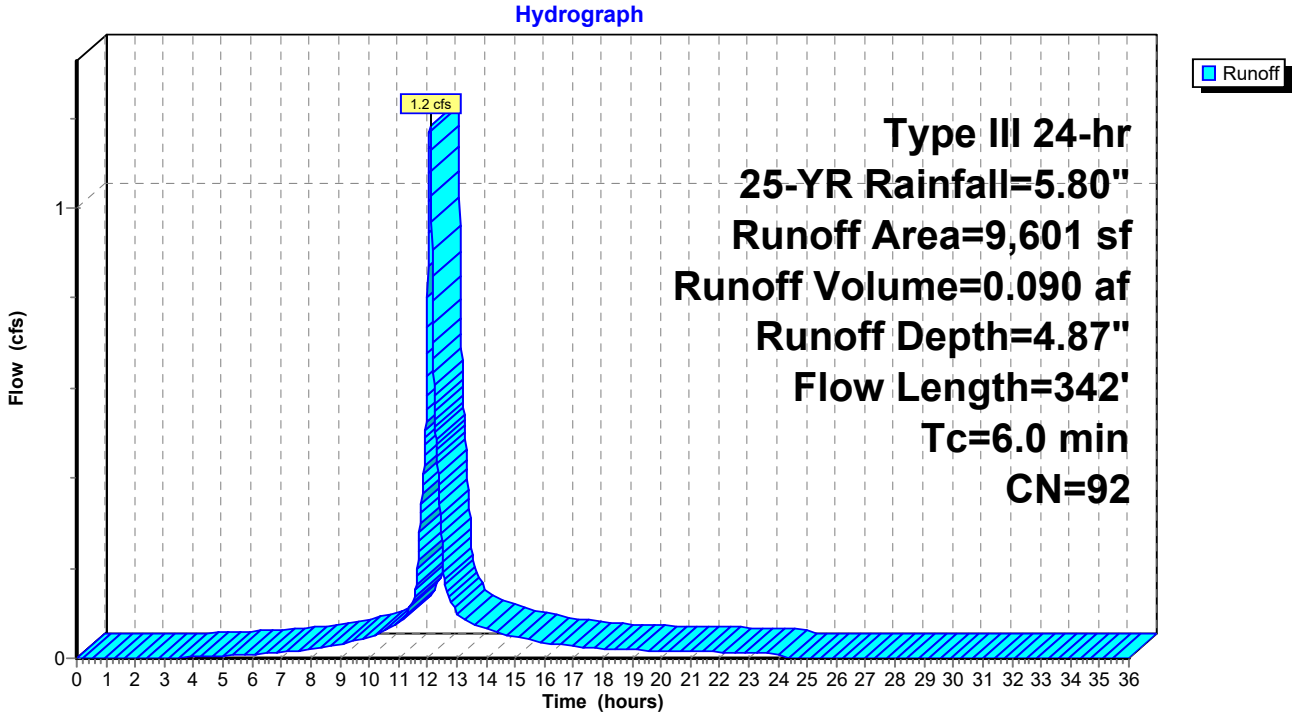
Runoff = 1.2 cfs @ 12.08 hrs, Volume= 0.090 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
9,601	92	Paved roads w/open ditches, 50% imp, HSG C
4,801		50.00% Pervious Area
4,801		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	320	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.1	22	0.1300	2.52		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
4.4					**Direct Entry,**
6.0	342	Total			

Subcatchment OS-5.1S:



Summary for Reach 1.1R:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.3 cfs @ 12.44 hrs, Volume= 0.802 af
Outflow = 5.8 cfs @ 12.60 hrs, Volume= 0.802 af, Atten= 9%, Lag= 9.4 min

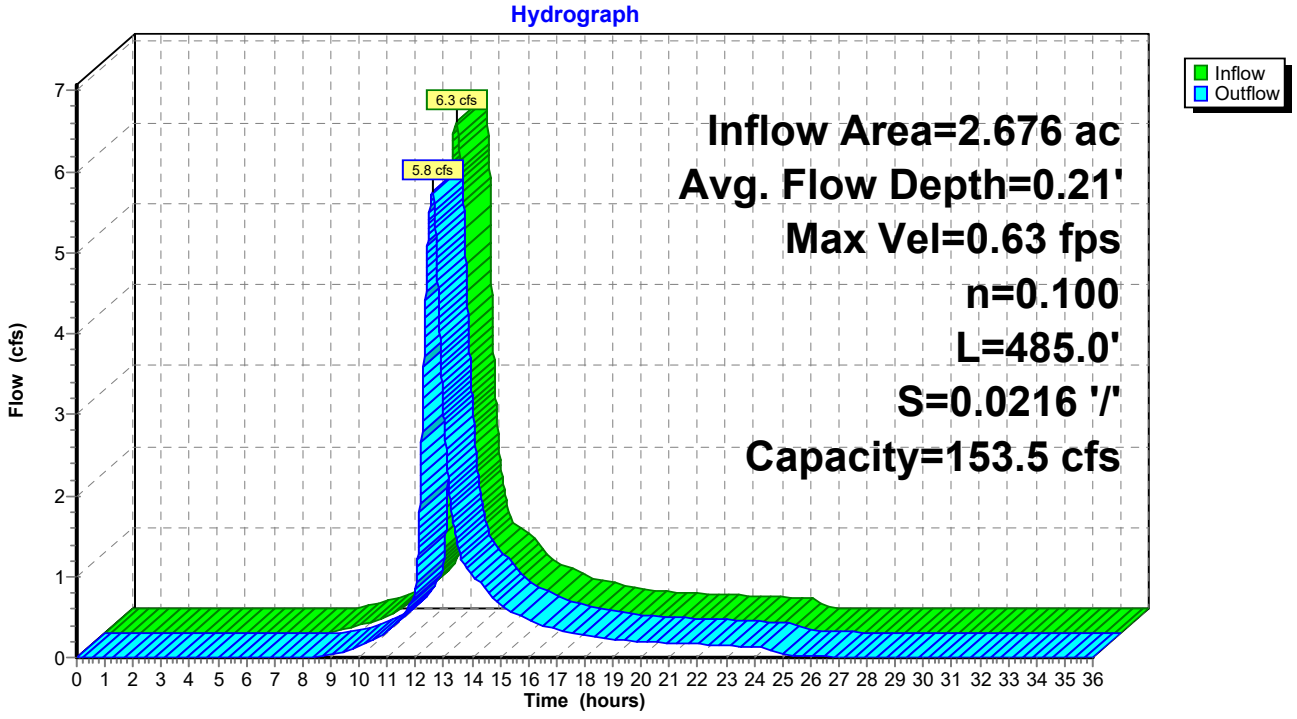
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.63 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 42.6 min

Peak Storage= 4,419 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.5 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'

‡

Reach 1.1R:



Summary for Reach 4.0R: (new Reach)

Inflow Area = 0.898 ac, 28.11% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 2.7 cfs @ 12.25 hrs, Volume= 0.270 af
Outflow = 2.6 cfs @ 12.30 hrs, Volume= 0.270 af, Atten= 4%, Lag= 3.2 min

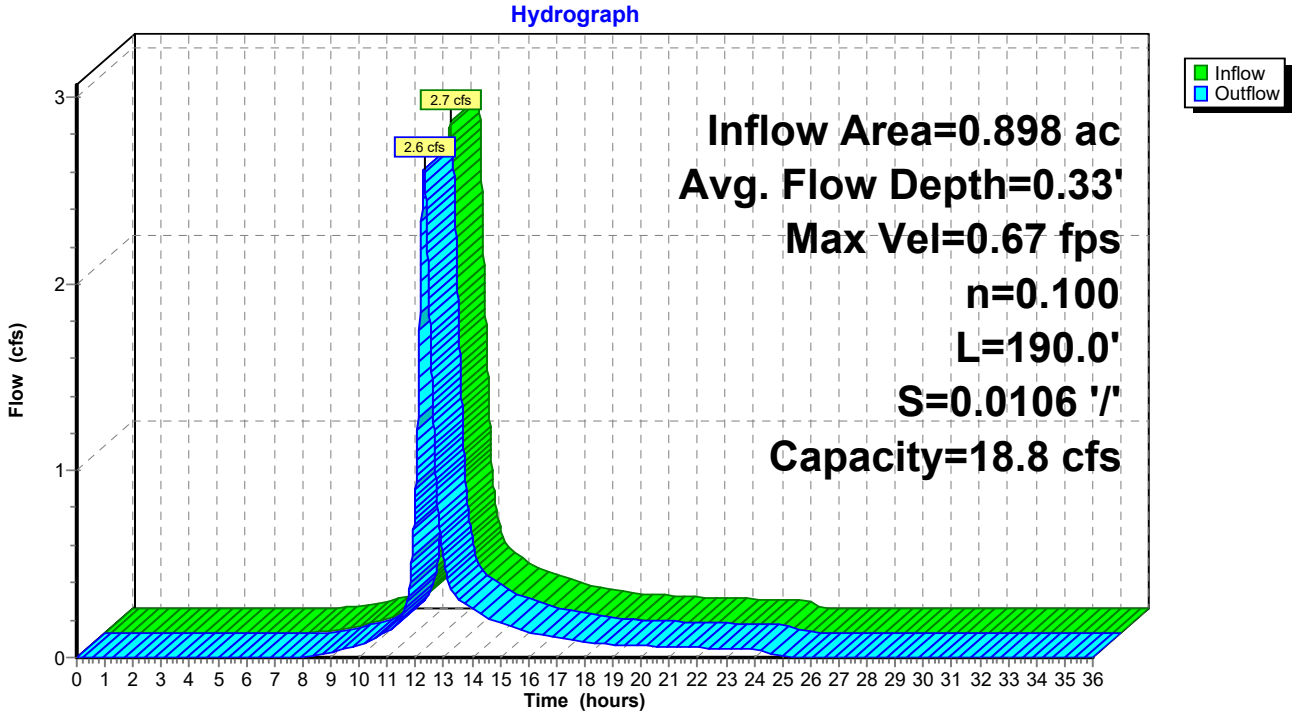
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.67 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 18.1 min

Peak Storage= 741 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 18.8 cfs

10.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 20.00'
Length= 190.0' Slope= 0.0106 '/'
Inlet Invert= 108.04', Outlet Invert= 106.03'

‡

Reach 4.0R: (new Reach)



Summary for Pond 1.1P:

Inflow Area = 2.676 ac, 21.37% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 7.0 cfs @ 12.33 hrs, Volume= 0.803 af
Outflow = 6.3 cfs @ 12.44 hrs, Volume= 0.802 af, Atten= 10%, Lag= 6.9 min
Primary = 6.3 cfs @ 12.44 hrs, Volume= 0.802 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 94.42' @ 12.44 hrs Surf.Area= 3,015 sf Storage= 2,183 cf
Flood Elev= 95.01' Surf.Area= 4,798 sf Storage= 4,485 cf

Plug-Flow detention time= 6.8 min calculated for 0.802 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (837.9 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.70'	12,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

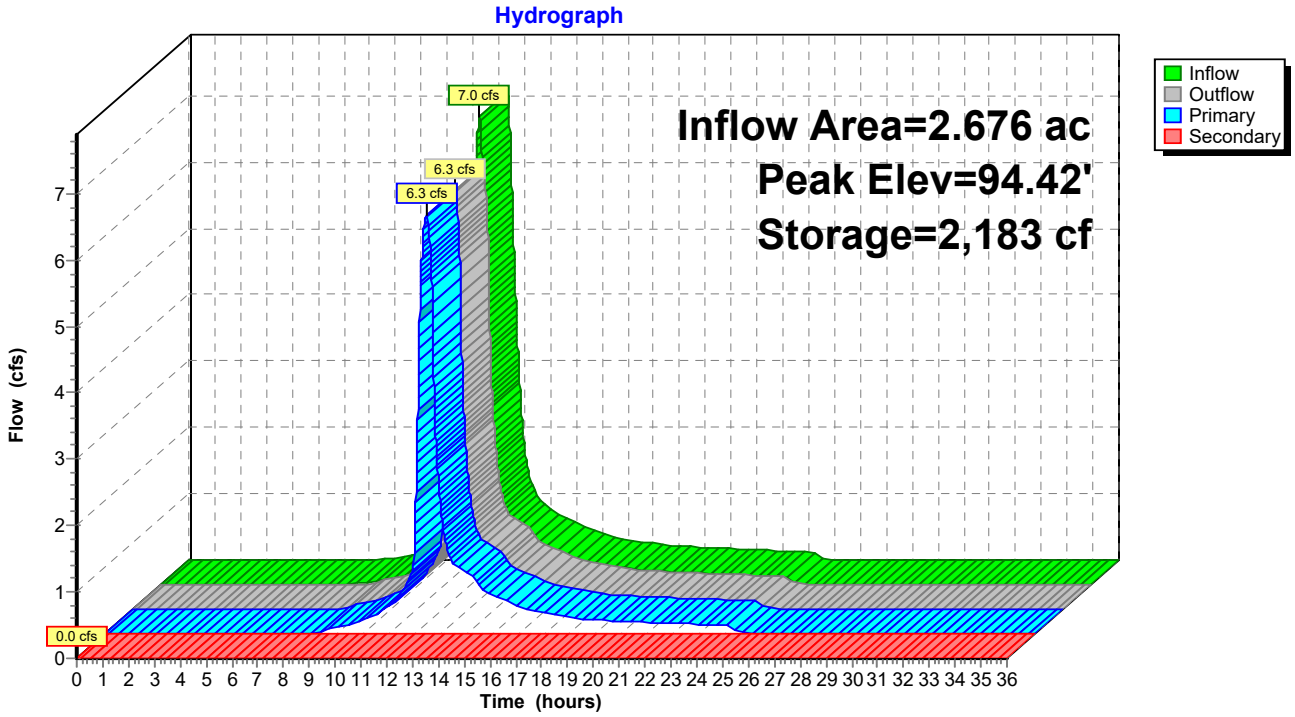
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.70	80	0.0	0	0
92.00	100	100.0	27	27
93.00	214	100.0	157	184
94.00	1,779	100.0	997	1,180
95.00	4,735	100.0	3,257	4,438
96.00	11,075	100.0	7,905	12,343

Device	Routing	Invert	Outlet Devices
#1	Primary	91.72'	**15.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.72' / 89.67' S= 0.0512 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	92.25'	**6.0" Vert. Controlling Orifice** C= 0.600
#3	Device 1	93.70'	**15.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	95.05'	**30.0' long x 10.0' breadth Roadway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.3 cfs @ 12.44 hrs HW=94.42' TW=89.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.3 cfs of 6.7 cfs potential flow)
  ├**2=Controlling Orifice** (Orifice Controls 1.3 cfs @ 6.67 fps)
  └**3=Grate** (Orifice Controls 5.0 cfs @ 4.08 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=91.70' TW=89.00' (Dynamic Tailwater)
└**4=Roadway** (Controls 0.0 cfs)

Pond 1.1P:


Hydrograph
Inflow Area=2.676 ac
Peak Elev=94.42'
Storage=2,183 cf
7.0 cfs
6.3 cfs
6.3 cfs
0.0 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

Summary for Pond 1P: Existing Culvert

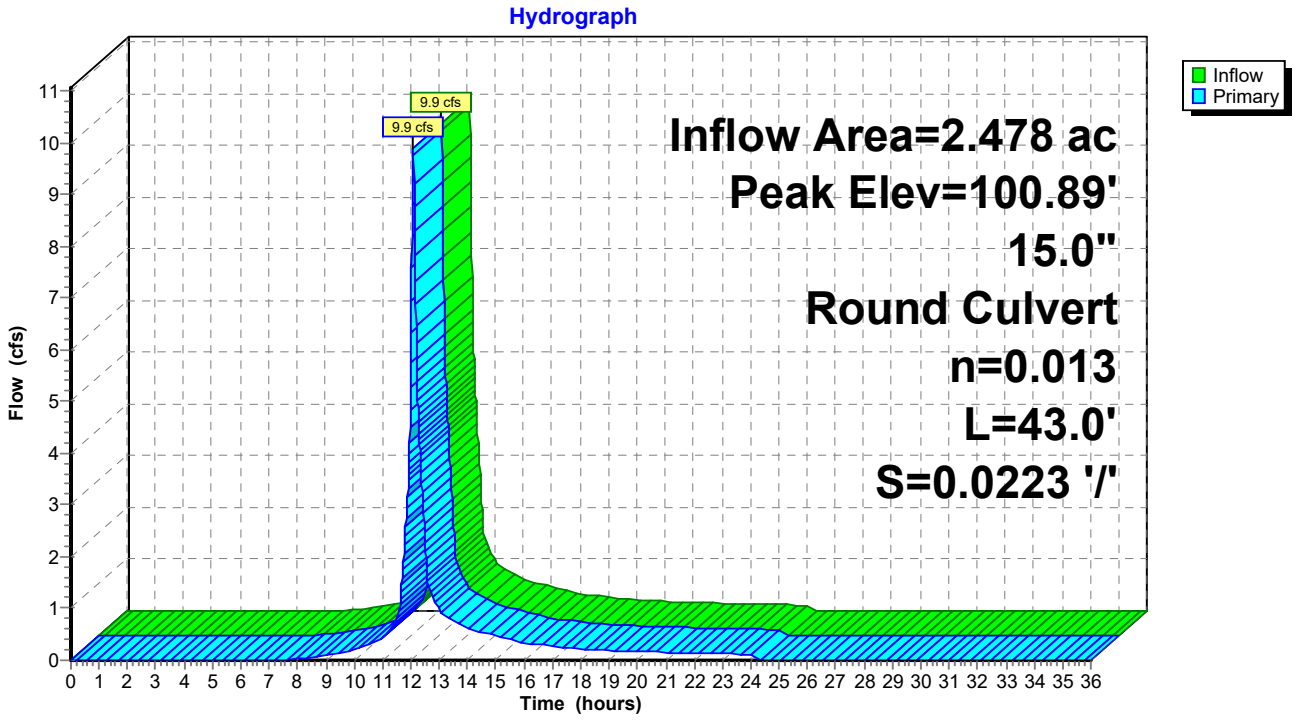
Inflow Area = 2.478 ac, 20.06% Impervious, Inflow Depth = 3.40" for 25-YR event
Inflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af
Outflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min
Primary = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 100.89' @ 12.09 hrs
Flood Elev= 100.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.78'	**15.0" Round Culvert** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.78' / 94.82' S= 0.0223 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=9.9 cfs @ 12.09 hrs HW=100.88' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.9 cfs @ 8.04 fps)

Pond 1P: Existing Culvert



Summary for Pond 4.01P: Existign pond

Inflow Area = 2.127 ac, 30.27% Impervious, Inflow Depth > 3.64" for 25-YR event
Inflow = 4.1 cfs @ 12.26 hrs, Volume= 0.645 af
Outflow = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af, Atten= 29%, Lag= 21.0 min
Primary = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 106.89' @ 12.61 hrs Surf.Area= 3,565 sf Storage= 3,705 cf

Plug-Flow detention time= 26.7 min calculated for 0.641 af (99% of inflow)
Center-of-Mass det. time= 22.0 min (880.0 - 858.1)

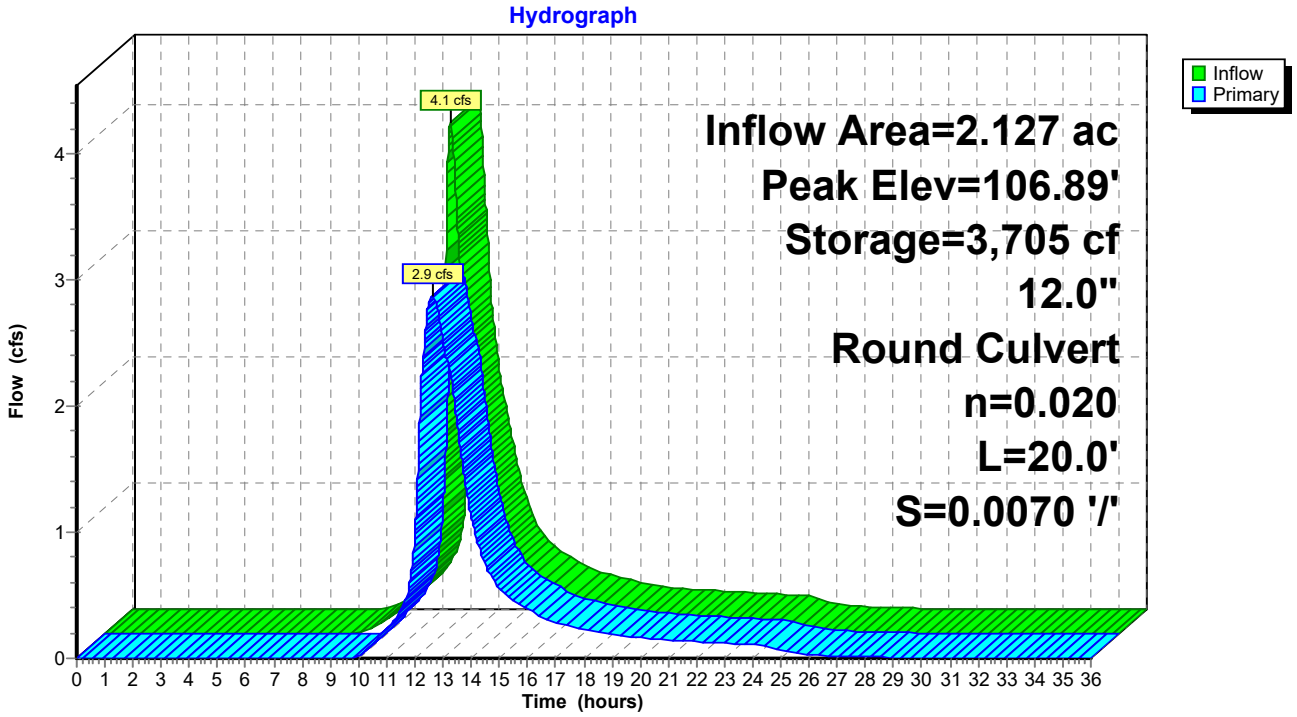
Volume	Invert	Avail.Storage	Storage Description
#1	105.00'	4,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
105.00	100	0	0
106.00	2,200	1,150	1,150
107.00	3,740	2,970	4,120

Device	Routing	Invert	Outlet Devices
#1	Primary	105.32'	**12.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.32' / 105.18' S= 0.0070 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.9 cfs @ 12.61 hrs HW=106.89' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.9 cfs @ 3.66 fps)

Pond 4.01P: Existign pond



Summary for Pond 4.0P: Existing Wetland

Inflow Area = 2.127 ac, 30.27% Impervious, Inflow Depth = 3.66" for 25-YR event
Inflow = 6.4 cfs @ 12.15 hrs, Volume= 0.648 af
Outflow = 4.1 cfs @ 12.26 hrs, Volume= 0.645 af, Atten= 37%, Lag= 6.8 min
Primary = 4.1 cfs @ 12.26 hrs, Volume= 0.645 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 107.08' @ 12.50 hrs Surf.Area= 5,998 sf Storage= 4,959 cf
Flood Elev= 109.00' Surf.Area= 11,962 sf Storage= 18,373 cf

Plug-Flow detention time= 37.0 min calculated for 0.645 af (99% of inflow)
Center-of-Mass det. time= 33.7 min (858.1 - 824.4)

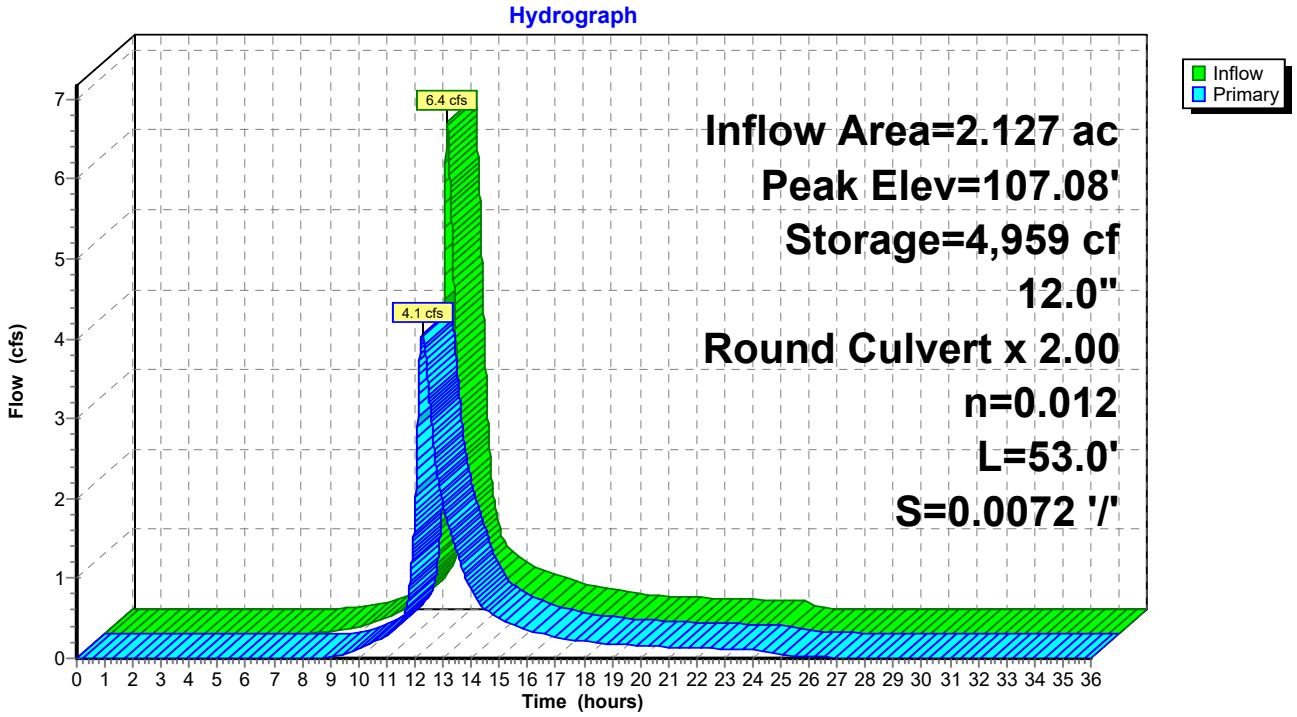
Volume	Invert	Avail.Storage	Storage Description
#1	106.00'	18,373 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
106.00	3,400	0	0
107.00	5,564	4,482	4,482
108.00	10,824	8,194	12,676
108.50	11,962	5,697	18,373

Device	Routing	Invert	Outlet Devices
#1	Primary	106.03'	**12.0" Round Culvert X 2.00** L= 53.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 106.03' / 105.65' S= 0.0072 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=4.1 cfs @ 12.26 hrs HW=106.97' TW=106.55' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.1 cfs @ 3.42 fps)

Pond 4.0P: Existing Wetland



Summary for Pond 4.1P: Existing Culvert

Inflow Area = 0.898 ac, 28.11% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 2.8 cfs @ 12.22 hrs, Volume= 0.270 af
Outflow = 2.7 cfs @ 12.25 hrs, Volume= 0.270 af, Atten= 2%, Lag= 1.7 min
Primary = 2.7 cfs @ 12.25 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 109.24' @ 12.25 hrs Surf.Area= 493 sf Storage= 168 cf
Flood Elev= 111.00' Surf.Area= 4,030 sf Storage= 3,589 cf

Plug-Flow detention time= 0.9 min calculated for 0.269 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (825.9 - 825.0)

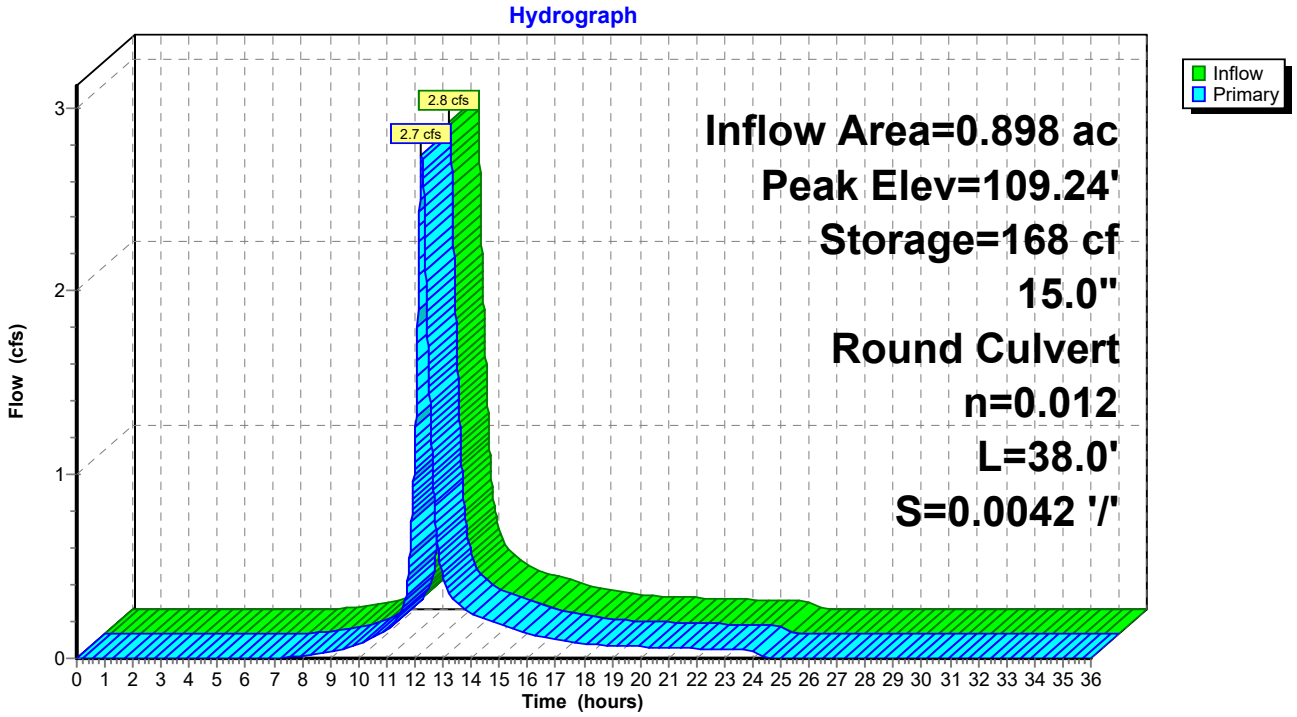
Volume	Invert	Avail.Storage	Storage Description
#1	108.27'	3,589 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
108.27	10	0	0
109.00	220	84	84
110.00	1,380	800	884
111.00	4,030	2,705	3,589

Device	Routing	Invert	Outlet Devices
#1	Primary	108.27'	**15.0" Round Culvert** L= 38.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 108.27' / 108.11' S= 0.0042 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.7 cfs @ 12.25 hrs HW=109.24' TW=108.36' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.7 cfs @ 3.71 fps)

Pond 4.1P: Existing Culvert

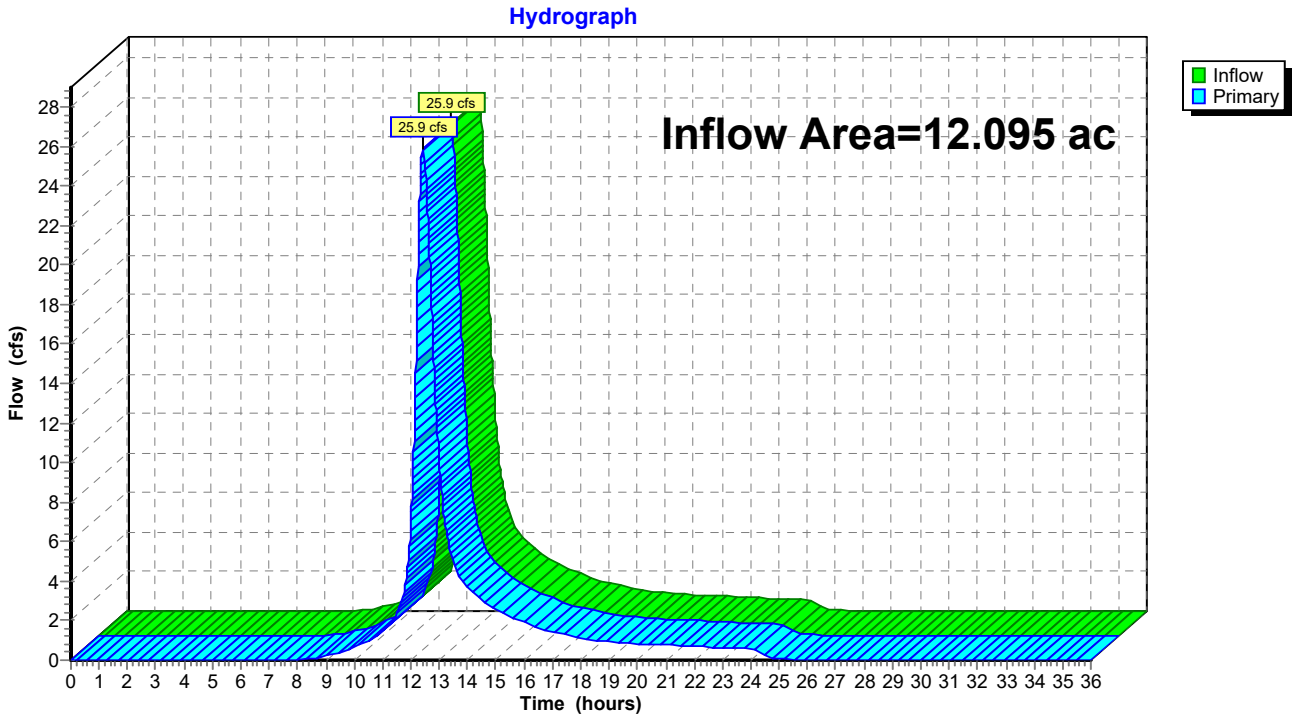


Summary for Link SP-1:

Inflow Area = 12.095 ac, 7.69% Impervious, Inflow Depth = 3.37" for 25-YR event
Inflow = 25.9 cfs @ 12.44 hrs, Volume= 3.396 af
Primary = 25.9 cfs @ 12.44 hrs, Volume= 3.396 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-1:

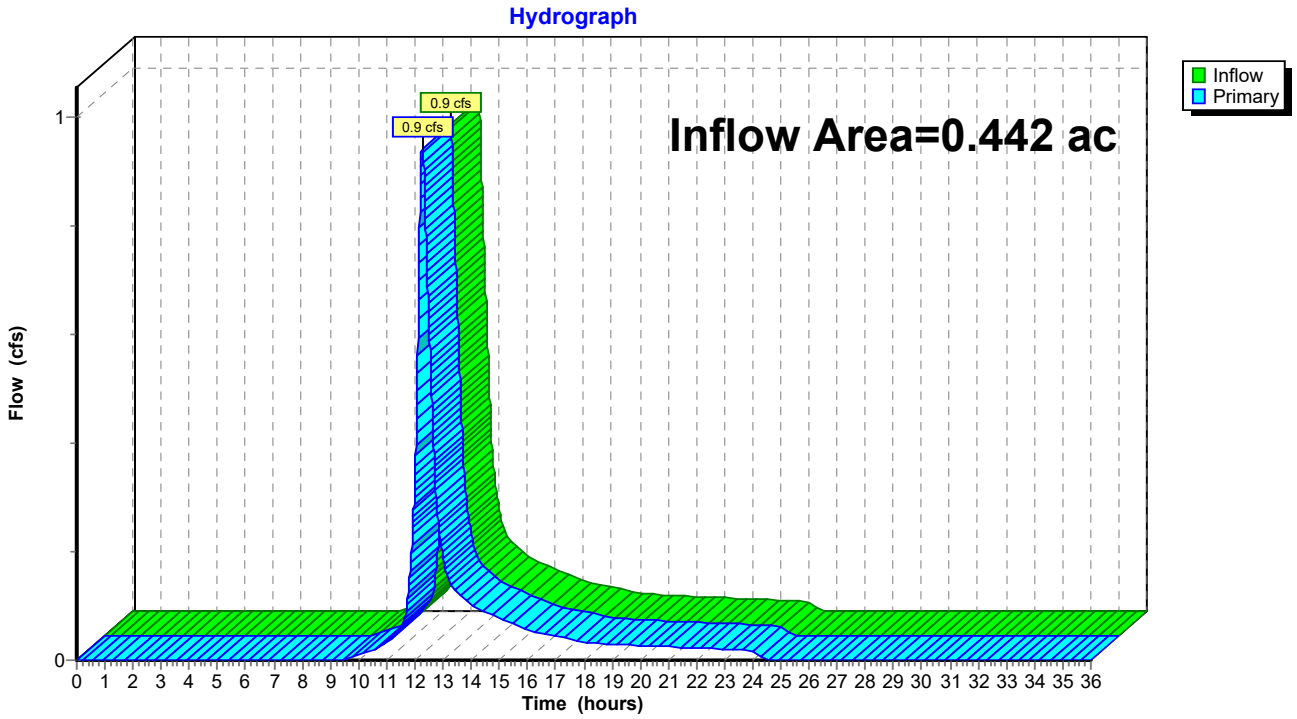


Summary for Link SP-2:

Inflow Area = 0.442 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.9 cfs @ 12.26 hrs, Volume= 0.098 af
Primary = 0.9 cfs @ 12.26 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-2:

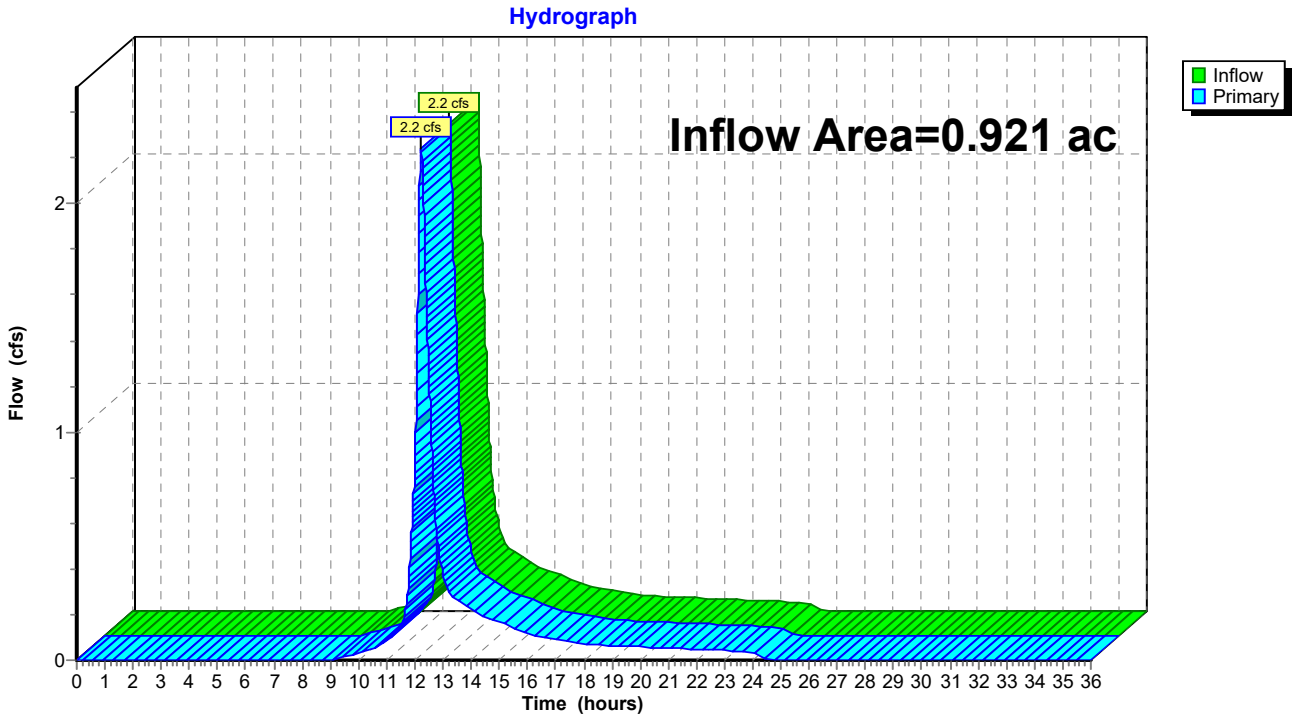


Summary for Link SP-3:

Inflow Area = 0.921 ac, 3.67% Impervious, Inflow Depth = 2.83" for 25-YR event
Inflow = 2.2 cfs @ 12.22 hrs, Volume= 0.217 af
Primary = 2.2 cfs @ 12.22 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-3:

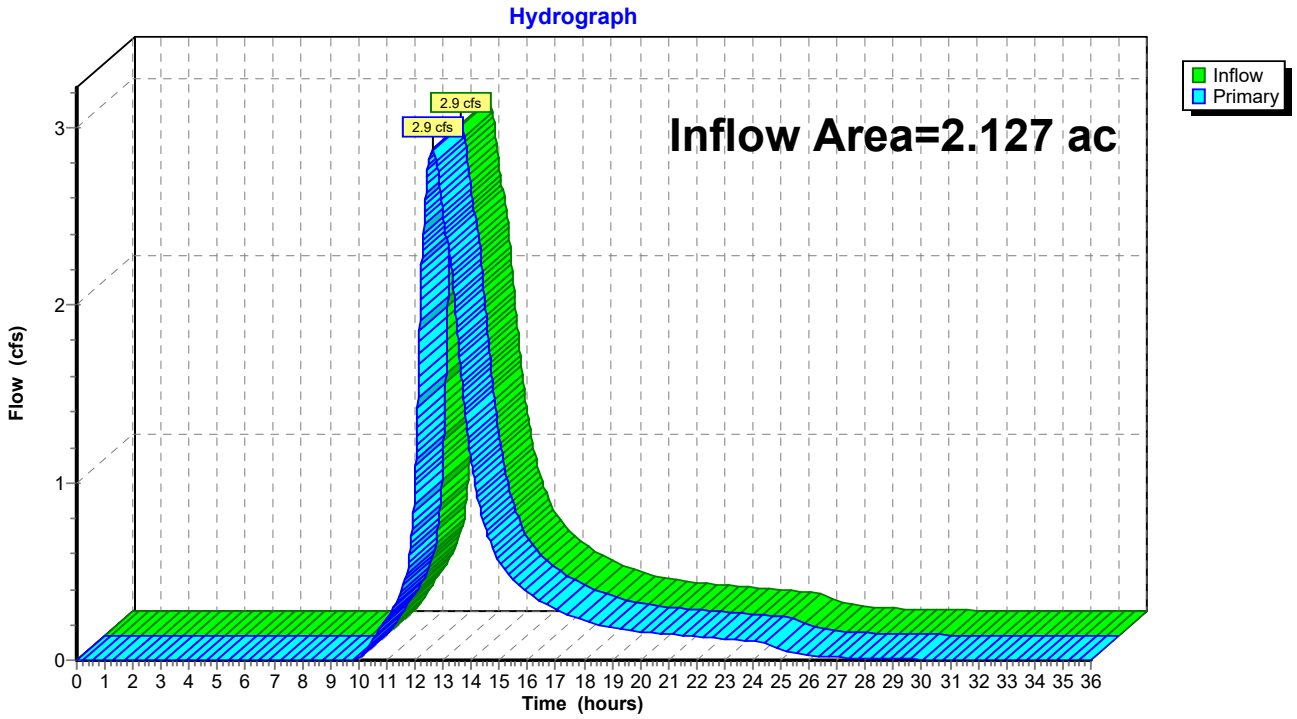


Summary for Link SP-4: SP-4

Inflow Area = 2.127 ac, 30.27% Impervious, Inflow Depth > 3.62" for 25-YR event
Inflow = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af
Primary = 2.9 cfs @ 12.61 hrs, Volume= 0.641 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-4: SP-4

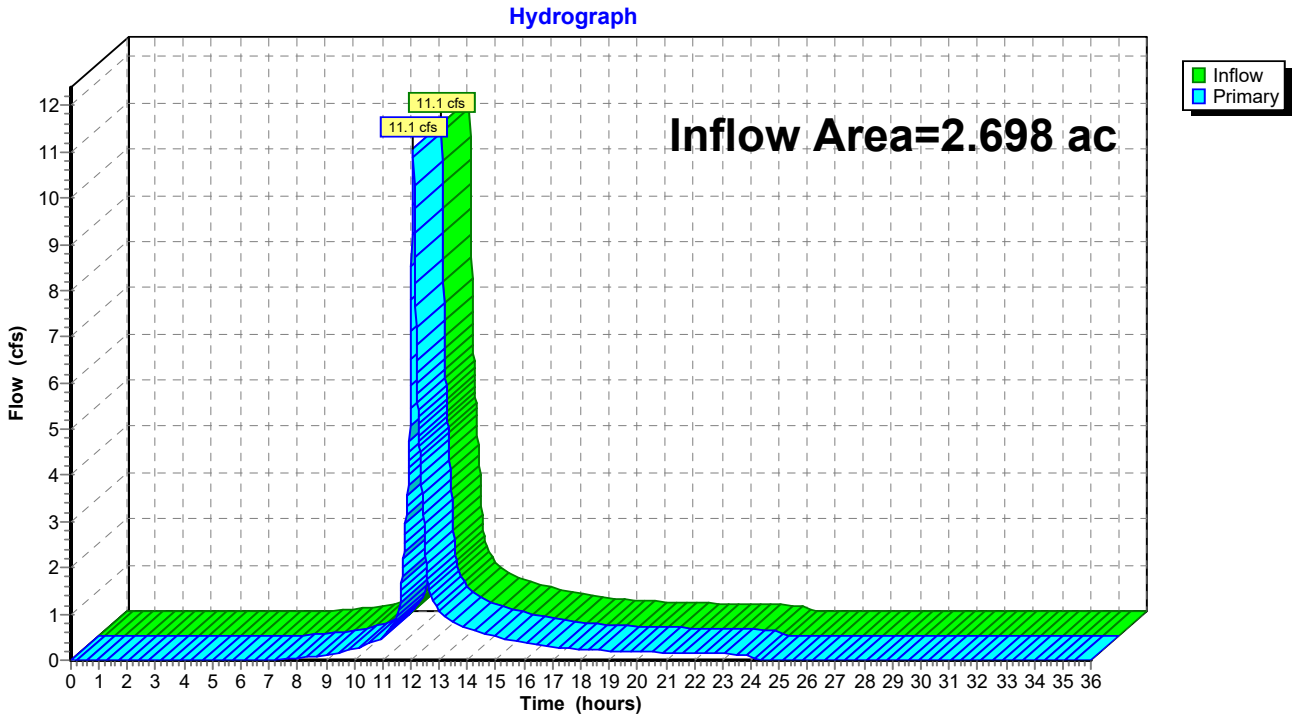


Summary for Link SP-5: SP-5

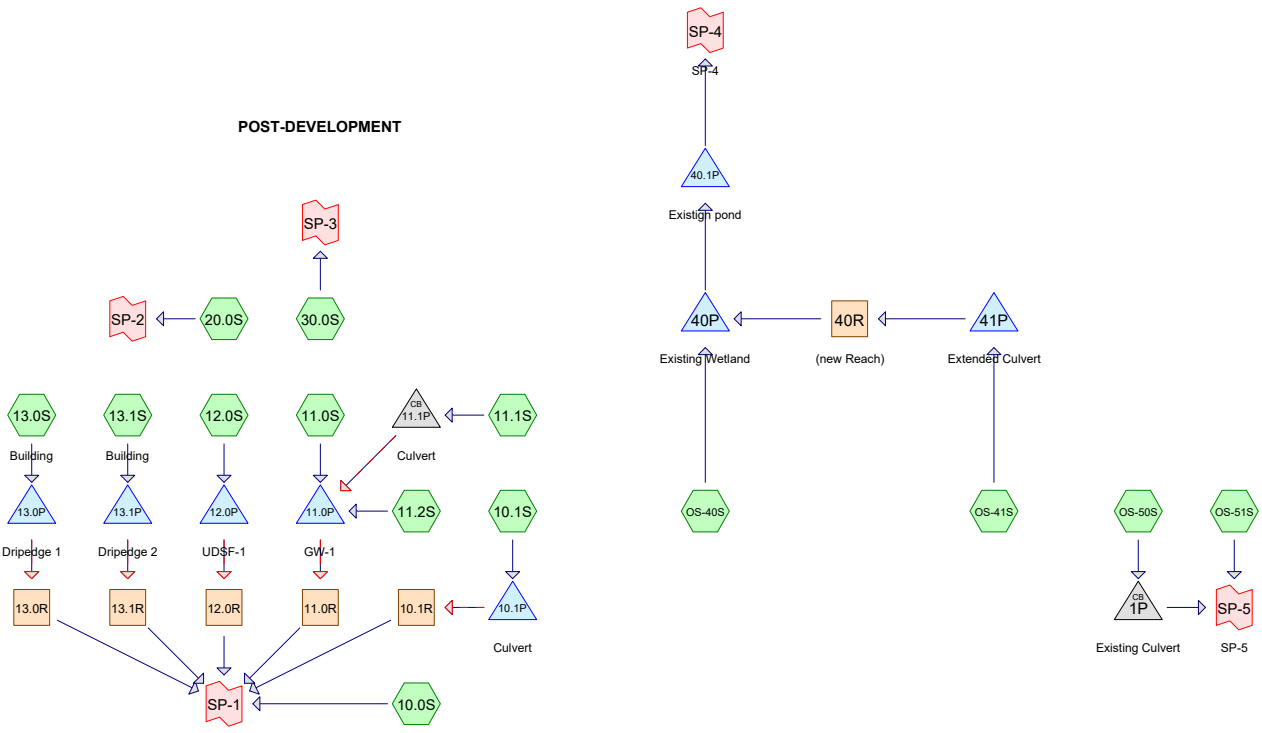
Inflow Area = 2.698 ac, 22.50% Impervious, Inflow Depth = 3.52" for 25-YR event
Inflow = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af
Primary = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-5: SP-5



Appendix 3B
POSTDEVELOPMENT



Routing Diagram for 18347 POST-DEVELOPMENT

Prepared by {enter your company name here}, Printed 7/9/2020

HydroCAD® 10.00-24 s/n 01856 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.272	80	1/2 acre lots, 25% imp, HSG C (OS-50S)
2.866	74	>75% Grass cover, Good, HSG C (10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 30.0S, OS-40S, OS-41S)
3.513	80	>75% Grass cover, Good, HSG D (10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 30.0S)
1.649	98	Paved parking, HSG C (10.1S, 11.0S, 11.2S, 12.0S, OS-40S, OS-41S)
0.791	98	Paved parking, HSG D (10.0S, 10.1S, 11.0S, 12.0S)
0.596	92	Paved roads w/open ditches, 50% imp, HSG C (OS-50S, OS-51S)
1.089	98	Roofs, HSG C (10.0S, 10.1S, 11.0S, 11.2S, 13.0S, 13.1S, OS-40S, OS-41S)
0.809	98	Roofs, HSG D (10.0S, 10.1S, 11.0S, 13.0S, 13.1S)
2.460	70	Woods, Good, HSG C (10.0S, 10.1S, 11.2S, 12.0S, 20.0S, 30.0S, OS-40S, OS-41S, OS-50S)
3.236	77	Woods, Good, HSG D (10.0S, 10.1S, 30.0S)
18.283	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
9.933	HSG C	10.0S, 10.1S, 11.0S, 11.1S, 11.2S, 12.0S, 13.0S, 13.1S, 20.0S, 30.0S, OS-40S, OS-41S, OS-50S, OS-51S
8.350	HSG D	10.0S, 10.1S, 11.0S, 11.1S, 12.0S, 13.0S, 13.1S, 30.0S
0.000	Other	
18.283		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=1.26"
Flow Length=626' Tc=28.5 min CN=79 Runoff=3.8 cfs 0.477 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=1.33"
Flow Length=324' Tc=23.9 min CN=80 Runoff=2.5 cfs 0.290 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=2.26"
Flow Length=254' Tc=11.7 min CN=92 Runoff=4.1 cfs 0.362 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=1.08"
Flow Length=266' Tc=18.0 min CN=76 Runoff=0.5 cfs 0.048 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=1.39"
Flow Length=100' Tc=15.0 min CN=81 Runoff=0.8 cfs 0.072 af

Subcatchment12.0S: Runoff Area=57,628 sf 41.26% Impervious Runoff Depth=1.67"
Flow Length=428' Tc=17.2 min CN=85 Runoff=1.9 cfs 0.184 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.2 cfs 0.094 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.2 cfs 0.093 af

Subcatchment20.0S: Runoff Area=10,684 sf 0.00% Impervious Runoff Depth=0.77"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.1 cfs 0.016 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=0.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=0.6 cfs 0.065 af

SubcatchmentOS-40S: Runoff Area=53,510 sf 37.68% Impervious Runoff Depth=1.53"
Flow Length=129' Tc=6.2 min CN=83 Runoff=2.2 cfs 0.156 af

SubcatchmentOS-41S: Runoff Area=39,122 sf 33.33% Impervious Runoff Depth=1.39"
Flow Length=193' Tc=15.9 min CN=81 Runoff=1.1 cfs 0.104 af

SubcatchmentOS-50S: Runoff Area=107,926 sf 20.41% Impervious Runoff Depth=1.20"
Flow Length=543' Tc=6.0 min CN=78 Runoff=3.4 cfs 0.248 af

SubcatchmentOS-51S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=2.26"
Flow Length=342' Tc=6.0 min CN=92 Runoff=0.6 cfs 0.041 af

Reach 10.1R: Avg. Flow Depth=0.11' Max Vel=0.45 fps Inflow=2.5 cfs 0.290 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=2.0 cfs 0.290 af

Reach 11.0R: Avg. Flow Depth=0.06' Max Vel=0.19 fps Inflow=0.6 cfs 0.310 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.9 cfs Outflow=0.6 cfs 0.305 af

Reach 12.0R: Avg. Flow Depth=0.03' Max Vel=0.14 fps Inflow=0.3 cfs 0.149 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.1 cfs Outflow=0.2 cfs 0.142 af

Reach 13.0R: Avg. Flow Depth=0.03' Max Vel=0.17 fps Inflow=0.4 cfs 0.094 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.1 cfs Outflow=0.3 cfs 0.094 af

Reach 13.1R: Avg. Flow Depth=0.03' Max Vel=0.18 fps Inflow=0.3 cfs 0.093 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.9 cfs Outflow=0.3 cfs 0.093 af

Reach 40R: (new Reach) Avg. Flow Depth=0.18' Max Vel=0.47 fps Inflow=1.0 cfs 0.102 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=0.9 cfs 0.102 af

Pond 1P: Existing Culvert Peak Elev=96.93' Inflow=3.4 cfs 0.248 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=3.4 cfs 0.248 af

Pond 10.1P: Culvert Peak Elev=91.00' Storage=0 cf Inflow=2.5 cfs 0.290 af
Primary=2.5 cfs 0.290 af Secondary=0.0 cfs 0.000 af Outflow=2.5 cfs 0.290 af

Pond 11.0P: GW-1 Peak Elev=82.65' Storage=11,986 cf Inflow=5.2 cfs 0.483 af
Primary=0.6 cfs 0.310 af Secondary=0.0 cfs 0.000 af Outflow=0.6 cfs 0.310 af

Pond 11.1P: Culvert Peak Elev=84.04' Inflow=0.5 cfs 0.048 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=0.5 cfs 0.048 af

Pond 12.0P: UDSF-1 Peak Elev=89.08' Storage=3,975 cf Inflow=1.9 cfs 0.184 af
Primary=0.3 cfs 0.149 af Secondary=0.0 cfs 0.000 af Outflow=0.3 cfs 0.149 af

Pond 13.0P: Dripedge 1 Peak Elev=100.10' Storage=969 cf Inflow=1.2 cfs 0.094 af
Primary=0.4 cfs 0.094 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.094 af

Pond 13.1P: Dripedge 2 Peak Elev=87.00' Storage=742 cf Inflow=1.2 cfs 0.093 af
Primary=0.3 cfs 0.093 af Secondary=0.0 cfs 0.000 af Outflow=0.3 cfs 0.093 af

Pond 40.1P: Existign pond Peak Elev=106.13' Storage=1,455 cf Inflow=1.6 cfs 0.255 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=1.3 cfs 0.251 af

Pond 40P: Existing Wetland Peak Elev=106.52' Storage=2,063 cf Inflow=2.5 cfs 0.258 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=1.6 cfs 0.255 af

Pond 41P: Extended Culvert Peak Elev=108.80' Storage=395 cf Inflow=1.1 cfs 0.104 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0049 '/' Outflow=1.0 cfs 0.102 af

Link SP-1: Inflow=6.3 cfs 1.401 af
Primary=6.3 cfs 1.401 af

Link SP-2: Inflow=0.1 cfs 0.016 af
Primary=0.1 cfs 0.016 af

Link SP-3: Inflow=0.6 cfs 0.065 af
Primary=0.6 cfs 0.065 af

Link SP-4: SP-4 Inflow=1.3 cfs 0.251 af
Primary=1.3 cfs 0.251 af

Link SP-5: SP-5 Inflow=4.0 cfs 0.289 af
Primary=4.0 cfs 0.289 af

Total Runoff Area = 18.283 ac Runoff Volume = 2.253 af Average Runoff Depth = 1.48"
72.90% Pervious = 13.328 ac 27.10% Impervious = 4.955 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=2.63"
Flow Length=626' Tc=28.5 min CN=79 Runoff=8.1 cfs 0.995 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=2.72"
Flow Length=324' Tc=23.9 min CN=80 Runoff=5.2 cfs 0.596 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=3.89"
Flow Length=254' Tc=11.7 min CN=92 Runoff=7.0 cfs 0.625 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=2.37"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.0 cfs 0.106 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=2.81"
Flow Length=100' Tc=15.0 min CN=81 Runoff=1.6 cfs 0.146 af

Subcatchment12.0S: Runoff Area=57,628 sf 41.26% Impervious Runoff Depth=3.18"
Flow Length=428' Tc=17.2 min CN=85 Runoff=3.5 cfs 0.351 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.9 cfs 0.150 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.8 cfs 0.148 af

Subcatchment20.0S: Runoff Area=10,684 sf 0.00% Impervious Runoff Depth=1.89"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.4 cfs 0.039 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.12"
Flow Length=292' Tc=16.1 min CN=73 Runoff=1.5 cfs 0.150 af

SubcatchmentOS-40S: Runoff Area=53,510 sf 37.68% Impervious Runoff Depth=2.99"
Flow Length=129' Tc=6.2 min CN=83 Runoff=4.3 cfs 0.306 af

SubcatchmentOS-41S: Runoff Area=39,122 sf 33.33% Impervious Runoff Depth=2.81"
Flow Length=193' Tc=15.9 min CN=81 Runoff=2.2 cfs 0.210 af

SubcatchmentOS-50S: Runoff Area=107,926 sf 20.41% Impervious Runoff Depth=2.54"
Flow Length=543' Tc=6.0 min CN=78 Runoff=7.4 cfs 0.525 af

SubcatchmentOS-51S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=3.89"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.0 cfs 0.072 af

Reach 10.1R: Avg. Flow Depth=0.18' Max Vel=0.58 fps Inflow=5.2 cfs 0.596 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=4.4 cfs 0.596 af

Reach 11.0R: Avg. Flow Depth=0.17' Max Vel=0.37 fps Inflow=4.4 cfs 0.701 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.9 cfs Outflow=3.9 cfs 0.696 af

Reach 12.0R: Avg. Flow Depth=0.08' Max Vel=0.29 fps Inflow=2.7 cfs 0.311 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.1 cfs Outflow=1.4 cfs 0.304 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.5 cfs 0.150 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.1 cfs Outflow=0.4 cfs 0.150 af

Reach 13.1R: Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.4 cfs 0.148 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.9 cfs Outflow=0.4 cfs 0.148 af

Reach 40R: (new Reach) Avg. Flow Depth=0.28' Max Vel=0.61 fps Inflow=2.1 cfs 0.208 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.0 cfs 0.208 af

Pond 1P: Existing Culvert Peak Elev=98.91' Inflow=7.4 cfs 0.525 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=7.4 cfs 0.525 af

Pond 10.1P: Culvert Peak Elev=91.35' Storage=49 cf Inflow=5.2 cfs 0.596 af
Primary=5.2 cfs 0.596 af Secondary=0.0 cfs 0.000 af Outflow=5.2 cfs 0.596 af

Pond 11.0P: GW-1 Peak Elev=83.12' Storage=16,258 cf Inflow=9.3 cfs 0.877 af
Primary=4.4 cfs 0.701 af Secondary=0.0 cfs 0.000 af Outflow=4.4 cfs 0.701 af

Pond 11.1P: Culvert Peak Elev=84.23' Inflow=1.0 cfs 0.106 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.0 cfs 0.106 af

Pond 12.0P: UDSF-1 Peak Elev=89.35' Storage=4,842 cf Inflow=3.5 cfs 0.351 af
Primary=2.7 cfs 0.311 af Secondary=0.0 cfs 0.000 af Outflow=2.7 cfs 0.311 af

Pond 13.0P: Dripedge 1 Peak Elev=100.76' Storage=1,731 cf Inflow=1.9 cfs 0.150 af
Primary=0.5 cfs 0.150 af Secondary=0.0 cfs 0.000 af Outflow=0.5 cfs 0.150 af

Pond 13.1P: Dripedge 2 Peak Elev=87.85' Storage=1,574 cf Inflow=1.8 cfs 0.148 af
Primary=0.4 cfs 0.148 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.148 af

Pond 40.1P: Existign pond Peak Elev=106.63' Storage=2,856 cf Inflow=3.1 cfs 0.511 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.4 cfs 0.507 af

Pond 40P: Existing Wetland Peak Elev=106.87' Storage=3,791 cf Inflow=5.1 cfs 0.514 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=3.1 cfs 0.511 af

Pond 41P: Extended Culvert Peak Elev=109.07' Storage=583 cf Inflow=2.2 cfs 0.210 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0049 '/' Outflow=2.1 cfs 0.208 af

Link SP-1: Inflow=17.0 cfs 2.889 af
Primary=17.0 cfs 2.889 af

Link SP-2: Inflow=0.4 cfs 0.039 af
Primary=0.4 cfs 0.039 af

Link SP-3: Inflow=1.5 cfs 0.150 af
Primary=1.5 cfs 0.150 af

Link SP-4: SP-4 Inflow=2.4 cfs 0.507 af
Primary=2.4 cfs 0.507 af

Link SP-5: SP-5 Inflow=8.3 cfs 0.597 af
Primary=8.3 cfs 0.597 af

Total Runoff Area = 18.283 ac Runoff Volume = 4.420 af Average Runoff Depth = 2.90"
72.90% Pervious = 13.328 ac 27.10% Impervious = 4.955 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment10.0S: Runoff Area=197,762 sf 4.39% Impervious Runoff Depth=3.50"
Flow Length=626' Tc=28.5 min CN=79 Runoff=10.8 cfs 1.325 af

Subcatchment10.1S: Runoff Area=114,524 sf 21.75% Impervious Runoff Depth=3.60"
Flow Length=324' Tc=23.9 min CN=80 Runoff=6.9 cfs 0.789 af

Subcatchment11.0S: Runoff Area=83,879 sf 66.37% Impervious Runoff Depth=4.87"
Flow Length=254' Tc=11.7 min CN=92 Runoff=8.6 cfs 0.782 af

Subcatchment11.1S: Runoff Area=23,407 sf 0.00% Impervious Runoff Depth=3.21"
Flow Length=266' Tc=18.0 min CN=76 Runoff=1.4 cfs 0.144 af

Subcatchment11.2S: Runoff Area=27,164 sf 31.62% Impervious Runoff Depth=3.70"
Flow Length=100' Tc=15.0 min CN=81 Runoff=2.0 cfs 0.192 af

Subcatchment12.0S: Runoff Area=57,628 sf 41.26% Impervious Runoff Depth=4.11"
Flow Length=428' Tc=17.2 min CN=85 Runoff=4.5 cfs 0.454 af

Subcatchment13.0S: Building Runoff Area=17,204 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.2 cfs 0.183 af

Subcatchment13.1S: Building Runoff Area=16,974 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.2 cfs 0.181 af

Subcatchment20.0S: Runoff Area=10,684 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=100' Slope=0.0300 '/' Tc=18.0 min CN=70 Runoff=0.5 cfs 0.054 af

Subcatchment30.0S: Runoff Area=37,005 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=292' Tc=16.1 min CN=73 Runoff=2.1 cfs 0.207 af

SubcatchmentOS-40S: Runoff Area=53,510 sf 37.68% Impervious Runoff Depth=3.91"
Flow Length=129' Tc=6.2 min CN=83 Runoff=5.5 cfs 0.400 af

SubcatchmentOS-41S: Runoff Area=39,122 sf 33.33% Impervious Runoff Depth=3.70"
Flow Length=193' Tc=15.9 min CN=81 Runoff=2.9 cfs 0.277 af

SubcatchmentOS-50S: Runoff Area=107,926 sf 20.41% Impervious Runoff Depth=3.40"
Flow Length=543' Tc=6.0 min CN=78 Runoff=9.9 cfs 0.703 af

SubcatchmentOS-51S: Runoff Area=9,601 sf 50.00% Impervious Runoff Depth=4.87"
Flow Length=342' Tc=6.0 min CN=92 Runoff=1.2 cfs 0.090 af

Reach 10.1R: Avg. Flow Depth=0.21' Max Vel=0.64 fps Inflow=6.9 cfs 0.789 af
n=0.100 L=485.0' S=0.0216 '/' Capacity=153.5 cfs Outflow=5.9 cfs 0.789 af

Reach 11.0R: Avg. Flow Depth=0.21' Max Vel=0.42 fps Inflow=6.0 cfs 0.941 af
n=0.100 L=290.0' S=0.0086 '/' Capacity=121.9 cfs Outflow=5.6 cfs 0.936 af

Reach 12.0R: Avg. Flow Depth=0.11' Max Vel=0.35 fps Inflow=4.0 cfs 0.413 af
n=0.100 L=547.0' S=0.0119 '/' Capacity=143.1 cfs Outflow=2.3 cfs 0.406 af

Reach 13.0R: Avg. Flow Depth=0.04' Max Vel=0.20 fps Inflow=0.9 cfs 0.183 af
n=0.100 L=525.0' S=0.0124 '/' Capacity=146.1 cfs Outflow=0.5 cfs 0.183 af

Reach 13.1R: Avg. Flow Depth=0.05' Max Vel=0.22 fps Inflow=0.9 cfs 0.181 af
n=0.100 L=315.0' S=0.0143 '/' Capacity=156.9 cfs Outflow=0.6 cfs 0.181 af

Reach 40R: (new Reach) Avg. Flow Depth=0.33' Max Vel=0.67 fps Inflow=2.7 cfs 0.275 af
n=0.100 L=190.0' S=0.0106 '/' Capacity=18.8 cfs Outflow=2.6 cfs 0.275 af

Pond 1P: Existing Culvert Peak Elev=100.89' Inflow=9.9 cfs 0.703 af
15.0" Round Culvert n=0.013 L=43.0' S=0.0223 '/' Outflow=9.9 cfs 0.703 af

Pond 10.1P: Culvert Peak Elev=91.81' Storage=137 cf Inflow=6.9 cfs 0.789 af
Primary=6.9 cfs 0.789 af Secondary=0.0 cfs 0.000 af Outflow=6.9 cfs 0.789 af

Pond 11.0P: GW-1 Peak Elev=83.42' Storage=19,185 cf Inflow=11.8 cfs 1.118 af
Primary=6.0 cfs 0.941 af Secondary=0.0 cfs 0.000 af Outflow=6.0 cfs 0.941 af

Pond 11.1P: Culvert Peak Elev=84.37' Inflow=1.4 cfs 0.144 af
12.0" Round Culvert n=0.012 L=146.0' S=0.0082 '/' Outflow=1.4 cfs 0.144 af

Pond 12.0P: UDSF-1 Peak Elev=89.46' Storage=5,209 cf Inflow=4.5 cfs 0.454 af
Primary=4.0 cfs 0.413 af Secondary=0.0 cfs 0.000 af Outflow=4.0 cfs 0.413 af

Pond 13.0P: Dripedge 1 Peak Elev=101.01' Storage=2,064 cf Inflow=2.2 cfs 0.183 af
Primary=0.5 cfs 0.178 af Secondary=0.4 cfs 0.005 af Outflow=0.9 cfs 0.183 af

Pond 13.1P: Dripedge 2 Peak Elev=88.02' Storage=1,791 cf Inflow=2.2 cfs 0.181 af
Primary=0.4 cfs 0.172 af Secondary=0.5 cfs 0.008 af Outflow=0.9 cfs 0.181 af

Pond 40.1P: Existign pond Peak Elev=106.90' Storage=3,768 cf Inflow=4.0 cfs 0.671 af
12.0" Round Culvert n=0.020 L=20.0' S=0.0070 '/' Outflow=2.9 cfs 0.667 af

Pond 40P: Existing Wetland Peak Elev=107.10' Storage=5,046 cf Inflow=6.7 cfs 0.674 af
12.0" Round Culvert x 2.00 n=0.012 L=53.0' S=0.0072 '/' Outflow=4.0 cfs 0.671 af

Pond 41P: Extended Culvert Peak Elev=109.21' Storage=697 cf Inflow=2.9 cfs 0.277 af
15.0" Round Culvert n=0.012 L=55.0' S=0.0049 '/' Outflow=2.7 cfs 0.275 af

Link SP-1: Inflow=24.5 cfs 3.819 af
Primary=24.5 cfs 3.819 af

Link SP-2: Inflow=0.5 cfs 0.054 af
Primary=0.5 cfs 0.054 af

Link SP-3: Inflow=2.1 cfs 0.207 af
Primary=2.1 cfs 0.207 af

Link SP-4: SP-4 Inflow=2.9 cfs 0.667 af
Primary=2.9 cfs 0.667 af

Link SP-5: SP-5 Inflow=11.1 cfs 0.792 af
Primary=11.1 cfs 0.792 af

Total Runoff Area = 18.283 ac Runoff Volume = 5.779 af Average Runoff Depth = 3.79"
72.90% Pervious = 13.328 ac 27.10% Impervious = 4.955 ac

Summary for Subcatchment 10.0S:

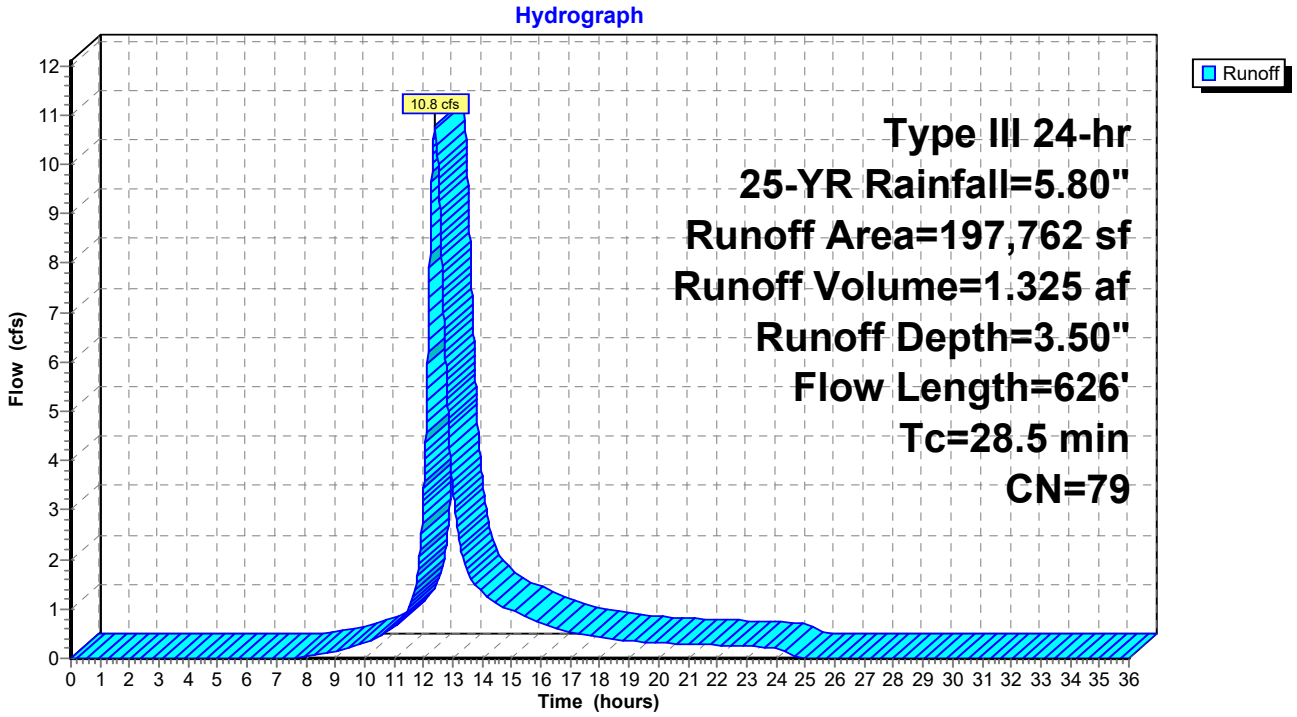
Runoff = 10.8 cfs @ 12.38 hrs, Volume= 1.325 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
1,470	98	Paved parking, HSG D
1,693	74	>75% Grass cover, Good, HSG C
83,115	80	>75% Grass cover, Good, HSG D
273	98	Roofs, HSG C
6,933	98	Roofs, HSG D
411	70	Woods, Good, HSG C
103,867	77	Woods, Good, HSG D
197,762	79	Weighted Average
189,086		95.61% Pervious Area
8,676		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0850	0.14		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	66	0.0300	0.87		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
15.3	460	0.0100	0.50		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
28.5	626	Total			

Subcatchment 10.0S:



Summary for Subcatchment 10.1S:

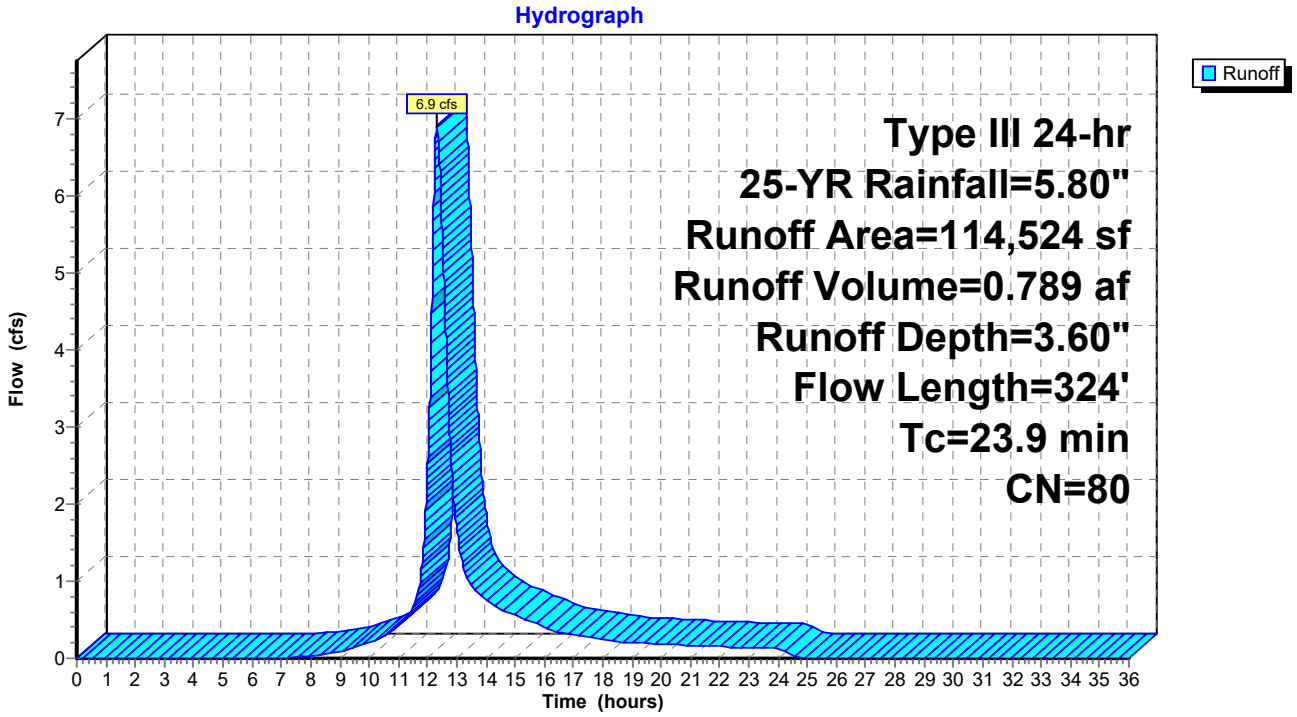
Runoff = 6.9 cfs @ 12.33 hrs, Volume= 0.789 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
2,274	98	Paved parking, HSG C
741	98	Paved parking, HSG D
22,713	74	>75% Grass cover, Good, HSG C
17,290	80	>75% Grass cover, Good, HSG D
11,653	98	Roofs, HSG C
10,246	98	Roofs, HSG D
18,039	70	Woods, Good, HSG C
31,568	77	Woods, Good, HSG D
114,524	80	Weighted Average
89,610		78.25% Pervious Area
24,914		21.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"
2.8	224	0.0700	1.32		**Shallow Concentrated Flow, B** Woodland Kv= 5.0 fps
23.9	324	Total			

Subcatchment 10.1S:



Summary for Subcatchment 11.0S:

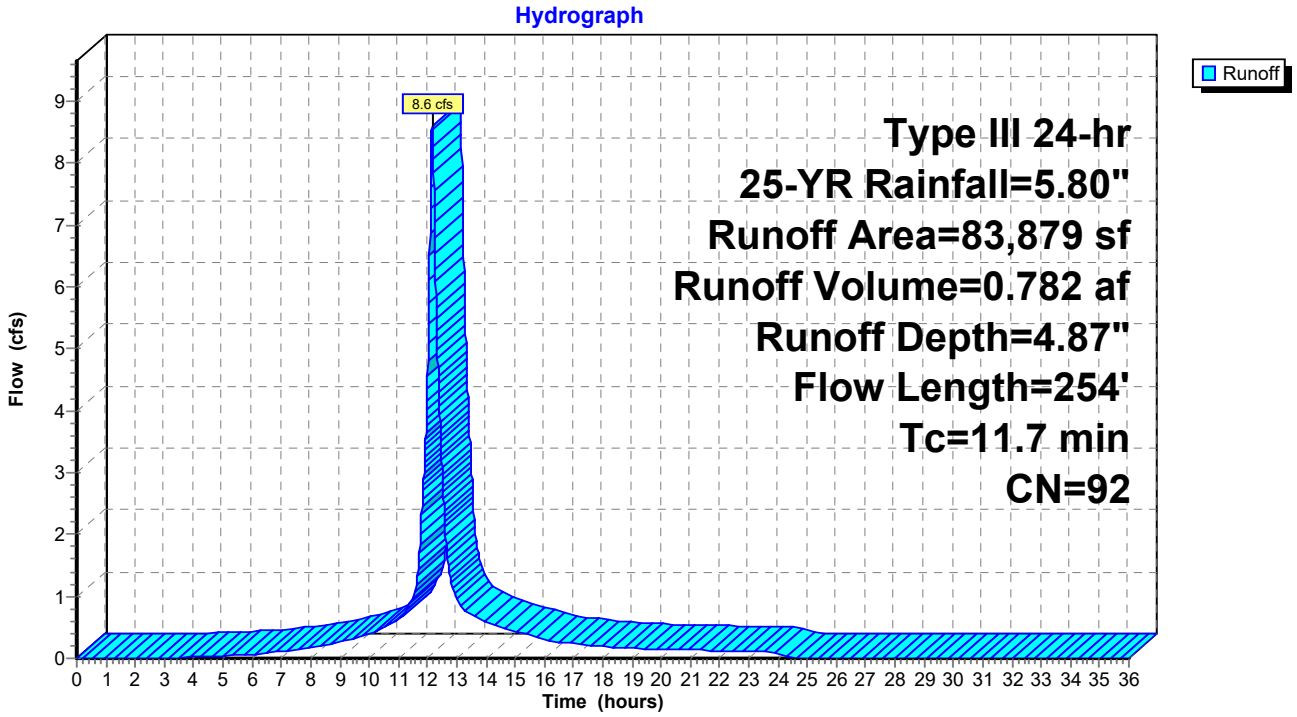
Runoff = 8.6 cfs @ 12.16 hrs, Volume= 0.782 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
30,453	98	Paved parking, HSG C
19,414	98	Paved parking, HSG D
913	74	>75% Grass cover, Good, HSG C
27,299	80	>75% Grass cover, Good, HSG D
4,300	98	Roofs, HSG C
1,500	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
83,879	92	Weighted Average
28,212		33.63% Pervious Area
55,667		66.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	62	0.0150	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	67	0.0200	2.87		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
0.5	125	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
11.7	254	Total			

Subcatchment 11.0S:



Summary for Subcatchment 11.1S:

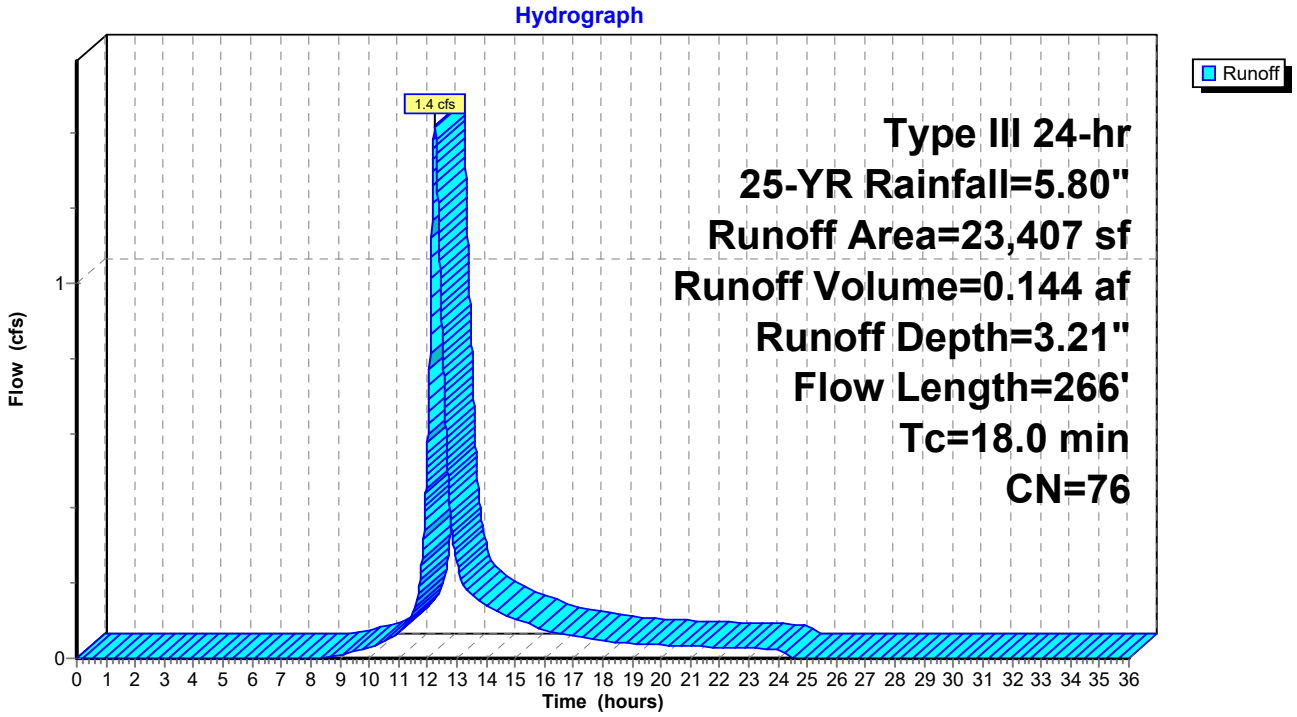
Runoff = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,653	74	>75% Grass cover, Good, HSG C
7,754	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
23,407	76	Weighted Average
23,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	100	0.0120	0.10		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.2	20	0.0120	1.64		**Shallow Concentrated Flow, B** Grassed Waterway Kv= 15.0 fps
0.6	146	0.0080	4.40	3.45	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
18.0	266	Total			

Subcatchment 11.1S:



Summary for Subcatchment 11.2S:

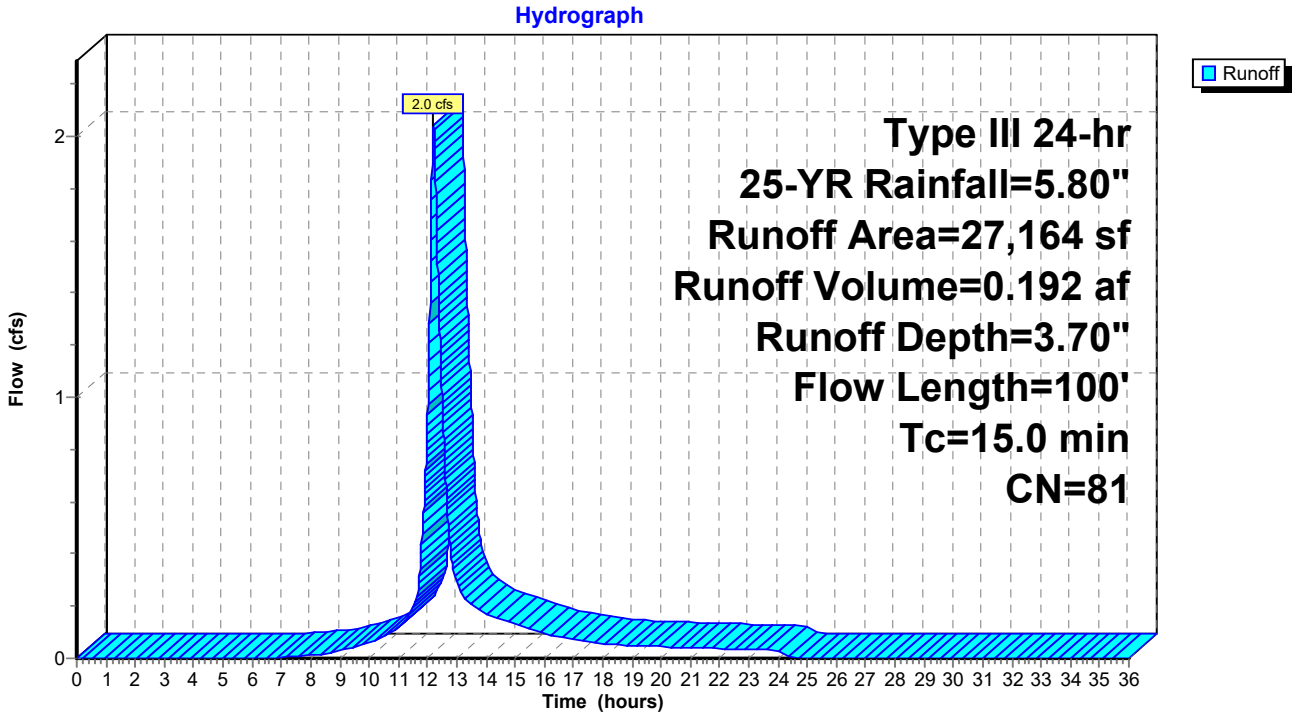
Runoff = 2.0 cfs @ 12.20 hrs, Volume= 0.192 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
3,092	98	Paved parking, HSG C
0	98	Paved parking, HSG D
15,185	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
5,497	98	Roofs, HSG C
0	98	Roofs, HSG D
3,390	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
27,164	81	Weighted Average
18,575		68.38% Pervious Area
8,589		31.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	50	0.0100	0.08		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
4.4	50	0.2600	0.19		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
15.0	100	Total			

Subcatchment 11.2S:



Summary for Subcatchment 12.0S:

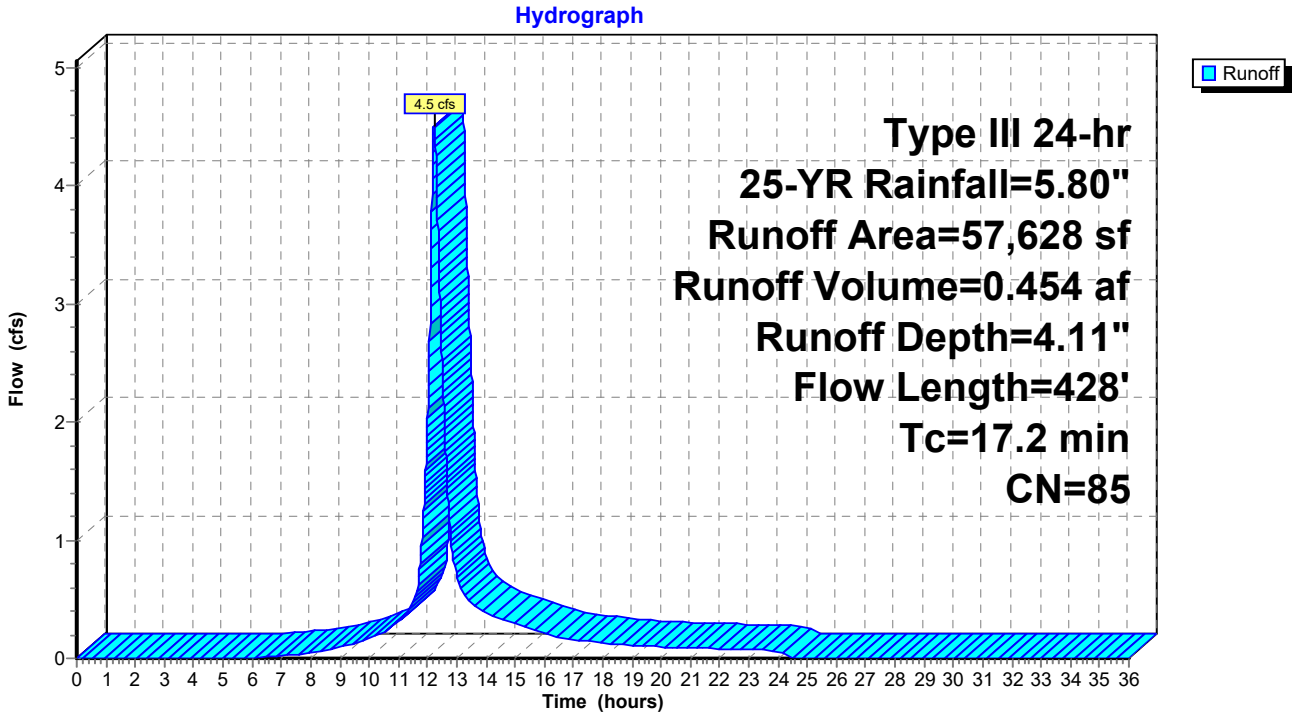
Runoff = 4.5 cfs @ 12.23 hrs, Volume= 0.454 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
10,936	98	Paved parking, HSG C
12,840	98	Paved parking, HSG D
16,741	74	>75% Grass cover, Good, HSG C
13,329	80	>75% Grass cover, Good, HSG D
3,782	70	Woods, Good, HSG C
57,628	85	Weighted Average
33,852		58.74% Pervious Area
23,776		41.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0150	0.11		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
0.4	114	0.0500	4.54		**Shallow Concentrated Flow, B** Paved Kv= 20.3 fps
1.0	214	0.0050	3.47	2.73	**Pipe Channel, C** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
17.2	428	Total			

Subcatchment 12.0S:



Summary for Subcatchment 13.0S: Building

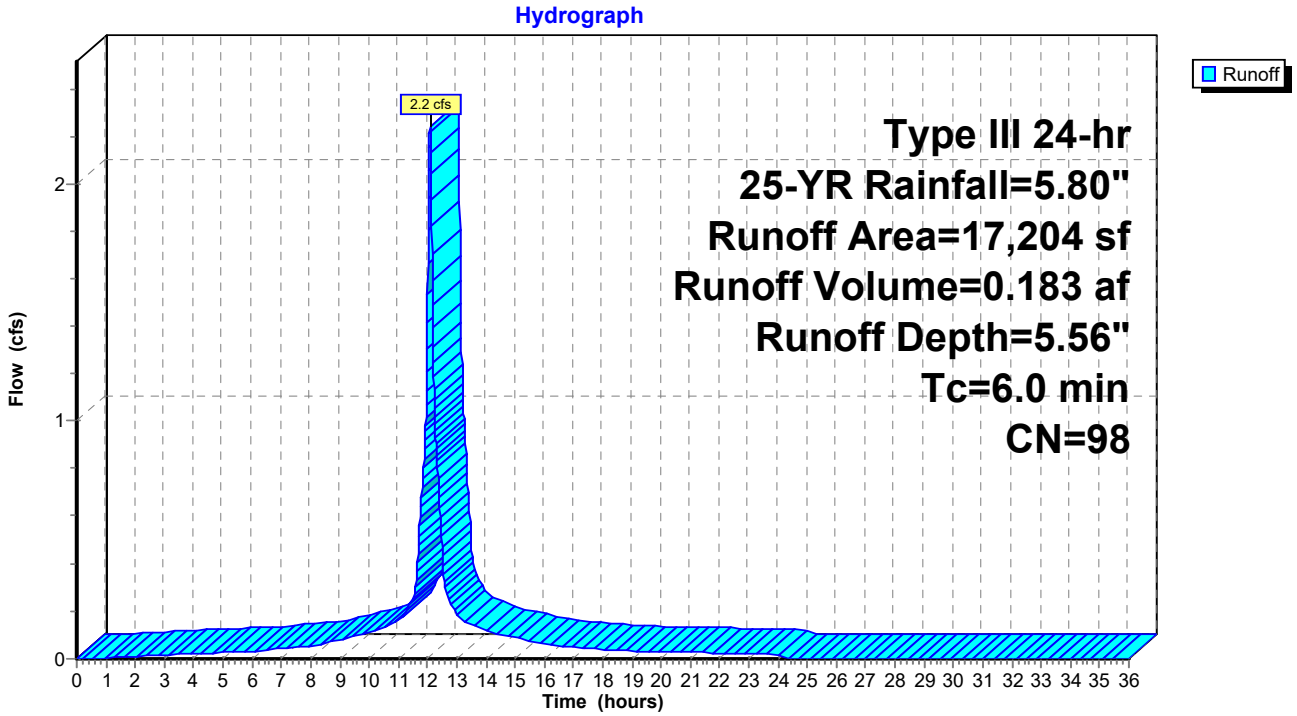
Runoff = 2.2 cfs @ 12.08 hrs, Volume= 0.183 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
9,791	98	Roofs, HSG C
7,413	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
17,204	98	Weighted Average
17,204		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13.0S: Building



Summary for Subcatchment 13.1S: Building

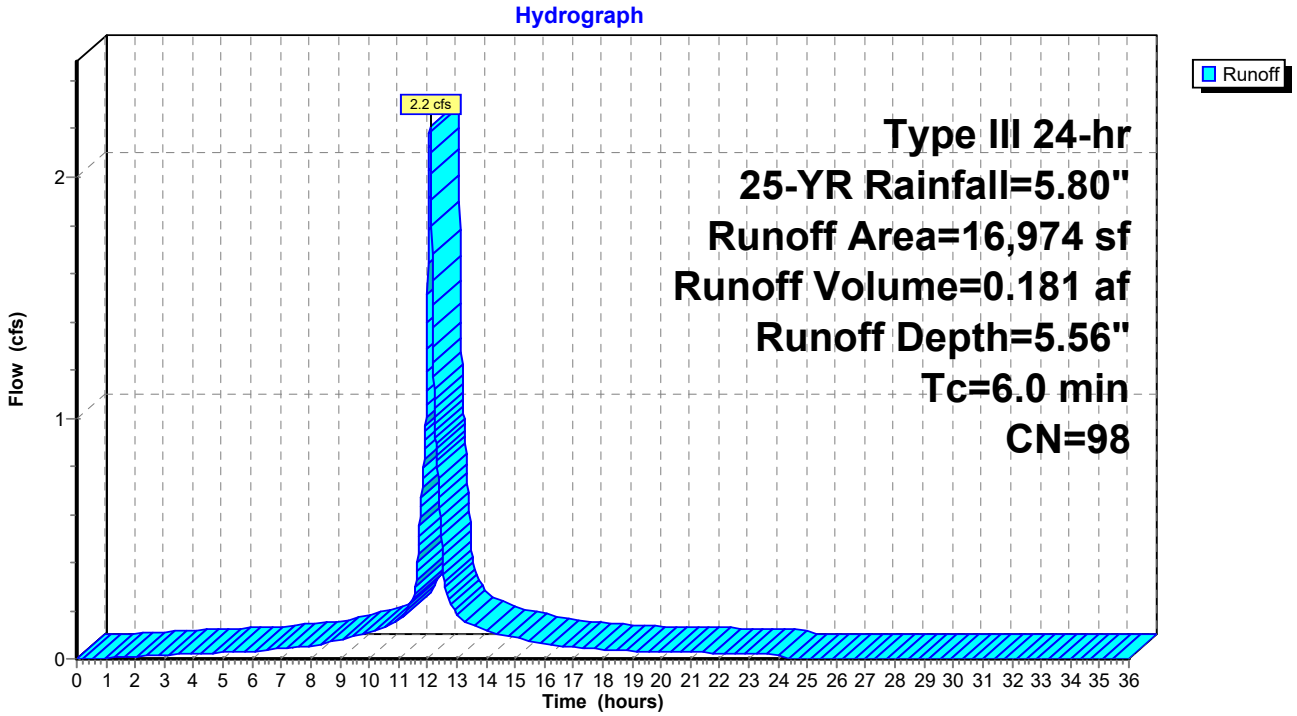
Runoff = 2.2 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
7,807	98	Roofs, HSG C
9,167	98	Roofs, HSG D
0	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
16,974	98	Weighted Average
16,974		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13.1S: Building



Summary for Subcatchment 20.0S:

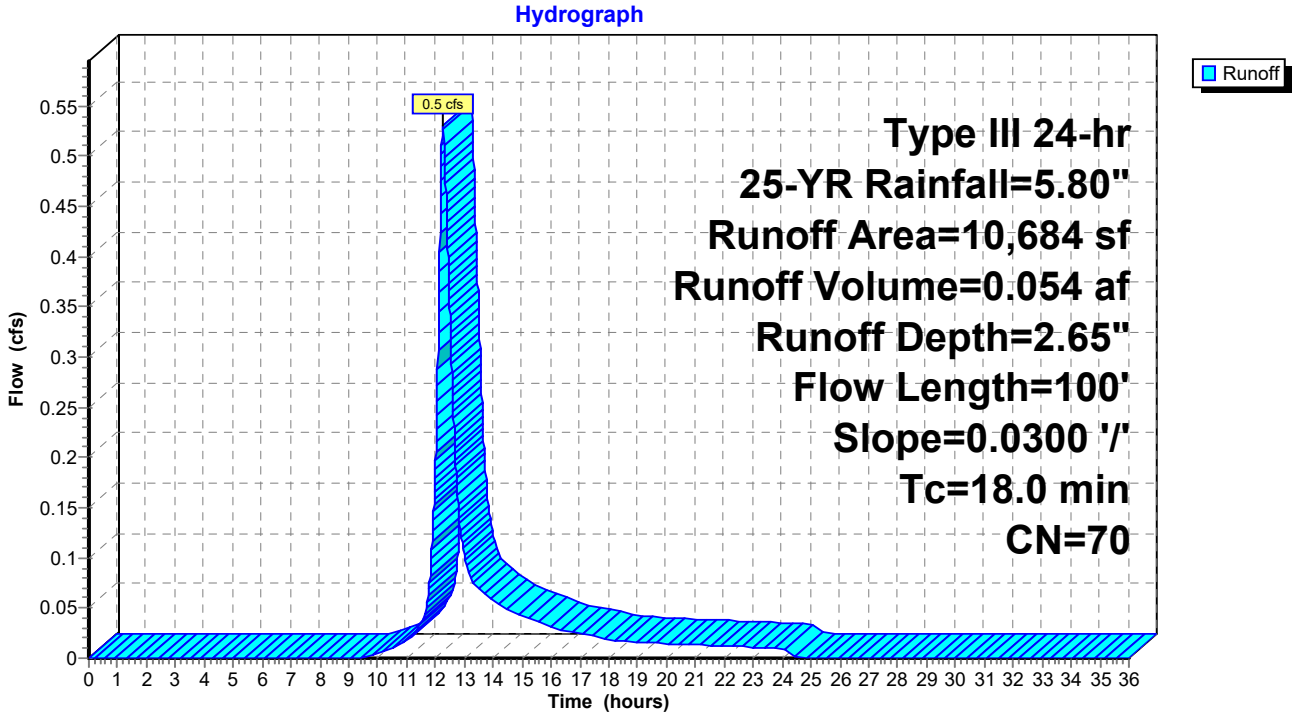
Runoff = 0.5 cfs @ 12.26 hrs, Volume= 0.054 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
0	74	>75% Grass cover, Good, HSG C
0	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
10,684	70	Woods, Good, HSG C
0	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
10,684	70	Weighted Average
10,684		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	100	0.0300	0.09		**Sheet Flow, A** Woods: Light underbrush n= 0.400 P2= 3.30"

Subcatchment 20.0S:



Summary for Subcatchment 30.0S:

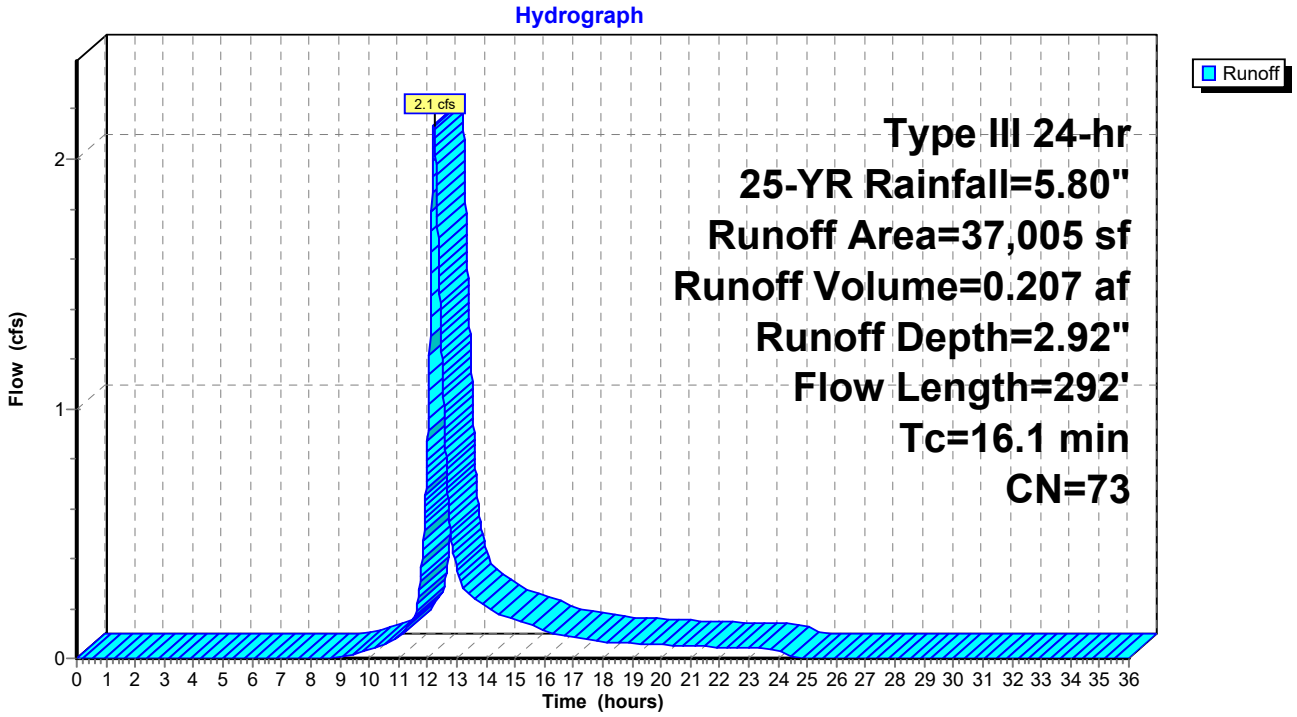
Runoff = 2.1 cfs @ 12.22 hrs, Volume= 0.207 af, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
0	98	Paved parking, HSG D
8,150	74	>75% Grass cover, Good, HSG C
4,260	80	>75% Grass cover, Good, HSG D
0	98	Roofs, HSG C
0	98	Roofs, HSG D
19,072	70	Woods, Good, HSG C
5,523	77	Woods, Good, HSG D
0	96	Gravel surface, HSG C
0	96	Gravel surface, HSG D
37,005	73	Weighted Average
37,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	27	0.0600	0.14		**Sheet Flow, A** Grass: Dense n= 0.240 P2= 3.30"
10.0	73	0.0700	0.12		**Sheet Flow, B** Woods: Light underbrush n= 0.400 P2= 3.30"
2.9	192	0.0500	1.12		**Shallow Concentrated Flow, C** Woodland Kv= 5.0 fps
16.1	292	Total			

Subcatchment 30.0S:



Summary for Subcatchment OS-40S:

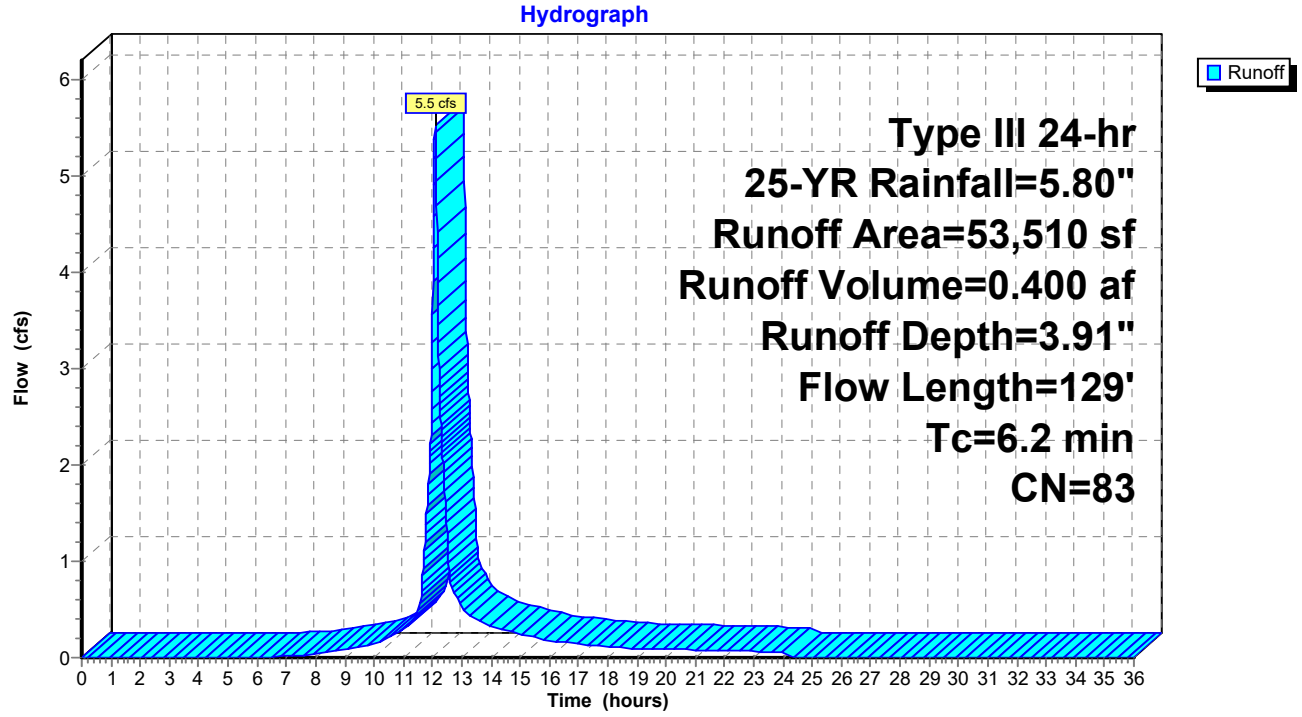
Runoff = 5.5 cfs @ 12.09 hrs, Volume= 0.400 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
16,475	98	Paved parking, HSG C
29,634	74	>75% Grass cover, Good, HSG C
3,686	98	Roofs, HSG C
3,715	70	Woods, Good, HSG C
53,510	83	Weighted Average
33,349		62.32% Pervious Area
20,161		37.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	22	0.0100	0.07		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.30"
0.4	65	0.0200	2.87		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.3	42	0.1000	2.21		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
6.2	129	Total			

Subcatchment OS-40S:



Summary for Subcatchment OS-41S:

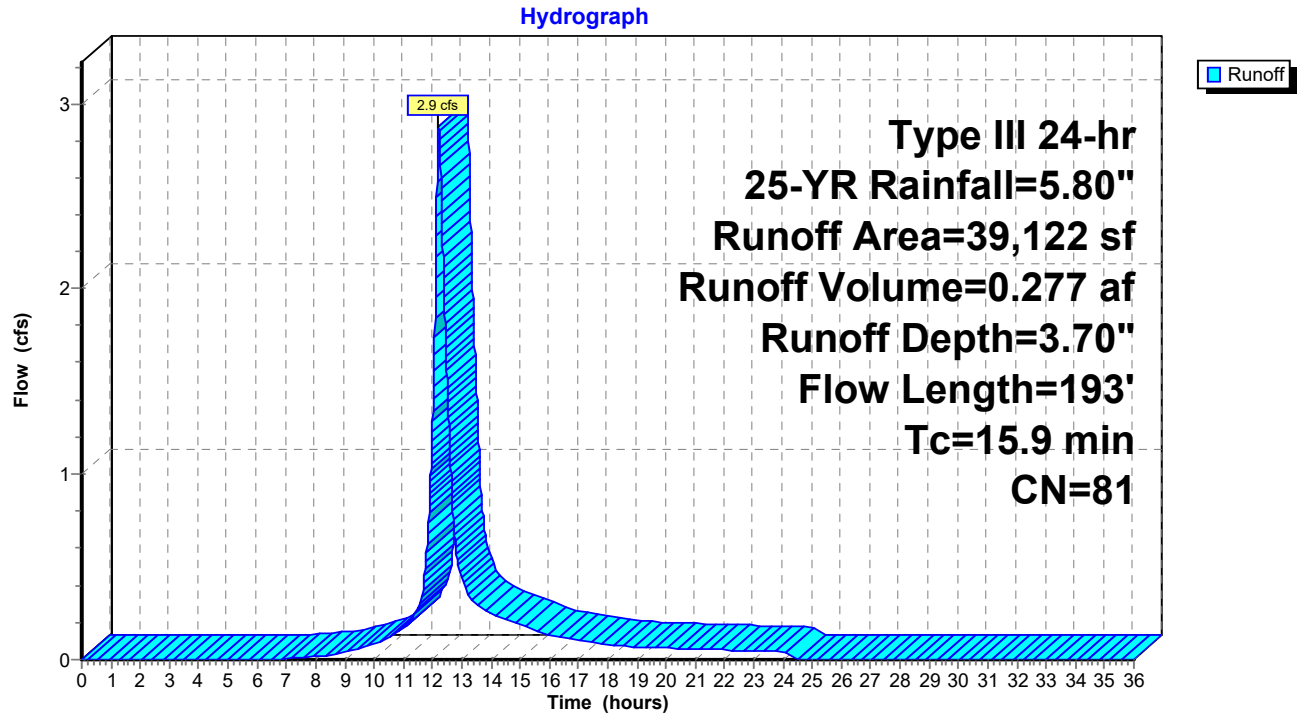
Runoff = 2.9 cfs @ 12.21 hrs, Volume= 0.277 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
8,592	98	Paved parking, HSG C
14,180	74	>75% Grass cover, Good, HSG C
4,449	98	Roofs, HSG C
11,901	70	Woods, Good, HSG C
39,122	81	Weighted Average
26,081		66.67% Pervious Area
13,041		33.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	14	0.2100	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.30"
12.2	86	0.0580	0.12		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.30"
2.0	93	0.0250	0.79		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
15.9	193	Total			

Subcatchment OS-41S:



Summary for Subcatchment OS-50S:

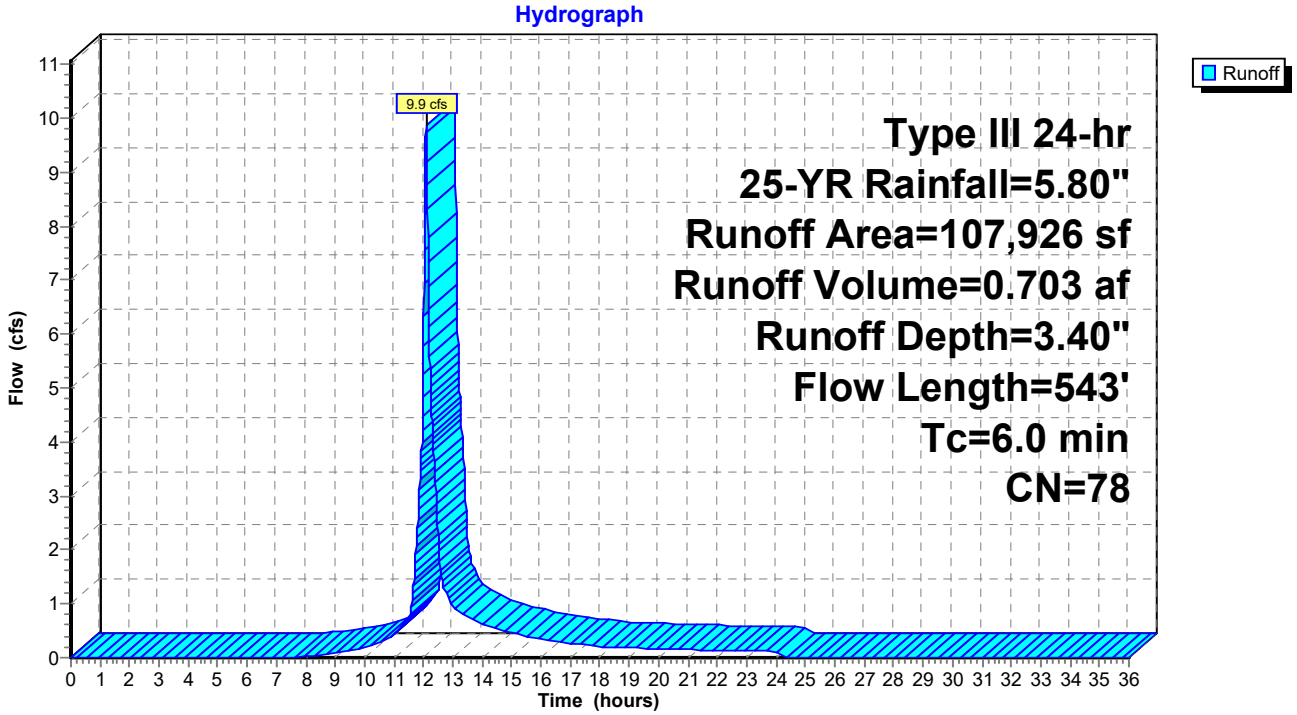
Runoff = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
16,363	92	Paved roads w/open ditches, 50% imp, HSG C
55,403	80	1/2 acre lots, 25% imp, HSG C
36,160	70	Woods, Good, HSG C
107,926	78	Weighted Average
85,894		79.59% Pervious Area
22,032		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	477	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.9	66	0.0300	1.21		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
2.8					**Direct Entry,**
6.0	543	Total			

Subcatchment OS-50S:



Summary for Subcatchment OS-51S:

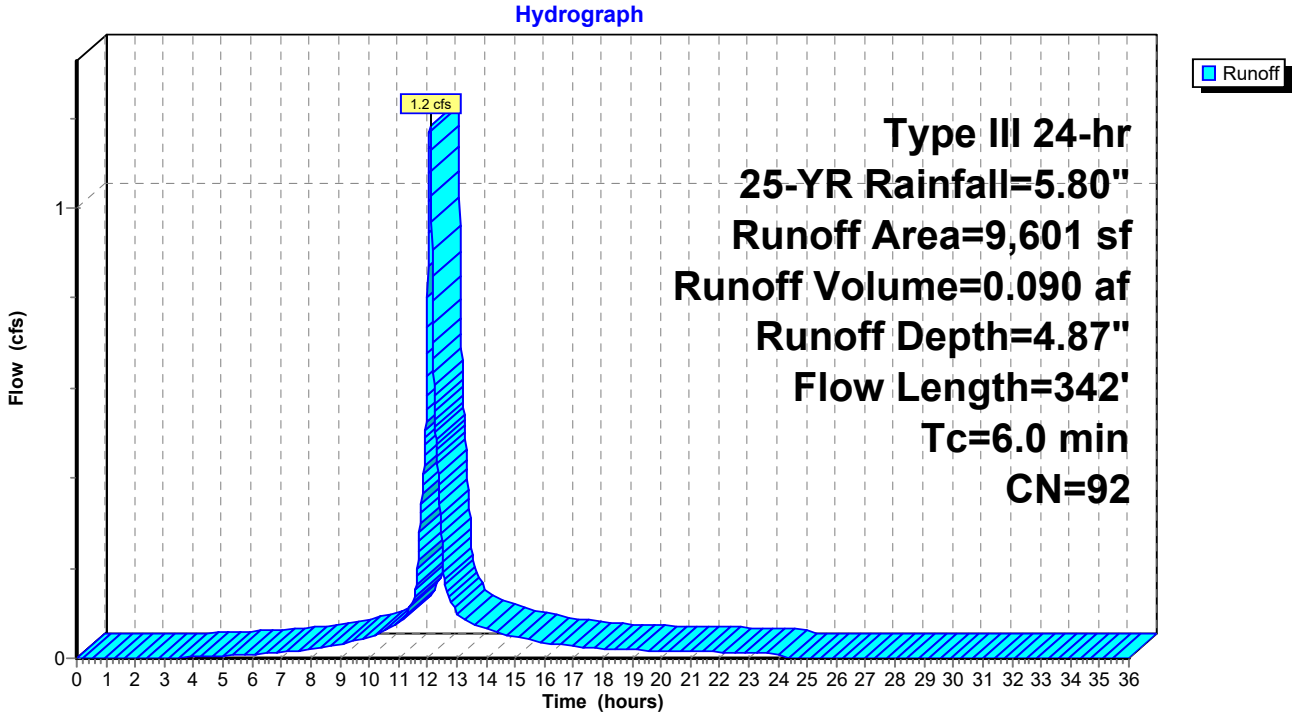
Runoff = 1.2 cfs @ 12.08 hrs, Volume= 0.090 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
9,601	92	Paved roads w/open ditches, 50% imp, HSG C
4,801		50.00% Pervious Area
4,801		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	320	0.0290	3.46		**Shallow Concentrated Flow, A-B** Paved Kv= 20.3 fps
0.1	22	0.1300	2.52		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
4.4					**Direct Entry,**
6.0	342	Total			

Subcatchment OS-51S:



Summary for Reach 10.1R:

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.9 cfs @ 12.35 hrs, Volume= 0.789 af
Outflow = 5.9 cfs @ 12.48 hrs, Volume= 0.789 af, Atten= 14%, Lag= 8.1 min

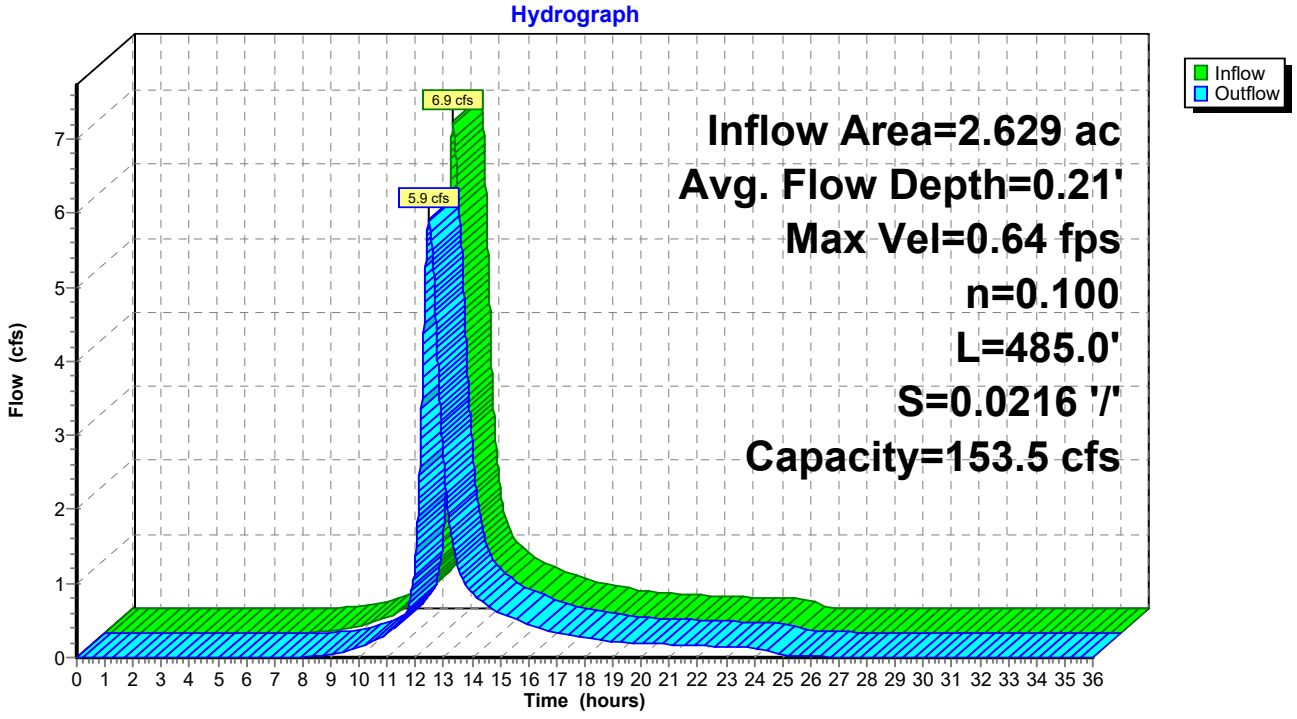
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.64 fps, Min. Travel Time= 12.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 43.6 min

Peak Storage= 4,508 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 100.0 sf, Capacity= 153.5 cfs

30.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 170.00'
Length= 485.0' Slope= 0.0216 '/'
Inlet Invert= 89.00', Outlet Invert= 78.50'

‡

Reach 10.1R:



Summary for Reach 11.0R:

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth > 3.66" for 25-YR event
Inflow = 6.0 cfs @ 12.44 hrs, Volume= 0.941 af
Outflow = 5.6 cfs @ 12.62 hrs, Volume= 0.936 af, Atten= 7%, Lag= 11.2 min

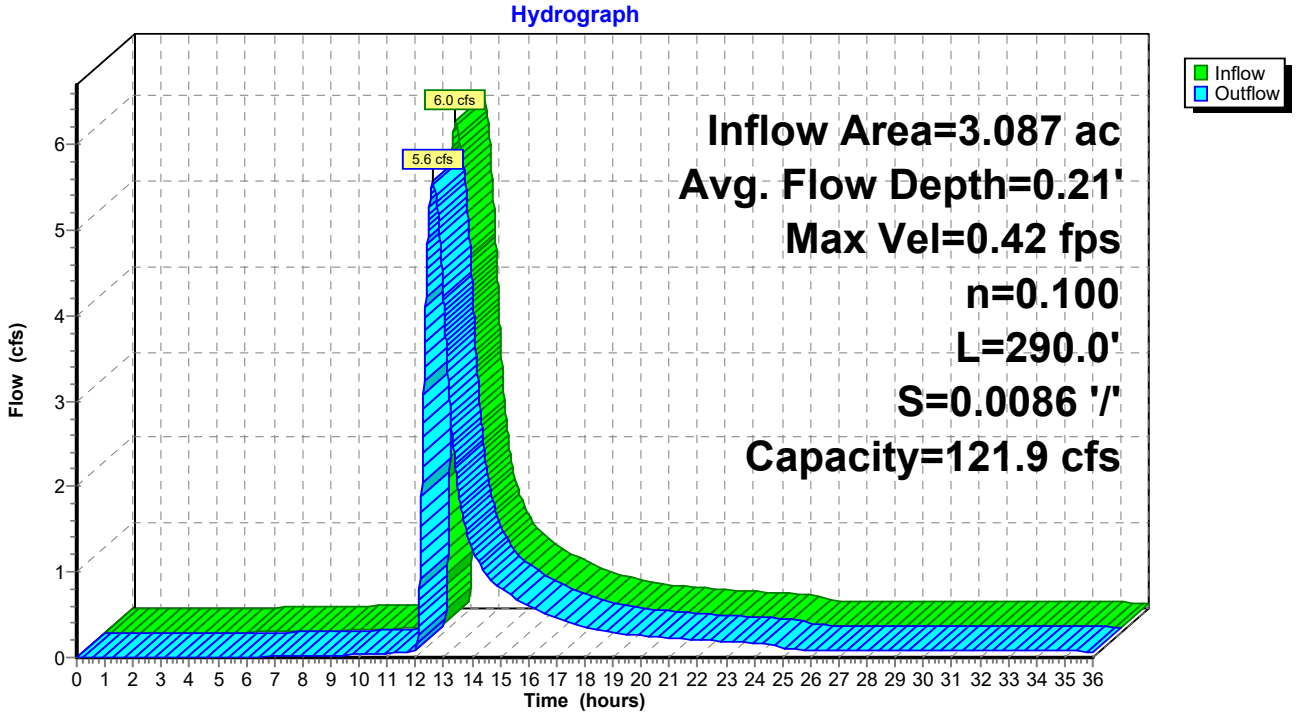
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.42 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 39.7 min

Peak Storage= 3,842 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 121.9 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 290.0' Slope= 0.0086 '/'
Inlet Invert= 81.00', Outlet Invert= 78.50'

‡

Reach 11.0R:



Summary for Reach 12.0R:

Inflow Area = 1.323 ac, 41.26% Impervious, Inflow Depth > 3.75" for 25-YR event
Inflow = 4.0 cfs @ 12.32 hrs, Volume= 0.413 af
Outflow = 2.3 cfs @ 12.61 hrs, Volume= 0.406 af, Atten= 42%, Lag= 17.7 min

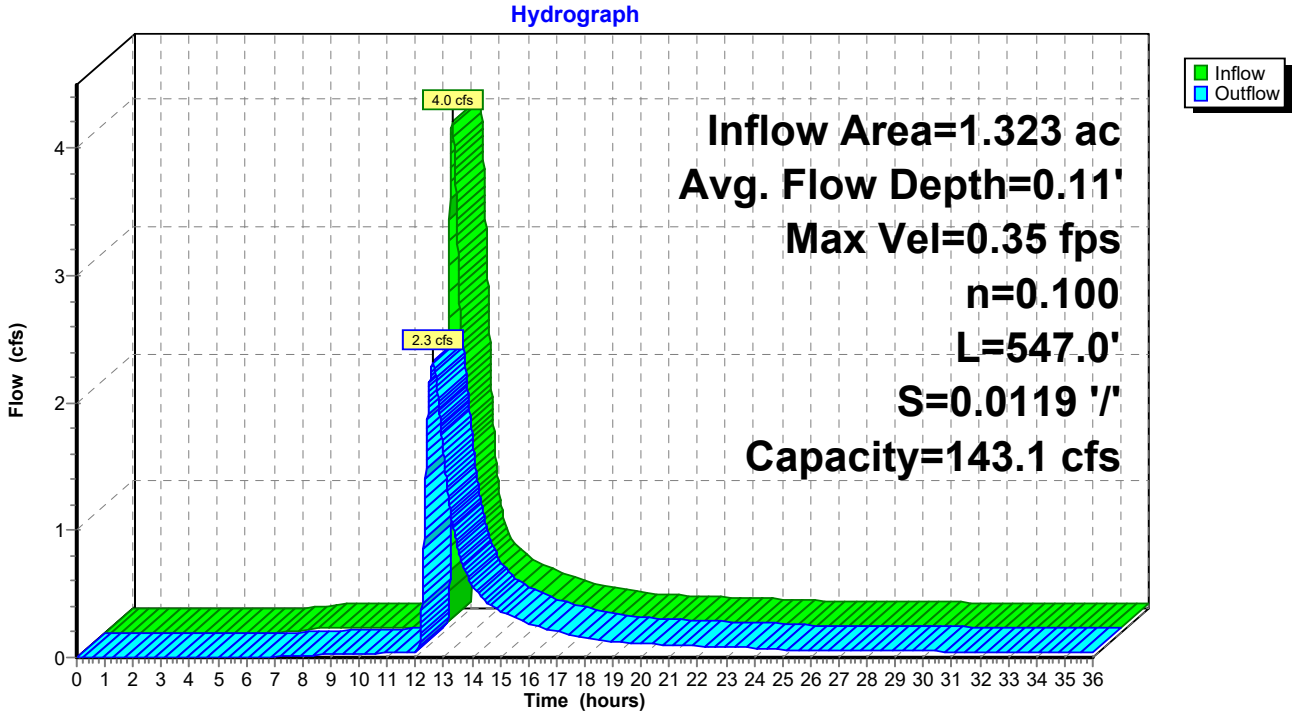
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.35 fps, Min. Travel Time= 26.0 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 82.6 min

Peak Storage= 3,625 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 143.1 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 547.0' Slope= 0.0119 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'

‡

Reach 12.0R:



Summary for Reach 13.0R:

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.9 cfs @ 12.31 hrs, Volume= 0.183 af
Outflow = 0.5 cfs @ 12.85 hrs, Volume= 0.183 af, Atten= 44%, Lag= 32.4 min

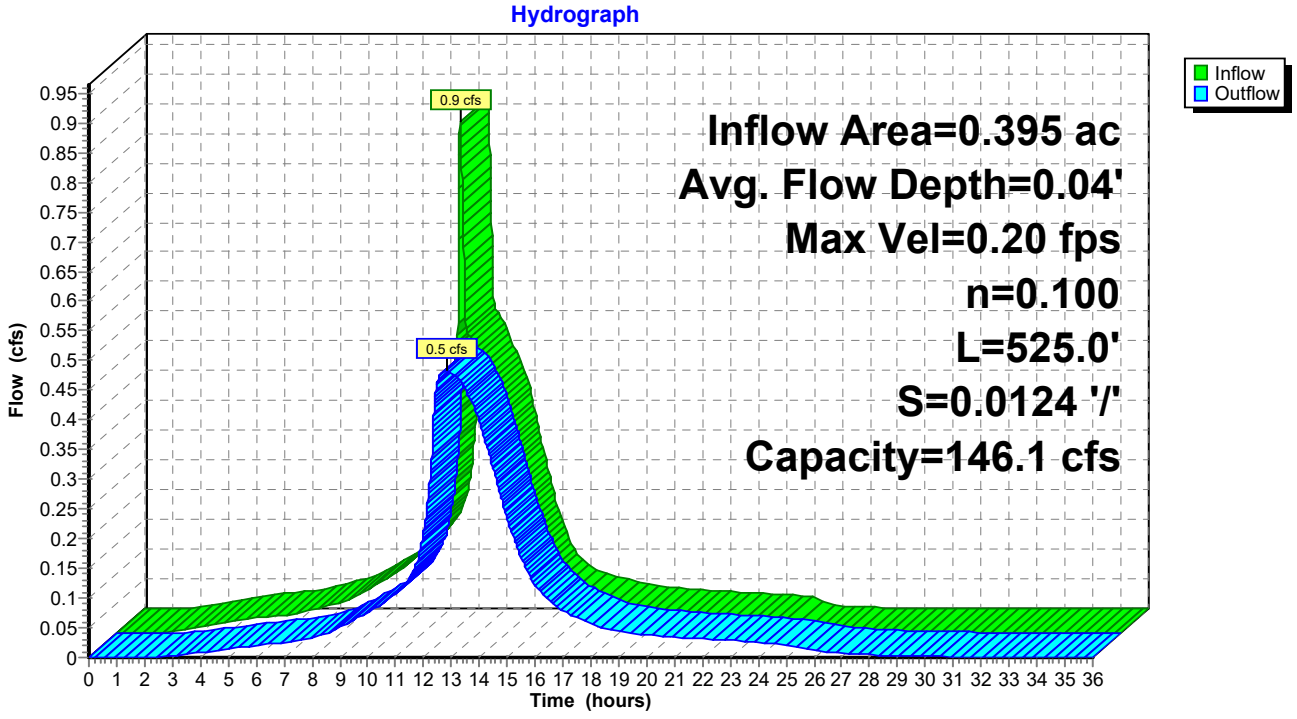
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.20 fps, Min. Travel Time= 43.2 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 94.8 min

Peak Storage= 1,253 cf @ 12.85 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 146.1 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 525.0' Slope= 0.0124 '/'
Inlet Invert= 85.00', Outlet Invert= 78.50'

‡

Reach 13.0R:



Summary for Reach 13.1R:

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.9 cfs @ 12.29 hrs, Volume= 0.181 af
Outflow = 0.6 cfs @ 12.47 hrs, Volume= 0.181 af, Atten= 37%, Lag= 11.0 min

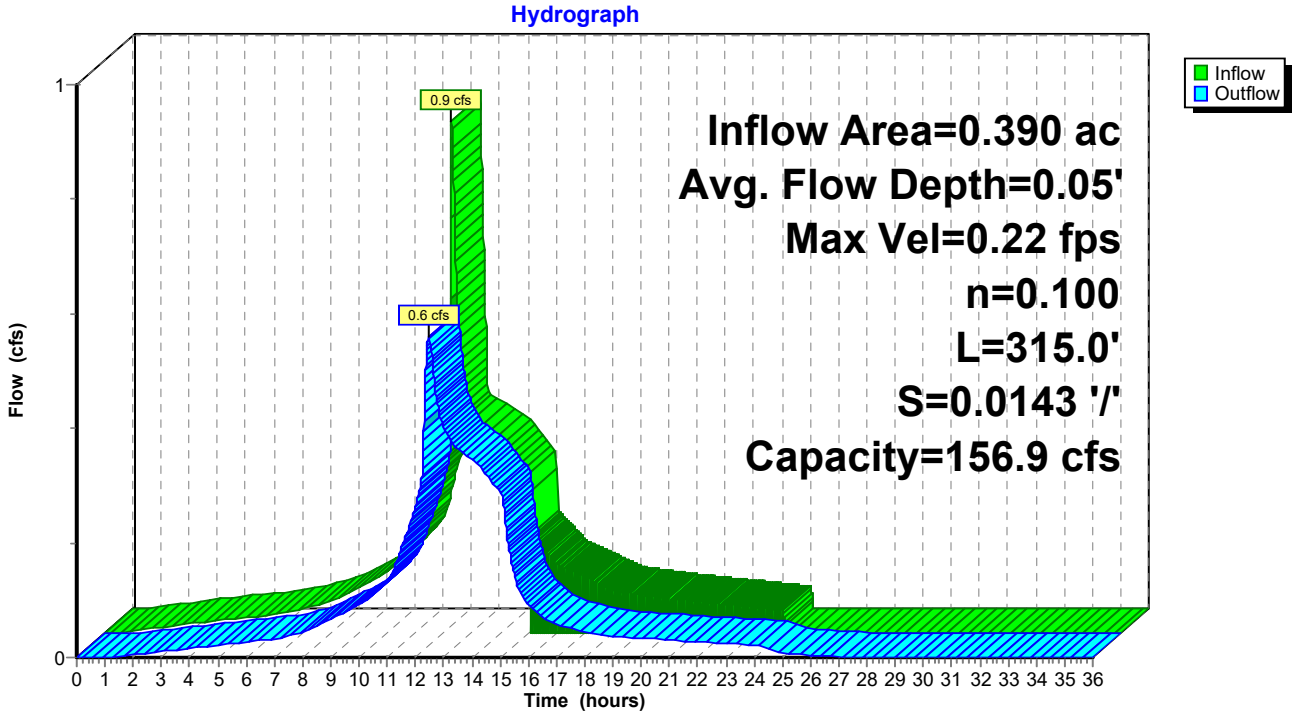
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.22 fps, Min. Travel Time= 23.5 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 52.8 min

Peak Storage= 791 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 120.0 sf, Capacity= 156.9 cfs

50.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 70.0 '/' Top Width= 190.00'
Length= 315.0' Slope= 0.0143 '/'
Inlet Invert= 83.00', Outlet Invert= 78.50'

‡

Reach 13.1R:



Summary for Reach 40R: (new Reach)

Inflow Area = 0.898 ac, 33.33% Impervious, Inflow Depth = 3.67" for 25-YR event
Inflow = 2.7 cfs @ 12.26 hrs, Volume= 0.275 af
Outflow = 2.6 cfs @ 12.32 hrs, Volume= 0.275 af, Atten= 4%, Lag= 3.3 min

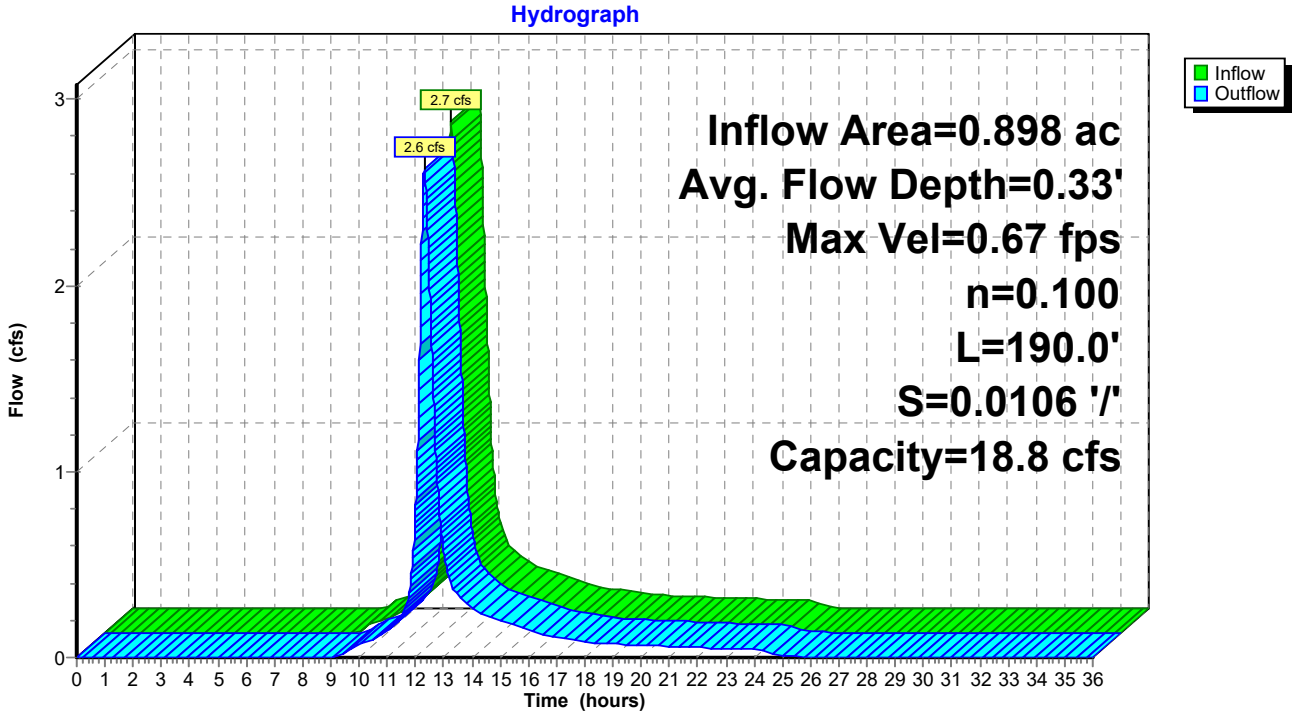
Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.67 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 19.9 min

Peak Storage= 743 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 18.8 cfs

10.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 20.00'
Length= 190.0' Slope= 0.0106 '/'
Inlet Invert= 108.04', Outlet Invert= 106.03'

‡

Reach 40R: (new Reach)



Summary for Pond 1P: Existing Culvert

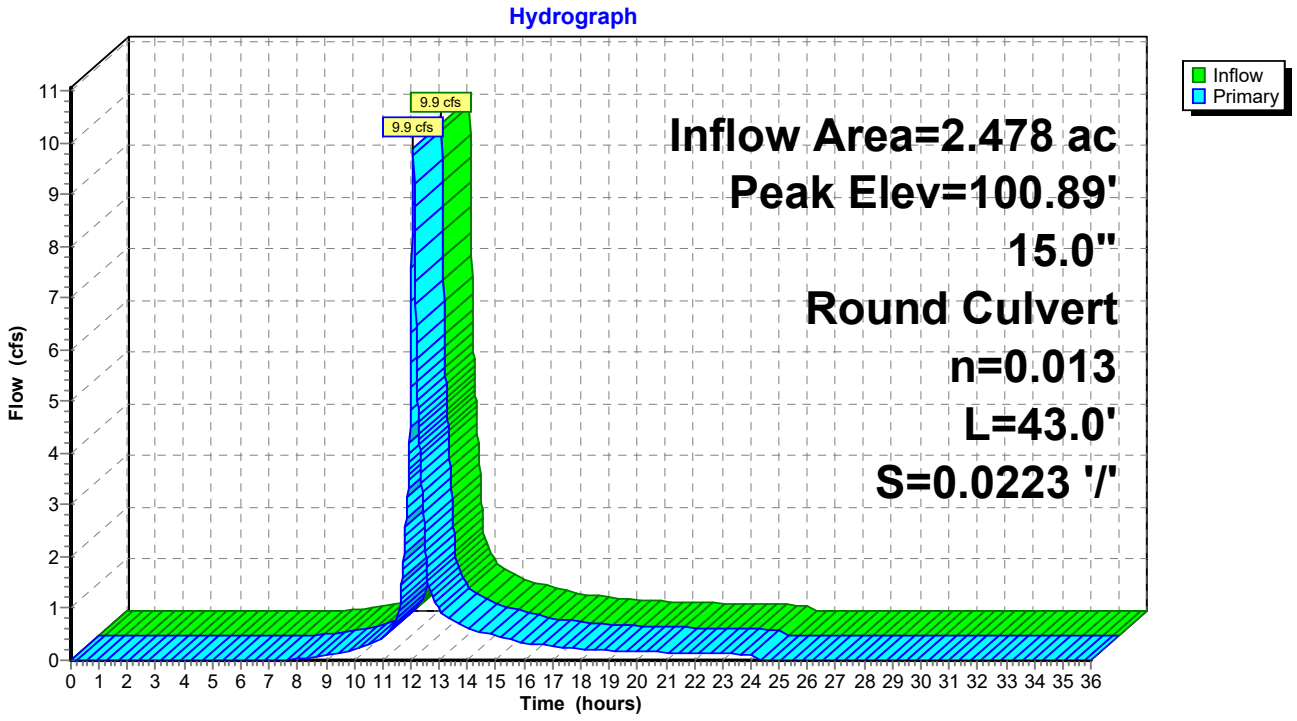
Inflow Area = 2.478 ac, 20.41% Impervious, Inflow Depth = 3.40" for 25-YR event
Inflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af
Outflow = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min
Primary = 9.9 cfs @ 12.09 hrs, Volume= 0.703 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 100.89' @ 12.09 hrs
Flood Elev= 100.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.78'	**15.0" Round Culvert** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.78' / 94.82' S= 0.0223 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=9.9 cfs @ 12.09 hrs HW=100.88' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.9 cfs @ 8.04 fps)

Pond 1P: Existing Culvert



Summary for Pond 10.1P: Culvert

Inflow Area = 2.629 ac, 21.75% Impervious, Inflow Depth = 3.60" for 25-YR event
Inflow = 6.9 cfs @ 12.33 hrs, Volume= 0.789 af
Outflow = 6.9 cfs @ 12.35 hrs, Volume= 0.789 af, Atten= 0%, Lag= 1.3 min
Primary = 6.9 cfs @ 12.35 hrs, Volume= 0.789 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.81' @ 12.35 hrs Surf.Area= 224 sf Storage= 137 cf
Flood Elev= 93.00' Surf.Area= 500 sf Storage= 558 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (832.2 - 832.1)

Volume	Invert	Avail.Storage	Storage Description
#1	91.00'	3,993 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

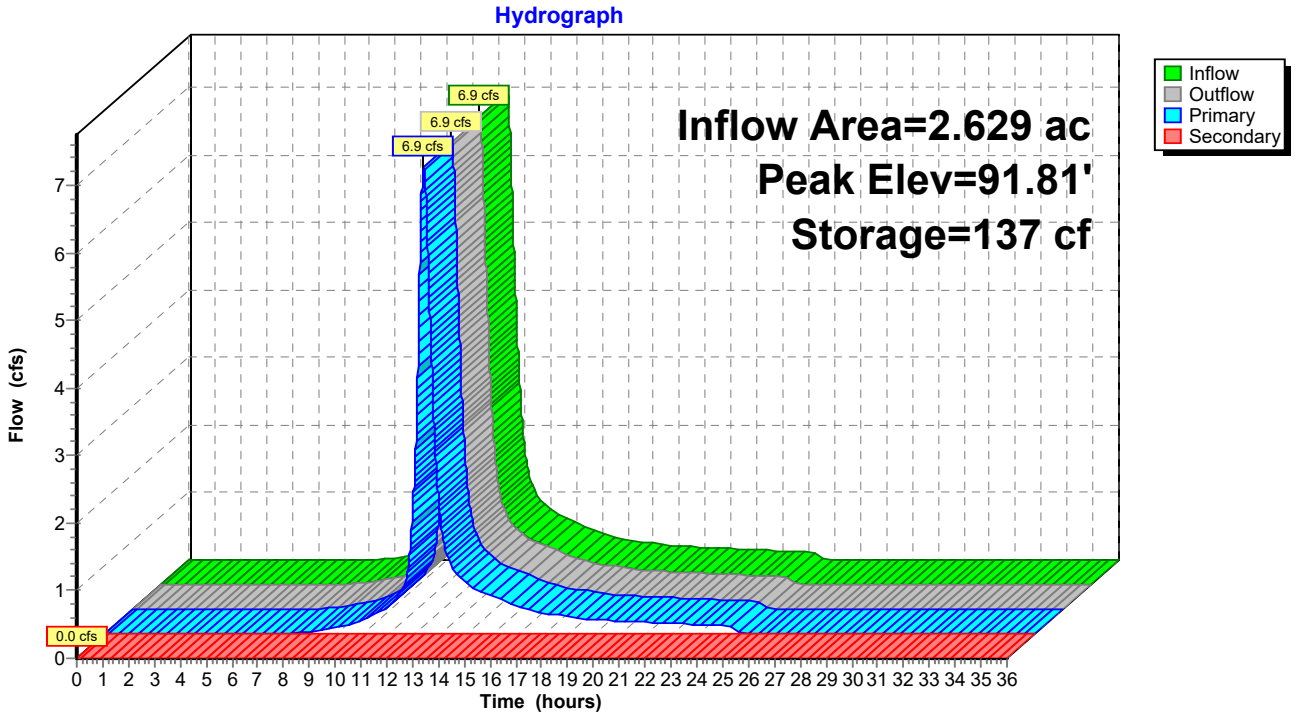
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
91.00	115	0	0
92.00	250	183	183
93.00	500	375	558
94.00	2,580	1,540	2,098
94.50	5,000	1,895	3,993

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**18.0" Round 18" PIPE** L= 48.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 88.00' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	93.00'	**40.0' long x 2.0' breadth Overflow at Driveway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=6.9 cfs @ 12.35 hrs HW=91.81' TW=89.19' (Dynamic Tailwater)
↑—**1=18" PIPE** (Inlet Controls 6.9 cfs @ 3.91 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=91.00' TW=89.00' (Dynamic Tailwater)
↑—**2=Overflow at Driveway** (Controls 0.0 cfs)

Pond 10.1P: Culvert



Summary for Pond 11.0P: GW-1

Inflow Area = 3.087 ac, 47.79% Impervious, Inflow Depth = 4.35" for 25-YR event
Inflow = 11.8 cfs @ 12.17 hrs, Volume= 1.118 af
Outflow = 6.0 cfs @ 12.44 hrs, Volume= 0.941 af, Atten= 49%, Lag= 16.1 min
Primary = 6.0 cfs @ 12.44 hrs, Volume= 0.941 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 83.42' @ 12.44 hrs Surf.Area= 9,949 sf Storage= 19,185 cf
Flood Elev= 84.80' Surf.Area= 10,850 sf Storage= 25,208 cf

Plug-Flow detention time= 210.1 min calculated for 0.941 af (84% of inflow)
Center-of-Mass det. time= 143.5 min (940.3 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	81.00'	25,208 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

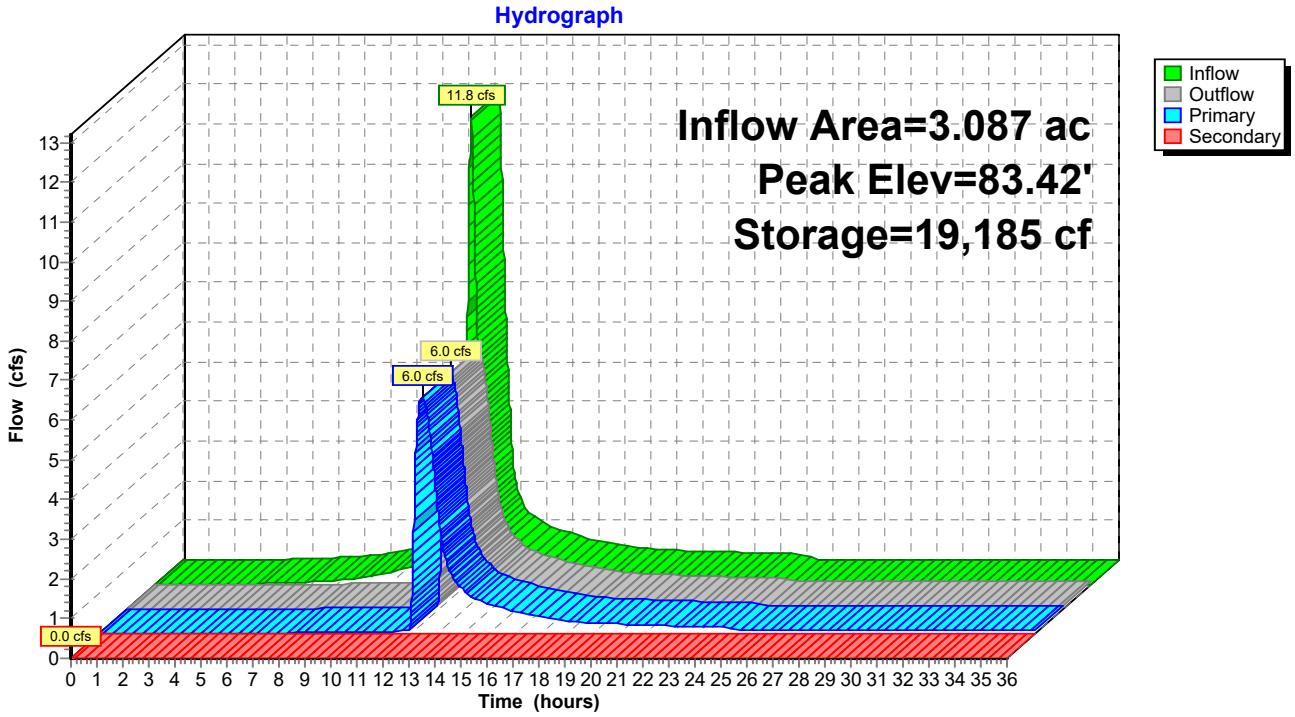
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.00	6,175	0	0
82.00	7,400	6,788	6,788
83.00	9,295	8,348	15,135
84.00	10,850	10,073	25,208

Device	Routing	Invert	Outlet Devices
#1	Primary	80.67'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.67' / 80.50' S= 0.0085 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	80.67'	**1.6" Vert. Orifice** C= 0.600
#3	Device 1	82.50'	**36.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#4	Secondary	83.50'	**25.0' long x 6.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=6.0 cfs @ 12.44 hrs HW=83.42' TW=81.19' (Dynamic Tailwater)
└**1=Culvert** (Passes 6.0 cfs of 8.6 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.1 cfs @ 7.19 fps)
  └**3=WQV Orifice** (Orifice Controls 5.9 cfs @ 3.92 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=81.00' TW=81.00' (Dynamic Tailwater)
└**4=Emergency Spillway** (Controls 0.0 cfs)

Pond 11.0P: GW-1



Summary for Pond 11.1P: Culvert

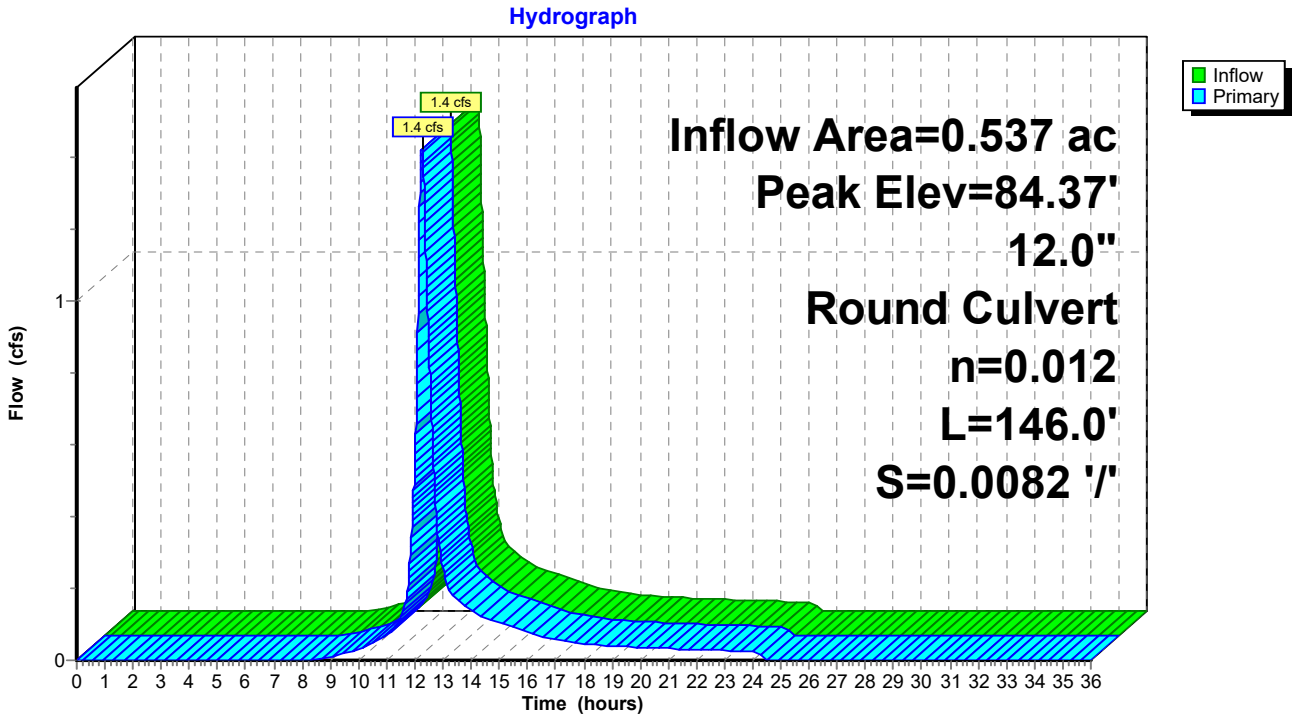
Inflow Area = 0.537 ac, 0.00% Impervious, Inflow Depth = 3.21" for 25-YR event
Inflow = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af
Outflow = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.25 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 84.37' @ 12.27 hrs
Flood Elev= 87.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	83.70'	**12.0" Round 12" PIPE** L= 146.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 83.70' / 82.50' S= 0.0082 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.4 cfs @ 12.25 hrs HW=84.37' TW=83.28' (Dynamic Tailwater)
↳**1=12" PIPE** (Outlet Controls 1.4 cfs @ 3.60 fps)

Pond 11.1P: Culvert



Summary for Pond 12.0P: UDSF-1

Inflow Area = 1.323 ac, 41.26% Impervious, Inflow Depth = 4.11" for 25-YR event
Inflow = 4.5 cfs @ 12.23 hrs, Volume= 0.454 af
Outflow = 4.0 cfs @ 12.32 hrs, Volume= 0.413 af, Atten= 11%, Lag= 5.3 min
Primary = 4.0 cfs @ 12.32 hrs, Volume= 0.413 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 89.46' @ 12.32 hrs Surf.Area= 3,379 sf Storage= 5,209 cf
Flood Elev= 90.80' Surf.Area= 4,200 sf Storage= 9,144 cf

Plug-Flow detention time= 190.9 min calculated for 0.413 af (91% of inflow)
Center-of-Mass det. time= 146.4 min (958.7 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1	87.50'	9,144 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

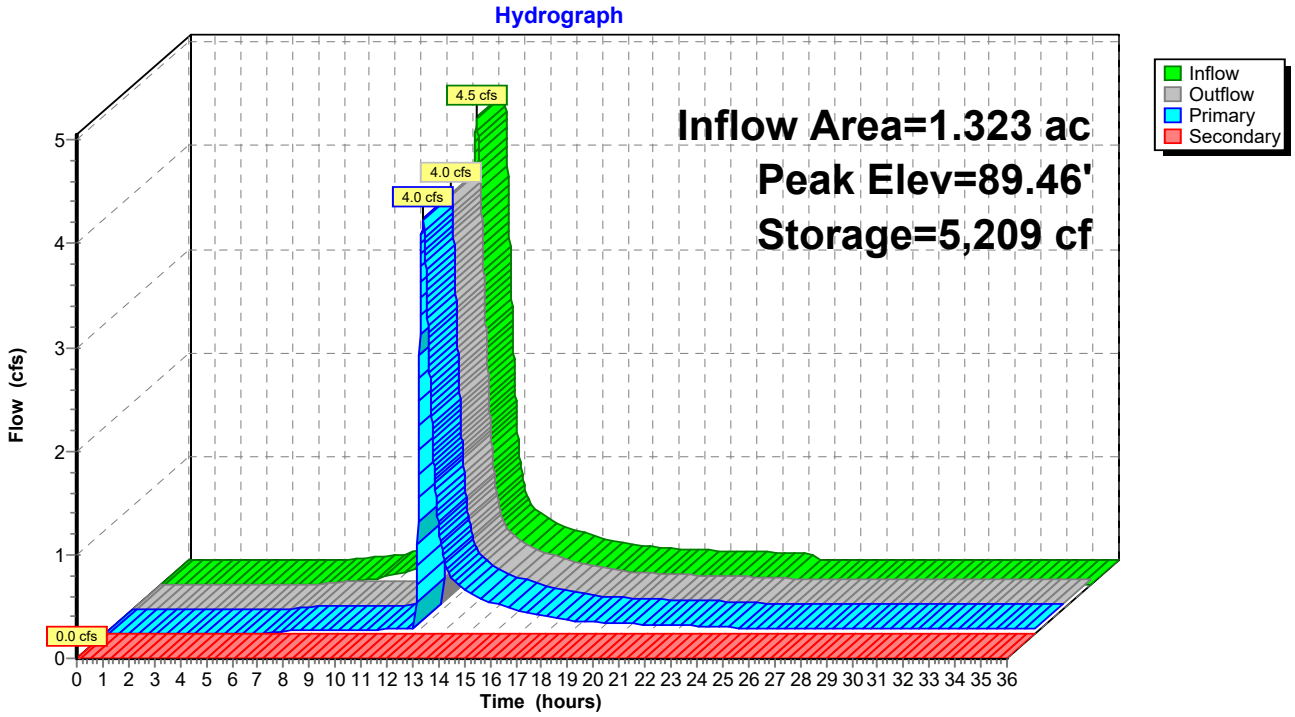
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
87.50	1,955	0	0
88.00	2,304	1,065	1,065
89.00	3,050	2,677	3,742
90.00	3,770	3,410	7,152
90.50	4,200	1,993	9,144

Device	Routing	Invert	Outlet Devices
#1	Primary	85.30'	**12.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 84.30' S= 0.0111 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	85.30'	**1.0" Vert. Controlling Orifice** C= 0.600
#3	Device 2	85.30'	**4.0" Round UD Header** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.30' / 85.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 1	89.00'	**48.0" W x 6.0" H Vert. WQV Orifice** C= 0.600
#5	Secondary	89.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.0 cfs @ 12.32 hrs HW=89.46' TW=85.07' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.0 cfs of 5.7 cfs potential flow)
  - **2=Controlling Orifice** (Orifice Controls 0.1 cfs @ 9.77 fps)
    - **3=UD Header** (Passes 0.1 cfs of 0.4 cfs potential flow)
  - **4=WQV Orifice** (Orifice Controls 4.0 cfs @ 2.17 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=87.50' TW=85.00' (Dynamic Tailwater)
- **5=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 12.0P: UDSF-1



Summary for Pond 13.0P: Dripedge 1

Inflow Area = 0.395 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.2 cfs @ 12.08 hrs, Volume= 0.183 af
Outflow = 0.9 cfs @ 12.31 hrs, Volume= 0.183 af, Atten= 62%, Lag= 13.6 min
Primary = 0.5 cfs @ 12.31 hrs, Volume= 0.178 af
Secondary = 0.4 cfs @ 12.31 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 101.01' @ 12.31 hrs Surf.Area= 3,843 sf Storage= 2,064 cf
Flood Elev= 101.20' Surf.Area= 10,000 sf Storage= 2,660 cf

Plug-Flow detention time= 40.4 min calculated for 0.183 af (100% of inflow)
Center-of-Mass det. time= 40.1 min (785.7 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	2,660 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

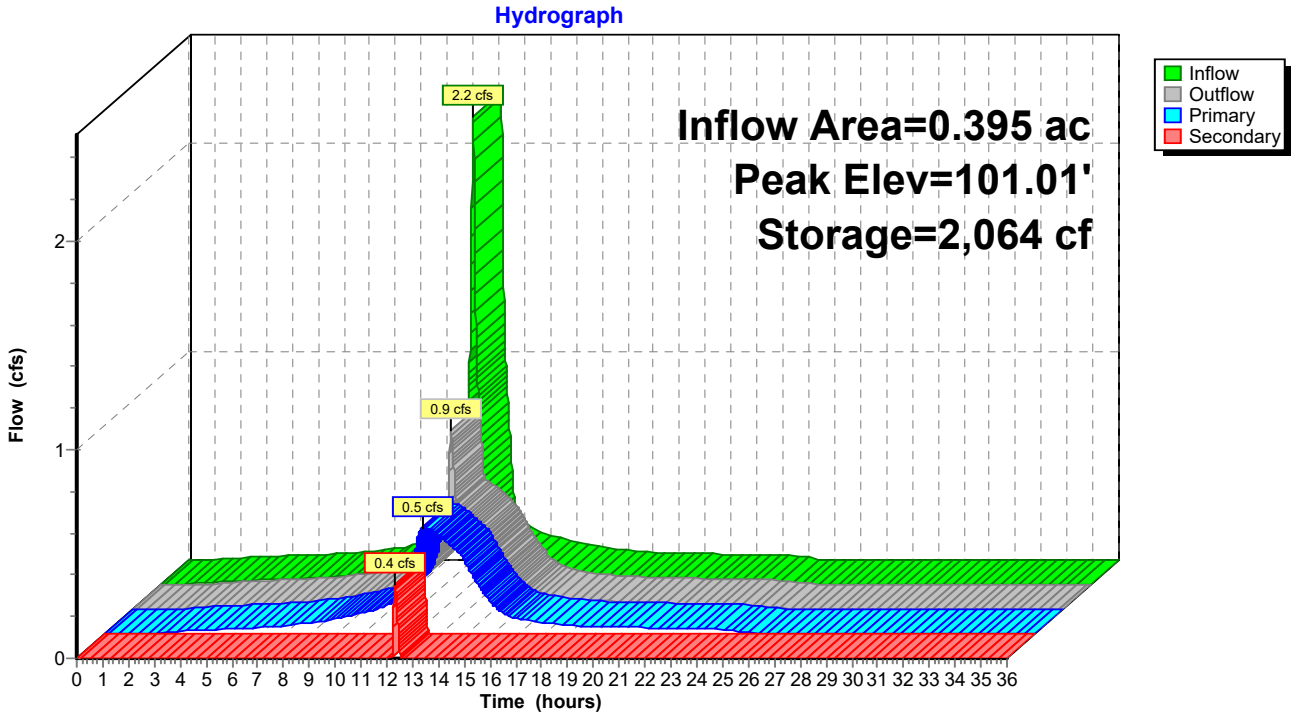
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	2,850	0.0	0	0
98.51	2,850	20.0	6	6
99.00	2,850	20.0	279	285
99.99	2,850	20.0	564	849
100.00	2,850	40.0	11	861
100.99	2,850	40.0	1,129	1,989
101.00	2,850	100.0	29	2,018
101.10	10,000	100.0	642	2,660

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**4.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.50' / 82.30' S= 0.5400 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	101.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.5 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.5 cfs @ 5.82 fps)

Secondary OutFlow Max=0.4 cfs @ 12.31 hrs HW=101.01' TW=85.04' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.32 fps)

Pond 13.0P: Dripedge 1



Summary for Pond 13.1P: Dripedge 2

Inflow Area = 0.390 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 2.2 cfs @ 12.08 hrs, Volume= 0.181 af
Outflow = 0.9 cfs @ 12.29 hrs, Volume= 0.181 af, Atten= 60%, Lag= 12.5 min
Primary = 0.4 cfs @ 12.27 hrs, Volume= 0.172 af
Secondary = 0.5 cfs @ 12.29 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.02' @ 12.29 hrs Surf.Area= 3,810 sf Storage= 1,791 cf
Flood Elev= 88.20' Surf.Area= 10,000 sf Storage= 2,357 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.9 min (770.6 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	85.50'	2,357 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

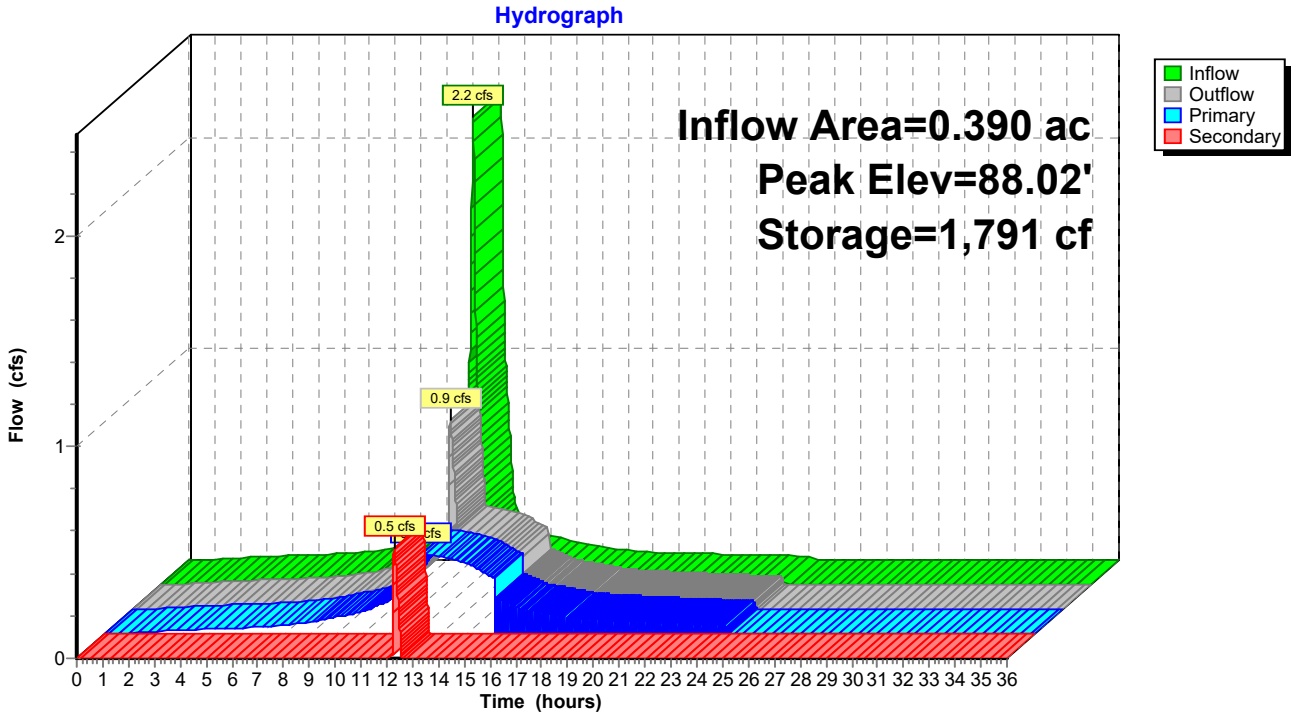
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.50	2,450	0.0	0	0
85.51	2,450	20.0	5	5
86.00	2,450	20.0	240	245
86.99	2,450	20.0	485	730
87.00	2,450	40.0	10	740
87.99	2,450	40.0	970	1,710
88.00	2,450	100.0	25	1,735
88.10	10,000	100.0	622	2,357

Device	Routing	Invert	Outlet Devices
#1	Primary	84.00'	**4.0" Round Culvert** L= 135.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 84.00' / 80.70' S= 0.0244 '/' Cc= 0.900 n= 0.012, Flow Area= 0.09 sf
#2	Secondary	88.00'	**80.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.4 cfs @ 12.27 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.4 cfs @ 4.28 fps)

Secondary OutFlow Max=0.5 cfs @ 12.29 hrs HW=88.02' TW=83.04' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.5 cfs @ 0.36 fps)

Pond 13.1P: Dripedge 2



Summary for Pond 40.1P: Existign pond

Inflow Area = 2.127 ac, 35.84% Impervious, Inflow Depth > 3.79" for 25-YR event
Inflow = 4.0 cfs @ 12.18 hrs, Volume= 0.671 af
Outflow = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af, Atten= 27%, Lag= 25.0 min
Primary = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 106.90' @ 12.60 hrs Surf.Area= 3,592 sf Storage= 3,768 cf

Plug-Flow detention time= 26.6 min calculated for 0.667 af (99% of inflow)
Center-of-Mass det. time= 21.9 min (877.6 - 855.7)

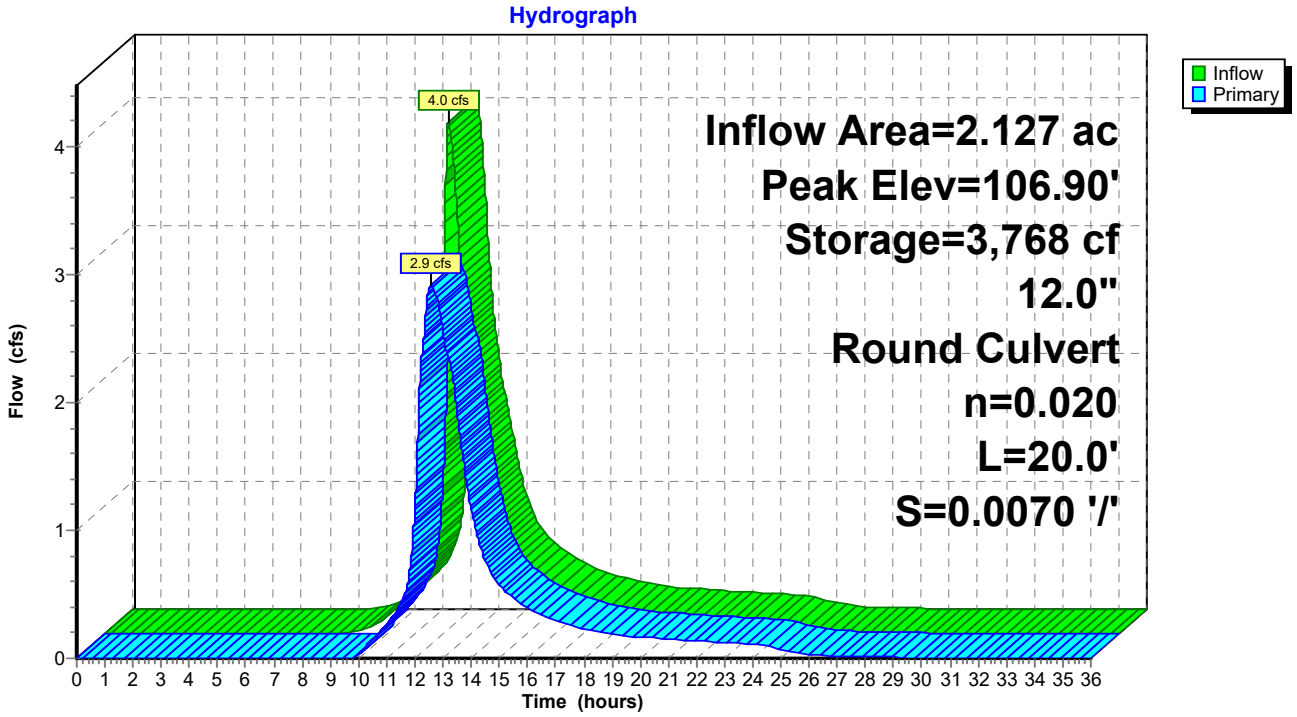
Volume	Invert	Avail.Storage	Storage Description
#1	105.00'	4,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
105.00	100	0	0
106.00	2,200	1,150	1,150
107.00	3,740	2,970	4,120

Device	Routing	Invert	Outlet Devices
#1	Primary	105.32'	**12.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.32' / 105.18' S= 0.0070 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.9 cfs @ 12.60 hrs HW=106.90' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.9 cfs @ 3.71 fps)

Pond 40.1P: Existign pond



Summary for Pond 40P: Existing Wetland

Inflow Area = 2.127 ac, 35.84% Impervious, Inflow Depth = 3.81" for 25-YR event
Inflow = 6.7 cfs @ 12.10 hrs, Volume= 0.674 af
Outflow = 4.0 cfs @ 12.18 hrs, Volume= 0.671 af, Atten= 40%, Lag= 5.2 min
Primary = 4.0 cfs @ 12.18 hrs, Volume= 0.671 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 107.10' @ 12.49 hrs Surf.Area= 6,074 sf Storage= 5,046 cf
Flood Elev= 109.00' Surf.Area= 11,962 sf Storage= 18,373 cf

Plug-Flow detention time= 36.8 min calculated for 0.671 af (99% of inflow)
Center-of-Mass det. time= 33.6 min (855.7 - 822.1)

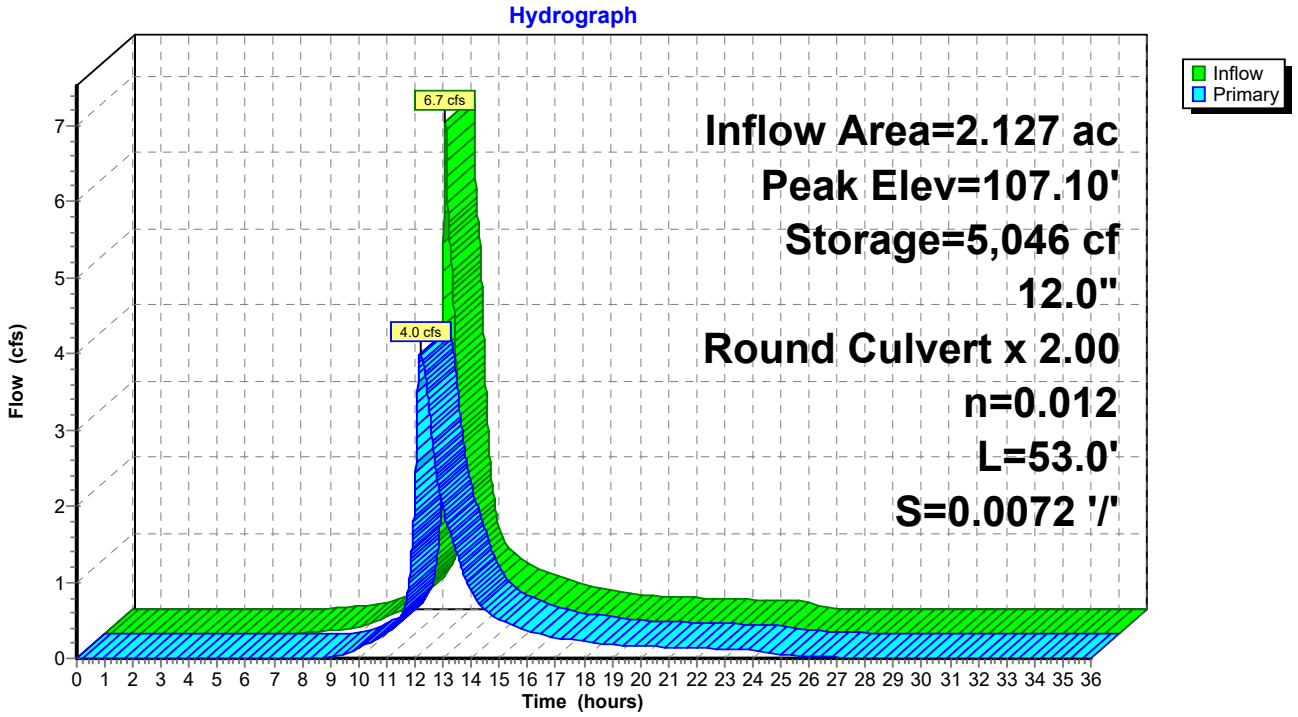
Volume	Invert	Avail.Storage	Storage Description
#1	106.00'	18,373 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
106.00	3,400	0	0
107.00	5,564	4,482	4,482
108.00	10,824	8,194	12,676
108.50	11,962	5,697	18,373

Device	Routing	Invert	Outlet Devices
#1	Primary	106.03'	**12.0" Round Culvert X 2.00** L= 53.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 106.03' / 105.65' S= 0.0072 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=4.0 cfs @ 12.18 hrs HW=106.93' TW=106.48' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.0 cfs @ 3.54 fps)

Pond 40P: Existing Wetland



Summary for Pond 41P: Extended Culvert

Inflow Area = 0.898 ac, 33.33% Impervious, Inflow Depth = 3.70" for 25-YR event
Inflow = 2.9 cfs @ 12.21 hrs, Volume= 0.277 af
Outflow = 2.7 cfs @ 12.26 hrs, Volume= 0.275 af, Atten= 4%, Lag= 3.0 min
Primary = 2.7 cfs @ 12.26 hrs, Volume= 0.275 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 109.21' @ 12.26 hrs Surf.Area= 838 sf Storage= 697 cf
Flood Elev= 111.00' Surf.Area= 3,710 sf Storage= 3,983 cf

Plug-Flow detention time= 16.3 min calculated for 0.275 af (99% of inflow)
Center-of-Mass det. time= 10.8 min (832.9 - 822.1)

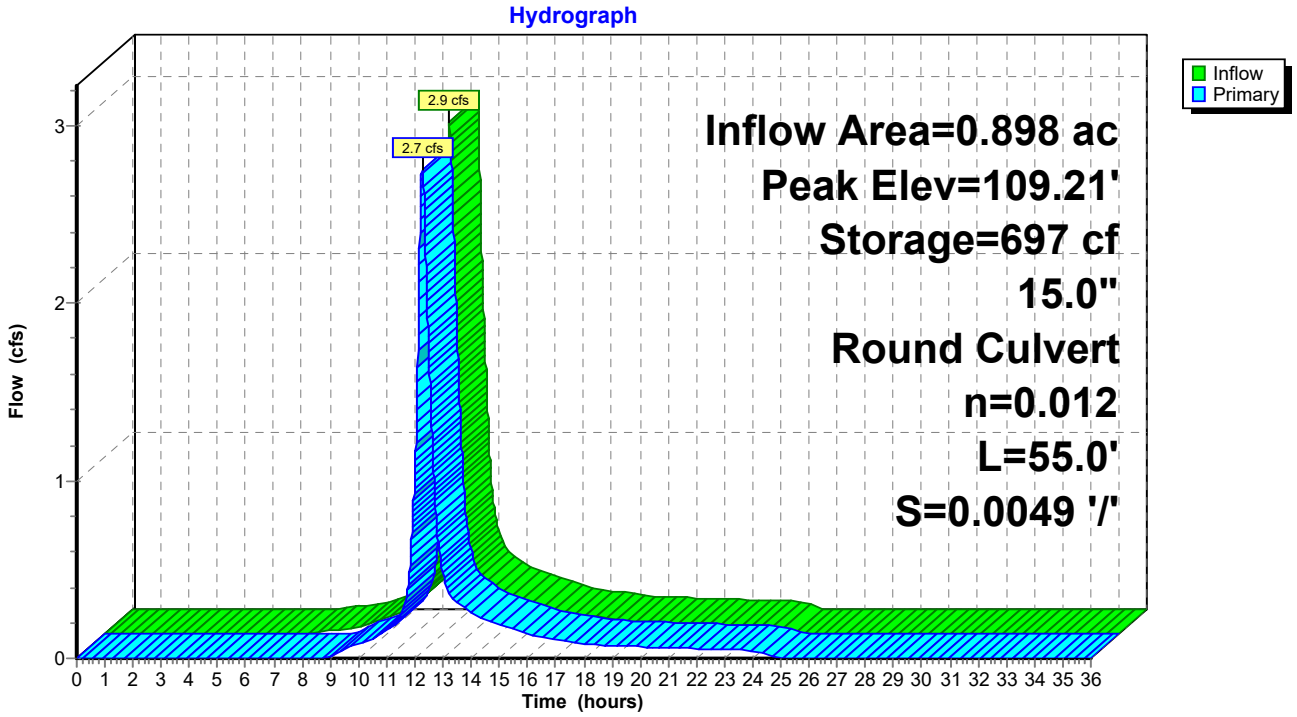
Volume	Invert	Avail.Storage	Storage Description
#1	108.00'	3,983 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
108.00	330	0	0
109.00	733	532	532
110.00	1,230	982	1,513
111.00	3,710	2,470	3,983

Device	Routing	Invert	Outlet Devices
#1	Primary	108.27'	**15.0" Round Culvert** L= 55.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 108.27' / 108.00' S= 0.0049 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.7 cfs @ 12.26 hrs HW=109.21' TW=108.37' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.7 cfs @ 3.85 fps)

Pond 41P: Extended Culvert

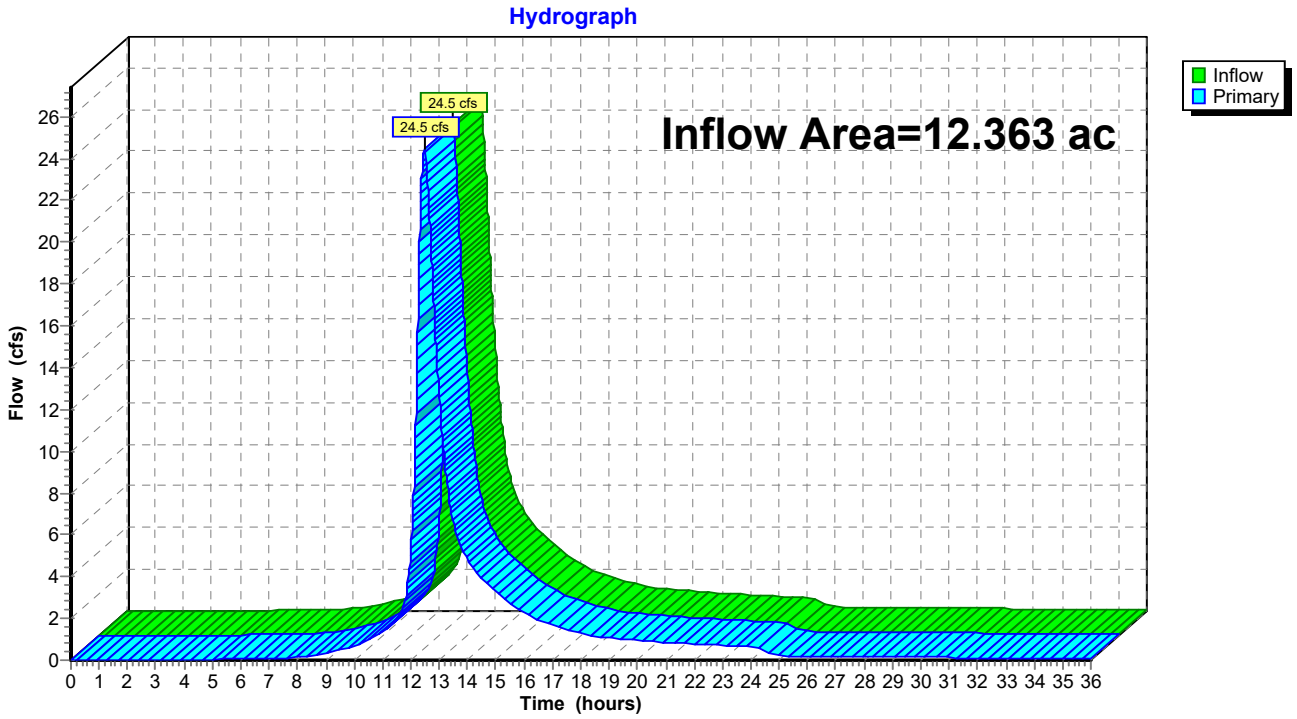


Summary for Link SP-1:

Inflow Area = 12.363 ac, 28.93% Impervious, Inflow Depth > 3.71" for 25-YR event
Inflow = 24.5 cfs @ 12.47 hrs, Volume= 3.819 af
Primary = 24.5 cfs @ 12.47 hrs, Volume= 3.819 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-1:

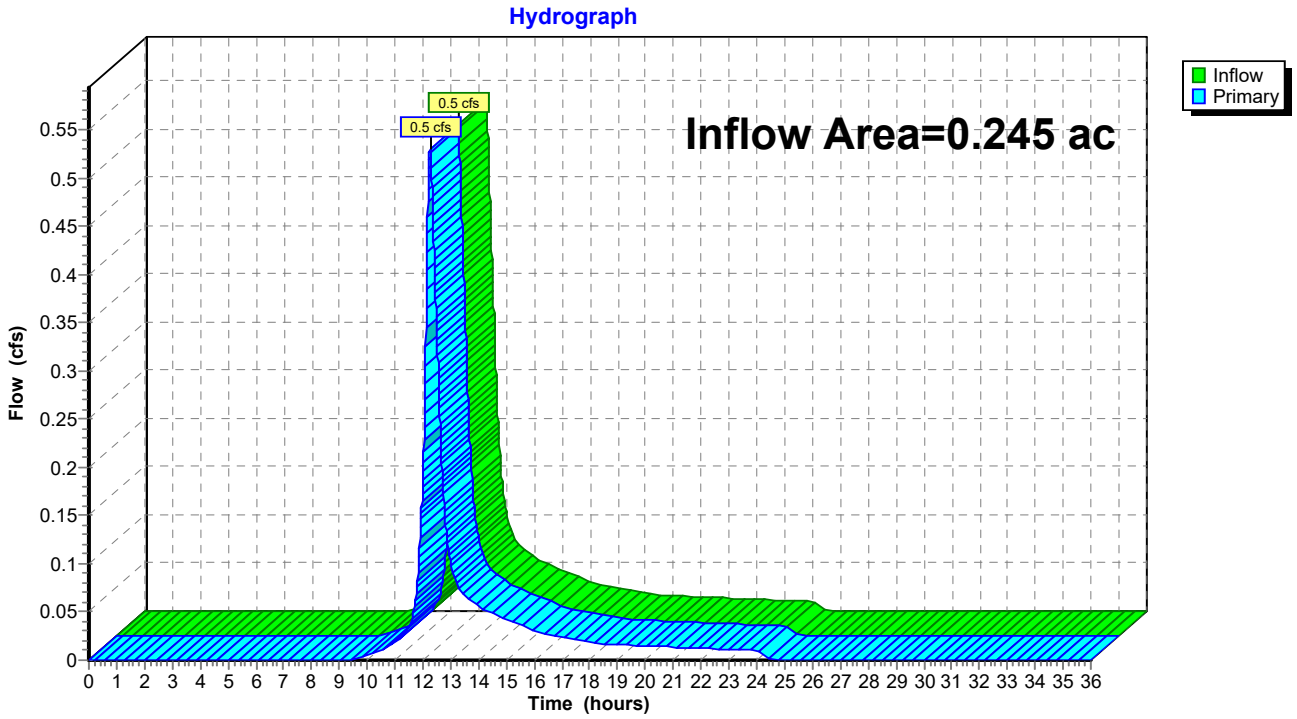


Summary for Link SP-2:

Inflow Area = 0.245 ac, 0.00% Impervious, Inflow Depth = 2.65" for 25-YR event
Inflow = 0.5 cfs @ 12.26 hrs, Volume= 0.054 af
Primary = 0.5 cfs @ 12.26 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-2:

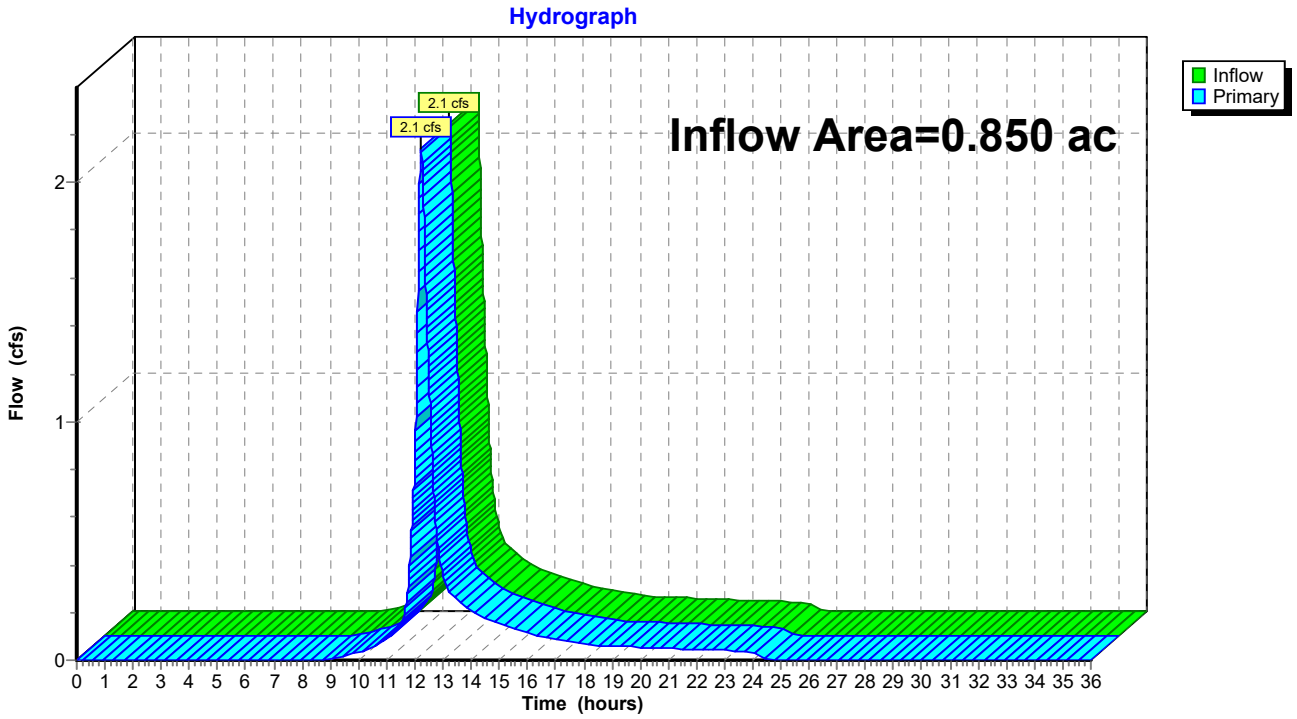


Summary for Link SP-3:

Inflow Area = 0.850 ac, 0.00% Impervious, Inflow Depth = 2.92" for 25-YR event
Inflow = 2.1 cfs @ 12.22 hrs, Volume= 0.207 af
Primary = 2.1 cfs @ 12.22 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-3:

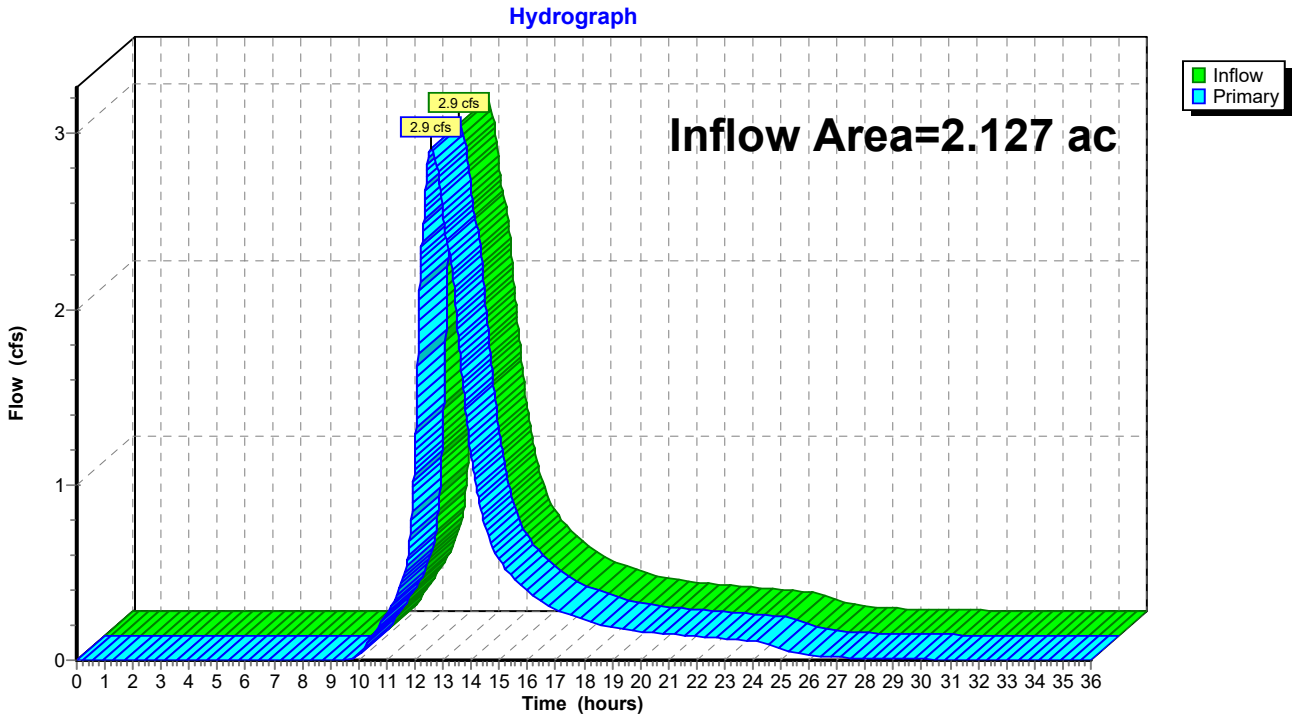


Summary for Link SP-4: SP-4

Inflow Area = 2.127 ac, 35.84% Impervious, Inflow Depth > 3.77" for 25-YR event
Inflow = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af
Primary = 2.9 cfs @ 12.60 hrs, Volume= 0.667 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-4: SP-4

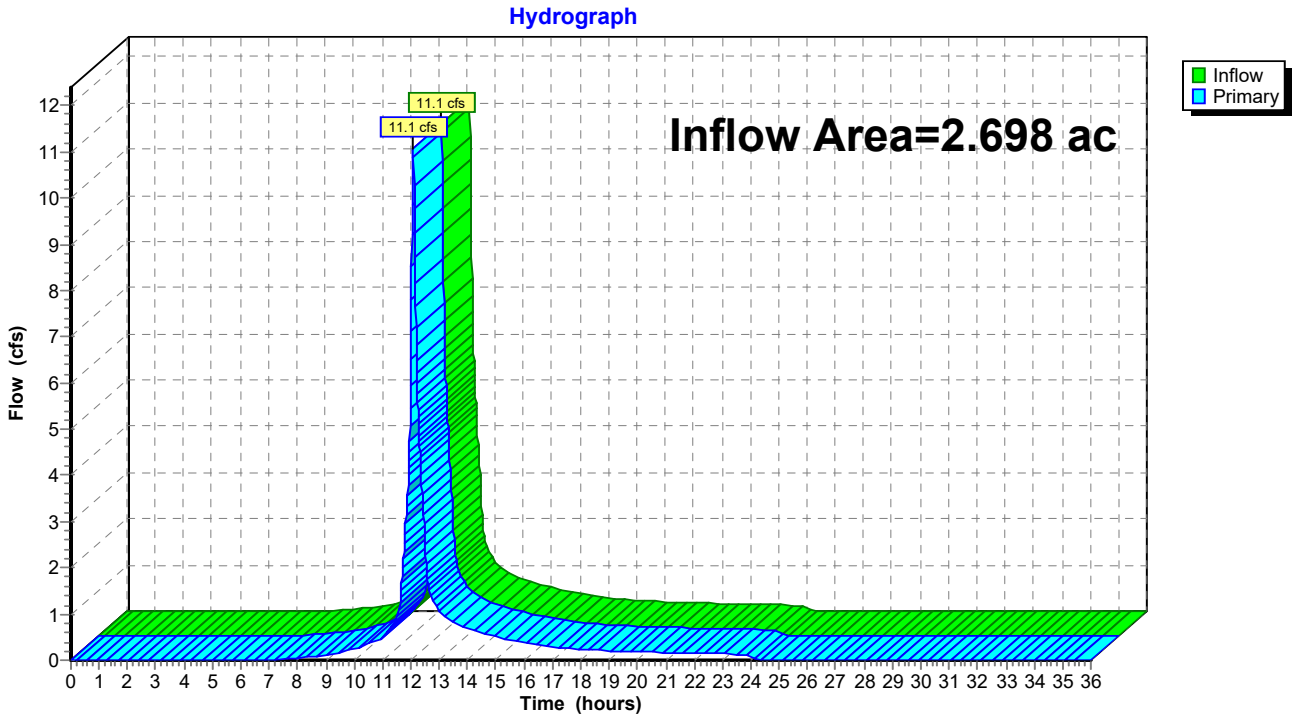


Summary for Link SP-5: SP-5

Inflow Area = 2.698 ac, 22.83% Impervious, Inflow Depth = 3.52" for 25-YR event
Inflow = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af
Primary = 11.1 cfs @ 12.09 hrs, Volume= 0.792 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SP-5: SP-5



Appendix 4

Inspection, Maintenance and Housekeeping Plan

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

FALLBROOK COMMONS
PORTLAND, MAINE

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site by the contractor during construction and by the owner/homeowner association after construction. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section and the erosion and sedimentation control plan for the project. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Correction action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or

washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation. A Spill, Prevention, Control and Countermeasures Plan is created for the project and is to be kept onsite at all times.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from

trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the owner or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

   A. Vegetated Areas:

   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
   - If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

   C. Winter Sanding:

   - Clear accumulations of winter sand along access road at least once a year, preferably in the spring.
   - Accumulations of sand along road shoulders may be removed by grading excess

sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Underdrained Soil Filters:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. Removed sediments should be disposed of in an acceptable manner.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Mowing: If mowing is desired, only handheld string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.

F. Level Spreader:

- The level spreader pool should be inspected after rainfall events for sediment accumulation and debris that may reduce its capacity. Sediment and debris buildup should be removed once the volume of the pool has been reduced by 25%. The level berm must be constructed so that flows slowly seep across the berm as

sheet flow to the receiving downstream drainage way. Repair or reconstruction of the berm is required when flow from the spreader becomes channelized.

G. Gravel Wetland:

- During the first year, the basin shall be inspected semi-annually and following major storm events.
- Debris and sediment buildup shall be removed from the forebay and basin as needed. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good vegetative cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.
- The gravel wetland should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
- Removal any decaying vegetation, litter, and debris that may be found.
- Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.
- Plant biomass shall be harvested annually.

H. Roof Drip Edge:

- During the first year, the drip edge shall be inspected semi-annually and following major storm events.
- Debris, sand and sediment buildup shall be removed as needed. Use vacuum truck as required to remove sand within rock. The drip edge should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours.
- The rock layer shall be replaced with new rock free of sediment/ sand when water ponds on the surface of the bed for more than 72 hours. If water continues to pond, the top several inches of the filter shall be replaced with fresh material. Removed sediments should be disposed of in an acceptable manner.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 2 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. Duration of Maintenance: Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachments

Attachment 1 – Stormwater Inspection and Maintenance Log Form

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

FALLBROOK COMMONS
PORTLAND, MAINE

This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the proposed Institute for Local Food Systems Innovation. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the municipality. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Level Spreader			
Remove sediment			Monthly
Check for evidence of channelized flow over berm			Monthly
Erosion (side slopes, embankment)			Monthly
Mowed			Semi-Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

Underdrained Soil Filters				
	Remove sediment & debris			Monthly
	Remove weeds			Monthly (during growing season)
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
Gravel Wetland				
	Remove sediment & debris			Monthly
	Check and clean the risers			Monthly
	Erosion (side slopes, embankment)			Monthly
	Inspection after major storm to verify proper function			Bi-Annually
	Remove decaying vegetation, litter and debris			As-needed
Roof Drip Edge Filter				
	Remove sediment & debris			Annually
	Remove weeds			Monthly (during growing season)
	Inspection after major storm to verify proper function			Bi-Annually

Appendix 5

Web Soil Survey

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine
(18347 Fallbrook Commons - Web Soil Survey)

Map Scale: 1:2,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	C	4.2	15.4%
BuB	Lamoine silt loam, 3 to 8 percent slopes	C/D	3.0	11.0%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	D	2.2	8.1%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	D	6.0	22.0%
HsB	Lyman-Abram complex, 0 to 8 percent slopes, very rocky	D	2.3	8.6%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	9.6	35.0%
Totals for Area of Interest			**27.3**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix 6

FEMA Map

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** To be protected from 100-year flood by federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside 500-year flood plain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 Base Flood Elevation Line; Elevation in Feet*

(EL. 987) Base Flood Elevation in Feet Where Uniform Within Zone*

BM 7 Elevation Reference Mark

M1.5 River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated or additional flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross-sections and interpolated between cross-sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY:
City of Portland Zoning and Building Inspection Office, 389 Congress Street,Room 315, Portland, Maine 04101 (Maps available for reference only; not for distribution.)

INITIAL IDENTIFICATION:
APRIL 26, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 17, 1989

FLOOD INSURANCE RATE MAP REVISIONS:
December 8, 1998 – to change Base Flood elevations, to add base flood elevations, to change zone designations, to update map format, and to change floodways.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE
400 0 400/800

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 2 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0002 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency

Appendix 7

Form F: Soil Profile/Classification Information

FORM F 18347

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-101** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
VERY FINE SANDY LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 5/2 OLIVE GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
SILT LOAM		5Y 4/1 DARK GRAY	
SILTY CLAY LOAM	VERY FIRM	5Y 4/2 OLIVE GRAY	

LIMIT OF EXCAVATION = 96"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	10"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-102** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/2 DARK GRAYISH BROWN	
		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM		
SILTY CLAY LOAM	VERY FIRM	5Y 4/2	

LIMIT OF EXCAVATION = 84"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	7"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-103** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 3/2 VERY DARK GRAYISH BROWN	
SILTY CLAY LOAM		5Y 4/1 DARK GRAY	COMMON, MEDIUM, DISTINCT
	FIRM		
	VERY FIRM		

LIMIT OF EXCAVATION = 84"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	9"	

C.S.S. Soil Series / phase name: **ROUNDABOUT** — **SWPD** Drainage Class — **D** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-104** ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	10YR 4/4 DARK YELLOWISH BROWN	
VERY FINE SANDY LOAM		5Y 5/2 OLIVE GRAY	
			COMMON, MEDIUM, DISTINCT
SILTY CLAY LOAM	FIRM	5Y 4/1 DARK GRAY	
LOAMY VERY FINE SAND	FRIABLE	2.5Y 5/2 GRAYISH BROWN	

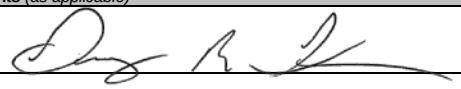
LIMIT OF EXCAVATION = 96"

hydric / non-hydric	Slope %	Limiting factor	ground water / restrictive layer / bedrock
non-hydric	0-3	16"	

C.S.S. Soil Series / phase name: **NICHOLVILLE** — **MWD** Drainage Class — **B** Hydrologic Group

L.S.E. Soil Classification: ____ Profile ____ Drainage Class ____ Design Class

Professional Endorsements *(as applicable)*

C.S.S. signature: 

Date: **11/7/19**

name printed/typed: **Gary M. Fullerton**

Lic.#: **462**

L.S.E. signature:

Date:

name printed/typed:

Lic.#:

affix professional seal

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
FALLBROOK COMMONS	SANDY RIVER COMPANY	PORTLAND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-105 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
			COMMON, MEDIUM, DISTINCT
SILT LOAM	FIRM	5Y 5/2 OLIVE GRAY	
LEDGE @ 33"			

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	12"	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: ROUNDABOUT VARIANT — SWPD Drainage Class — D Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-106 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	2.5Y 4/3 OLIVE BROWN	
SILT LOAM		5Y 5/2 OLIVE GRAY	
	FIRM		COMMON, MEDIUM, DISTINCT
LEDGE @ 23"			

hydric	Slope %	Limiting factor	ground water
■ non-hydric	3-8	16"	■ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: NICHOLVILLE VARIANT — MWD Drainage Class — B Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric	Slope %	Limiting factor	☐ ground water
☐ non-hydric	_____	_____	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class — _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

hydric	Slope %	Limiting factor	☐ ground water
☐ non-hydric	_____	_____	☐ restrictive layer ☐ bedrock

C.S.S. Soil Series / phase name: _____ Drainage Class — _____ Hydrologic Group

L.S.E. Soil Classification: _____ Profile — _____ Drainage Class — _____ Design Class

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date: 11/7/19
	name printed/typed: Gary M. Fullerton	Lic.#: 462
L.S.E.	signature:	Date:
	name printed/typed:	Lic.#:

STATE OF MAINE GARY M. FULLERTON NO. 462 CERTIFIED SOIL SCIENTIST

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Att. N

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CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Memorandum

18347

To: **Daniel Danvers, RLA, Sebago Technics**

From: **Derek Caldwell, P.E., PTOE, Sebago Technics**

Date: **May 6, 2020**

Subject: **Revised Traffic Impact Statement**
Fallbrook Commons Nursing Care Center
Portland, Maine

This memorandum serves to supersede the previously provided Traffic Impact Statement dated November 9, 2019 for the subject project.

We have completed a trip generation and site access assessment for the proposed Fallbrook Commons Licensed Nursing Care Center to be located at 418 Ray Street in Portland. It is our understanding the project is to consist of a 56,000 square foot facility with 90 nursing care beds. The development will be accessed by Merrymeeting Drive, an existing private roadway serving the Fallbrook Woods Assisted Living Facility and the Merrymeeting Condominiums.

Trip Generation

Trip generation for the proposed development is calculated using the 10th Edition of the *Institute of Transportation Engineers Trip Generation Manual*. Land Use Code (LUC) 620 – Nursing Home was used for the calculation based upon the independent variable of 1,000 square feet and beds. The total proposed trip generation for the development is based on an average of the trip generation calculations using each variable. Tables 1 and 2 show the result of the trip generation calculation using the variable of square feet and beds, respectively.

Table 1
Trip Generation
LUC 620 – Nursing Home
56,000 Square Feet

Time Period	Average Rate/ 1,000 SF	Total Trips	Entering %	Exiting %	Entering Trips	Exiting Trips
Weekday	6.64	372	50%	50%	186	186
AM Peak Hour of Adjacent Street	0.55	31	78%	22%	24	7
PM Peak Hour of Adjacent Street	0.59	33	41%	59%	14	19
AM Peak Hour of Generator	0.64	36	63%	37%	23	13
PM Peak Hour of Generator	0.86	48	43%	57%	21	27

Table 2
Trip Generation
LUC 620 – Nursing Home
90 Beds

Time Period	Average Rate/Bed	Total Trips	Entering %	Exiting %	Entering Trips	Exiting Trips
Weekday	3.06	275	50%	50%	138	137
AM Peak Hour of Adjacent Street	0.17	15	72%	28%	11	4
PM Peak Hour of Adjacent Street	0.22	20	33%	67%	7	13
AM Peak Hour of Generator	0.22	20	63%	37%	13	7
PM Peak Hour of Generator	0.37	33	41%	59%	14	19

Table 3 shows the total calculated trip generation for the proposed development, found by averaging the values found in Tables 1 and 2.

Table 3
Total Trip Generation

Time Period	Total Trips	Entering Trips	Exiting Trips
Weekday	324	162	162
AM Peak Hour of Adjacent Street	23	18	5
PM Peak Hour of Adjacent Street	27	11	16
AM Peak Hour of Generator	28	18	10
PM Peak Hour of Generator	41	18	23

In addition, we have evaluated the need for an additional traffic study based upon the Section 1.1 of the *City of Portland Technical Manual.* A traffic study is required if 25 or more passenger car equivalent (PCE) trips are generated in a peak hour and the following applies to the project location:

(1) on an arterial; and/or
(2) within ½ mile of a high crash location; and/or
(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D,

Although the development is projected to generate more than 25 PCE during the PM Peak Hour of the Generator, a traffic study is not required due to the following:

1.) Ray Street is classified as a local roadway.
2.) The project site is not located within a ½ mile of a high crash location. The closest High Crash Location is the segment of Allen Avenue from Washington Avenue to Braeburn Road, a distance of just over ½ mile to the northwest.
3.) The project site is not within ¼ mile of an intersection that has previously been identified as a failing intersection.

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Site Access

Access to the site is proposed by way of Merrymeeting Drive, an existing private roadway serving the Merrymeeting Condominiums and the existing Fallbrook Woods Assisted Living Facility. Merrymeeting Drive intersects Ray Street at an existing all-way stop controlled intersection. At this intersection location, Ray Street is classified as an urban local roadway with a posted speed limit of 25 miles per hour. The project proposes to provide improvements to this intersection including new stop signs, stop bars, and a new marked pedestrian crossing across Ray Street. This crossing would connect a proposed sidewalk on Merrymeeting Drive with the existing sidewalk on the eastern side of Ray Street.

It is also proposed to construct an emergency-only access drive connecting the proposed facility directly with Ray Street. This restricted access drive would intersect Ray Street opposite Nevada Avenue. A locked gate, equipped with a Knox Box, will be installed to prevent unauthorized use.

Conclusion

The proposed Fallbrook Commons Nursing Care Center is projected to generate 28 trips during the AM Peak Hour of the Generator and 41 trips during the PM Peak Hour of the Generator. This level of trip generation does not require a MaineDOT Traffic Movement Permit, nor does it warrant further traffic study based upon the criteria set forth in the City of Portland Technical Manual. This low vehicular trip generation is not expected to have an adverse impact on the surrounding area roadways. The main access to the site will be by the existing private Merrymeeting Drive. Proposed improvements at the intersection of Merrymeeting Drive and Ray Street include new stop signs and stop bars, and a new pedestrian crossing.

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Transportation Analysis – Traffic Impact (14-526 (a) 1)

Provisions have been made at the site to allow for the safe circulation of vehicles and pedestrians within the site. Please see the vehicle tracking plan for additional information.

Access and Circulation (14-526 (a) 2 a)

(i) The development provides safe and reasonable access and internal circulation for the entire site for all users of the site and complies with the standards set forth in Section 1 of the Technical Manual. Please see the vehicle tracking plan.

(ii) The points of access and egress have been located to avoid conflicts with the existing turning movements and traffic flows. Please see the vehicle tracking plan.

(iii) Not applicable. There are no drive-up features associated with this project.

Loading and Servicing (14-526 (a) 2 b)

(i) The development/proposed addition has been designed for proper circulation of delivery and other service vehicles.

Sidewalks (14-526 (a) 2 c)

(i) The development has been designed with the appropriate sidewalk and curb layout. Please see the site plan.

(ii) Not applicable. There is no existing sidewalk to be utilized for this project.

(iii) The internal sidewalk leads from the proposed facility (Fallbrook Commons) to the existing facility (Fallbrook Woods). From there, the applicant is proposing a sidewalk along Merrymeeting Drive, that will connect to Ray Street's sidewalk.

Public Transit (14-526 (a) 3)

Not applicable. Bus service is available on Ray Street only on days that the area schools are open. The closest daily, year-round bus service is on Washington Avenue. The facility will have a private shuttle service for residents.

Off-Street Parking: Vehicle & Motorcycle/Scooter (14-526 (a) 4 a and c)

a. The proposed project meets the parking requirements for the zone and development size. The parking spaces have been designed in accordance with City Regulations and the parking surface will be a paved surface. Please see the site plan.
c. The proposed parking lot can accommodate motorcycle and scooter parking, though no spaces have been created specifically for motorcycle or scooter parking. Please see the site plan.

Bicycle Parking (14-526 (a) 4 b)

The proposed project provides space for ten bicycles to be parked on site. Please see the site plan for the bicycle rack location. The proposed bicycle rack product information has been included as part of this section.

landscapeforms®

BOLA®

Product Data Sheet

An artful solution for bicycle storage and security that meets Association of Pedestrian and Bicycle and Professionals (APBP) recommendations. Bola's understated design doesn't conflict with other site elements. An artful solution for bicycle storage and security that meets Association of Pedestrian and Bicycle and Professionals (APBP) recommendations. Bola's understated design doesn't conflict with other site elements.

Bike Rack

- Capacity: 2 bikes
- Bike racks made of 1.5" o.d., .120" wall stainless steel tubing, with a #4 satin electropolish finish on bare stainless steel.
- Bola is also available in powdercoated steel.
- Bola must be embedded.
- Bola an secure two bicycles parked parallel to the rack.
- The bicycles can be headed in opposite directions, or in the same direction. The rack provides two- point contact to prevent the bicycle from tipping over.
- A standard D-shaped bike lock can secure both a wheel and the frame.

	STYLE	DEPTH	WIDTH	HEIGHT	PRODUCT WEIGHT
	Bola	1.5"	28.25"	32"	13 lb

Finishes

- All metal parts are finished with Landscape Forms' proprietary Pangard II® polyester powdercoat, a hard yet flexible finish that resists rusting, chipping, peeling and fading.
- Call for standard color chart.

To Specify

- Select bike rack style. Specify powdercoat color or stainless steel.

Designed by Brian Kane, IDSA
All Landscape Forms bike racks meet guidelines established by the Association of Pedestrian and Bicycle Professionals.

Visit our landscapeforms.com for more information. Specifications are subject to change without notice.
Landscape Forms supports the Landscape Architecture Foundation at the Second Century level.
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Snow Storage (14-526 (a) 4 d)

(i) Snow storage areas have been provided for the site. Please see the site plan.

(ii) The proposed snow storage areas will not encroach on areas designated to meet minimum parking requirements or pedestrian walkways. They are not located in areas that will interfere with the storm water management plan of the site.

Environmental and Landscape Features

Preservation of significant Natural Features (14-526 (b) 1)

The development has been designed to preserve and protect significant natural features. A Tier 2 Natural Resource Protection Act application has been filed with the Maine Department of Environmental Protection for any proposed wetland impacts. Please see the site plan and landscape plan for additional information.

Landscaping and Landscape Preservation (14-526 (b) 2 a)

(i) The proposed project involves some tree removal to allow for site development. Existing tree cover was incorporated into the landscaping plan as was practicable providing a wooded buffer between the proposed development and the existing abutters.

(ii) No trees with a 10-inch DBH or greater within the setback are to be impacted. Please see the site plan.

(iii) Vegetation will be protected during construction in accordance with tree preservation standards listed in Section 4 of the Technical Manual.

(iv) No waivers for vegetation are sought.

(v) Not Applicable. The proposed project site is not located in the Shoreland Zone.

Site Landscaping (14-526 (b) 2 b)

The proposed project has been designed in accordance to the requirements of the City Ordinance. The proposed development has been designed to provide a wooded and landscaped buffer between the development and surrounding properties.

Please see the Site plan and the Landscape plan.

Parking Lot Landscaping (14-526 (b) 2 b ii)

Landscaped islands have been provided as part of the proposed development plan. There are plantings proposed for the two islands located within the parking area, as well as plantings along the perimeter of the parking areas and building.

Please see the Site Plan and Landscape Plan for more detailed information.

Street Trees (14-526 (b) 2 b iii)

The proposed planting plan was designed in accordance to the specifications of Section 4 of the City's Technical Manual. Please see the Site Plan for more detailed information.

Consistency with City Master Plans (14-526 (c) 1)

The proposed development is consistent with the City Master Plan. The proposed development involves the construction of a senior living facility. The development will not result in any unreasonable burdens to the City's resources, nor the unnecessary decrease of undeveloped parcels. The proposed use is consistent with the surrounding area.

Massing, Ventilations and Wind Impact (14-526 (d) 1)

a. The bulk and height of the proposed building will not result in health or safety problems from a reduction in ventilation to abutting structures. Please see the site plan.
b. The bulk, location, and height of the proposed building will not minimize the value or utility of the neighboring buildings. The proposed development is in keeping with the neighborhood. Please see the plan set.
c. The HVAC venting mechanisms have not been sited on the plan as the appropriately sized system has not yet been determined. The building will be constructed with the all venting systems directed away from public spaces and residential properties.

Shadows (14-526 (d) 2)

Not applicable. There are no open public spaces surrounding the property.

Snow and Ice Loading (14-526 (d) 3)

The building will be designed to prevent significant amounts of accumulated snow and ice from loading or falling onto adjacent properties or public ways.

Historic Resources (14-526 (d) 5)

The proposed development will not impact nor is it in close proximity of any historic resources. A letter has been sent to the Maine Historic Preservation Commission. As of the submittal date a response from them had not yet been received. Their response letter will be forwarded upon receipt.

Noise and Vibration (14-526 (d) 7)

Not Applicable. There is no equipment associated with the proposed use that would result in the generation of noise or vibrations.

Signage and Wayfinding (14-526 (d) 8)

Please see the plan set for signage information.

Zone Related Design Standards (14-526 (d) 5)

Not Applicable. There are no specific design standards associated with the zone of the subject site.

Environmental and Stormwater

Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a)

The proposed site has been designed in accordance to City and Chapter 500 requirements to minimize the amount of stormwater leaving the site.

Please see this exhibit for the Stormwater Management Plan.

Public Safety and Fire Prevention (14-526 (c) 2)

a. Crime Prevention - The proposed facility has been designed with planting that will complement the site but will not provide concealment for illegal activities. The parking area is well lit. Please see the plan set.

b. There is adequate access to the site for emergency vehicles. Please see the plan set.

c. The site has been designed to be consistent with the standards of the City of Portland Technical Manual. Please see the plan set.

Fire Checklist will be submitted under separate cover.

Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)

a. The development will not overburden sanitary sewers and storm drains, water lines, or other public infrastructure and utilities.

b. Electrical service has been designed to be underground.

c. All proposed sanitary sewers, storm drains, water lines or other utilities meet the provisions of the City Technical manual.

d. The proposed development will connect to an existing sewer line. There is a pump station proposed for this project. Please see the proposed pump station design attached.

e. All proposed sanitary sewer and stormwater utilities are designed to City standards.

f. The proposed project involves the construction of a healthcare facility that will have a solid waste removal plan. Please see the Site Plan for the dumpster location.

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JOB Fallbrook Nursing
SHEET NO. 1 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

Pump Station Design

Building/Phase	Type of Use	# of units/SF	flow/unit	Total
Site				
	50	employees	12 gpd/employee	600 gpd
	90 beds		125 gpd/bed	11,250 gpd
			Total	11,850 gpd
	Project flow from Mechanical Engineer			16,000 gpd
	Higher Total Flow			16,000 gpd
	Peak Factor, Peak Day			3.0
	Peak Day = 3.0 x Average Daily Flow (ADF) =			48,000 gpd
	Peak Factor, Peak Hour			5.6
	Operating hours per day			16 hr
	Peak Hour = 5.6 x ADF/ 720 min/day (16 hour day) =			93.3333 gpm
	Inflow/ Infiltration (I/I) Allowance			
	Gravity main size:	8 inches		
	Approximately	0 linear feet (0 miles) of 8" sewer line		
	I/I allowance	= 250 gpd/inch diameter of pipe in inches/mile of sewer		
			Flow from Inflow/Infiltration =	0 gpd
			Peak Hour =	0.00 gpm

STATE OF MAINE
ROBERT A. McSORLEY
No. 8588
LICENSED PROFESSIONAL ENGINEER

11/1/19

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JOB Fallbrook Nursing
SHEET NO. 2 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

Cycle times for given flow rates and wetwell size: Buildout

		Average wastewater flow =			16,000	GPD, or	16.67	GPM					
		Peak Flow =			100.00	GPM =	6000	GPH					
		Minimum Flow =			2.3	GPM =	140	GPH					
	Proposed Forcemain size =			4	inches	HPDE DR 11			minimum velocity			3	fps
Min. pump rate (larger of 1.50 x peak or min fm flow) =						GPM	150	GPM					
						Use	150	GPM	50%	more than peak			
	Diameter of wet well =				6	feet, so radius=		3	ft				
	Travel (pump on to pump off) =				24	inches, or		2	ft				
		So working volume =			56.5	cubic feet, or		423.0	gal.				
	Is pump station for a septic field?			**no**									
	For average design flow:												
		Effective pumping rate =		150	gpm -	16.67	gpm =	133.33	gpm				
		Pump cycle =		423.0	gal /	133.3	gpm =	3.17	min				
		Fill time =		423.0	gal /	16.67	gpm =	25.38	min				
					Total cycle =			28.56	min or	0.48	hours		
		Summary: Pump starts 2x/hour. Using alternating pumps											
	Peak on Maximum Day (Average x 6.0)												
		Effective pumping rate =		150	gpm -	100.00	gpm =	50.00	gpm				
		Pump cycle =		423.0	gal /	50.0	gpm =	8.46	min				
		Fill time =		423.0	gal /	100.00	gpm =	4.23	min				
					Total cycle =			12.69	min or	0.21	hours		
	Extreme minimum on minimum day (Average x 0.14)												
		Effective pumping rate =		150	gpm -	2.33	gpm =	147.67	gpm				
		Pump cycle =		423.0	gal /	147.7	gpm =	2.86	min				
		Fill time =		423.0	gal /	2.33	gpm =	181.30	min				
					Total cycle =			184.17	min or	3.07	hours		

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JOB Fallbrook Nursing
SHEET NO. 3 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

HAZEN-WILLIAMS COEFFICIENTS

100	Average 15 year old cast iron pipe	140	Very straight & smooth cast iron pipe
110	Vitrified sewer pipe	140	New steel pipe; cement asbestos pipe
120	New wrought iron pipe	150	New cl pipe w/cent. Bituminous lining
120	Average 5 year old cast iron pipe	150	Schedule 40 PVC pipe & HDPE
130	Average new cast iron pipe		

EQUIVALENT LENGTHS (NOTE: Enter # of each fitting, d is smaller diameter)

SIZE(IN)	1.25	1.5	2	2.5	3	4	6	8
Gate valve					1			
Butterfly valve	X	X						
Globe Valve								
90° elbow					3			
45° elbow or long sweep 90° elbow					1			
Tee, thru								
Tee, branch					1			
Reducer, d/D = 0.5								
Reducer, d/D = 0.75								
Increaser, d/D = 0.5								
Increaser, d/D = 0.75					1			
Check Valve					1			
TOTAL	0	0	0	0	73	0	0	0

Flow: 150 gpm

Additional flow in forcemain? N

Use standard pressure value for minor loses, H_{SL}? Y

H_{SL}: 3 ft

Highest Forcemain Elevation: 90.3

H_{ST}: 11.8 ft

Discharge Elevation: 85

Wet Well Low Elevation: 78.5

Tie in Pressure, H_{EX}: 0 ft

Size (in)	Pipe Type	C	Length (ft)	Add Eq. Length	Eq. Length (ft)	Add. Flow	H_f (ft) 0.50xQ 75	0.75xQ 112.5	1.00xQ 150	1.25xQ 187.5	1.50xQ 225	1.75xQ 262.5	2.00xQ 300	2.25xQ 337.5
3	Sch. 80 PVC	130	6.50	y	73	n	1.68	3.55	6.05	9.14	12.81	17.03	21.81	27.12
4	HPDE DR 11	130	475	n		n	3.37	7.13	12.14	18.35	25.71	34.20	43.78	54.44
					H_{TOTAL}:		19.8	25.5	33.0	42.3	53.3	66.0	80.4	96.4
					$H_{TOTAL\ (PSI)}$:		8.6	11.0	14.3	18.3	23.1	28.6	34.9	41.8
					Velocity, V:		3.40	5.11	6.81	8.51	10.21	11.92	13.62	15.32

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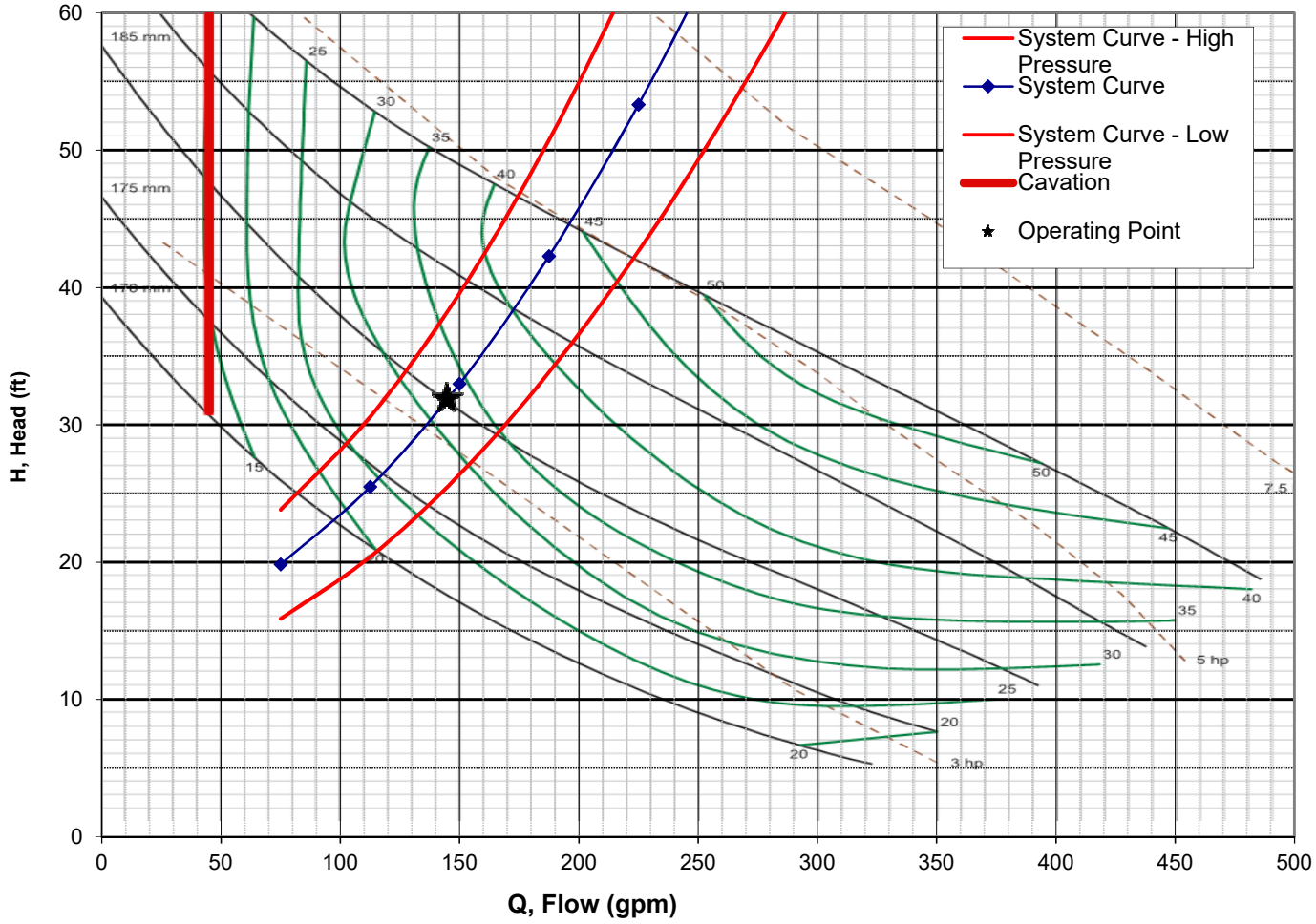
JOB	Fallbrook Nursing		
SHEET NO.	4	OF	5
CALCULATED BY	BAW	DATE	10/30/2019
CHECKED BY	RAM	DATE	10/30/2019
FILE NAME	18347 Pump Station 2019-10-30		

Fallbrook Nursing



Duplex Barnes Sithe chopper, Model 3XSCMPA50N4, pump will flow **145** gpm at **32** ft TDH

5.0 H.P., 15.0 A, 230 Volt, 3 Phase, 60 Hz motor operating at 1750 RPM with 185mm impellor.

Velocity in **4** (in) HPDE DR 11 force main will be 4.5 ft/s

Flow	Pump	Fill	Total			
Low	2.97	181.3	184.3	min	3.07	hrs
Avg	3.30	25.38	28.68	min	0.48	hrs
Peak	9.40	4.23	13.63	min	0.23	hrs

Check cycle times

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JOB Fallbrook Nursing
SHEET NO. 5 OF 5
CALCULATED BY BAW DATE 10/30/2019
CHECKED BY RAM DATE 10/30/2019
FILE NAME 18347 Pump Station 2019-10-30

FLOATATION CALCULATIONS

PARAMETERS:

1.	STATION TYPE(TREMIE/MONO/PACKAGE) =	MONO	
2.	DENSITY OF CONCRETE =	150.00	#/C.F.
3.	GRANULAR BACKFILL =	120.00	#/C.F.
4.	WETWELL DIAMETER =	6.00	FEET
5.	WALL THICKNESS =	7.00	INCHES
6.	TOP OF STATION ELEVATION =	90.50	N.A.V.D.
7.	FINISHED GROUND ELEVATION (-8")=	89.83	N.A.V.D.
8.	TOP OF BASE ELEVATION =	77.00	N.A.V.D.
9.	THICKNESS OF TOP =	8.00	INCHES
10.	THICKNESS OF BASE(MONO/PACKAGE) =	8.00	INCHES
11.	WIDTH OF MONO SLAB = 12.00 IN BASE DIAMETER =	110.00	INCHES
12.	THICKNESS OF TREMIE/FLOOR =		INCHES
13.	AREA OF HATCH =	10.00	SQ. FEET

BOUYANCY OF STRUCTURE:

CYLINDER =	544.58	CUBIC FEET
BASE =	44.00	CUBIC FEET
TOTAL =	588.57	CUBIC FEET

BOUYANCY FORCE = VOLUME OF STRUCTURE x WEIGHT OF WATER(62.4 #/C.F.)

BOUYANCY FORCE = 36,726.91 POUNDS

WEIGHT OF STRUCTURE:

BASE/TREMIE =	44.00	CUBIC FEET
CYLINDER =	154.83	CUBIC FEET
FILLET =	20.55	CUBIC FEET
TOP =	26.89	CUBIC FEET
HATCH =	-6.67	CUBIC FEET
TOTAL =	239.60	CUBIC FEET

WEIGHT OF STRUCTURE = VOLUME OF CONCRETE x WEIGHT OF CONCRETE(150 #/C.F.)

WEIGHT OF STRUCTURE = 35,940.44 POUNDS

WEIGHT OF OVERBURDEN:

VOLUME OF OVERBURDEN = 329.26 CUBIC FEET

WEIGHT OF OVERBURDEN = VOLUME OF OVERBURDEN x DRY WEIGHT OF SOIL(120 #/C.F.)

WEIGHT OF OVERBURDEN = 18,965.17 POUNDS

TOTAL DOWNWARD FORCES = 54,905.61 POUNDS

FACTOR OF SAFETY = 1.49 OK

Construction Management Plan
Fallbrook Health Center
Sandy River Company /Applicant
Landry French
Construction/Contractor

The Construction Management includes the following:
1) a construction management site plan (See attached plan);
2) a construction schedule (time frame); and
3) a written narrative.

Construction Management Principles

A. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits
Prior to scheduling a preconstruction meeting and the issuance of any city required permits, [Applicant and Contractor] shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.
2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

B. Construction Administration and Communication
[Applicant and Contractor] will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Construction Manager will work closely with adjacent abutters, businesses, nearby construction sites, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. The final construction management plan shall provide for the following:

1. Contact Person and contact information for the [applicant and contractor] and who is available 24 hours
2. Construction Signage posted on the site with Contact Information for Contractor
3. Describe any additional communication strategies
4. All construction site signage is temporary and shall be removed at project completion.

C. Construction Schedule

1. The contractor will begin construction in June 2020, with an estimated completion date of October 2021.
2. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
3. Extended Hours or Night Work: Pursuant to Section 17-18, this section not apply to emergency utility work or "Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority."
4. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

D. Security & Public Safety

1. The Construction Management Plan depicts all proposed fencing or other barriers and access gates (with knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*
3. Fire Safety Program. An overall construction of demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security
    - Installation of new fire protection systems as construction progresses
    - Preservation of existing systems during demolition
    - Organization and training of an on-site fire brigade
    - Development of a pre-fire plan with the local fire department
    - Rapid communication
    - Consideration of special hazards resulting from previous occupancies
    - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

E. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction

activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects are required to submit a satisfactory 'maintenance of traffic" (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

   Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic
   - Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
   - In some situations, flaggers may be required.
   - Police details may be required at lighted intersections and may be requested by the City's transportation engineer or his designee.

   All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

F. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).

4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
    1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
    2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or sight lines with the piles of snow.
    3) Clear all walks & ramps with the work zone
    4) Sand or Salt as needed
    5) Clear all basin or drainage to help snow melt
    6) This would include Monday-Friday Sat/Sunday/Holidays

G. Erosion Control and Preservation of Trees

1. The [contractor] shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The [contractor] shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

H. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage area shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. Delivery Truck Holding Areas Off-Site: In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

I. Parking During Construction

1. Construction Parking: Adequate parking for construction workers shall be provided on

site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.

2. Parking: Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.
3. Truck Routes and Volumes: The Construction Management Plan shall address the designated truck routes and expected truck volumes.

J. Dewatering Plans

A basic dewatering plan for any construction work is required. The plan must cover construction sites where groundwater is not expected but the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including filters, erosion and sediment control measures, or other methods of removing sediment from approved discharges.

For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared and approved by the Department of Public Works. Groundwater and/or soil testing may be required to determine course of action if treatment is necessary. Approval for all discharges to City infrastructure is required.

The proposed plan must address the following:

- Project duration, discharge location, storage equipment on-site, dewatering schematic, and emergency contact.
- General requirements include trained staff on-site for all approve discharges and required site log for documentation of all discharges.
- Storage and/or treatment process should include proper settling time and maintain proper use of filtering medium as required.
- Contingency/maintenance plan for all dewatering equipment devices and filtration mediums.

Any water that is removed from an excavation must be pumped from a perforated device buried in crush stone prior discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

LOCATION MAP N.T.S.

PROGRESS PRINT

NOT FOR CONSTRUCTION

DANIEL M. DANVERS RLA #815 DANIEL L. RILEY PE #8696

REV.:	BY:	DATE:	STATUS:
A	DMD	11-01-19	SUBMIT TO CITY OF PORTLAND

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

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

SITE PLAN
OF:
FALLBROOK NURSING CARE
MERRYMEETING DRIVE
PORTLAND, MAINE
FOR:
SANDY RIVER COMPANY
217 COMMERCIAL ST., SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	BJB
DATE	11/01/19
SCALE	1" = 40'
PROJECT	18347

GRAPHIC SCALE
(IN FEET)
1 INCH = 40 FT.

SHEET 3 OF 16

18347-25.dwg, 24B-S

Att. R

June 4, 2020
18347

Andrew Tufts
Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Response to Comments for Fallbrook Commons
Parcel ID: 400 D 023001

Dear Andrew:

A neighborhood meeting for the Fallbrook Commons project was held on February 18th at Fallbrook Woods, approximately 30 of neighbors attended the meeting. We have made a number of revisions to the plans based on comments and concerns raised at the meeting. These concerns were primarily related to the proposed entrance off of Ray Street, the parking areas at the existing facility (Fallbrook Woods), and pedestrian access along Merrymeeting Drive.

The applicant proposes the following changes to the project:

- The proposed access from Ray Street opposite Nevada Avenue has been revised to be an Emergency Only Entrance. This emergency access driveway will be gated with a Knox box for emergency access only to both the proposed and existing facilities.
- The primary entrance to the proposed facility will be from the Merrymeeting Drive, through the existing facility.
- Sidewalks have been added along Merrymeeting Drive for pedestrians and the existing roadway will be repaved to improve its condition
- The parking area at the existing facility (Fallbrook Woods) will be modified and expanded to relocate existing on street parking from Merrymeeting Drive to the facility's parking lot.

We have included revised sections of the original application to reflect the project design, revised plans, and offer the following response to staff comments received in February 2020.

Response to Comments- Planning and Urban Development

Comments from- Mike Tremblay: *"There is a crest vertical curve on Ray Street approximately 200 feet northwest of the site driveway. Vehicles traveling along Ray Street may not be able to see a vehicle entering or exiting the site driveway, depending on the speed of the approaching vehicle and weather conditions. The stopping sight distance for a vehicle traveling 30mph is 200 feet, assuming a flat roadway surface. The marked speed limit on Ray Street is 25mph, but prevailing speeds may be higher. The Applicant should provide sight distance analysis at the site driveway. If sight distance is found to be insufficient, the applicant should provide solutions."*

Response: Sebago Technics traffic engineer has measured sight distance to be 270' from the Ray Street entrance exceeding the requirements for the posted 25 mph speed limit and a 30MPH assumed speed. The applicant has revised the plans to make the entrance off Ray Street opposite Nevada Avenue a gated

emergency fire entrance only. The applicant proposes to use Merrymeeting Drive as the primary entrance to the proposed facility. Additionally, the applicant proposes to improve the pedestrian and vehicular access along Merrymeeting Drive by repaving the road and adding a sidewalk from Ray Street to the new facility as shown on the plans attached to this submission.

Comment from- Mike Tremblay: *"In the bay of parking immediately outside the main entrance to the site, there are accessible parking signs that appear to be installed directly into the ground between parking spaces. This would appear to be challenging to plow/maintain and may result in damage/removal of the signs. A raised area where these signs could be mounted is suggested."*

Response: The applicant is proposing signs on bollards within the parking area to protect them from plowing / mechanical damage. A detail further of the sign on bollard is provided on sheet 16.

Comment from- Mike Tremblay: *"There are 92 parking spaces proposed on-site. There is little information provided about the anticipated parking demand. Given that the site has significant wetlands impacts, right-sizing the parking lots is of paramount importance. The applicant should provide justification for the parking supplied on-site."*

Response: Parking for 92 vehicles is proposed to accommodate the anticipated staffing and visitor requirements of the facility and is based on the applicants experience at similar facilities of this size and use. The facility is expected to employ up to 113 Full time equivalent (FTE) employees as submitted in projections with the Maine Department of Health and Human Services. The staff occurs in shifts. with 55 employees during the day shift, 25 during the evening shift and 10 employees during the night shift. The applicant's experience has been that providing parking for day shift employees with an allowance of approximately one visitor space per 2.5 beds meets the requirements for a typical day use for family visitors, and specialty service vehicle needs at their other facilities.

Comment from- Mike Tremblay: *"Of the 92 proposed parking spaces, 4 are universally accessible. ADA guidelines require 10% of spaces to be accessible for outpatient medical facilities, and 20% of spaces to be accessible for mobility rehabilitation facilities. Understanding that the proposal is for an assisted living/nursing care facility, and thus does not fall under one of the above categories, the number of accessible spaces provided on-site should be considered carefully, as the minimum amount required may not be appropriate."*

Response: This facility is not an outpatient medical facility or a rehabilitation facility, the parking count meets the ADA 208.2.3 Residential Facilities Standards. Residents of this facility will not have cars, leaving all parking spaces to be for guests, employees, and other Non-residents (208.2.3.3). This section refers the requirements back to the standard ADA parking table (Table 208.2) requiring 4 spaces. All ADA spaces at Fallbrook Commons will be Van Accessible.

Comment from- Mike Tremblay: *"None of the accessible spaces are provided in the lower satellite parking area containing the majority of parking spaces. It appears these spaces serve a different level of the building than the main entrance. The applicant should consider the appropriateness of providing a portion of, or additional, accessible spaces in the lower lot. Note that this lot appears to be closest to the courtyard area, which could be the best area for a resident to wait for a relative to pick them up, etc. in this case, the parking area closest to the courtyard would be the lower parking lot. "*

Response: All ADA spaces have been located nearest the primary entrance to the building for employees, guests, and visitors. All public access to the building is controlled through the main entrance. The courtyard entrances are for egress and maintenance/staff access only and are not open to visitors or residents from the outside the front door is the primary entrance for staff and is the only entrance for visitors.

Comment from- Mike Tremblay: *"None of the six parking spaces serving the service entrance, presumably provided for employees, is accessible. "*
Response: The service area is for contractors and facilities maintenance vehicles. Employees and other visitors will use the upper lots.

Comment from- Mike Tremblay: *"Understanding that there is a significant grade challenge, and that this area is currently proposed to be landscaped, the apparent desire line between the courtyard and the lower parking area is a direct line between the courtyard and lower parking area. The Applicant should consider providing a staircase serving this desire line, in addition to the accessible route already proposed. "*

Response: The courtyards are not accessible to the public from the outside. The gates are for egress and maintenance access only. The desire line from the parking areas will be to the front door of the facility.

Comment from- Mike Tremblay: *"The intersection of the site driveway with the internal driveway between sites appears to have two of the three legs under stop control. This is irregular and not recommended. An all-way stop, or partial stop control where only the site driveway has a stop sign, is recommended. "*

Response: The intersection has been revised to an all-way stop.

Comment from- Benjamin Pearson: *"2000-gallon external grease interceptor proposed. A junction manhole is required with channel where grease interceptor outlet connects to sanitary sewer. (See sheet 10 of 19) / Utility Plan 1. Circled in red below. "*

Response: Sewer Man Hole (SMH) 1 has been added to Utility drawing 2.

Comment from- Benjamin Pearson: *"No construction management plan narrative - map provided. A CMP using newest template will be required with building permit submittal. "*

Response: A construction management plan, and map have been provided as section 37 in our application documents. Uploaded 01.08.2020. We have also uploaded this plan to the Construction Management Plan section of E-plan for clarity.

Response to Comments- Lauren Swett from Woodard and Curran

Comment from- Lauren Swett: *"The project is required to conform with Maine DEP Chapter 500 Stormwater Regulations as well as with the City of Portland Section 5 of the Technical Manual. Conformance with the Basic, General and Flooding Standards is required. "*

Response:

- Basic Standards – The Applicant has proposed erosion and sedimentation control measures in conformance with the Basic Standards.
- General Standards – The Applicant has proposed an under drained soil filter, gravel wetland, and roof drip edge filters to treat the proposed project area.
- Flooding Standards – The proposed project will not increase flows in the post-development condition, in conformance with the Flooding Standards.

Comment from- Lauren Swett: *"The Applicant should evaluate the steepness of some of their pipes. In particular pipes SD-21 and RD-4 are steep, due to the proposed change in grade. RD-1 is also relatively steep. Please consider potential velocity issues at the ends of these pipes. "*

Response: Given the relatively small tributary areas and corresponding flow rates we do not have a concern regarding the slopes at these locations. To address the concern, we have adjusted the grades of SD-12 at the upstream and downstream structures. We have revised the alignment of the roof drains and added connection/drop structures at the top of the slope to flatten the grade.

Comment from- Lauren Swett: *"Pipe SD-18 is missing from the Stormdrain Pipe Data tables. "*

Response: Pipe SD-18 has been added to the tables

Comment from- Lauren Swett: *"Wall drains are noted to be connected to CB-8. Please clarify the depth of these connections to verify that the pipe can connect to the structure with all of the other proposed stormdrain connections. "*

Response: Inverts for the wall drain inverts have been added to the labels. The wall drains enter above the site drainage pipes to accommodate the connection.

Comment from- Lauren Swett: *"Ability to serve confirmation will be required from utilities, including the Portland Water District for domestic and fire water services and the Department of Public Works for sewer. "*

Response: We have reached out to Portland Water District and are working with them on the sizing of the domestic, Fire, and Sewer services.

Response to Comments- Robert Bartels- PWD

Comment from- Robert Bartels: *"We are going to want to see the public water main extended through the site from Merrymeeting Drive to the entrance at Ray Street. The hydrant can then be public and the domestic service will not need a meter pit. Please update your design to show a public water main in an easement through the access drive. Please use the attached as reference. Connect the two 8" mains."*

Response: We have complied with this request. Changes will be shown on the next round of drawings.

Response to Comments- Jason Grant- Life Safety CEO

Comment from- Robert Bartels: *"The hydrant should be moved to somewhere in the vicinity of the arrow marked on the attached plan."*

Response: We have relocated the hydrant to the desired location. This change will be reflected on the next round of drawings.

Thank you for your time and consideration during your review. We look forward to the planning board workshop and continued feedback from staff.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel M Danvers, RLA
Maine Licensed Landscape Architect

Cc: Daniel Maguire / John Orestis / Doug Gardner

Evidence of State or federal Approvals

A NRPA Tier 2 application has been submitted to the Maine DEP for their review. A Site Location of Development application will be submitted under separate cover to the City for delegated review.

Exterior Lighting (14-526 (d) 6)

Included with this section please find the lighting product cutsheets. Please see the plan set for the lighting plan.

CIMARRON LED

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Construction:
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:
- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:
- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:
- L90 at 60,000 hours (Projected per IESNA TM-21-11)

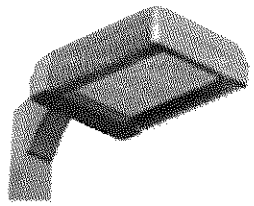
Installation:
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

Finish:
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

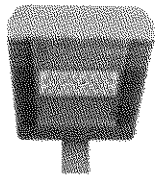
Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

Listings:
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- IDA approved • IP65

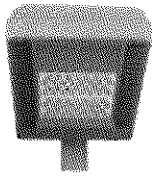
PRODUCT IMAGE(S)



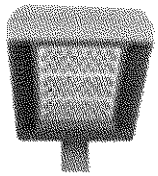
90 LED 3/4 VIEW



30 LED

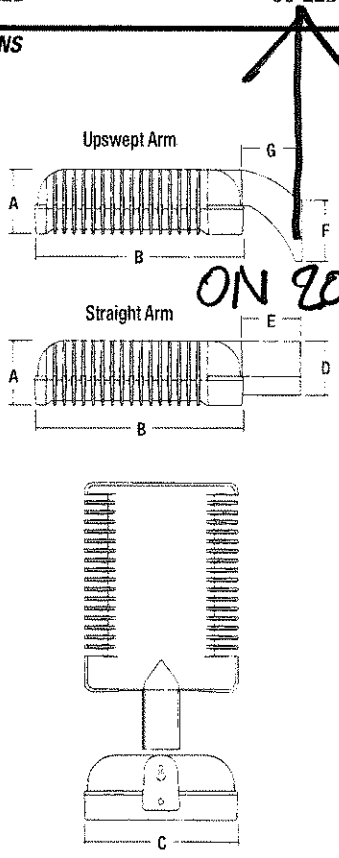


60 LED



90 LED

DIMENSIONS



ON 20' poles

A	B	C	D	E	F	G
6 3/4" 171mm	21 3/4" 552mm	16" 406mm	6 5/8" 168mm	6 5/16" 160mm	5 5/8" 143mm	6 1/8" 155mm

CERTIFICATIONS/LISTINGS

Turtle Friendly

*3000K and warmer CCTs only

ORDERING INFORMATION SEE NEXT PAGE

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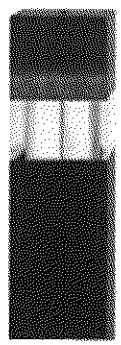
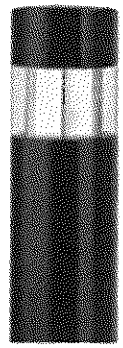
Fresno FN

Bollards

- Rotatable LED assembly adjustment for ideal placement and aiming of asymmetric light pattern
- 24 high brightness LEDs at 500mA deliver symmetric distribution at 46w
- 12 high brightness LEDs at 700mA deliver asymmetric distribution at 30w
- Available in three different color correlated temperatures
- >60,000 HOUR L90
- Extruded aluminum housing with single screw access for top relamping; Decorative cast top with tamper resistant hardware
- Sealed one-piece, clear acrylic lens
- Durable Lektrocote® TGIC thermoset polyester powder coat paint finish assures long life and maintenance-free service
- Concealed, cast aluminum anchor base; Four 1/2" x 10" anchor bolts on 4" diameter bolt circle
- Listed to UL1598 for use in wet locations
- 5 year limited system warranty



FRESNO SQUARE



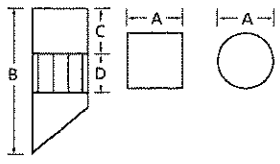
FRESNO ROUND

MADE-TO-ORDER **ORDERING INFORMATION**

SERIES	SOURCE/WATTAGE/LED	VOLTAGE	COLOR	OPTIONS[1]
FN1 Fresno Square	12LU-3K asymmetric, 27W, 3000K CCT	U 120V-277V	DB Dark Bronze	CD 0-10V dimmable
FN2 Fresno Round	12LU-4K asymmetric, 27W, 4000K CCT	1 120	BL Black	24 24" OAH[2]
	12LU-5K asymmetric, 27W, 5000K CCT	2 277	WH White	30 30" OAH[2]
	24LU-3K symmetric, 41W, 3000K CCT	3 240	GR Gray	36 36" OAH[2]
	24LU-4K symmetric, 41W, 4000K CCT	4 277	PS Platinum Silver	F(X) Fusing[3]
	24LU-5K symmetric, 41W, 5000K CCT	5 480	RD Red (premium color)	P(X) Button Photocell[3]
	24LU-AM symmetric, 20W, Amber 590nm	F 347	FG Forest Green (premium color)	ABS Bolts shipped ahead
			CC Custom Color (consult factory)	

[1] Any or all options may be used together
[2] Standard fixture height is 42", only one overall height (OAH) may be selected
[3] Replace '(X)' with corresponding voltage (1=120, 2=208, 3=240, 4=277, 5=480, 6=347), Button Photocell not available in 480V

DIMENSIONS



	A	B	C	D	Weight
FN1	6 3/4" sq.	42"	6"	4"	41 lbs.
	171 mm	1067 mm	152 mm	102 mm	18.6 kg
FN2	7" dia.	42"	6"	4"	41 lbs.
	178 mm	1067 mm	152 mm	102 mm	18.6 kg

CIMARRON LED

Cat.#	
Job	Type

HUBBELL Outdoor Lighting

Approvals

SPECIFICATIONS

Construction:
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- Separate optical and electrical compartment for optimum component operation
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Complements the Hubbell Southwest series of outdoor fixtures
- Weight - 45.0 pounds, EPA - 1.3 ft²
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31

Optics:
- Choice of 72 high brightness LED configurations with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions
- Auto optics designed for front row 1A and interior rows 2A (see distribution under ordering and page 2)
- CCT: 3000K (80 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

Electrical:
- Universal input voltage 120-277 VAC, 50/60 Hz
- Integral step-down transformer for 347V & 480V
- Ambient operating temperature -40° C to 40° C
- Automatic thermal self-protection
- Drivers have greater than 90% power factor and less than 10% THD
- Optional continuous dimming to 10% or dual circuitry available
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- 1050 mA driver available with 90L configuration for increased lumen output
- LED electrical assembly, including PR devices, consumes no power in the 'off' state
- Surge protection – 20KA; Turns fixture off at end of life; Includes LED for end of life indication (see surge suppressor page 4)

Controls:
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

Lumen maintenance:
- L90 at 60,000 hours (Projected per IESNA TM-21-11)

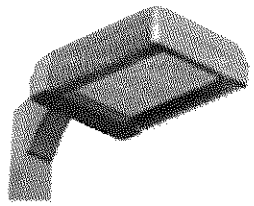
Installation:
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

Finish:
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

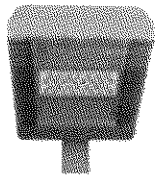
Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

Listings:
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations
- Models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: http://www.designlights.org/QPL
- IDA approved • IP65

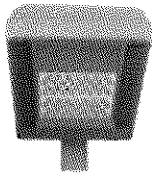
PRODUCT IMAGE(S)



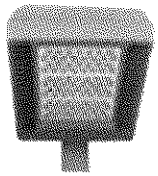
90 LED 3/4 VIEW



30 LED

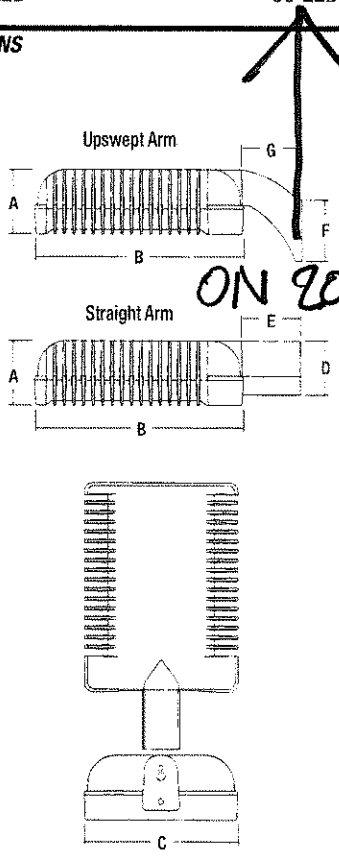


60 LED



90 LED

DIMENSIONS



ON 20' poles

A	B	C	D	E	F	G
6 3/4" 171mm	21 3/4" 552mm	16" 406mm	6 5/8" 168mm	6 5/16" 160mm	5 5/8" 143mm	6 1/8" 155mm

CERTIFICATIONS/LISTINGS

Turtle Friendly

*3000K and warmer CCTs only

ORDERING INFORMATION SEE NEXT PAGE

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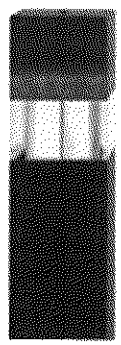
Fresno FN

Bollards

- Rotatable LED assembly adjustment for ideal placement and aiming of asymmetric light pattern
- 24 high brightness LEDs at 500mA deliver symmetric distribution at 46w
- 12 high brightness LEDs at 700mA deliver asymmetric distribution at 30w
- Available in three different color correlated temperatures
- >60,000 HOUR L90
- Extruded aluminum housing with single screw access for top relamping; Decorative cast top with tamper resistant hardware
- Sealed one-piece, clear acrylic lens
- Durable Lektrocote® TGIC thermoset polyester powder coat paint finish assures long life and maintenance-free service
- Concealed, cast aluminum anchor base; Four 1/2" x 10" anchor bolts on 4" diameter bolt circle
- Listed to UL1598 for use in wet locations
- 5 year limited system warranty



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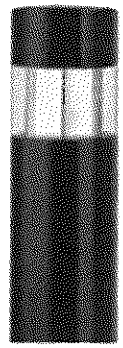

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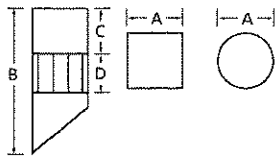

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Andrew Tufts
July 2020
18347

The city of Portland, Department of Planning and Urban Development
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

Fallbrook Commons Development LLC
Narrative of revisions to plans, and response to Planning Board Comments

Dear Andrew:

The applicant has revised the project to address comments raised by the Planning Board and the public at a workshop meeting in June. Please find the attached narrative, plans, and supporting materials prepared by Sebago Technics, and a letter from the applicant further addressing the project's purpose and the Conditional Use criteria of the R-3 Zone.

Fallbrook Commons is designed to function as a campus with the neighboring Fallbrook Woods facility. Dense landscaping, sidewalks, distributed parking with landscaped islands, and campus signage liken the site to a Planned Residential Development which is an approved use in the R-3 zone. The building features a unique two-story design and retaining walls to limit fill slopes to the edges of existing wetlands, creating an altered-but uniform wetland area. The site is proposed to be landscaped with largely native plants and seed mixes, complementing the existing vegetation found on the site, providing a sense of place.

The applicant has revised the parking area to address the Planning Board's comments. The revised plan reduces the site parking from 92 paved spaces to 83 paved parking spaces and 20 overflow and special event parking spaces which will be constructed using reinforced turf to reduce both the visual impression of the site and the impervious area associated with the development. The parking area is has been re-oriented to preserve existing tree cover between the property line and improvements being proposed. Compact car spaces and conduit for EV parking are included in the revised layout.

Evergreen landscaping has been added along the edge of the event parking area and along the property line of the adjacent residences along Florida Avenue to screen vehicles and headlights. Plantings will be tall enough to screen headlights at the time of installation (approximately 3'-4' tall minimum). Trees and landscaping are featured in all parking islands meeting the ordinance requirements to provide shade reducing the heat-island effects.

The facilities dumpster enclosure has been realigned moving it further from Florida Avenue, creating space for additional evergreen screening plantings and reducing wetland impacts.

Fallbrook Commons' exterior walls are proposed to be residential-style materials, highlighting the residential nature of its programming and the purpose of the underlying R-3 zone. Retaining walls are used to minimize wetland impacts, and address the site's topography. Wetland tolerant plantings and native climbing vines proposed along the retaining wall will screen the wall from view. The two walls are stepped to provide a planting area between them. The lower wall will have a lattice installed, for native climbing vines. Additionally, native wetland plant species are proposed at the base of the wall. They will be 3' to 6' tall upon installation and will reach a mature height of 6'-12', screening the majority of the 12' wall. The base of the upper wall is planted with evergreen trees and deciduous shrubs. These trees will be 6'-8' upon installation and will reach a mature height of 12' and will screen the majority of the 6.5' wall.

This project received a Natural Resource Protection Act permit from the Maine Department of Environmental Protection and has received letters of approval by the Army Corps of Engineers for wetland alterations. As a part of their extensive review process, the applicant provided an alternatives analysis demonstrating to the state and federal agencies that the project avoids and minimizes wetland impacts, to the extent practicable. As part of this minimization effort, the review agencies consider both the magnitude and location of the impacts seeking where possible to limit impacts that cannot be avoided to the upland edges of the wetlands to avoid fragmenting retained wetland areas. This has been achieved on the project. Once the agencies have been satisfied that wetland impacts have been avoided and minimized, mitigation is required. MDEP has established its In-Lieu Fee program as the preferred means of mitigating impacts. This program uses fees collected from many projects to fund larger-scale preservation and mitigation projects which have been found to have larger ecological benefits than individual project-by-project on-site migration efforts. This is a mandated program and is a condition of the project permits.

Stormwater generated by the site is being managed in two vegetated systems. The largest, a subsurface gravel wetland, is a vegetated runoff treatment system designed to mimic the function and habitat of the adjacent natural wetlands. Although this is not formally credited against impacts in the permitting process and fee programs. The proposed facility will offset and expand the visual and the physical impacts on the site by re-creating approximately 6,200 sf of constructed wetlands on what are now upland areas represents about 16% of the permitted impacts. A wetland seed mix is proposed for all the stormwater systems and the surrounding earthwork; revegetating these areas with species adapted to the natural setting.

Fallbrook Commons
July 2020
18347

Included with the revised plan set, are renderings showing perspective views of the facility, the walls, the tree canopy being protected, and the proposed landscaping on the site.

We thank you for the opportunity for a second workshop.

Sincerely,

Dan Danvers, RLA

SEBAGO TECHNICS, INC.

Cc: Daniel Maguire; John Orestis; Doug Gardner

Sandy River
COMPANY

Att. V

June 29, 2020

Andrew Tufts
City of Portland Planning Board

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

Re: Fallbrook Commons replacement project for St Joseph Manor

We look forward to a second Workshop meeting with the Planning Board just as soon as possible. We have made changes to the parking areas in both layout and a reduction in spaces, along with additional buffers, to address concerns expressed in the first Workshop meeting. We have also made changes to the retaining wall which was also expressed as a concern. And we are providing further information regarding wetlands and our approved permits from the Maine Department of Environmental Protection.

We would also like to use this letter to address questions about Conditional Use and the discussion raised at the end of the first Workshop about where nursing homes belong in the city.

As mentioned in our meeting, Sandy River Company has been involved in the development of over a dozen nursing home projects in the past 30+ years. What we have learned is that residents and families do not want to live in commercial or industrial areas, nor out in the country. A nursing home is the resident's home. They would prefer to be in a residential area with surroundings that feel as much as home as possible.

The proposed site is in the R-3 zone and within the North Deering Neighborhood. A nursing home (called a Long-term and Extended care facility in the City's Land Use Code) is a Conditional Use under the Institutional section. The Institutional section also includes Hospitals, Places of Assembly and Schools which are also Conditional Uses within the R-3 Zone.

There are several nursing homes and assisted living facilities in Portland to include Fallbrook Woods, St Joseph, The Cedars, Portland Center for Assisted Living, Seaside Nursing, and the City's own Barron Center. These are all located within Residential Zones. Fallbrook Woods and St Joseph are in the same R-3 zone and area within the North Deering Neighborhood and abut residential streets. St Joseph is just one street over from Florida Avenue and abuts Maine Avenue and Ray Street.

The Land Use Code further indicates as a condition of Conditional Use that "the Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing of the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts that would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard

217 Commercial St., Suite 201 PO Box 110 • Portland, Maine 04112 • TEL: 207.558.6060
www.SandyRiverCompany.com

is satisfied if it finds that: The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone".

Again, St Joseph and Fallbrook Woods Assisted Living are within this same area within the North Deering Neighborhood and same R-3 Zone. There are also schools and churches within this same North Deering Neighborhood and R-3 Zone. St Joseph, which is being replaced, operates 24 hours a day and has over 120 parking spaces. We are, in fact, replacing and downsizing St Joseph with a new state-of-the-art nursing care center in the same neighborhood that will have less beds and less parking spaces and with less traffic. And again, there are other long-term care facilities within R-3 and other Residential Zones as mentioned above with similar parking spaces, hours of operation and traffic being generated.

It is also important to note that the traffic being generated by the new project does not empty onto Florida Avenue. The proposed nursing home will be part of the existing Fallbrook Woods campus and use the campus drive, Merrymeeting Drive. Merrymeeting Drive is a private drive that will be upgraded as part of this project.

In summary, the City intended through its Land Use Code that nursing homes belonged in residential zones and neighborhoods and the nursing homes in Portland are all located within a Residential Zone. We believe Fallbrook Commons meets the standards for a Conditional Use Permit within the R-3 Zone. We will certainly do everything possible to screen and provide buffers to lesson the impact of this project on the neighborhood. And as mentioned, we are also proposing a decrease in parking spaces.

We would like to close this letter by reiterating the importance of this new facility as a replacement of St Joseph.

The existing 45-year old nursing care facility has outlived its useful life as a nursing home. Additionally, as we have all learned from COVID-19, existing older nursing homes are extremely vulnerable places in managing such infectious disease outbreaks. We need to replace St Joseph Manor for the following reasons:

- The resident rooms are small, shared rooms, and four persons to a bathroom that do not meet ADA standards, nor appropriately allow for managing any possible virus outbreaks. The new building will be largely private rooms with private baths and offer a much safer environment to manage infectious disease control.

- Built in 1974, the facility is an old-style long double loaded corridor facility with dead end corridors. The layout of the building does not allow for efficient programming and caregiving. The proposed new facility will consist of three "neighborhoods" within the building offering the opportunity to create both a traditional long-term care neighborhood and short stay rehabilitation neighborhoods, as well as decentralize dining and living areas. This layout also offers the opportunity to significantly improve the management of any outbreaks of infectious disease.

- The physical plant is in poor condition with failing or outdated mechanical systems, heating inefficiencies and a roof that needs replacing; there is an entire wing that is not operational.

Clearly, replacing St Joseph Manor with a new state-of-the-art nursing center will have a dramatic positive impact on the quality of life of residents and improve the emotional health of residents and their families. As part of the collaboration for this project, it became important that the replacement facility and services continue to be offered within the City of Portland. The proposed new replacement facility is within the same neighborhood, allowing for a nearby transition for residents and family and staff. The development of a new nursing home that will be home to 90 residents requires at least 5-7 acres of land which is almost impossible to find with the City. The available land at Fallbrook Woods offers the opportunity to create a senior care campus whereby staff and resources can be shared as well as families can easily visit family members that might be in both centers.

Building and opening the replacement facility for St Joseph Manor is critical to the health and safety of residents and staff. And we believe the City's Land Use Codes intends for nursing homes to be in residential areas. Fallbrook Commons will replace St Joseph in the same residential neighborhood and Residential Zone (R-3).

We appreciate the City of Portland's support for this important project.

Sincerely,

Daniel J Maguire
Managing Partner
Sandy River Company

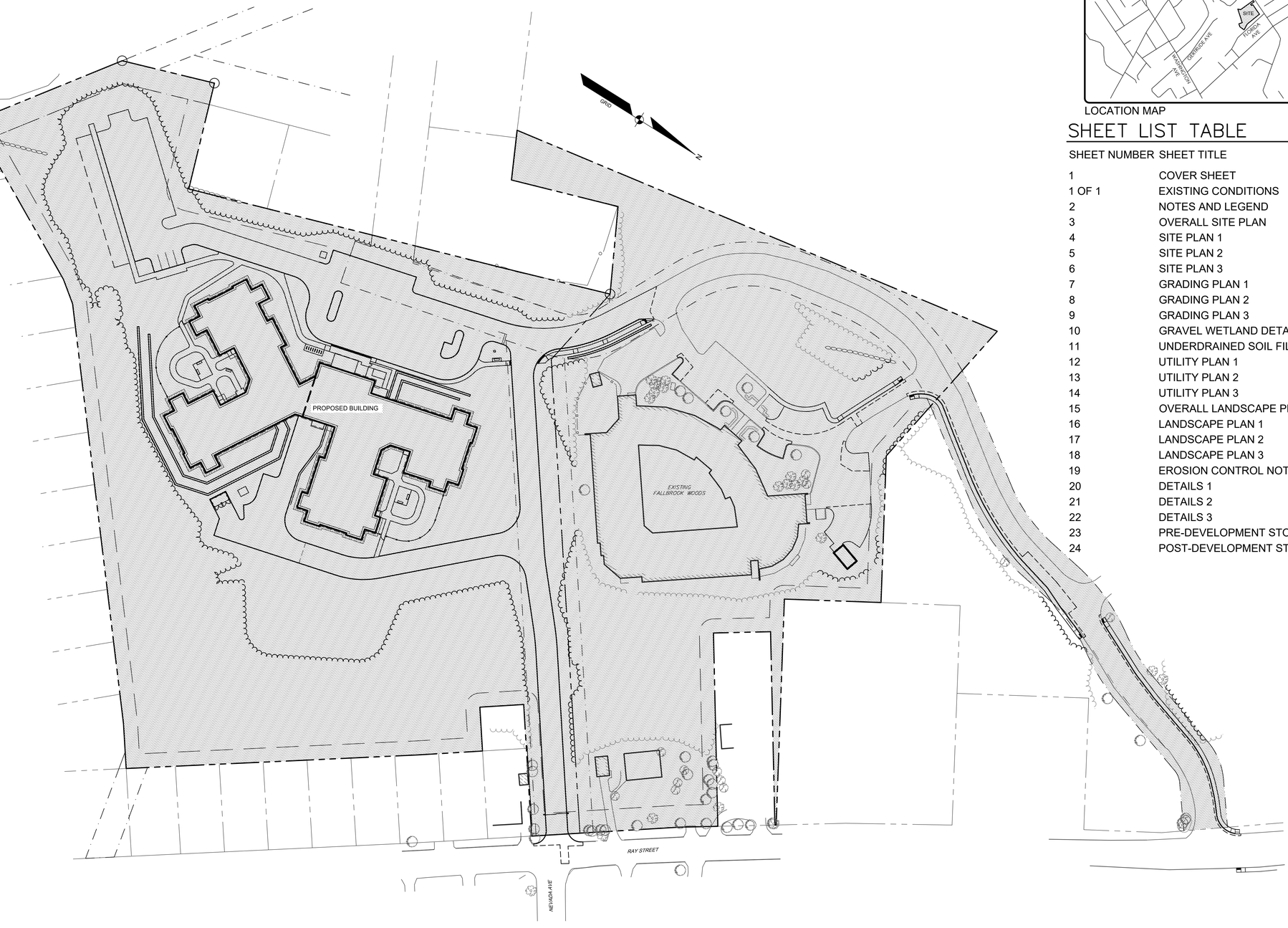
FALLBROOK COMMONS

RAY STREET
PORTLAND, MAINE

APPLICANT:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

ENGINEER/SURVEYOR/ LANDSCAPE ARCHITECT:
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

ARCHITECT
GAWRON TURGEON ARCHITECTS, P.C.
27 BLACK POINT ROAD
SCARBOROUGH, MAINE



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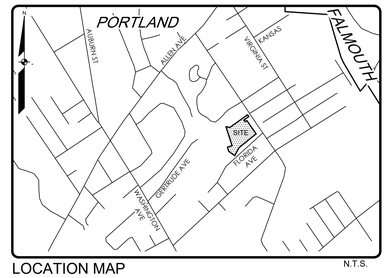
REVISED THROUGH 07-08-20



LOCATION MAP N.T.S.

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
1 OF 1	EXISTING CONDITIONS
2	NOTES AND LEGEND
3	OVERALL SITE PLAN
4	SITE PLAN 1
5	SITE PLAN 2
6	SITE PLAN 3
7	GRADING PLAN 1
8	GRADING PLAN 2
9	GRADING PLAN 3
10	GRAVEL WETLAND DETAIL
11	UNDERDRAINED SOIL FILTER DETAIL
12	UTILITY PLAN 1
13	UTILITY PLAN 2
14	UTILITY PLAN 3
15	OVERALL LANDSCAPE PLAN
16	LANDSCAPE PLAN 1
17	LANDSCAPE PLAN 2
18	LANDSCAPE PLAN 3
19	EROSION CONTROL NOTES AND DETAILS
20	DETAILS 1
21	DETAILS 2
22	DETAILS 3
23	PRE-DEVELOPMENT STORMWATER PLAN
24	POST-DEVELOPMENT STORMWATER PLAN

DANIEL L. RILEY PE 6696 — STATE OF MAINE — DANIEL L. RILEY — No. 6696 — REGISTERED PROFESSIONAL ENGINEER — 08/06/2020

DANIEL M. DANVERS RLA 481S — DESIGNED LANDSCAPE ARCHITECT — DANIEL M. DANVERS — 481S — STATE OF MAINE — 08/06/2020

NOT FOR CONSTRUCTION

REV:	BY:	DATE:	STATUS:
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

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

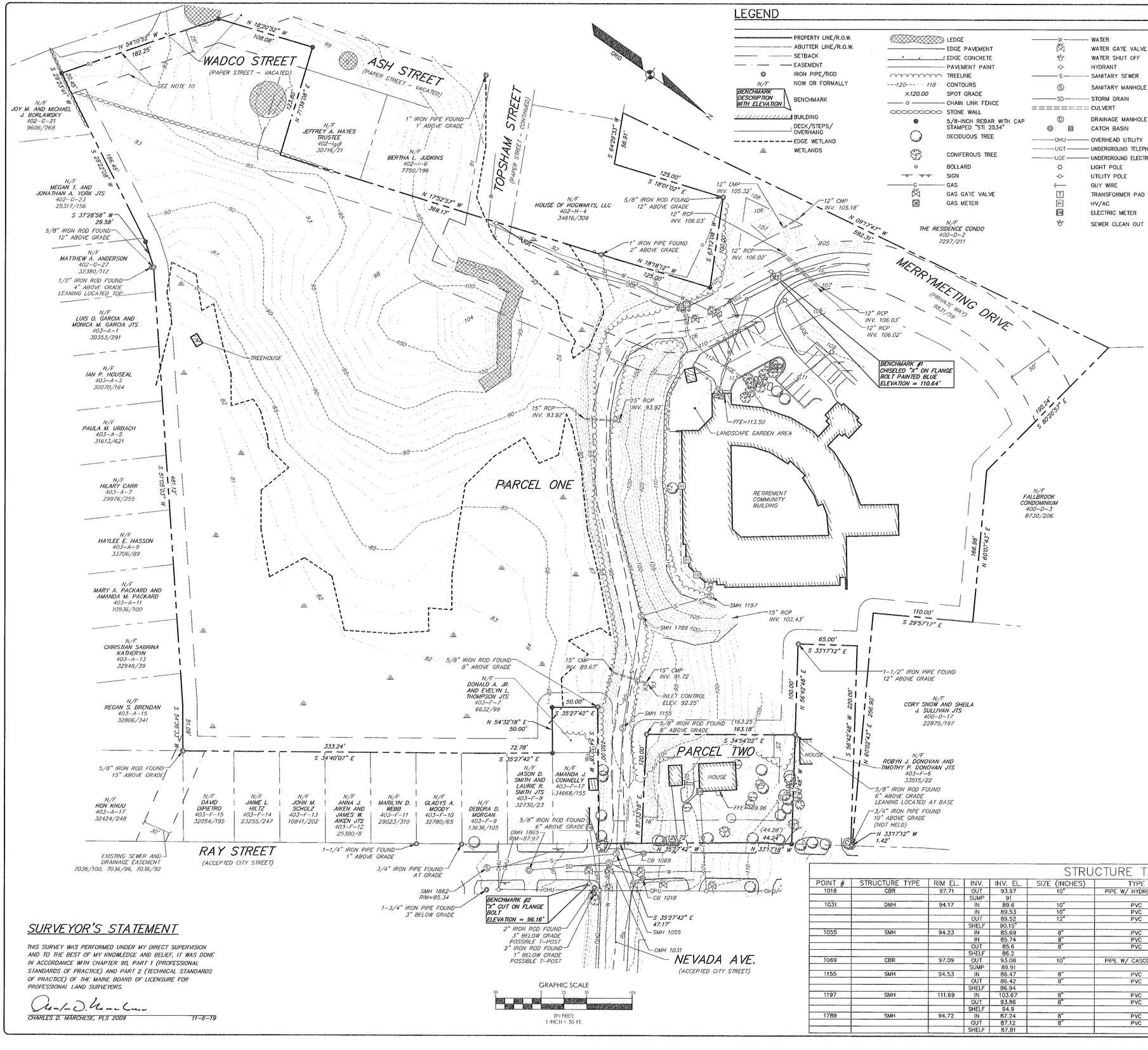
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

COVER SHEET
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	AS SHOWN
PROJECT	18347

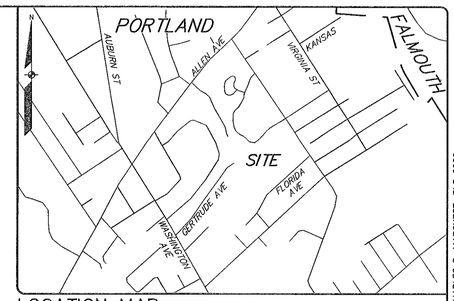
18347C dwg, TAB G

SHEET 1 OF 24



LEGEND

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- SETBACK
- EASEMENT
- IRON PIPE/ROD
- N/F NOW OR FORMALLY
- BENCHMARK DESCRIPTION WITH ELEVATION
- BENCHMARK
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE WETLAND
- WETLANDS
- LEDGE
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- TREELINE
- CONTOURS
- SPOT GRADE
- CHAIN LINK FENCE
- STONE WALL
- 5/8-INCH REBAR WITH CAP STAMPED "STI 2534"
- DECIDUOUS TREE
- CONIFEROUS TREE
- BOLLARD
- SIGN
- GAS
- GAS GATE VALVE
- GAS METER
- WATER
- WATER GATE VALVE
- WATER SHUT OFF
- HYDRANT
- SANITARY SEWER
- SANITARY MANHOLE
- STORM DRAIN
- CULVERT
- DRAINAGE MANHOLE
- CATCH BASIN
- OVERHEAD UTILITY
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRIC
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- TRANSFORMER PAD
- HV/AC
- ELECTRIC METER
- SEWER CLEAN OUT



LOCATION MAP N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF PARCEL ONE IS FALLBROOK PROPERTIES, LLC BY DEED DATED DECEMBER 15, 2009 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 27501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JULY 7, 1989 AND RECORDED AT THE CCRD IN BOOK 8818, PAGE 50.
2. PARCEL ONE IS SHOWN AS LOT F-001 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE. PARCEL TWO IS SHOWN AS LOT F-005 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE.
3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

MINIMUM LOT SIZE:	6,500 SQUARE FEET*
MINIMUM STREET FRONTAGE:	50 FEET*
MINIMUM FRONT YARD:	25 FEET*
MINIMUM SIDE YARD:	16 FEET*
MINIMUM REAR YARD:	25 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET
MAXIMUM LOT COVERAGE:	35%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL ONE IS APPROXIMATELY 12.78 ACRES. TOTAL AREA OF PARCEL TWO IS APPROXIMATELY 19,573 SQUARE FEET OR 0.449 ACRES.
5. BOUNDARY INFORMATION FOR PARCEL ONE IS AS DEPICTED ON PLAN REFERENCE 6A, SEBAGO TECHNICS, INC. HAS NOT PERFORMED AN INDEPENDENT BOUNDARY RETRACEMENT SURVEY. BOUNDARY INFORMATION FOR PARCEL TWO IS BASED UPON AN INDEPENDENT BOUNDARY SURVEY. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. IN MAY OF 2019 AND IN JULY OF 2019.
6. PLAN REFERENCES:
   A. "PLAN OF LAND OF FALLBROOK WOODS ON RAY STREET, PORTLAND, MAINE PREPARED FOR OWNER OF RECORD FALLBROOK, INC., 7 SHADY LANE, FALMOUTH, MAINE" BY LAND USE CONSULTANTS, DATED SEPTEMBER 25, 1992 AND REVISED THROUGH OCTOBER 9, 1992 AND RECORDED AT THE CCRD IN PLAN BOOK 193, PAGE 248.
   B. "CONDOMINIUM PLAT III FOR FALLBROOK, A CONDOMINIUM ON RAY STREET, PORTLAND, MAINE FOR MERREAL CORP. BY OWEN HASKELL, INC. DATED MAY 10, 1990 AND RECORDED AT THE CCRD IN PLAN BOOK 185, PAGE 15.
   C. "PLAN OF WADCO PARK, PROPERTY OF DERRAH AND WESCOTT, WASHINGTON AVE. PORTLAND, MAINE" DATED AUGUST 1905 AND RECORDED AT THE CCRD IN PLAN BOOK 12, PAGE 17.
   D. "THE PINES, PORTLAND MAINE, OWNED BY THE A.H. CHAPMAN LAND CO., PORTLAND, MAINE, SECTION A" BY PERCY H. RICHARDSON, C.E. DATED APRIL 1925.
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NGVD29, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
8. PER STANDARDS ASCE/CI 38-02: SANITARY AND STORM DRAINAGE LINES SHOWN HEREON ARE QUALITY LEVEL C; ELECTRIC, COMMUNICATION, AND WATER LINES SHOWN HEREON ARE QUALITY LEVEL B, AS DELINEATED BY DIGSMART OF MAINE IN MAY 2019; GAS LINES SHOWN HEREON ARE QUALITY LEVEL D BASED UPON FOUND ABOVE GROUND EVIDENCE. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
9. THE LOCUS PROPERTIES AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230051 0002 C, HAVING AN EFFECTIVE DATE OF DECEMBER 8, 1998. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
10. PER THE CITY OF PORTLAND, MAINE, ASH STREET AND WADCO STREET HAVE BEEN VACATED. THIS REVERTS THE PROPERTY LINE TO THE CENTERLINE OF THE PAPER STREETS (23 M.R.S.A. 3027). THERE MAY STILL BE RIGHTS ASSOCIATED WITH THE PAPER STREET FOR THE LOTS AS DEPICTED IN PLAN REFERENCE 6C.
11. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROPOSED DEVELOPMENT AREAS WERE LOCATED USING GLOBAL POSITIONING SYSTEMS (GPS) TECHNOLOGY CAPABLE OF DECIMETER ACCURACY.

   A VERNAL POOL SURVEY WAS PERFORMED ON MAY 6, 2019 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS SURVEY CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN CHAPTER 335, SECTION 9, OF THE NATURAL RESOURCE PROTECTION ACT, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MARCHESE, PLS 2009 11-6-19

STRUCTURE TABLE

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE (INCHES)	TYPE	LOCATION (N=12)	COMMENTS
1018	CBR	97.71	OUT	93.97	10"	PIPE W/ HYDROBRAKE	7	PVC PIPE MEASURED TOP WATER
			SUMP	91				
1031	DMH	94.17	IN	89.6	10"	PVC	11	
			IN	89.53	10"	PVC	1	
			OUT	89.52	12"	PVC	6	
			SHELF	90.15"				
1055	SMH	94.23	IN	85.69	8"	PVC	9	
			IN	85.74	8"	PVC	1	
			OUT	85.6	8"	PVC	5	
			SHELF	86.2				
1069	CBR	97.09	OUT	93.08	10"	PIPE W/ CASCO TRAP	5	HOOD TRAP INSTALLED MEASURED TOP OF WATER
			SUMP	89.91				APPROX 1 FOOT SILT ON BOTTOM
1155	SMH	94.53	IN	86.47	8"	PVC	10	
			OUT	86.42	8"	PVC	3	
			SHELF	86.94				
1197	SMH	111.69	IN	103.67	8"	PVC	9	WITH DOWNSPOUT
			OUT	93.86	8"	PVC	5	
			SHELF	94.9				
1789	SMH	94.72	IN	87.24	8"	PVC	11	
			OUT	87.12	8"	PVC	3	
			SHELF	87.81				

CHARLES D. MARCHESE, PLS 2009

DRAWN	CHECKED
AJS	TSL/CDM

REV	BY:	DATE:	STATUS:
C	CDM	12-18-19	SUBMITTED TO CITY OF PORTLAND
B	AJS	7-10-19	REVISED TO SHOW EXPANDED SCOPE
A	AJS	5-30-19	ISSUED FOR CLIENT REVIEW

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

RECORD OWNER:
FALLBROOK PROPERTIES, LLC
418 RAY STREET
PORTLAND, MAINE 04103

EXISTING CONDITIONS
OF:
FALLBROOK COMMONS
MERRYMEETING DRIVE
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC
217 COMMERCIAL ST., SUITE 201
PORTLAND, MAINE 04112

PROJECT NO.	SCALE
18347	1" = 50'

SHEET 1 OF 1

18347EC.dwg, TAB: EC

GENERAL NOTES

1. THE RECORD OWNER OF PARCEL ONE IS FALLBROOK PROPERTIES, LLC BY DEED DATED DECEMBER 15, 2009 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 27501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JULY 7, 1989 AND RECORDED AT THE CCRD IN BOOK 8818, PAGE 50.
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3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

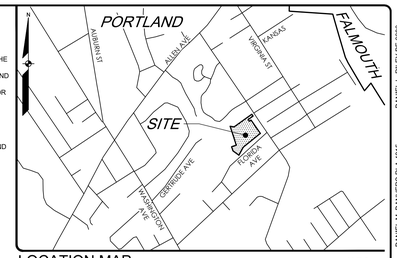
	REQUIRED	FALLBROOK COMMONS	FALLBROOK WOODS
MINIMUM LOT SIZE:	2.0 ACRES*	8.3 ACRES	4.5 ACERS
MINIMUM STREET FRONTAGE:	50 FEET*	55 FEET	157 FEET
MINIMUM FRONT YARD:	25 FEET*	348 FEET	238 FEET
MINIMUM SIDE YARD:	16 FEET*	88 FEET	29 FEET
MINIMUM REAR YARD:	25 FEET	84 FEET	227 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET	34 FEET	30 FEET
MAXIMUM COVERAGE:	35%	34%	31%

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA (FALLBROOK COMMONS LOT) APPROXIMATELY: 360,771 SQUARE FEET OR 8.3 ACRES.
   TOTAL AREA (FALLBROOK WOODS LOT) APPROXIMATELY: 215,734 SQUARE FEET OR 4.95 ACERS.
5. ORDINANCE SEC. 14-332 (n): LONG-TERM, EXTENDED CARE AND INTERMEDIATE CARE FACILITIES: ONE (1) PARKING SPACE FOR EACH FIVE (5) BEDS, OR MAJOR FRACTION THEREOF, PLUS ONE (1) PARKING SPACE PER EACH EMPLOYEE NORMALLY PRESENT DURING ONE (1) WEEKDAY MORNING SHIFT.
   OFF STREET PARKING:

	FALLBROOK COMMONS	FALLBROOK WOODS (EXISTING)
EXISTING:	0 SPACES	24 SPACES
ORDINANCE:	73 SPACES	37 SPACES
PROPOSED:	83 SPACES	37 SPACES

6. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROPOSED DEVELOPMENT AREAS WERE LOCATED USING GLOBAL POSITIONING SYSTEMS (GPS) TECHNOLOGY CAPABLE OF DECIMETER ACCURACY. A VERNAL POOL SURVEY WAS PERFORMED ON MAY 6, 2019 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS SURVEY CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN CHAPTER 335, SECTION 9, OF THE NATURAL RESOURCE PROTECTION ACT, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
7. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
8. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
9. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
10. PROVIDE ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
12. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC. STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
13. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
14. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
15. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OCTOBER 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
16. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
17. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
18. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGEMENT OF SEBAGO TECHNICS, INC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.



LOCATION MAP N.T.S.

IMPACT SCHEDULE

WETLAND IMPACTS
A: 4,714 ± S.F.
B: 23 ± S.F.
C: 28,095 ± S.F.
D: 4,059 ± S.F.
E: 227 ± S.F.
F: 447 ± S.F.
TOTAL: 37,565 ± S.F.

TREE CLEARING: 217,078 ± S.F.

WETLAND IMPACT

DANIEL L. RILEY PE 6696 — STATE OF MAINE — DANIEL RILEY — No. 6696 — REGISTERED PROFESSIONAL ENGINEER — 08/06/2020

DANIEL M. DANVERS RLA 491S — STATE OF MAINE — DANIEL M. DANVERS — 491S — REGISTERED LANDSCAPE ARCHITECT — 08/06/2020

NOT FOR CONSTRUCTION

	BY:	DATE:	STATUS:
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	06-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	06-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

OVERALL SITE PLAN
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

SHEET 3 OF 24

18347S.dwg, TAB.S

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	92.30	88.30 (SD-18)	88.20 (SD-16)	48"
CB-2	92.30		88.50 (SD-18)	48"
CB-3	94.80	87.60 (SD-16) 91.00 (SD-17)	87.50 (SD-22)	48"
CB-4	96.60	92.70 (SD-19)	92.60 (SD-17)	48"
CB-5	96.70		93.00 (SD-19)	48"
CB-6	88.60	83.20 (SD-5)	83.10 (SD-6)	48"
CB-7	88.50	83.80 (SD-3)	83.70 (SD-5)	48"
CB-8	89.00	84.80 (SD-2) 85.00 (SD-12)	84.70 (SD-3)	48"
CB-9	88.50		85.50 (SD-2)	48"
CB-10	98.50	93.60 (SD-23)	93.50 (SD-12)	48"
CB-11	98.50		94.50 (SD-23)	48"
CB-12	89.10	82.90 (SD-10)	82.80 (SD-11)	48"
CB-13	87.40	83.70 (SD-9)	83.60 (SD-10)	48"
CB-14	89.00	84.50 (SD-8)	84.40 (SD-9)	48"
CB-15	95.15	88.68 (SD-14)	88.68 (SD-15)	48"
CB-16	93.65	89.28 (SD-20) 89.28 (SD-25)	89.28 (SD-14)	48"
CB-17	92.50	89.50 (SD-21)	89.50 (SD-20)	48"
CB-18	101.00		93.00 (SD-21)	48"
CB-19	94.75		90.00 (SD-25)	48"
CB-1069	98.00		93.15 (SD-24)	48"
OCS-1	85.50	78.08 (UD-23)	80.67 (SD-4)	72"
OCS-2	91.00	85.30 (UD-24)	85.20 (SD-13)	60"
RISER-26	101.00	94.70 (RD-4) 94.70 (RD-3)	93.65 (RD-5)	8"
RISER-27	95.00	91.35 (RD-5)	86.85 (RD-6)	8"

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
RD-1	8"	18'	6.11%
RD-2	8"	80'	3.73%
RD-3	8"	55'	5.97%
RD-4	8"	36'	5.02%
RD-5	8"	38'	6.04%
RD-6	8"	31'	6.03%
SD-1	18"	48'	4.19%
SD-2	12"	83'	0.85%
SD-3	12"	117'	0.77%
SD-4	15"	28'	0.60%
SD-5	12"	70'	0.71%
SD-6	12"	72'	0.84%
SD-7	6"	35'	0.85%
SD-8	6"	28'	0.72%
SD-9	6"	91'	0.77%
SD-10	12"	89'	0.78%
SD-11	12"	30'	1.00%
SD-12	12"	164'	5.17%
SD-13	12"	23'	1.33%
SD-14	12"	89'	0.68%
SD-15	12"	46'	1.04%
SD-16	12"	63'	0.96%
SD-17	12"	75'	2.15%
SD-18	12"	18'	1.12%
SD-19	12"	19'	1.59%
SD-20	12"	40'	0.55%
SD-21	12"	56'	6.27%
SD-22	12"	31'	6.44%
SD-23	12"	93'	0.97%
SD-24	12"	3'	3.39%

DANIEL L. RILEY, PE 6696 — 08/06/2020

DANIEL M. DAVIERS RLA 4915 — 08/06/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

GRADING PLAN 1
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET 7 OF 24

183470-dwg, TAB G1

GRID N

SD-16

CB-15

UNDERDRAINED SOIL FILTER (UDSF-1). SEE DETAIL ON SHEET 9.

SD-15

CB-19

CB-16

SD-25

UD-24

OCS-2

SD-24

CB-17

STILLING BASIN (SB-2), TYP.

RIPRAP APRON

SD-23

RD-4

CB-18

RD-3

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

42" STONE DRIP EDGE, TYP.

PROPOSED BUILDING OVERALL FOOTPRINT UPPER LEVEL F.F.E.=102.00

INSTALL FOUNDATION DRAIN. COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

42" STONE DRIP EDGE, TYP.

INSTALL SINGLE-PHASE TRANSFORMER ON 7'x7' CONCRETE PAD

INSTALL TEL/DATA PULL-BOX

CB-11

SD-22

SINGLE-PHASE ELECTRIC & TEL/DATA

EXTEND SINGLE-PHASE POWER & TEL/DATA UNDERGROUND TO BUILDING. COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

CB-10

EXTEND SINGLE-PHASE ELECTRIC & TEL/DATA UNDERGROUND FROM UTILITY POLE RISER TO PROPOSED TRANSFORMER. INSTALL TEL/DATA IN SEPARATE TRENCH, TYP.

INSTALL SINGLE-PHASE POWER & TEL/DATA RISERS ON EXISTING UTILITY POLE & EXTEND CONDUIT. COORDINATE CONNECTION & UNDERGROUND EXTENSION WITH CMP & OTHER UTILITY COMPANIES. PROVIDE 30" MINIMUM COVER OVER CONDUIT. SEE GRADING PLAN FOR ELEVATIONS.

PROTECT EXISTING OVERHEAD UTILITY LINES, POLE & GUY WIRES

PROTECT EXISTING UNDERGROUND UTILITIES & CONDUIT

PROPOSED UTILITY EASEMENT

60' EXISTING EASEMENT

CONNECT TO EXISTING GAS MAIN, COORDINATE CONNECTION WITH UNITIL GAS COMPANY

RIPRAP SLOPE

CONTRACTOR SHALL VERIFY EXISTING WATER MAIN SIZE AND VALVING LOCATION PRIOR TO CONSTRUCTION

8" GATE VALVE

PROPOSED WALL DRAINS, TYP.

PROTECT EXISTING GAS, WATER & ELECTRIC UTILITY DURING INSTALLATION OF PROPOSED WALL

SD-12

MECHANICAL & SPRINKLER ROOM LOCATED AT BUILDING CORNER

COORDINATE SEWER CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS, INV.=83.00

2,000 GALLON GREASE TRAP INV, IN=82.90 INV, OUT=82.65

SS-5

SS-4

CLEANOUT, TYP.

SS-2

SS-3

SMH-1

SS-2.1

COORDINATE ELECTRICAL CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

COORDINATE WATER CONNECTIONS AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

INSTALL GAS METER & RISER ASSEMBLY, COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

FIRE ALARM PANEL/ REMOTE ANNUNCIATOR AT FRONT DOOR

PROPOSED BUILDING OVERALL FOOTPRINT LOWER LOWER LEVEL L.L.E.=90.00

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

42" STONE DRIP EDGE, TYP.

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

PUMP DESIGN CONTROL PANEL

EXTEND GENERATOR POWER UNDERGROUND TO BUILDING, COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

SD-1

SD-7

22.5° BEND

10' MIN. SEPARATION BETWEEN SEWER AND WATER

22.5° BEND

CB-14

SEWER PUMP STATION RIM = 90.50 INV, IN = 82.00 INV, OUT = 85.00 (DESIGN BY MANUFACTURER, SEE DETAILS)

PROPOSED WALL DRAIN WEEP HOLES ON LOWER WALL

PROPOSED WALL DRAINS, TYP.

GENERATOR & CONCRETE PAD. COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS

MATCHLINE, SEE SHEET 11

MATCHLINE, SEE SHEET 10

INSTALL THRUST BLOCK AT ALL BENDS, TYP.

SD-18

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

PROPOSED PIPE CROSSING TOP OF 12" HDPE INV.=85.10± BOTTOM OF 8" HDPE INV.=85.70±

45° BEND

INSTALL FOUNDATION DRAIN. COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS

42" STONE DRIP EDGE, TYP.

PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.

CONNECT DRIPLINE & FOUNDATION DRAIN TO STORMDRAIN WITH WYE FITTING, TYP.

SD-3

RD-1

CB-7

6" GATE VALVE

SD-8

INSTALL 6"X6" MJ TEE, 6" GATE VALVE & HYDRANT ASSEMBLY, INSTALL MECHANICAL JOINT CAP ON BLIND TEE END

CONNECT WALL DRAINS TO PROPOSED CATCH BASIN

CB-9

SD-2

CB-8

8" WATER MAIN

CONNECT FIRE SERVICE TO PROPOSED FIRE HYDRANT

PROPOSED HYDRANT LOCATION TO BE CONFIRMED BY FIRE DEPARTMENT

15'

15' GRADING EASEMENT

REMOVE EXISTING CULVERT

MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE

MAINTAIN MIN. 12" VERTICAL SEPARATION BETWEEN STORMDRAIN & GAS SERVICE

CB-4

SD-19

CB-5

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 INCH = 20 FT.

DANIEL L. RILEY PE 6696

STATE OF MAINE DANIEL L. RILEY No. 9969 REGISTERED PROFESSIONAL ENGINEER

07/09/2020

DANIEL M. DANYEROS RLA 481S

LICENSED LANDSCAPE ARCHITECT DANIEL M. DANYEROS 481S STATE OF MAINE

07/09/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite E
South Portland, ME 04106
Tel: 207-200-2100

UTILITY PLAN 1
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

18347U.dwg, TAB:U1

SHEET 12 OF 24

PUMP DESIGN CONTROL PANEL
EXTEND GENERATOR POWER UNDERGROUND TO BUILDING, COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS
SS-3
SMH-1
SS-2.1
SS-1
22.5° BEND
10' MIN. SEPARATION BETWEEN SEWER AND WATER
22.5° BEND
CB-14
SEWER PUMP STATION RIM = 90.50 INV. IN = 82.00 INV. OUT = 85.00 (DESIGN BY MANUFACTURER, SEE DETAILS)
PROPOSED BUILDING OVERALL FOOTPRINT LOWER LOWER LEVEL L.L.E.=90.00
PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.
CONNECT DRIPLINE & FOUNDATION DRAIN TO STORMDRAIN WITH WYE FITTING, TYP.
INSTALL FOUNDATION DRAIN, COORDINATE WITH ARCHITECTURAL & M.E.P. DRAWINGS
42" STONE DRIP EDGE, TYP.
PROPOSED WALL DRAIN WEEP HOLES ON LOWER WALL
PROPOSED WALL DRAINS, TYP.
GENERATOR & CONCRETE PAD, COORDINATE CONNECTION AT BUILDING WITH ARCHITECTURAL & M.E.P. DRAWINGS
MATCHLINE, SEE SHEET 11
MATCHLINE, SEE SHEET 10
PROPOSED DRIPLINE & FOUNDATION DRAIN, TYP.
PROPOSED PIPE CROSSING TOP OF 12" HDPE INV.=85.10± BOTTOM OF 8" HDPE INV.=85.70±
INSTALL THRUST BLOCK AT ALL BENDS, TYP.
45° BEND
45° BEND
8" MIN. SEPARATION BETWEEN SEWER FORCEMAIN AND WATER
CB-13
11.25° BEND
RIPRAP APRON
STILLING BASIN (SB-1) TYP.
OCS-1
UD-23
SD-4
CB-12
GRAVEL WETLAND TREATMENT CELL GW-2, SEE DETAIL ON SHEET 10.
GRAVEL WETLAND TREATMENT CELL GW-1, SEE DETAIL ON SHEET 10.
CB-6
CB-7
SD-5
6" GATE VALVE
6" D.I. FIRE SERVICE
2" WATER SERVICE
2" GATE VALVE
CB-4
SD-19
CB-5
15' GRADING EASEMENT
REMOVE EXISTING CULVERT
MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE
MAINTAIN MIN. 12" VERTICAL SEPARATION BETWEEN STORMDRAIN & GAS SERVICE
EXISTING FALLBROOK WOODS
MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN WATER & GAS SERVICE
MAINTAIN MIN. 12" VERTICAL SEPARATION BETWEEN STORMDRAIN & GAS SERVICE
8" GATE VALVE
6"X8" TEE
INSTALL BENDS & THRUST BLOCKS FOR WATER PIPE & FIRE SERVICE PIPE AS REQUIRED
MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE
INSTALL BENDS & THRUST BLOCKS FOR WATER PIPE & FIRE SERVICE PIPE AS REQUIRED
4" HDPE SDR 11 FORCEMAIN, MAINTAIN MINIMUM 5.0' OF COVER OVER FORCE MAIN ENTIRE LENGTH, CONFIRM MAIN SIZE WITH MANUFACTURER
11.25° BEND
CB-3
SD-22
RIPRAP APRON
SD-16
SMH 1197
SMH 1789
PROPOSED INV. IN = 87.40 (CORE EXISTING STRUCTURE FOR INSTALLATION OF BOOT FOR FORCEMAIN, RECONSTRUCT CHANNEL & BENCH FOR NEW SERVICE)
CB-1
SD-18
CB-2
SD-17
MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN STORMDRAIN & WATER SERVICE
22.5° BEND
PROPOSED STORMDRAIN & SEWER PIPE CROSSING BOTTOM OF 12" HDPE INV.=89.35± TOP OF 8" HDPE SEWER INV.=87.45±
REMOVE EXISTING CULVERT AND OUTLET STRUCTURE TO BE REPLACED
MAINTAIN MIN. 18" VERTICAL SEPARATION BETWEEN SEWER & WATER SERVICE
22.5° BEND
SMH 1155
LIGHT POLE, TYP.
8" GATE VALVE
CB-1069
SD-24
PROTECT EXISTING UTILITIES IN RIGHT OF WAY
SMH 1862 RIM=85.34
SMH 1055
APPROXIMATE LOCATION OF EXISTING 8" TO 6" WATER MAIN REDUCER
EXISTING 8" WATER MAIN
PROTECT EXISTING 6" WATERMAIN & FORCEMAIN AS REQUIRED FOR NEW UTILITY INSTALLATION
WATER MAIN CONNECTION, INSTALL 6"X8" TAPPING SLEEVE, CONNECTION TO BE CONFIRMED WITH PWD
GRAPHIC SCALE
30 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-1	8"	23'	1.50%
SS-2	8"	10'	1.09%
SS-2.1	8"	9'	1.02%
SS-3	8"	6'	1.75%
SS-4	8"	22'	1.81%
SS-5	8"	6'	0.88%

SANITARY SEWER STRUCTURE DATA

STRUCTURE	*RIM*	*INV. IN*	*INV. OUT:*	*DIAM.*
SMH 1055	94.23	85.69 (EX.SS-6) 85.74 (EX.SS-1)	85.60 (EX.SS-2)	48"
SMH 1155	94.53		86.42 (EX.SS-6)	48"
SMH 1197	111.69	103.67 (EX.SS-4)	93.86 (EX.SS-3)	48"
SMH 1789	94.72	87.24 (EX.SS-3)	87.12 (EX.SS-5)	48"

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-1	89.62	82.54 (SS-2) 82.50 (SS-3)	82.44 (SS-2.1)	48"

DANIEL L. RILEY PE 6696
STATE OF MAINE DANIEL L. RILEY No. 9961 PROFESSIONAL ENGINEER
07/09/2020

DANIEL M. DANYERS RLA 4915
LICENSED LANDSCAPE ARCHITECT DANIEL M. DANYERS 4915 STATE OF MAINE
07/09/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
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C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP

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75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100

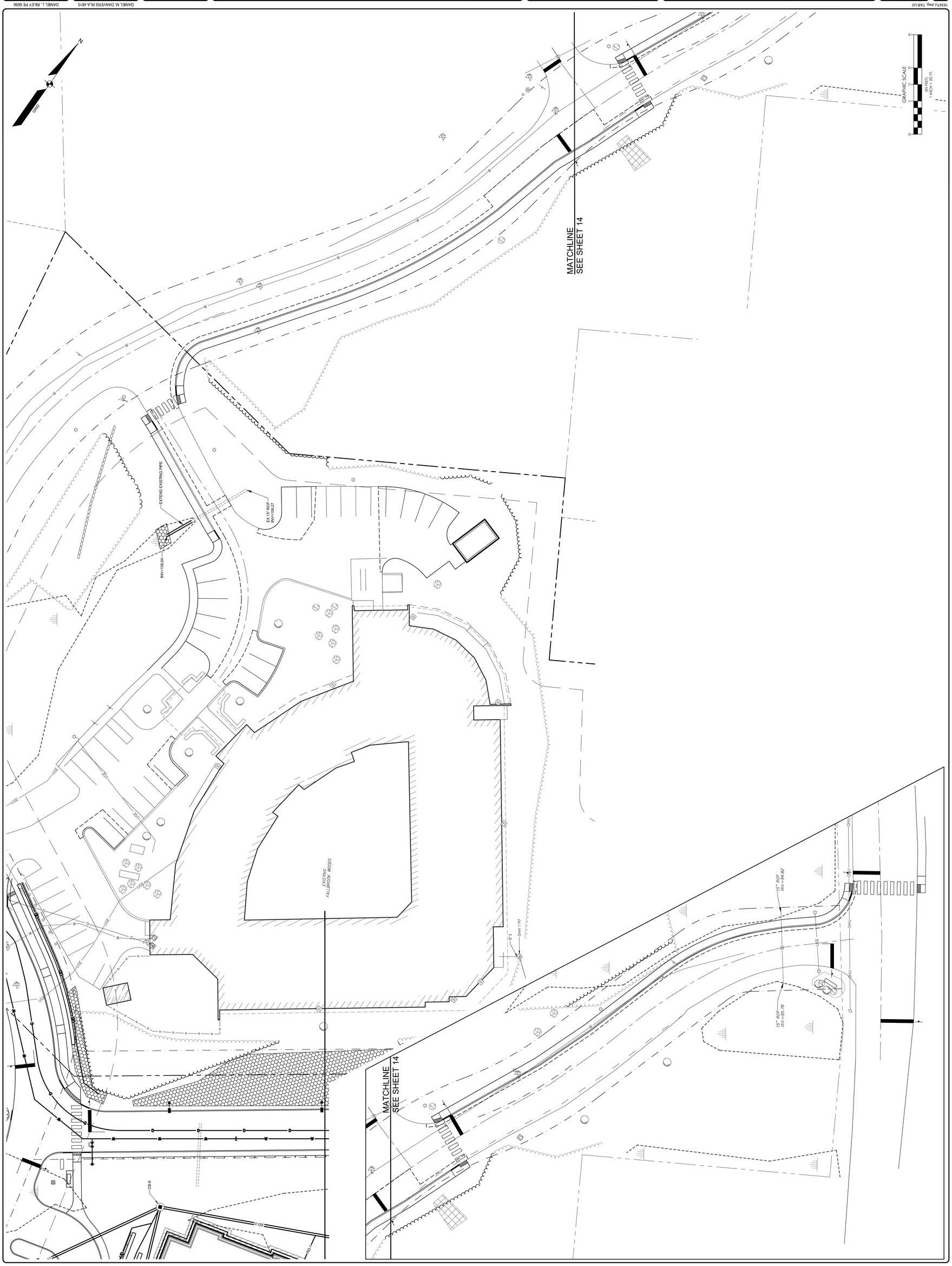
UTILITY PLAN 2
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET13 OF 24

18347U.dwg TAB:U2



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Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

UTILITY PLAN 3
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 20'
PROJECT	18347

SHEET14 OF 24

NOT FOR CONSTRUCTION

DANIEL M. DANVERS RLA 4815

DANIEL L. RILEY PE 6696

07/09/2020

07/09/2020

18347U.dwg, TAB:U3

FALLBROOK COMMONS
PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE | NOTES
AR	ACER RUBRUM 'NORTHWOOD'	NORTHWOOD RED MAPLE	3" CAL
CS	CATALPA SPECIOSA	CATALPA	3" CAL
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL
MA	MAGNOLIA ACUMINATA 'DAY BREAK'	DAYBREAK CUCUMBER MAGNOLIA	3" CAL
MP	MALUS 'PURPLE PRINCE'	PURPLE PRINCE CHERRY	3" CAL
BN	BETULA NIGRA	RIVERBIRCH	10'-12' HGT MIN 3 TRUNKS
PR	PINUS RESINOSA	RED PINE	10'-12' HGT
CT	CHAMAECYPARIS THYOIDES 'GLAUCA'	WHITE CEDAR	10'-12'HGT
BP	BETULA PAPYRIFERA 'RENAISSANCE REFLECTON'	PAPER BIRCH	8'-10' HGT
CV	CHIONANTHUS VIRGINICUS	FRINGETREE	8'-10' HGT
CP	CHAMAECYPARIS PISIFERA 'FILIFERA'	GREENTHREAD CYPRESS	8'-10' HGT
PO	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HGT
JS	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	WITCHITA BLUE JUNIPER	6'-8' HGT
AL	AMELANCHIER LAEVIS	SERVICE BERRY	6'-8' HGT
VR	VIBURNUM RHYTIDOPHYLLOIDES	LEATHERLEAF VIBURNUM	3'-5' HGT
RH	RHODODENDRON 'NOVA ZEMBLA'	RHODODENDRON	3'-5' HGT
JC	JUNIPERUS CHINENSIS 'HETZII GLAUCA'	BLUE HETZII JUNIPER	3'-5' HGT
LB	LINDERA BENZOIN	SPICEBUSH	3'-5' HGT
AS	AZALEA SCHLIPPENBACHII	ROYAL AZALEA	2'-3' HGT
DL	DIERVILLA LONICERA	BUSH HONEYSUCKLE	18"-24" HGT
HA1	HYDRANGEA ARBORESCENS 'INVINCIBELLE SPIRIT'	INVINCIBELLE SPIRIT HYDRANGEA	18"-24" HGT
RP	RHODODENDRON 'PJM'	PJM RHODODENDRON	18"-24" HGT
HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" HGT
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCHGRASS	18"-24" HGT
MD	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	#5 CONTAINER
EF	EUONYMUS F. 'EMERALD GAITY'	EUONYMUS	#2 CONTAINER
CP	CARAX 'PENNSYLVANICA'	SEDGE	#1 CONTAINER
HAR	HELLEBORUS 'ANNES RED'	LENTEN ROSE	#1 CONTAINER
LS	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SHASTA DAISY	#1 CONTAINER
HPR	HEUCHERELLA 'PINK REVOLUTION'	FOAMY BELLS	#1 CONTAINER
AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 CONTAINER
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	#1 CONTAINER
DF	DRYOPTERIS FILIX-MAS	WOOD FERN	#1 CONTAINER
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	#1 CONTAINER

SEED MIX A MEDOT- PARK MIX SEED METHOD A
SEED MIX B NEW ENGLAND WETLAND PLANTS- WETLAND MIX
SEED MIX C NEW ENGLAND WETLAND PLANTS- CONSERVATION MIX

GRID N

SEED MIX C (NATIVE GROUNDCOVER MIX)
VEGETATED EVENT OVERFLOW PARKING
SEED MIX B (WETLAND MIX)
VEGETATED STORM WATER TREATMENT SYSTEM
SEED MIX A (TURF)
PROPOSED BUILDING OVERALL FOOTPRINT
SEED MIX A (TURF)
SEED MIX C (NATIVE GROUNDCOVER MIX)
GRAVEL WETLAND TREATMENT CELL GW-2
GRAVEL WETLAND TREATMENT CELL GW-1
SEED MIX B (WETLAND MIX)
VEGETATED STORM WATER TREATMENT SYSTEM
SEED MIX C (NATIVE GROUNDCOVER MIX)
EXISTING TREE CANOPY TO REMAIN
EXISTING FALLBROOK WOODS
(765.84')
(780.47')
(44.28')
6"C.I.
8"D.I.
OHU
GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

DANIEL M. DANYERS R.L.A. 481S
LICENSED LANDSCAPE ARCHITECT
DANIEL M. DANYERS
481S
STATE OF MAINE
08/06/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
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OVERALL LANDSCAPE PLAN
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

SHEET15 OF 24

18347L.dwg, TAB:OAL

Department Legend

- CIRCULATION
- COMMON AREA
- RESIDENT ROOM
- RESIDENT SERVICES
- STAFF/UTILITIES
- UTILITIES

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LOWER LEVEL PLAN

10/29/2019

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10/29/2019

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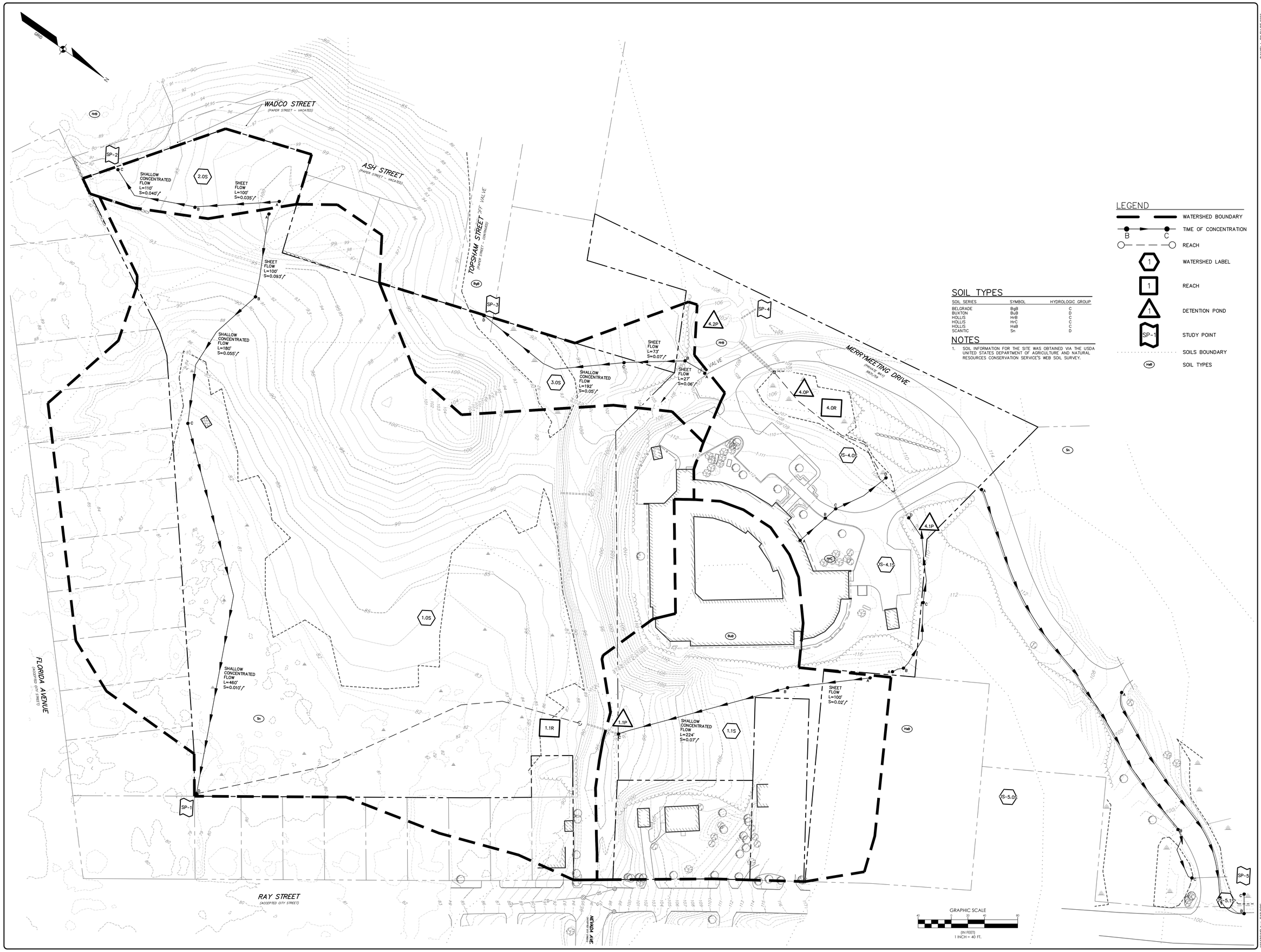
RENDERING

10/29/2019



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH
- WATERSHED LABEL
- REACH
- DETENTION POND
- STUDY POINT
- SOILS BOUNDARY
- SOIL TYPES

SOIL TYPES

SOIL SERIES	SYMBOL	HYDROLOGIC GROUP
BELGRADE	BgB	C
BUXTON	BuB	D
HOLLIS	HrB	C
HOLLIS	HrC	C
HOLLIS	HsB	C
SCANTIC	Sn	D

NOTES

1. SOIL INFORMATION FOR THE SITE WAS OBTAINED VIA THE USDA UNITED STATES DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE'S WEB SOIL SURVEY.

DANIEL L. RILEY PE 6696

STATE OF MAINE
DANIEL L. RILEY
No. 9696
PROFESSIONAL ENGINEER

07/09/2020

NOT FOR CONSTRUCTION

REV:	BY:	DATE:	STATUS:
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WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

PRE-DEVELOPMENT STORMWATER PLAN

OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

18347SWP.dwg, TAB:PRE

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 18347 Fallbrook Commons **Date:** 7/9/2020

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	IMPERVIOUS AREA TREATED (S.F.)	LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10.0S	197,762	8,676	226	167,582	21,278	21,504	176,258	NO	0	0	0	
10.1S	114,524	24,914	0	85,730	3,880	3,880	110,644	NO	0	0	0	
11.0S	83,879	0	55,667	0	28,212	83,879	0	YES	55,667	28,212	83,879	GW-1
11.1S	23,407	0	0	0	23,407	23,407	0	YES	0	23,407	23,407	GW-1
11.2S	27,173	7,890	700	9,821	8,762	9,462	17,711	YES	8,590	18,583	27,173	GW-1
12.0S	57,628	0	23,776	0	33,852	57,628	0	YES	23,776	33,852	57,628	UDSF-1
13.0S	17,204	0	17,204	0	0	17,204	0	YES	17,204	0	17,204	DL
13.1S	16,974	0	16,974	0	0	16,974	0	YES	16,974	0	16,974	DL
20.0S	10,684	0	0	10,684	0	0	10,684	NO	0	0	0	
30.0S	37,005	0	0	24,501	12,504	12,504	24,501	NO	0	0	0	
OS-40S	53,510	17,041	3,120	33,349	0	3,120	50,390	NO	0	0	0	
OS-41S	39,122	10,996	2,045	26,081	0	2,045	37,077	NO	0	0	0	
OS-50S	107,926	29,442	771	77,713	0	771	107,155	NO	0	0	0	
OS-51S	9,601	4,072	1,485	4,044	0	1,485	8,116	NO	0	0	0	
TOTAL (S.F.)	**796,399**	**103,031**	**121,968**	**439,505**	**131,895**	**253,863**	**542,536**		**122,211**	**104,054**	**226,265**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**121,968**	**TOTAL DEVELOPED AREA (S.F.)**	**253,863**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**122,211**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**226,265**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**100.20%**	**% OF AREA RECEIVING TREATMENT**	**89.13%**

SOIL TYPES

SOIL SERIES	SYMBOL	HYDROLOGIC GROUP
BELGRADE	BgB	C
BUXTON	BuB	C
HOLLIS	HrB	D
HOLLIS	HrC	D
HOLLIS	HsB	C
SCANTIC	Sn	C

NOTES

1. SOIL INFORMATION FOR THE SITE WAS OBTAINED VIA THE USDA UNITED STATES DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE'S WEB SOIL SURVEY.

LEGEND

WATERSHED BOUNDARY
TIME OF CONCENTRATION
REACH
WATERSHED LABEL
REACH
DETENTION POND
STUDY POINT
SOILS BOUNDARY
SOIL TYPES

GRAPHIC SCALE
(IN FEET)
1 INCH = 40 FT.

DANIEL L. RILEY PE 6696
STATE OF MAINE
DANIEL L. RILEY
No. 9696
REGISTERED PROFESSIONAL ENGINEER
07/09/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS MADE TO THIS PLAN WITHOUT THE WRITTEN AUTHORIZATION OF SEBAGO TECHNICS, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite E
South Portland, ME 04106
Tel: 207-200-2100

POST-DEVELOPMENT STORMWATER PLAN
OF
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE

FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

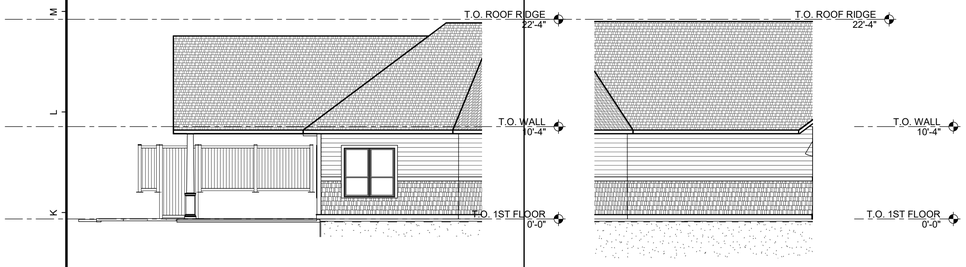
DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

18347SWP.dwg, TAB:POST

SHEET 24 OF 24

N1 EXTERIOR ELEVATION 1

1/8" = 1'-0"



J1 EXTERIOR ELEVATION 2

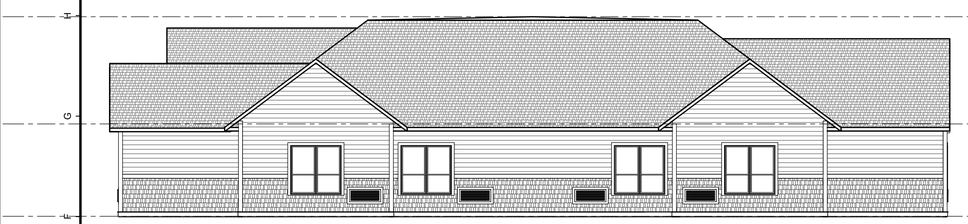
1/8" = 1'-0"

J5 EXTERIOR ELEVATION 3

1/8" = 1'-0"

J9 EXTERIOR ELEVATION 4

1/8" = 1'-0"



E1 EXTERIOR ELEVATION 5

1/8" = 1'-0"

E9 EXTERIOR ELEVATION 6

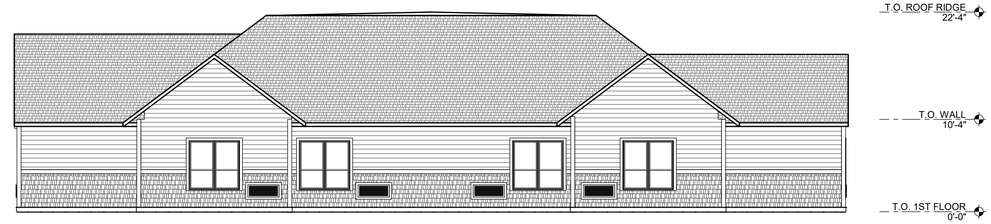
1/8" = 1'-0"

E18 EXTERIOR ELEV. 7

1/8" = 1'-0"

A1 EXTERIOR ELEVATION 8

1/8" = 1'-0"



A11 EXTERIOR ELEVATION 9

1/8" = 1'-0"

5/21/2020 9:30:00 AM MRP

29 BLACK POINT ROAD
SCARBOROUGH, MAINE 04074
207-883-6307
WWW.GAWRONTURGEON.COM

GAWRON TURGEON ARCHITECTS, P.C.

FALLBROOK COMMONS

TBD Ray Street
Portland, Maine 04103

REVISIONS

#	DATE	DESCRIPTION

DATE:	05.21.2020
PROJECT #	080318
DRAWN BY:	MRP
CHECKED BY:	RLD
DRAWING SCALE	1/8" = 1'-0"

SHEET TITLE

SCHEMATIC BUILDING ELEVATIONS

A401

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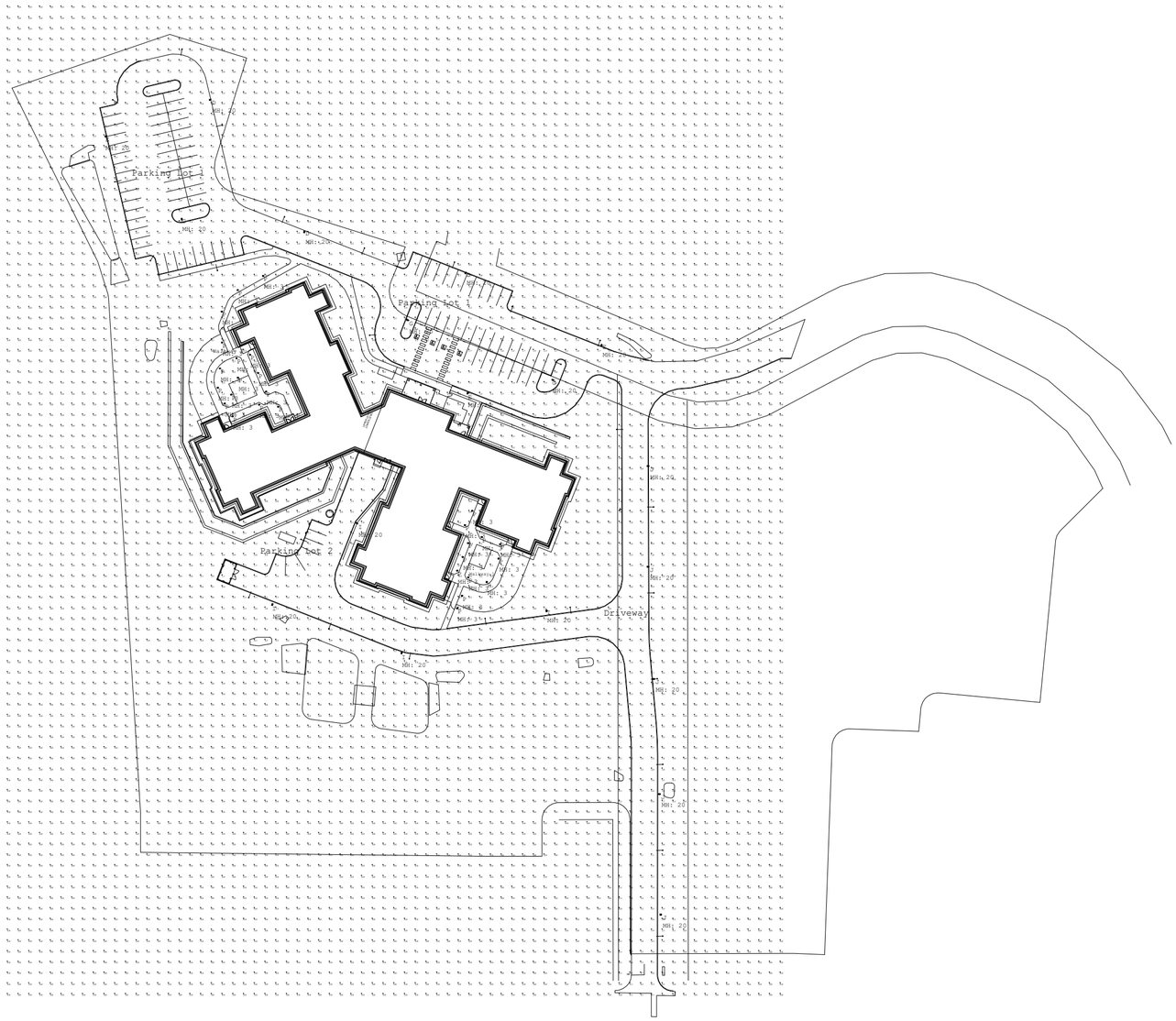


Luminaire Schedule							
Symbol	Label	Qty	Lum. Watts	Lum. Lumens	LLF	Arrangement	Description
	D	3	133.427	10544	0.850	SINGLE	VP-S-60L-136-4K7-3-BC
	E	3	133.155	14774	0.850	SINGLE	VP-S-60L-136-4K7-4W
	G	3	135.388	15071	0.850	SINGLE	VP-S-60L-136-4K7-5W
	I	4	135.383	15344	0.850	SINGLE	VP-S-60L-136-4K7-3
	J	5	133.829	11577	0.850	SINGLE	VP-S-60L-136-4K7-2-BC
	P	28	26.9	941	0.850	SINGLE	FN2-12LU-4K-XX

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Driveway	Illuminance	Fc	2.75	6.8	0.6	4.58	11.33
Parking Lot 1	Illuminance	Fc	1.83	4.7	0.5	3.66	9.40
Parking Lot 2	Illuminance	Fc	2.36	5.9	0.7	3.37	8.43
Property Line	Illuminance	Fc	0.00	0.1	0.0	N.A.	N.A.
Walkway 1	Illuminance	Fc	3.08	23.7	0.1	30.80	237.00
Walkway 2	Illuminance	Fc	2.39	26.5	0.0	N.A.	N.A.

Note:

Calculation Grid (10ft x 10ft) @ Ground Level.

Luminaire mounting heights are noted on each Luminaire Label.

100 0 50 100 200 400

1 Inch = 100 - FT.

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

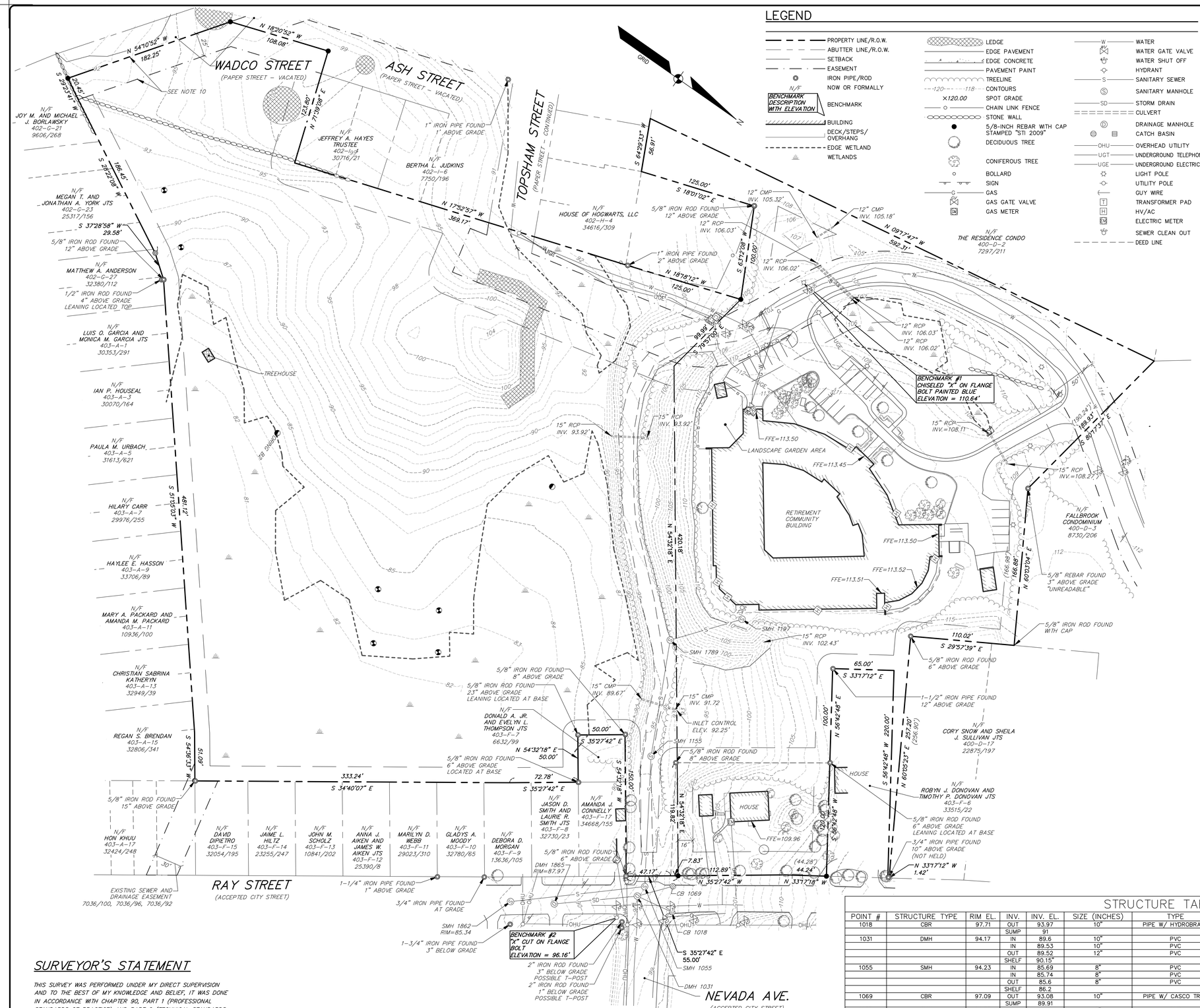
PHOTOMETRIC PLAN

Fallbrook Health Center

REVISED FROM DRAWING NUMBER(S):	
19-25238	
19-25238(R1)	

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

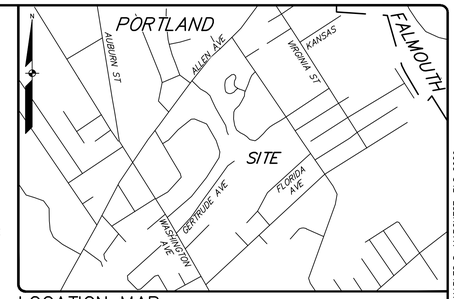
DN BY:	DATE:	CHK BY:
Kalyan	11-06-2019	Heath
REV. BY:	DATE:	SCALE: AS NOTED
QUOTE: N/A	DRAWING / DESIGN NO.: 19-25238(R2)	



LEGEND

- PROPERTY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- SETBACK
- EASEMENT
- IRON PIPE/ROD NOW OR FORMALLY
- BENCHMARK DESCRIPTION WITH ELEVATION
- BENCHMARK
- BUILDING
- DECK/STEPS/ OVERHANG
- EDGE WETLAND
- WETLANDS
- LEDGE
- EDGE PAVEMENT
- EDGE CONCRETE
- PAVEMENT PAINT
- TREELINE
- CONTOURS
- ×120.00 SPOT GRADE
- CHAIN LINK FENCE
- STONE WALL
- 5/8-INCH REBAR WITH CAP STAMPED "STI 2009"
- DECIDUOUS TREE
- CONIFEROUS TREE
- BOLLARD
- SIGN
- GAS
- GAS GATE VALVE
- GAS METER
- WATER
- WATER GATE VALVE
- WATER SHUT OFF
- HYDRANT
- SANITARY SEWER
- SANITARY MANHOLE
- STORM DRAIN
- CULVERT
- DRAINAGE MANHOLE
- CATCH BASIN
- OVERHEAD UTILITY
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRIC
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- TRANSFORMER PAD
- HV/AC
- ELECTRIC METER
- SEWER CLEAN OUT
- DEED LINE

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 INCH = 50 FT.



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF PARCEL ONE IS FALLBROOK PROPERTIES, LLC BY DEED DATED DECEMBER 15, 2009 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 27501, PAGE 183. THE RECORD OWNER OF PARCEL TWO IS PATRICIA A. MCDONALD AND CATHERINE E. MCDONALD BY DEED DATED JULY 7, 1989 AND RECORDED AT THE CCRD IN BOOK 8818, PAGE 50.
2. PARCEL ONE IS SHOWN AS LOT F-001 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE. PARCEL TWO IS SHOWN AS LOT F-005 ON THE CITY OF PORTLAND TAX MAP 403 AND IS LOCATED IN THE R-3 RESIDENTIAL ZONE.
3. SPACE AND BULK CRITERIA FOR THE R-3 RESIDENTIAL ZONE ARE AS FOLLOWS:

MINIMUM LOT SIZE:	6,500 SQUARE FEET•
MINIMUM STREET FRONTAGE:	50 FEET•
MINIMUM FRONT YARD:	25 FEET•
MINIMUM SIDE YARD:	16 FEET•
MINIMUM REAR YARD:	25 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET
MAXIMUM LOT COVERAGE:	35%

• SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL ONE IS APPROXIMATELY 12.78 ACRES. TOTAL AREA OF PARCEL TWO IS APPROXIMATELY 19,573 SQUARE FEET OR 0.449 ACRES.
5. BOUNDARY INFORMATION FOR PARCEL ONE IS AS DEPICTED ON PLAN REFERENCE 6A, SEBAGO TECHNICS, INC. HAS NOT PERFORMED AN INDEPENDENT BOUNDARY RETRACEMENT SURVEY. BOUNDARY INFORMATION FOR PARCEL TWO IS BASED UPON AN INDEPENDENT BOUNDARY SURVEY. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. IN MAY OF 2019 AND IN JULY OF 2019.
6. PLAN REFERENCES:
   A. "PLAN OF LAND OF FALLBROOK WOODS ON RAY STREET, PORTLAND, MAINE PREPARED FOR OWNER OF RECORD FALLBROOK, INC., 7 SHADY LANE, FALMOUTH, MAINE" BY LAND USE CONSULTANTS, DATED SEPTEMBER 25, 1992 AND REVISED THROUGH OCTOBER 9, 1992 AND RECORDED AT THE CCRD IN PLAN BOOK 193, PAGE 248.
   B. "CONDOMINIUM PLAT III FOR FALLBROOK, A CONDOMINIUM ON RAY STREET, PORTLAND, MAINE FOR MERREAL CORP. BY OWEN HASKELL, INC. DATED MAY 10, 1990 AND RECORDED AT THE CCRD IN PLAN BOOK 185, PAGE 15.
   C. "PLAN OF WADCO PARK, PROPERTY OF DERRAH AND WESCOTT, WASHINGTON AVE. PORTLAND, MAINE" DATED AUGUST 1905 AND RECORDED AT THE CCRD IN PLAN BOOK 12, PAGE 17.
   D. "THE PINES, PORTLAND MAINE, OWNED BY THE A.H. CHAPMAN LAND CO., PORTLAND, MAINE, SECTION A" BY PERCY H. RICHARDSON, C.E. DATED APRIL 1925.
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NGVD29, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
8. PER STANDARDS ASCE/CI 38-02: SANITARY AND STORM DRAINAGE LINES SHOWN HEREON ARE QUALITY LEVEL C; ELECTRIC, COMMUNICATION, AND WATER LINES SHOWN HEREON ARE QUALITY LEVEL B, AS DELINEATED BY DIGSMART OF MAINE IN MAY 2019; GAS LINES SHOWN HEREON ARE QUALITY LEVEL D BASED UPON FOUND ABOVE GROUND EVIDENCE. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
9. THE LOCUS PROPERTIES AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 230051 0002 C, HAVING AN EFFECTIVE DATE OF DECEMBER 8, 1998. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
10. PER THE CITY OF PORTLAND, MAINE, ASH STREET AND WADCO STREET HAVE BEEN VACATED. THIS REVERTS THE PROPERTY LINE TO THE CENTERLINE OF THE PAPER STREETS (23 M.R.S.A. 3027). THERE MAY STILL BE RIGHTS ASSOCIATED WITH THE PAPER STREET FOR THE LOTS AS DEPICTED IN PLAN REFERENCE 6C.
11. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN SEPTEMBER 2018 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS. WETLAND FLAGS WITHIN PROPOSED DEVELOPMENT AREAS WERE LOCATED USING GLOBAL POSITIONING SYSTEMS (GPS) TECHNOLOGY CAPABLE OF DECIMETER ACCURACY.

   A VERNAL POOL SURVEY WAS PERFORMED ON MAY 6, 2019 BY GARY M. FULLERTON, CERTIFIED SOIL SCIENTIST OF SEBAGO TECHNICS, INC. THIS SURVEY CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN CHAPTER 335, SECTION 9, OF THE NATURAL RESOURCE PROTECTION ACT, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SURVEYOR'S STATEMENT

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

CHARLES D. MARCHESE, PLS 2009 — 06-04-2020

STRUCTURE TABLE

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE (INCHES)	TYPE	LOCATION (N=12)	COMMENTS
1018	CBR	97.71	OUT	93.97	10"	PIPE W/ HYDROBRAKE	7	PVC PIPE MEASURED TOP WATER
			SUMP	91				
1031	DMH	94.17	IN	89.6	10"	PVC	11	
			IN	89.53	10"	PVC	1	
			OUT	89.52	12"	PVC	6	
			SHELF	90.15'				
1055	SMH	94.23	IN	85.69	8"	PVC	9	
			IN	85.74	8"	PVC	1	
			OUT	85.6	8"	PVC	5	
			SHELF	86.2				
1069	CBR	97.09	OUT	93.08	10"	PIPE W/ CASCO TRAP	5	HOOD TRAP INSTALLED MEASURED TOP OF WATER
			SUMP	89.91				APPROX 1 FOOT SILT ON BOTTOM
1155	SMH	94.53	IN	86.47	8"	PVC	10	
			OUT	86.42	8"	PVC	3	
			SHELF	86.94				
1197	SMH	111.69	IN	103.67	8"	PVC	9	WITH DOWNSPOUT
			OUT	93.86	8"	PVC	5	
			SHELF	94.9				
1789	SMH	94.72	IN	87.24	8"	PVC	11	
			OUT	87.12	8"	PVC	3	
			SHELF	87.81				

CHARLES D. MARCHESE, PLS 2009

STATE OF MAINE — CHARLES D. MARCHESE — 10098 — REGISTERED PROFESSIONAL LAND SURVEYOR

DRAWN	CHECKED
AJS/CDM	TSL/CDM

REV.	BY:	DATE:	STATUS:
A	CDM	6-04-20	ISSUED FOR CITY REVIEW

ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel: 207-200-2100
WWW.SEBAGOTECHNICS.COM

PROPOSED DIVISION PLAN
OF:
FALLBROOK COMMONS
MERRYMEETING DRIVE
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC
217 COMMERCIAL ST. SUITE 201
PORTLAND, MAINE 04112

RECORD OWNER:
FALLBROOK PROPERTIES, LLC
418 RAY STREET
PORTLAND, MAINE 04103

PROJECT NO.	SCALE
18347	1" = 50'

SHEET 1 OF 1

18347DIV.dwg, TAB:EC1

FALLBROOK COMMONS

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE | NOTES
AR	ACER RUBRUM 'NORTHWOOD'	NORTHWOOD RED MAPLE	3" CAL
CS	CATALPA SPECIOSA	CATALPA	3" CAL
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL
MA	MAGNOLIA ACUMINATA 'DAY BREAK'	DAYBREAK CUCUMBER MAGNOLIA	3" CAL
MP	MALUS 'PURPLE PRINCE'	PURPLE PRINCE CHERRY	3" CAL
BN	BETULA NIGRA	RIVERBIRCH	10'-12' HGT MIN 3 TRUNKS
PR	PINUS RESINOSA	RED PINE	10'-12' HGT
CT	CHAMAECYPARIS THYOIDES 'GLAUCA'	WHITE CEDAR	10'-12'HGT
BP	BETULA PAPYRIFERA 'RENAISSANCE REFLECTON'	PAPER BIRCH	8'-10' HGT
CV	CHIONANTHUS VIRGINICUS	FRINGETREE	8'-10' HGT
CP	CHAMAECYPARIS PISIFERA 'FILIFERA'	GREENTHREAD CYPRESS	8'-10' HGT
PO	PICEA OMORIKA	SERBIAN SPRUCE	8'-10' HGT
JS	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	WITCHITA BLUE JUNIPER	6'-8' HGT
AL	AMELANCHIER LAEVIS	SERVICE BERRY	6'-8' HGT
VR	VIBURNUM RHYTIDOPHYLLOIDES	LEATHERLEAF VIBURNUM	3'-5' HGT
RH	RHODODENDRON 'NOVA ZEMBLA'	RHODODENDRON	3'-5' HGT
JC	JUNIPERUS CHINENSIS 'HETZII GLAUCA'	BLUE HETZII JUNIPER	3'-5' HGT
LB	LINDERA BENZOIN	SPICEBUSH	3'-5' HGT
AS	AZALEA SCHLIPPENBACHII	ROYAL AZALEA	2'-3' HGT
DL	DIERVILLA LONICERA	BUSH HONEYSUCKLE	18"-24" HGT
HAI	HYDRANGEA ARBORESCENS 'INVINCIBELLE SPIRIT'	INVINCIBELLE SPIRIT HYDRANGEA	18"-24" HGT
RP	RHODODENDRON 'PJM'	PJM RHODODENDRON	18"-24" HGT
HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" HGT
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCHGRASS	18"-24" HGT
MD	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	#5 CONTAINER
EF	EUONYMUS F. 'EMERALD GAITY'	EUONYMUS	#2 CONTAINER
CP	CARAX 'PENNSYLVANICA'	SEDGE	#1 CONTAINER
HAR	HELLEBORUS 'ANNES RED'	LENTEN ROSE	#1 CONTAINER
LS	LEUCANTHEMUM SUPERBUM 'SNOWCAP'	SHASTA DAISY	#1 CONTAINER
HPR	HEUCHERELLA 'PINK REVOLUTION'	FOAMY BELLS	#1 CONTAINER
AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 CONTAINER
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	#1 CONTAINER
DF	DRYOPTERIS FILIX-MAS	WOOD FERN	#1 CONTAINER
OC	OSMUNDA CINNAMOMEA	CINNAMON FERN	#1 CONTAINER

SEED MIX A MEDOT- PARK MIX SEED METHOD A
SEED MIX B NEW ENGLAND WETLAND PLANTS- WETLAND MIX
SEED MIX C NEW ENGLAND WETLAND PLANTS- CONSERVATION MIX

GRID

SEED MIX C (NATIVE GROUNDCOVER MIX)

VEGETATED STORM WATER TREATMENT SYSTEM

SEED MIX B (WETLAND MIX)

SEED MIX A (TURF)

PROPOSED BUILDING OVERALL FOOTPRINT

GRAVEL WETLAND TREATMENT CELL GW-

EXISTING TREE CANOPY TO REMAIN

EXISTING FALLBROOK WOODS

(44.28')

6"C.I.

OHU

GRAPHIC SCALE
0 20 40 80
1 INCH = 40 FT.

DANIEL M. DANVERS RLA 4815
LICENSED LANDSCAPE ARCHITECT
DANIEL M. DANVERS
4815
STATE OF MAINE
08/06/2020

NOT FOR CONSTRUCTION

REV.	BY:	DATE:	STATUS:
A	DMD	12-18-19	SUBMIT TO CITY OF PORTLAND
B	DMD	05-15-20	SUBMITTED FOR RESPONSE TO COMMENTS
C	DMD	05-21-20	SUBMITTED FOR RESPONSE TO COMMENTS
D	DMD	07-09-20	SUBMITTED TO CITY FOR PLANNING BOARD WORKSHOP

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

OVERALL LANDSCAPE PLAN
OF:
FALLBROOK COMMONS
RAY STREET
PORTLAND, MAINE
FOR:
FALLBROOK COMMONS DEVELOPMENT LLC.
217 COMMERCIAL STREET, SUITE 201
PORTLAND, MAINE 04112

DESIGNED	DMD
DRAWN	SRC
CHECKED	DLR
DATE	07-09-20
SCALE	1" = 40'
PROJECT	18347

SHEET 15 OF 24

18347L.dwg, TAB:OAL

Google Groups

Fallbrook woods expansion

Alison Mason <lilady371@yahoo.com> Jun 3, 2020 4:04 PM

Posted in group: **Planning Board**

To whom it concerns, Iam a neighbor to Fallbrook woods living on Ray Street across from the proposed new entrance. Iwould like to say that for a facility that prides themselves and at one time promoted themsel1.es as an animal sanctuary, the expansion would not be a good idea. Here in North Deering we enjoy living side by side our animal neighbors the deer, racoon, skunk, porcupine, hawks, and occasional coyote. The deer herd here is a good sized group who live side by side with us mostly unnoticeable.

Fallbrook woods on the other hand is very noticeable with their large engine going off a few times a day distrubing our peace and tranquility. I am thinking with this expansion the around the clock intermitten banging would only be amplified. (I am thinking this is a generator of some type that I mention here and it goes off a few times a day. It is located at the far right front of the building, close to where the proposed building is to go) The trail along side the facility has been used by many as a walking or biking path but lately as a dumping site for garbage by people walking through and left there to rot. They claim the water area at their entrance is theirs, you can clearly see how well they have managed that. Polluted and again not cared for.

I don't feel the need to say anything more as to having a business "nestled in the woods" of our household neighborhood. Perhaps a relocation for them all together would answer their need to expand. I hope they are not permitted to expand their business at the expense of the rest of the people who live here 24 hours a day 7 days a week and call this home. Our animal neighbors will be grateful as well. I am attaching a picture of the HUGE buck we have living here. He was located in the woods on Ray Street heading "home" for the night, his home is in the location of this new facility.

Thank you so very much for taking the time to read this and even more for considering the impact this expansion has on everyone around it.

Sincerely,

Alison Mason

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Fallbrook Commons, Merrymeeting Drive

Andrew Tufts <atufts@portlandmaine.gov> Mon, Jul 6, 2020 at 1:19 PM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: **Ann Acheson** <tinkeya@yahoo.com>
Date: Fri, Jul 3, 2020 at 4:53 PM
Subject: Fallbrook Commons, Merrymeeting Drive
To: atufts@portlandmaine.gov <atufts@portlandmaine.gov>

Dear Andrew,

I understand there may still be time to submit written comments regarding the new Fallbrook Commons nursing home planned to be located off Merrymeeting Drive, since an additional workshop is being planned. I am the secretary of the Fallbrook Condo Association, but am writing in my capacity as a unit owner. My comments are on the attached document.

Thanks very much.

Ann Acheson

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov
(207) 874-8724

Response to Planning Board from A. Acheson.docx
17K

Fallbrook Woods

Beth <mom21kid@aol.com> Jul 1, 2020 4:54 PM
Posted in group: **Planning Board**

Hi

I am a resident of Florida Avenue. I have lived there for 24 years. I strenuously object to the building of the nursing home / long term care facility at Fallbrook, for many reasons.including the impact on the wildlife, the paths to walk on through the woods, the atmosphere of our neighborhood, the destruction of wetlands. If the DEP isn't going to do their job to protect us, please do yours to help us and the wildlife.

This conditional use permit should not be granted - it will significantly and negatively impact the peace and quiet of our current residential neighborhood. They are trying to pull one over on us - from doing the "public meeting" in the middle of a snowstorm when the rest of the City was shut down hoping we wouldn't all attend to who knows what else they have done. This neighborhood is zoned R3 for a reason - please keep it that way!

Thank you for your consideration.

Beth Webster
47 Florida Avenue

Opposition to 60 Merrymeeting project - I am largest private landowner/abutter

B Melcher <tech@zembugroup.com> Jul 1, 2020 3:17 PM
Posted in group: **Planning Board**

Hello Planning Board!
My name is Bill Melcher and I share over 510 feet of property line with FallBrook Woods (see attached images). I am the single largest private neighbor and my residential, single-family home will be severely impacted by this proposed project.

- There are minimal (in some cases, only 8 feet!) setbacks along my property lines
- Some of the planned use is for parking. Headlights will be shining directly into my property during any hours of even semi-darkness. With three shift changes, visitors, vendors, etc. this will be a MAJOR source of disruption and change to how things are currently and will last far beyond the even more intrusive 14-month construction timeline
- Over 90% of the trees separating the properties are being removed. There are plans for them to be replaced by "plantings" - some of these are as minor as foot-tall lilies or other perennial plants or bushes. "Plantings" do not provide the shade, sound absorption, erosion control or privacy of mature trees
- No consideration has been taken for snow measures (removal or snowbanks). Plows will regularly force snow (and salt/chemical runoff) into my property during the winter when these parking spaces are cleared
- Have the standards been met for solar warming and shade of these parking lots? And are these RESIDENTIAL standards or commercial ones? It seems as though this corporation is trying to double dip - claiming they are making a residence when it comes to pleasing the Board, but then building a large retail/commercial structure with an even larger parking lot, in the middle of a classically residential, quiet neighborhood.

The above are just a few of the most major impacts I'll experience to my property. In addition, the destruction of acres of wetland are distressing to say the least. Just because they have received preliminary NERPA/DEP approval does NOT mean that they have fulfilled YOUR (Board of Planning, Portland Maine) site plan standards. HOLD THEM TO THOSE.

Adherence to city ordinances and the opinions, desires and overall quality of life of residents of Portland are YOUR RESPONSIBILITY - don't forget why you took the job of protecting your neighbors! The powerful letters of recommendation from Maine Med and others should have no more influence over your decision making than the voices of the many many residents whose lives will be negatively impacted by the proposed project.

Is Fallbrook prepared to mitigate the impact of 20 foot retaining walls, permanent removal of wildlife and flora, massive increases in traffic, blasting damage, water intrusion and things like 16,000 gallons of increased sewer usage to the abutters of this property? Will compensation be made for any damages and if so, will Fallbrook point the finger at the City for their involvement?

This conditional use permit should NOT be granted - it will significantly and negatively impact the peace and quiet of our current residential neighborhood. I do not believe they are doing all they can to preserve the overwhelmingly beautiful, irreplaceable nature features of this very large, green space. This neighborhood is zoned R3 for a reason - the Board should defend that!

This property, while considered a "residence" is in fact a long-term care facility with "24/7 access, a hair salon, gift shop and full restaurant and kitchen" - how is that aligned with the current residential neighborhood and more importantly, how does this integrate into our current COMMUNITY? It does not. Please protect us.

Respectfully,
Bill Melcher

Fallbrook Nursing Home Expansion Opposition

Brendan Regan <brendan.regan01@gmail.com> Jul 3, 2020 10:09 AM
Posted in group: **Planning Board**

Dear Portland Maine Planning Board,

My name is Brendan Regan. I've been a Portland Resident for 6 years and have owned and lived at 114 Florida Ave for the last 4 years. I'm writing this email to go on record as being OPPOSED to the Conditional Use Permit under consideration for the expansion of Fallbrook Nursing Home. The reasons for my opposition are many: Destruction of wetland and wooded habitat for local wildlife, concern about drainage at my flat, low-lying-elevation property, concern about increased traffic and public safety, concern about depreciation of property value, concern about the proposed access point being a "blind" location creating another public safety issue and being squeezed between current residential properties, and concern about increased light and noise pollution.

Overall, I'm really upset that this project is even under consideration. My neighbors and I live in an R3 zone. I chose to live here because it's a quiet, RESIDENTIAL neighborhood. I have no desire to live in a commercial area. It's my understanding that the current Fallbrook establishment was granted a conditional use permit for it's construction originally. It's current facility I must admit is "out of sight, out of mind". The current expansion project would be quite the opposite. Not only destroying wetland and wildlife habitat, but placing a parking lot requiring a retaining wall upwards of 15+ feet tall from what I've heard. That's about as tall as my home!

Should this project be approved, the facility will loom over the local neighborhood. It will be a commercial citadel on a newly formed hill! With the absolute minimum offset from property lines I might add.

On the topic of the massive parking lot, I have serious concern about drainage affecting my property. My property shares the lowest point of the area with my adjacent neighbors. The plan to direct all the run-off from the proposed IMPERVIOUS ACRES of drainage plane towards the drain at the intersection of Ray St and Penn Ave via a retention pond seems drastically insufficient and is very concerning to me. Being at such a flat, low elevation and having very dense, clay soil, my property already suffers from poor drainage. Any threat to increased drainage or flood potential could lead to property damage and/or inhospitable use of my property for many months out of the year during our wet seasons.

I can tell you from personal experience that the drain at Ray St and Penn Ave is already borderline insufficient. It's overgrown with vegetation and it gets easily blocked or restricted with branches, leafs, and other debris. Placing additional strain on it's capacity by creating acres and acres of impervious surface will most definitely cause complications. What is my recourse should Fallbrook lead to flooding of my property? This burden should not be placed on me or my neighbors after the fact.

The other complaint I'd like to focus more closely on is the depreciation of local property values. It's been estimated that property values could reduce by 5-10% based on this project. That equates to tens of thousands of dollars for EACH property in the vicinity. That's a substantial burden to be placed on local property owners, the majority of whom are owner-occupied and are your constituents!

I could continue with each topic of concern, but I'd like to summarize my view of this project and the conditional use exemption. This proposal is placing a serious unjust, undue burden on the tax-paying citizens of this neighborhood. It's in violation of R3 zoning. Fallbrook has already received an original exemption, they should NOT be granted another one. I am STRONGLY OPPOSED to this project for all my stated reasons. I find it incredibly hard to believe that St Joseph's is not capable of renovation. I find it incredibly hard to believe that Fallbrook's parent company cannot find another suitable location for a facility of this sort that is zoned properly. Alternative options are out there, they are just not being considered because it's easier to bully around local residents and flaunt the power of the dollar to supersede existing law. It's a matter of commercial gain at the expense of the local citizenry and wildlife. This is an R3 residential area and it should stay that way, no acceptions. I AM OPPOSED TO THIS PROJECT AND ALL IT'S AFFILIATED APPLICATIONS AND EXEMPTIONS! I request that you deny Fallbrook's request for any exemptions from current zoning or any other laws that are necessary to move forward with this expansion.

Sincerely,

Brendan Regan, owner-occupant
114 Florida Ave
Portland, Maine 04103

No to Fallbrook Nursing Home proposal

Christopher Havey <christopherhavey@gmail.com> Jul 16, 2020 7:55 PM
Posted in group: **Planning Board**

To Whom It May Concern,

Our family bought a house abutting the land proposed land to be built on not too long ago. The forest behind the house is what really sealed the deal and made us ok with paying what we did.

The wildlife, birds, flora, wetlands, and brooks will be highly impacted. We have to protect these valuable resources which cannot speak for themselves.

We love the quiet and close community here. People and children and dogwalkers are always out walking and biking on these streets and the increase in traffic will also irrevocably affect the character and safety of this R3 zoned neighborhood. I'm also concerned about possible flooding, and the increased light and noise pollution that comes with this type of facility on a 24 hour basis.

This project doesn't seem to meet the criteria for being an exception to the R3 zoning. Why can't they utilize the already developed property where St. Josephs sits currently. I could go on and on but I know my neighbors have already laid out my concerns so well, and I absolutely echo all their thoughtful responses.

Please protect our community and our natural resources.

Sincerely,
Christopher Havey

No to New Fallbrook Nursing Home Site.

Dana Hilt <rigoletto2@verizon.net> Jul 17, 2020 10:43 AM
Posted in group: **Planning Board**

We are new neighbors abutting the 60 Merrymeeting proposed nursing home site, and we're thrilled to purchase a home with a bit of natural woods and such a quiet back yard. We were drawn to this when purchasing, and have so enjoyed the abundance of wildlife that lives there and the quiet. The neighborhood seemed one where children could play and people were known to each other. A major project such as this one ,even if the Portland area needs more nursing homes , would change the whole character of a whole series of wooded backyards on many blocks which we believed would remain the same when we purchased the property. I am sure the original planners did not envision this as a viable plan. There are many other medical parks and sites that would be more appropriate. I am concerned that the huge increase in traffic and small streets will host so much new traffic, to make it less safe for drivers and children. There is also a school nearby; and during construction there is worry about the few who may be less concerned about the safety of children and homes than those in this tight neighborhood. Has there been proposals to adequately address these concerns? Where will the children play?
Sincerely,
Terry Hilt

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: comments project - 60 Merrymeeting Dr

1 message

Andrew Tufts <atufts@portlandmaine.gov> Tue, Jun 2, 2020 at 8:51 AM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: **Ian Pollis Houseal** <ihouseal@yahoo.com>
Date: Fri, Feb 7, 2020 at 2:40 PM
Subject: comments project - 60 Merrymeeting Dr
To: Andrews Tufts <atufts@portlandmaine.gov>

Mr. Tufts,

As an abutter to the proposed project at 60 Merrymeeting Dr. Plan Number PL-000925-2019, I would like to make the following comments on the project at this time:

1. The project is entirely too large for the neighborhood.

2. The project well exceeds the intended density of the zone. The existing nursing home facility has already clustered development to that portion of the site and this project will more than double the density.

3. The WETLAND impact is extensive and will be severely damaging on both the Florida Avenue side of the project and the fire road side of the project.

4. The project will disturb and eliminate natural spring streams

5. The project makes no consideration to the natural topography of the site. The project proposes rip-rap and erosion control blankets around the perimeter of the site which is unnecessary.

6. The project will flood basements on houses along Florida Ave because of its runoff.

7. It looks like the project will blast or have to pound the ridge outcrop at the center of the site.

8. Stormwater impacts will be excessive, flooding abutting properties and overwhelming the stormwater system to the south of Ray St. The proposed plan gives not consideration of the existing stormwater system which runs along the back of the properties along Florida Ave and the fire road.

9. There are important species in this forest including foxes, hawks, kestrels, owl, and a white deer in this forest.

10. A gravel wetland? Why not something more considerate of the site.

11. Should this project proceed, the project should obligated to connect to Gertrude Avenue and improve Gertrude Avenue, not make no reference or consideration of connecting to this street out of convenience. Gertrude Avenue connects to Washington Avenue.

Thank you,

Ian Houseal
86 Florida Avenue

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov

(207) 874-8724

Google Groups

testimony - Ian Houseal - 86 Florida Ave - abutter to application in the vicinity of 60 merrymeeting dr

Ian Pollis Houseal <ihouseal@yahoo.com> Jun 5, 2020 12:01 PM

Posted in group: **Planning Board**

Dear Planning Board,

Please see the attached testimony for inclusion in the record for the remote planning board workshop scheduled for Tuesday June 9 at 4:30 from Ian Houseal, 86 Florida Ave abutter to the proposed project in the vicinity 60 Merrymeeting Dr.

thank you,

Ian Houseal
86 Florida Ave

Ian Houseal
86 Florida Ave
Abutter

Testimony of Ian Houseal for public comments for Planning Board Workshop, Tuesday June 9, 2020
In consideration of a plan by Fallbrook Properties, LLC on a proposal for a 90-bed, 58,197 square foot nursing care facility

Dear Members of the Planning Board, please accept my comments as a citizen, property owner, and abutter to the proposed project.

1. Apparently this proposed project will be replacing the Saint Joseph's Rehabilitation and Residence facility, nearby, due to a claim that the facility has reached the end of its useful life. That 19.54 acre site, currently less than 50% developed, is affiliated with this project due to the transfer and crediting of authorized beds. In keeping with City Zoning Code, § 14-88, Conditional Use, (c) Institutional, 2. Long-term and expended care facilities, a. "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential area," the applicant must demonstrate the proposed use cannot be reasonability accommodated at the Saint Joseph's property. It is reasonable that the application demonstrate the requirement of this standard due to the corporate relationships between the developer, and the operators of these facilities. Frankly, this evaluation is practical and important to the planning function of the City in appropriately locating congregate care facilities.

2. According to the City Assessing records as of April 1, 2020, Fallbrook Properties LLC is the owner of record of this 12.62 acre parcel including the Fallbrook Woods Assisted Living Facility. As proposed by the applicant, the project will split and sell 8.28 acres to a new owner, Fallbrook Care Development LLC. Pursuant to City Zoning Code, § 14-88, Conditional Use, (c) Institutional, 2. Long-term and expended care facilities, a. "In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential area," it appears as if the applicant intends to split the lot, thereby bypassing the condition and standard required by City Code § 14-88 (c) 2. a. This is not right. The applicant must demonstrate that the proposed use cannot be reasonably accommodated on the existing site through more efficient utilization of land or buildings, unless of course the evaluation demonstrates that the site could be more efficiently utilized. Financial convenience is not sufficient for a project of this scale and magnitude.

3. Although most certainly a standard of site plan review, it is unacceptable that the proposed project does not proposed to connect to Washington Avenue via existing public right-of-ways. Gertrude Street and the so called Topsham Street public right-of-ways are streets on the official map of the City, and connectivity is a stated goal of the City's planning documents. Furthermore, this connection is stated in prior site plan approvals for development. The applicant must demonstrate that this connection is not practical, unless of course it is practical

as an evaluation would determine. Financial convenience to ignore this standard is not sufficient for a project of this scale and magnitude.

4. With regard to "significant physical encroachment into established residential area" as cited in City Code § 14-88 (c) 2. a. above, and pursuant to City Code § 14-474 (c) Conditions for conditional uses: 1. Authorized uses. A conditional use permit may be issued for any use denominated as a conditional use in the regulations applicable to the zone in which it is proposed to be located. 2. Standards. …upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district, please ensure that the application adheres to the standards and conditions listed below in its submission:

    a. With regard to Zoning Code § 14-88 (c) 2. a. above, had the proposal made consideration of these standards and conditions, a different proposal would have emerged in keeping with the standards and conditions requiring consideration of existing and surrounding uses on the site more specifically, the Saint Joseph's property and the property under deliberation, itself.

    b. With regard to City Code § 14-474 (c) 2. above, it does not appear that this application is for an expansion or amendment for capacity for concurrent operations at the property under deliberation. This application clearly appears to be for a second conditional use, separate and distinct from the Fallbrook Woods facility. This is especially disappointing in that the applicant has not considered the Fallbrook Woods facility site even though there is a corporate and currently an ownership affiliation, given that Fallbrook Properties LLC, the owner of the Fallbrook Woods facility owns the property. This is furthermore disappointing due to the failure to consider the Saint Joseph's Rehabilitation and Residence facility and the deferred maintenance that has occurred there and at the Fallbrook Woods facility and surrounding properties. The application must adhere to the standards and conditions in its application.

    c. As proposed, the application proposes a second conditional use in addition to the existing conditional use existing at the Fallbrook Woods facility, at similar size and intensity already existing on the same property or more simply stated, next door. An additional conditional use of similar size and intensity will, without a doubt, due to the fact that the existing facility is already a conditional use and therefore already exceeds the size and intensity of use allowed in the district; the new conditional use will by fact have a substantial negative impact. Such additional conditional uses would most certainly have a substantially greater negative impact than would normally occur from surrounding uses or other allowable uses in the same zoning district, specifically R-3 and the allowable uses in that district since the purpose of the conditional use permit is to mitigate the negative impact of conditional uses. For example, obviously, it would be inappropriate to permit two utility substations conditional use permits (Zoning Code § 14-88 (d) 2.) or a line of day cares in a residential neighborhood within proximity of each other. It would stand to reason that multiple daycares, multiple substations, multiple congregate care facilities would be better located in other locations when treated as conditional uses, not in proximity to each other. Or stated as fundamental to planning, agglomerated through zoning for allowable use for reasons of business benefit including

such as activities/uses as retail, lawyers, and doctors offices. At a minimum, the Planning Board is obligated to require that the second conditional use consider the first conditional use, if it was to be permitted it at all in consideration of the question as to whether the application is complete. This is why the standards and conditions of the Zoning Code pertaining to conditional use exist and more particularly City Code § 14-88 (c) 2. a. and § 14-474 (c) 2. This has obviously been ignored in the application. The application must adhere to the standards and conditions in its application, as described above and consider the existing conditional use and the Saint Joseph's property.

d. Concerning site design issues as presented in the plan:

   i. Retaining Walls. As calculated from the proposed plan, retaining walls would be installed on this outcropping site to support a single floor plate. These retaining walls are calculated at 6-12 feet in height as drawn. The visual impact from the backyards of Florida Avenue homes is excessive and could be mitigated with a different configuration in consideration of the neighborhood and surrounding permitted uses and conditional uses.

   ii. Dumpster: The dumpster locations are inappropriate. The locations will be disruptive due to noise, smell, rodents, and headlights. As currently proposed, dumpster locations would be better located near the access road so as to minimize paving, site disturbance, and facilitate access and security.

   iii. Pedestrian Access: Where are the sidewalks to access Washington Avenue and Ray Street or Merry Meeting Drive? How will employees safely access this facility or for those using the facility to take a walk for exercise? This is an institutional use, is it not?

   iv. Greenspace. There are well used pedestrian and bicycle trails throughout the property that the public, outside of the immediate neighborhood uses regularly for recreation and travel to and from work, school, or shopping. What accommodations will be made to the public to encourage the occupants of this congregate care facility to be part of the community and vice versa?

   v. Parking lot: The parking area will be disruptive to the neighbors on Florida Avenue due to noise at all hours, headlights, and during shift changes. This parking lot should be relocated to the access road side of the site so as to minimize disruption.

   vi. Lighting: Lighting will be disruptive to the neighbors on Florida Ave. As proposed, the site lighting on the site will be substantially greater than roadway lighting on Florida Avenue. Of course City lighting standards require downcast lighting, but this proposed facility is on a hill and light trespass is unavoidable as the structure is currently configured. The applicant should consider other locations for the structure and paved areas and parking lots.

vii. Maintenance. It is doubtful the facility will be adequately maintained or that the management of the facility will be responsive to complaints once built. As understood, this facility will be replacing a congregate care facility on Washington Ave which has degraded due to deferred maintenance. Potholes are extensive in the parking lot and although I have heard how poor the conditions are in the facility. In light of COVID, cleanliness, corporate models for lack of attention to maintenance, what assurances will be provided that this institutional facility will not be driven to the end of its useful life when the term for maximizing profit has expired?

viii. Public dump. I am appalled that Fallbrook Properties LLC has allowed a public dump to continue for more than five years along the fire access road. Piles of trash, televisions, bed frames continually pile up and remain. I have very little confidence that this facility being proposed will be treated with respect by whoever operates in the future and I expect it to degrade quickly, especially as proposed. What quality assurances will be made to ensure the property is not neglected as it currently is?

ix. Construction staging. The staging area as shown as the parking lot will be disruptive to the neighborhood. Access from one end of the site to the other without paving will cause excessive amount of dust and noise throughout construction. Staging construction material would be more appropriate next to the access road. I am disappointed that this application even suggests this as a location for staging construction. What reaction was the developer expecting from the neighborhood?

x. Blasting. There is a substantial amount of ledge that will need to be driven or blasted as currently designed. This will disruptive for a long period of time during construction. This will cause an excessive amount of dust and noise and will continue for a long period of time.

xi. Arrangement of structures. The arrangement of the structures designed is like fitting a round peg in a square hole on this site. The proposed building and site layout is excessively over-designed (i.e. retaining walls, blasting, dumpsters, staff parking lot, lighting, gravel wetlands, etc.), placed for convenience and not considerating of its context in the neighborhood. The proposed structures make no consideration of the existing congregate care facility on the same site or abutting the proposed facility. The application makes no consideration of access to public ways including Gertrude Street. The proposal exacerbates the potential for pedestrian and vehicle conflicts at the proposed access road especially since access to Merry Meeting Lane is being discouraged.

xii. Sewage disposal. Although the project will potentially meet State Chapter 500 Standards for stormwater runoff, excessive gravel wetland area is proposed. This engineered system is more appropriate for industrial or commercial facilities on a site where site disturbance could be minimized to a greater extend without engineering controls, but due to the wetlands present on the

site, and the topography of the site, consideration has not been made for convenience. An engineered gravel wetland is inappropriate for a residential neighborhood. The gravel wetlands will need maintenance which is unlikely to be carried out and must remain free and clear of vegetation. Better site context consideration would lead to a better design and functionality.

xiii. Volume and type of traffic. Traffic generated, hours of operation, expanse of pavement, and the number of parking spaces are substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone. Although the Fallbrook Woods facility, as proposed, would be a surrounding use, by conditional use permit, the property has already exceeded a reasonable calculation of normal.

It is heartening that through the pursuit of profit, Fallbrook Properties LLC has been motivated to finally take responsibility for considering the maintenance of their property; however, it is disappointing that now that Fallbrook Properties LLC is considering the maintenance of their property, they have discovered that the way this corporation chooses to meet that end is through the sale and maximization of profit at the expense of the community.

No to 60 Merrymeeting Development

Jenirose Friedkin <jenirosa@gmail.com> Jul 16, 2020 7:24 PM
Posted in group: **Planning Board**

Dear Planning Board,

Our family recently purchased a house on Florida Ave. abutting the proposed site for the FallBrook Nursing home. Our choice of this house and decision to pay as much as we did was very much because of the greenway behind our backyard. I can not imagine that this development will not affect property values as it was absolutely why we paid as much as we did.

We have so enjoyed the quiet of this neighborhood and the relatively low light pollution. And also the abundance of birdsong. In the short time we have been here, we have seen deer, hawks, groundhogs, squirrels, chipmunks, bats, and an ever expanding assortment of birds, so many birds! The neighborhood children play in the woods, and we use it for walks. There are wetlands there ,which are a dwindling resource, and I hate to think of all the flora and fauna that will be displaced or lost due to the development. We need to preserve the green spaces we still have in our cities to be stewards for the future.

There is relatively little traffic and no sidewalks here. People are always walking their dogs, jogging , riding bikes with their kids, playing games, and suchlike on these narrow and friendly streets. The increase of traffic will be seriously significant as people rush to and from work at all hours of the day and night. Emergency vehicles and supply trucks and service vehicles as well as the noise and traffic anticipated for the construction phase will cause much disruption and are a safety concern. There also is no public transportation that regularly runs to here, and so employees and visitors will need to have cars which seems irresponsible in this time of environmental and economic distress for essential workers.

We also have a very high water table here and folks have experienced flooding in the past, the amount of run off from the newly paved area would certainly increase and the plans do not account for this level of change to water patterns. I also am concerned about how this run off will affect the creek it runs into and it's ecology.

The developer has also not been responsible in informing the community about this proposal and the change in venues to online for planning board meetings can make it difficult for many neighbors to stay informed and attend meetings. Not everyone is internet savvy or has access to the technology necessary to engage responsibly. For instance, one cannot view the published plans from an iPhone or iPad and myself and may older adults only use this sort of technology if they use it at all due to the relative ease of these devices. I only heard about the proposal through a flyer a neighbor distributed.

This area is Zoned R3 and it truly has the character of a quiet residential neighborhood. It would have to be approved as a conditional use permit and I do not believe it should be an exception. The previous St. Joseph's site is already developed and should be home to new and updated facility. I hate to have a NIMBY attitude as I have worked in social work with seniors and understand the need this is addressing, but after careful consideration I have come to believe that this is not an appropriate site for the project.

Thank you for your consideration,
Jenirose Friedkin.

Fall Brook Woods & North Deering

Jennell Carter <jennell.carter@gmail.com> Jul 1, 2020 8:07 PM
Posted in group: **Planning Board**

Dear Portland Planning Board Members,

Thank you for listening to the potential benefits and negative impact that the expansion of Fall Brook Woods may bring to the city of Portland and specifically to the neighborhood in North Deering.

I have been a homeowner in this neighborhood for 12 years. I moved to this neighborhood because it was walkable, there is minimal traffic outside of neighbors moving to and fro. My partner and I were drawn to neighbors outside walking, old, young families, kids on bikes riding in the streets. It was reminiscent of the neighbors we each grew up in.

We have gone through the updates to the re-routing of the actual brook of Fall Brook and St. Joseph's Manner. We have benefited from the enhanced traffic pattern by removing the entrance on Maine Avenue and seeing the reduction of traffic help keep our neighborhood a safe walkable neighborhood. We do experience 53 ft tractor trailers traveling down our road on occasion when they miss the entrance and you feel the vibration in your home.

Additionally, we saw wildlife return as they use the once paved entrance off of Maine Ave as a corridor that connects them from the actual Fall Brook into Copley Woods and then in the wooded areas surrounding the Quarry Run as well as the powerline off of Ledgewood where wildlife have some sort of habitat in greater Portland.

Our homes were predominantly built in the 1920s and 1930s. Many are from Sears Kit homes - they have great bones, lots of character and represent the working families that reside within. We purchased these homes to live in a family centric neighborhood, with trails, sidewalks, limited commercial traffic and the beauty of the natural environment including trees well over 100 yrs old.

It is easy to overlook these assets that we drive by each day but the reality is, trees these old, wildlife corridors, neighborhoods that promote community and engagement amongst neighbors are rare - in fact these are buzz terms that are used to assist in getting permits to meet certain criteria for permitting; however, they actually exist - not in theory but in everyday life in our neighborhood.

I have a Master's Degree in Community Planning and Development and all too familiar with NIMBY - but I think that sometimes we overlook the character and the existence of the community that is so very hard to recreate through the planning and permitting process.

It is my belief that as members of our community we need to provide housing and medical facilities for all of our community members. But I also think that we need to provide equal consideration for the wildlife, the natural environment and the people and the community that exists and weigh the impact (either good or negative).

We need to protect our very limited green space that exists in Portland. The land that Fall Brook Woods would like to develop is adjacent to some of the larger contiguous parcels of land that connect - creating a safe and necessary environment for wildlife, wetland and water run off.

Yes, I have concerns about traffic patterns, home values, man made features such as large parking lots, tall street lights in the parking lots, loss of trees but the reality is - what will be affected are people, the community the exists, their foot traffic patterns that drive daily social engagement and for those that we all need to speak up for - the wildlife, trees, and natural vegetation.

Thank you for listening. I encourage you to come visit our neighborhood, park your cars and take a walk. You just might be surprised to witness the community that exists in our neighborhood.

Sincerely,
Jennell

Jennell Carter
146 Maine Avenue
Portland, ME 04103
207-252-5910

Proposed Fallbrook Commons

Lee Ann Whitney <leeanninmaine@gmail.com> Jul 8, 2020 6:00 PM
Posted in group: **Planning Board**

To All Members:

I am writing to you at this time to express my strong opposition to the proposed twelve acre Fallbrook Commons development on Merrymeeting Drive. I live in the Fallbrook Woods Condominiums that are located at 1 Merrymeeting Drive. There are twenty eight units here in this quiet, residential area. At the present time we share the road with the Fallbrook Woods Assisted Living (Memory Care) facility that is just down the road from my Unit #1. The traffic is usually minimal with the exception of the very large delivery trucks and fire and rescue vehicles that frequent the road. Sadly, this quiet road would become the one and only route into both Fallbrook Woods and Fallbrook Commons if this project is approved. Originally, the route to the Commons had been from Ray Street but that was changed, apparently due to vehicle safety concerns. The problem that the developers faced was easily solved by simply changing the entrance to Merrymeeting Drive!

Since being informed of these plans, I have decided to scope out the area surrounding my neighborhood that would also be impacted. I have walked on Ray Street, Florida Avenue and Gertrude Avenue. I have spoken to the owners of the condominiums at The Residences off of Allen Avenue. Surprisingly, many of the people I have spoken to are unaware of what may be coming into their neighborhoods. The families whose backyards will abut the proposed "Commons" would sacrifice their woodlands and wetlands in exchange for a six to twelve foot retaining wall, parking for 92 cars with 24 hour lighting. The lighting would impact the nocturnal environment of not only the residents on Florida but also the wildlife that might still find a habitat there after all the construction. I particularly urge you to take into consideration the issue of the wetlands. They exist everywhere in this area, and also on Merrymeeting Drive. Could this be the reason that the name Fallbrook has been assigned to these two facilities?

I must emphasize to you that these areas in North Deering are clearly residential neighborhoods! Merrymeeting would be transformed from a simple, residential road into a busy thoroughfare. Please try to imagine the volume of traffic that will pass by my condominium as well as by my neighbors" who live as I do, directly on Merrymeeting Drive: All deliveries of everything you can imagine, huge Sysco trucks, rescue and fire vehicles, all staff (nurses, doctors, CNA's, physical therapists, podiatrists, kitchen cooks and aids etc.), visitors and volunteers. As with any medical facility, there would be work-shift changes and other activities 24/7. The developers have planned eight to ten special events annually generating even more traffic. It is easy to predict that the folks on Ray Street and Allen Avenue will also be impacted by the increased traffic. During the construction phase, that is projected to last at least eighteen months, all areas will suffer, but particularly Merrymeeting Drive, the only way in and the only way out!

I have been told by the HOA board that this 12 acre plot was part of a long term plan to slowly add more condominium units. I consider there to be a massive difference between the building of more units and the construction of a two-story commercial property in the middle of a residential,wetland area. Has the term "grandfathered" somehow been attached to this proposal because of plans for more housing units made way back in 1989? If so, I feel that the history of this "Fallbrook" area should be carefully scrutinized and then perhaps there may be a legitimate decision made that the proposed Fallbrook Commons does not belong in this neighborhood. Period. Grandfathered or not.

And, what about our property values? I doubt that any prospective buyers would think twice about my condominium were they to sit in my back garden during all day delivery days, or the folks on Florida whose back areas are bordered by a huge retaining wall separating them from dumpsters, street lights and parking lots

I sincerely hope that your consciences will prevail as you further assess the reasons why this project should or should not be approved. I feel that it is likely that Fallbrook Commons for a development site. But, please, not in backyards or anywhere in a residential area such as ours.

Sincerely,

Lee Ann Whitney

Fallbrook Commons Proposal

Lee Ann Whitney <leeanninmaine@gmail.com> Aug 20, 2020 2:17 PM
Posted in group: **Planning Board**

Dear Members,

This is a follow-up to a letter that I wrote to you regarding the proposed Fallbrook Commons project that would be built in my neighborhood. I would like to emphasize my use of the word "proposed" since the prospect of this plan ever coming to fruition greatly depresses me. This feeling is shared by many of my neighbors on Florida Avenue, Ray Street, Gertrude Avenue, among others, and includes Merrymeeting Drive where I own a condominium. All of us will be negatively affected if this plan is approved for this residential part of the city.

I suspect that many of you may not be familiar with our neighborhoods here in North Deering. Although we have the very busy Washington Avenue in our midst, it is impressive how this area nestled in between Allen Avenue Extension, Ray Street and Washington Avenue remains almost rural in nature. Many homeowners have extensive gardens in their yards. Dog walkers and children enhance the neighborly atmosphere. There is a wetland along Merrymeeting Drive where families of ducks raise their families every year. Surely this would be impacted by increased traffic and the construction of a proposed sidewalk. If this plan is accepted, Merrymeeting will become the *sole* entrance to both the small, existing Fallbrook Woods and the massive Fallbrook Commons, turning it into a 24/7 throughway, only a few yards from my back deck. The developers' grand dream of a "campus" will turn my quiet home and those of my neighbors into a grand nightmare. It is such a pleasure for me to watch people from around the area walk their dogs, to see children riding their bikes and parents pushing strollers along Merrymeeting Drive! It is unbearable to think of this vanishing. A proposed sidewalk would not solve the problem. The atmosphere would be changed forever by the increased volume of construction vehicles, staff and visitor cars, delivery trucks and rescue vehicles rushing by at all hours to get to the "complex" .

This is a residential area, not a commercial area! The homeowners on Ray Street and Florida Avenue would no longer have views of their private, wooded backyards. In exchange, there will be 24 hour lighting in the 90 plus parking lot, dumpsters and retaining walls and staff headlights shining into their windows all hours of the night. Please try to imagine how it will be for them. Traffic will increase on the full length of Ray Street as vehicles approach the *main entrance* on Merrymeeting Drive from both directions. There are no sidewalks on Ray Street, creating a pedestrian hazzard. Note: There is a lot of foot traffic on Ray Street.

The way I see it, this whole project would be a disaster to this neighborhood should it be approved. I encourage all of you to take a drive out here so you can better envision how we would be impacted by this proposed project in our residential area. In closing, a huge, noisy Sysco delivery truck just passed my condo on it's way to little Fallbrook Woods. I can manage that but I can easily imagine the future here with a massive Fallbrook Commons installed back there in those pristine woods. Maybe it would be time to think about moving since I foresee the value of my home will decrease considerably. Please don't let this proposed development happen!

Sincerely,

Lee Ann Whitney
1 Merrymeeting Drive.
Portland, ME 04103
207-699-8900

Fallbrook property development at Merrymeeting Dr.

LK Weiss <lk@portlanddesignco.com> Apr 8, 2020 9:14 AM
Posted in group: **Planning Board**

To whom it may concern,

Seven months ago, my wife and I purchased our first home together here on Ray St in Portland. Despite the prices being 1/3 higher than surrounding towns, we dug deep and chose this neighborhood because it's a quiet suburb with little traffic, lots of kids, wildlife, wooded trails, friendly neighbors with dogs, and a really sweet neighborhood feel. Within our first month of living here, we saw a doe, a pack of coyotes, and several fox. Just 10 minutes from downtown! It's the "last frontier" of Portland.

And we're passionate about keeping it that way.

We recently received a notice informing us of the proposed Fallbrook Development. A 90-bed nursing care facility on 13 acres of land which is currently home to multiple species of wildlife. In addition to what's listed above, turkeys, owls, hawks and eagles, woodpeckers, tree frogs and more call this area home.

Not only will it interfere with wildlife, it will have a major impact on traffic, the safety of children and pets in our neighborhood, and it could drastically impact the value of our homes and properties. The runoff from the proposed large parking area would have ramifications on area streams and ponds with winter salts and chemicals.

This isn't the right neighborhood for this kind of development, and would only benefit the developers—not the constituents who are investing in this neighborhood and city. It's not about keeping things the way they are forever. We know this city is growing and changing (I was born and raised here, and have seen it change so much in 40 years). While the downtown/peninsula areas continue to develop and expand with drab brick box hotels and corporate offices, the suburbs are the last bit of what drew people here in the first place. There are enough cities overtaken by stripmalls and retirement condos. Keep our neighborhoods in tact, and the wildlife in our city.

We are very much against this development moving forward.
Thank you for considering,
LK and Laura Weiss
305 Ray St. Portland

PORT LAND
DESIGN Co

LK Weiss
Founder & Creative Director

142 High St. Suite 415, Portland, Maine 04101
PortlandDesignCo.com

Google Groups

Fallbrook Woods Expansion

Louise Stone <stoneruks@maine.rr.com> Jul 7, 2020 3:38 PM
Posted in group: **Planning Board**

Hello, I am a resident of Virginia St. and very concerned about this quietly evolving detrimental project. I am opposed to the 60 Merrymeeting/Fallbrook Expansion project and think the R3 zoning should be upheld. This project does not support the clearly residential nature of this neighborhood. Every square inch of wetlands and woodlands in our city should be left alone. There are other places to build within the city that would do less damage. Paying a fine does not appear to be a deterrent which should also be reviewed.

Louise Stone
131 Virginia St.
Ptld. 04103

Portland Maine Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Opposition to the construction planned by fallbrook properties

Andrew Tufts <atufts@portlandmaine.gov> Wed, Feb 26, 2020 at 3:00 PM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: **Luis Garcia MD** <luis.garciamd2@gmail.com>
Date: Mon, Feb 24, 2020 at 5:20 PM
Subject: Opposition to the construction planned by fallbrook properties
To: <atufts@portlandmaine.gov>
Cc: MONY WIFE <monygarcia2@yahoo.com>

Hello Mr. Tufts, my wife and I want to reach out to express our complete opposition to the construction fallbrook properties is planning (plan number PL-000925-2019). The deleterious effect on flora, fauna, our environment and possibly on all our property values are simply unacceptable. The great majority of our neighbors hold the same sentiment and will oppose this project by any legal means available to us.
My wife and I would like to know where the city stands on this issue, we would also like to be informed of any meeting and/or hearing which is planned or already scheduled on this matter. I thank you for any assistance you can provide to my wife and I, as well as to our neighbors.

LUIS GARCIA, M.D.
MONICA GARCIA
80 FLORIDA AVE, PORTLAND

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov
(207) 874-8724

Against development of fallbrook woods behind our house

Luis Garcia MD <luis.garciamd2@gmail.com> Jul 1, 2020 4:36 PM
Posted in group: **Planning Board**

"I share a property line with FallBrook woods. Our property will be severely impacted by this proposed project.

- There are minimal setbacks on our property lines

- Some of the planned use is for parking. Headlights will be shining directly into my property during any hours of even semi-darkness. With three shift changes, visitors, vendors, etc. this will be a MAJOR source of disruption and change to how things are currently and will last far beyond the even more intrusive 14-month construction timeline
- The builder and owner both plan on placing the GARBAGE DUMPSTERS behind our property. That is utterly unacceptable!! This development will bring an increase in the population of insects and rodents which create a health hazard to all of us.
- Over 90% of the trees separating my property from theirs are being removed. There are plans for them to be replaced by "plantings" - some of these are as minor as foot-tall lilies or other perennial plants or bushes. Plants do not provide the shade, sound absorption, erosion control or privacy of mature trees

- No consideration has been taken for snow measures (removal or snowbanks). Plows will regularly force snow (and salt/chemical runoff) into my property during the winter when these parking spaces are cleared

- Have the standards been met for solar warming and shade of these parking lots? And are these RESIDENTIAL standards or commercial ones? It seems as though this corporation is trying to double dip - claiming they are making a residence when it comes to pleasing the Board, but then building a large retail/commercial structure with an even larger parking lot, in the middle of a classically residential, quiet neighborhood.

The above are just a few of the most major impacts I'll experience to my property. In addition, the destruction of acres of wetland are distressing to say the least. Just because they have received preliminary NERPA/DEP approval does NOT mean that they have fulfilled YOUR (Board of Planning, Portland Maine) site plan standards. HOLD THEM TO THOSE.

Adherence to city ordinances and the opinions, desires and overall quality of life of residents of Portland are YOUR RESPONSIBILITY - don't forget why you took the job of protecting your neighbors! The powerful letters of recommendation from Maine Med and others should have no more influence over your decision making than the voices of the many many residents whose lives will be negatively impacted by the proposed project.

Is Fallbrook prepared to mitigate the impact of 20 foot retaining walls, permanent removal of wildlife and flora, massive increases in traffic, blasting damage, water intrusion and things like 16,000 gallons of increased sewer usage to the abutters of this property? Will compensation be made for any damages and if so, will Fallbrook point the finger at the City for their involvement?

This conditional use permit should NOT be granted - it will significantly and negatively impact the peace and quiet of our current residential neighborhood. I do not believe they are doing all they can to preserve the overwhelmingly beautiful, irreplaceable nature features of this very large, green space. This neighborhood is zoned R3 for a reason - the Board should defend that!

This property, while considered a "residence" is in fact a long-term care facility with "24/7 access, a hair salon, gift shop and full restaurant and kitchen" - how is that aligned with the current neighborhood and more importantly, how does this integrate into our current COMMUNITY? It does not. Please protect us.

LUIS GARCIA, M.D.

Fallbrook project in North Deering

Lynn Lagerstrom <stonesfan26@gmail.com> Mar 11, 2020 9:53 AM
Posted in group: **Planning Board**

March 9, 2020

Dear Sir/Madam:

I would like to add my voice to the concern regarding the Fall Brook Nursing Home. While I understand the need for such a facility I don't believe this is the best location for it.

Portland has grown by leaps and bounds and in the process so many woodlands and waterways have been taken over and eliminated. This neighborhood is so fortunate in having rare wetlands and deep woods for all sorts of wild animals not to mention all the many variations of wild birds. There are turtles and frogs in these woods and wetlands that are fast becoming dangerously close to endangered in Maine. There are also many walking trails that connect throughout Portland and Falmouth.

Also, as many of us who live here are aware, there is an underground stream right through the whole area and there is a lot of flooding because of it. My own cellar once had over two feet of water during a rain storm some years ago and that is when I first heard of the stream. Some people, in the houses on the end of Florida Avenue, can even hear the stream running when the water is high. Some areas of the street have even sunk in a little here and there which shows that the ground may not be quite secure for heavy building and construction to say nothing of the blasting. It is one thing to build a small family home in this area but a huge multi-level building will be quite another matter altogether.

I ask you all to please reconsider destroying all this wild beauty for a plan that might not even work out in the long run. These woods and wetlands are important to the ecology and I don't believe it is the proper place for a nursing home and huge extended parking lots. It will also increase the traffic and that will further devastate the whole area.

Thank you very much for your consideration of this matter.

Sincerely,

Lynn Lagerstrom

57 Florida Avenue

Portland, ME 04103

June 23, 2020

Ladies and Gentlemen of the Planning Board Re:Fallbrook Project

I would again like to express my concern regarding the Fall Brook Nursing Home.

Our neighborhood has wonderful nature trails and wetlands that many in Portland enjoy and I'm sure you know that areas like these are fast disappearing in the Greater Portland area. They are home to a multitude of wildlife and birds and water creatures and we should all be banding together to protect them and not tear this land asunder for still more building when we already have an existing structure that could be utilized. I continue to hope that something can be done to build on to the already existing nursing home site off Ray Street and Washington Avenue - the two access roads that currently serve this site and would greatly minimize construction and impact on this quiet neighborhood.

Also, much of this neighborhood is built on ledge and there is an underground stream right through the whole area and at times this causes flooding. Some areas of the street have even sunk in a little here and there which shows that the ground may not be quite secure for heavy building and construction to say nothing of the blasting. My neighbors and I are very concerned about the blasting, noise, excess traffic flow and the mud, dirt and dust caused by heavy construction. Some of us are retired and on the older side and the idea of this whole thing is very stressful to us.

These woods and wetlands are very important to the ecology and I feel that we should be trying to keep and protect them instead of going forward with this very destructive and invasive project. Please remember all our fears and concerns when you meet to consider this project.

Thank you very much for your consideration of this matter.

Sincerely,

Lynn Lagerstrom

Lynn Lagerstrom

57 Florida Avenue

Portland, ME 04103

Google Groups

Fallbook Commons expansion

martha maury welty <mwelty65@gmail.com> Jul 4, 2020 10:09 AM
Posted in group: **Planning Board**

Having recently moved to a condo at Fallbrook, we're distressed to learn of the proposed 90 bed nursing home to be built in our neighborhood.

We moved here for the woods and wetlands and all the wildlife they provide.

We thought we would continue to enjoy the area unchanged, since it was zoned residential. I'm not sure I understand zoning, if a corporation can be allowed to come into residential neighborhood when it's clearly against the rules.

Our other concern is enlarging an existing nursing home, at a time when we know these places are incubators for disease. Smaller establishments seem much more practical.

Thank you for your time and consideration.

Sincerely,
Martha and Charles Welty
4 Merrymeeting Dr
Portland, Me 04103

Mike and Deb Denbow
69 Florida Ave, Portland, Maine
207-899-0053 (mdenbow@maine.rr.com)
Portland, Maine 04103
03/15/2020

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

Dear Portland Maine Planning Board:

My wife and I own property at 69 Florida Ave in Portland. We purchased our home over 20 years ago for the location and neighborhood quality the location brings to this portion of Portland. The wooded land, lack of traffic noise buffered by the trees, wildlife that have been evident throughout our years here, give this area a country atmosphere. This neighborhood is a vast mix of young and older adults, young families with small children, single adults, and retirees. The sense of community has always been in place and most have felt it to be a great place to live, until lately.

The recent notification and meeting with the proposed builders of Fallbrook LLC about a large-scale skilled nursing facility that will be built in a wooded section abutting our neighborhood has changed the dynamics of the once calm neighborhood. At a meeting with Fallbrook LLS., it was stated by the designers and owners the project will be built with the cooperation from Maine Medical Center. The reasoning for this is Maine Medical Center does not wish to be in the nursing home business any longer and is looking for placement of the people who currently reside at St Joseph's Manor. Fallbrook LLC with the cooperation of Maine Medical Center has decided to build a facility to accommodate this by building a facility that will completely remove the wooded section in the neighborhood, covering wet lands, and placing parking lots up to the allowed distances from property lines. It was indicated in this meeting there would be no compromise. Representatives stated building would start as early as June of this year, they changed this quickly to October of this year when questioned further at the meeting.

Unfortunately, families in the neighborhood are quickly selling their homes to avoid the anticipated approval by city planning board for this immense construction project. They along with the rest of us here feel this will not only change the neighborhood, but will have significant impact on land, housing values, drainage, wildlife, wetlands, noise, traffic, safety, and loss of community. Because Maine Medical Center, who owns St Joseph's Manor, does not wish to be in the nursing home business and wishes to convert their existing nursing home into something else, our neighborhood may have to pay the price.

Throughout this letter I would like to address several, but not all issues that will follow this project.

Stress-

> Several families have considered and two families have already moved from our street due to the location and magnitude of this project. Their homes would have directly abutted the parking lot of the new Fallbrook project. One of the families was at the meeting at Fallbrook where the design members and Fallbrook members had no problems or issues stating the project will not change, all the trees will be cut down on the land, the parking lot and building area will be brought to within 25 feet of property lines. Blasting will occur for several months during excavation, construction noise, traffic will increase causing more stress and agitation. It was clearly stated by the representatives of Fallbrook LLC. our neighborhood will have no problems with this in 2-3 years and would accept it. This has been causing significant stress in the area.

Safety

Several areas of concern will be noted here, but the list is substantially larger. General Construction, traffic both immediate and future, fire and rescue, will be addressed. Topics such as hazardous materials, hazardous waste, sewage will be discussed at a later times.

> General construction combined with added traffic will increase potential for accidents. Some adults walk the paths out back with their dogs and children. There are children who now play in the wooded area behind the homes. Flammables, construction equipment, explosives, are just a few concerns.
>
> Construction traffic will increase on Ray St with the entry to the Fallbrook LLC designers and staff state will be off of that street below a blind hill. Traffic coming in from Allen Ave will have a very high potential for accidents to occur at the entrance to the facility due to that very blind hill. Traffic on Maine Ave and side streets will increase due to traffic flow traveling northbound on Washington Ave, they will do what most travelers do, cut through to avoid Allen Ave. Unless the city of Portland authorizes the reduction of the hill prior to the new Fallbrook entry I feel there will be significant liability if the city approves this entry. I know I will be the first to testify that the city has been warned about this. Fallbrook Condominiums has already stated they do not want any of the construction or future employees or visitor traffic to travel on Merrymeeting Drive.
>
> After the construction is completed work day traffic in and out of the facility using the proposed roadway will cause the same safety issue as construction equipment. This was brought to the engineers and staff at the Fallbrook meeting in February. Their reply was there was not going to be that much employee or visitor traffic in or out. After prompting for estimates for employees daily it was between 50-70 during the day, this does not

count the night and middle shift staff, or visitors to the facility. When this was broached the only response given was “They can take public transportation”. I would like to point

out the increased traffic concern is not only by employees and guests, but also by delivery trucks and such that deliver at different times of day and night.

Fire and Rescue will have a traffic flow and safety concern. In the event of a large-scale fire or alarm numerous pieces of fire apparatus will be called to the facility to handle an emergency. The only entrance being that off of Ray St and below a blind hill. The road leading to the facility will not be adequate to handle these apparatuses. It would be prudent to have the facility look at a different entry off of Washington Ave where entrance and egress is easier and safer for everyone involved.

Increase in drainage issues and Mosquito’s

Currently the undeveloped land absorbs most of the water. Houses along the border of the proposed building area do have some flooding but is fairly well controlled by the make up the property. The proposed building site will remove most of the trees and land mass and replace it with a building or tarred section of driveway that will hold at least 90 or more vehicles. This will increase the potential for large amounts of run off that would normally be absorbed by the forested area. Engineers and staff form the Fallbrook LLC project stated that run off ponds would be used to control this. They could not effectively answer where that water would be directed afterward. They were also asked how the potential of increased mosquito habitat would be handled. The answer was that was not their concern.

Wildlife and Wetlands

This area has a population of deer and fawns, fox, coyotes, racoons and their kits, hawks, owls, turkeys, ducks and ducklings, bats (that eat the mosquitos), tree frogs, migratory birds, and the list goes on. Removing this environment will significantly impact the ecological balance of the wildlife that calls this home. There is nearly 1 acre of wetlands on the property that the designers have stated they will build over, there are vernal pools, along with streams both above and below ground. Removal of this land will not only impact the environmental balance but will also cause more noise pollution currently abated by the trees and current land configuration

Housing Values

Speaking to real estate agents, building this facility in the manner that is proposed will affect house and property resale later with a 5-10 percent reduction in value.

There are significant more issues that can be addressed by this letter, ie zoning and such but I will stop at this time. I will ask the planning board to review this letter along with

letters and emails from the rest of the neighborhood and ask yourselves, would you want this in your back yard? Most of us do not.

My wife and I hope the Portland Planning Board will closely review the project and make a wise and prudent decision on its outcome. Review of the plans for the project and also looking at the existing St Josephs Manor as an alternative building site would make more financial, ecological,

and safety sense. The land there is cleared, there is a safe access to Washington Ave, and a building exists at that location already.

Thank you for your attention in this matter. We request that this e-mail be placed into the public record for the review for this site.

Mike and Deb Denbow
69 Florida Ave, Portland, Maine
207-899-0053 (mdenbow@maine.rr.com)

Google Groups

Merrymeeting Drive - 60 (Fallbrook Commons)

Michaela Veillette <michveillette@gmail.com> Feb 25, 2020 2:09 PM
Posted in group: **Planning Board**

To Whom It May Concern,

I am writing against the proposed Site Plan PL-000925-2019 - Main Parcel 400 D023001 - 60 Merrymeeting Drive.

This proposed facility would have direct **negative** impacts on our neighborhood:

- Increasing traffic flow
- Impact the surrounding wildlife and ecological value of the land
- Lower the value of our homes
- Reduce residential privacy
- Increased light pollution

As part of the North Deering community, I ask that you remain mindful of our neighborhood's best interests by voting against this request.

Sincerely,

Michaela Veillette
72 Florida Ave, Portland, ME 04103

Google Groups

Merrymeeting Drive - 60 (Fallbrook Commons)

Michaela Veillette <michveillette@gmail.com> Mar 12, 2020 9:46 AM
Posted in group: **Planning Board**

To Whom it May Concern,

I am writing against the proposed Site Plan PL-000925-2019 - Main Parcel 400 D023001 - 60 Merrymeeting Drive.

This proposed facility would have direct negative impacts on our neighborhood:

- Increasing traffic flow
- Impact the surrounding wildlife and ecological value of the land
- Lower the value of our homes
- Reduce residential privacy

As part of the North Deering community, I ask that you remain mindful of our neighborhood's best interests.

Sincerely,

Michaela Veillette
72 Florida Ave, Portland, ME 04103

Portland Maine | Yes. Google's good here.

Jennifer Munson <jmy@portlandmaine.gov>

Fwd: Fallbrook Project North Deering

Andrew Tufts <atufts@portlandmaine.gov> Wed, Feb 26, 2020 at 3:00 PM
To: Jennifer Munson <jmy@portlandmaine.gov>

---------- Forwarded message ---------
From: <MDENBOW@maine.rr.com>
Date: Mon, Feb 24, 2020 at 12:12 PM
Subject: Fallbrook Project North Deering
To: atufts@Portlandmaine.gov <atufts@portlandmaine.gov>

Thank you Mr. Tufts for speaking with me today- you were very informative and helpful.

As you may remember our conversation today surrounded the proposed project off of Ray Street by Fallbrook Properties, LLC and their 90 Bed Skilled Nursing Facility that is proposed to be built. Some of us in the neighborhood received notice of a meeting with the engineers and facility on week prior to the meeting date, some did not receive any notice. At this meeting the engineers explained their plan of building, starting in June, the intent to cut all of the tress located on the property down, their intent to build and place parking lots and building up to the 25 foot set back, entrance to the facility to be placed on a very hazardous location at the base of a hill on Ray Street, and their lack of concern for the integrity of the neighborhood. As you may suspect the neighbors and people at the meeting were not pleased with the proposal.

Due to the environmental impact of the project, concern for loss of property values due to the type and size of the project (Minimal of 5-10 percent loss), traffic safety, and overall apparent disregard for the abutting neighbors may of us are extremely upset with this proposal. If possible I would like to be advised of any upcoming meetings with the city planning committee well in advance so the neighborhood may participate and view their concerns and opinions. I would also like to have the contact person that I may sent a FOIA (Freedom of Information Act) request to if needed.

I really do appreciate you help in this.

Thank you again.

Mike Denbow

69 Florida Ave, Portland, Maine 04103

mdenbow@maine.rr.com

207-899-0053

--
Andrew Tufts
Planner
Planning and Urban Development Department

389 Congress Street 4th Floor
Portland, ME 04101
atufts@portlandmaine.gov
(207) 874-8724

Google Groups

Fallbrook Project North Deering

MDENBOW@maine.rr.com <MDENBOW@maine.rr.com> Apr 26, 2020 10:14 AM
Posted in group: **Planning Board**

Hello Andrew,

I hope you have been well, safe, and not out and about in public. I have been watching the Planning board agenda for the Fallbrook Project to be announced. There have been no notifications at all about the date and time of the meeting. I have been noticing orange tape on some of the trees bordering the properties that will be directly effected by this project, the ones with parking lots going right up to their property lines. MANY in our neighborhood WANT to make sure that our voices and concerns are not only listened to but acted upon. We do not want to miss a meeting at all, we do not want the meeting to suddenly appear on the agenda the day before it happens, and we want to be prepared for it.

I have several questions in regard to this-

1) How much notice will be given for the meetings for Falbrook planning board/public involvement and monitoring
2) How will the public be notified of these meetings and insure that we as a neighborhood have plenty of notice to prepare for them
3) Can Fallbrook or its designers or contractors begin to build or prepare for the project before any approval is given by the planning board and if so, how much can they do.
4) Neighborhood recourse if the Fallbrook project starts w/o consent of the planning board
5) Zoning questions- who do we speak to to insure the project falls under the proper zoning- looking at the zoning area, I do not believe it does.
6) Where the meetings may occur on Zoom, what is the max participants the meetings may have. I want to make sure that all who have a say in the matter, who want to speak or attend, may do so.
7) Where can I find information on who actually is currently sitting on the planning board and who will be making decisions about this project.

I appreciate the assistance you gave to me when this first started. I know you are probably buried in upcoming events. Stay safe, stay well.

Mike Denbow
69 Florida Ave, Portland Maine
mdenbow@maine.rr.com
207-899-0053

Fallbrook Properties, LLC Plan Number PL-000925-2019

Paul Cournoyer <setsail34@gmail.com> Mar 6, 2020 3:14 PM
Posted in group: **Planning Board**

Hi Andrew,

RE: Fallbrook Properties, LLC Plan Number PL-000925-2019

We are residents of Fallbrook Condominiums located on Merrymeeting Drive, which is the location of the proposed 90 bed facility at 60 Merrymeeting Drive. We attended the February 18th informational meeting hosted by Fallbrook Properties and Sebago Technics. Here are our comments relative to the proposed project, which we ask are taken into consideration during the City's review of the proposal. We understand that a public hearing will be scheduled in the near future but we will be on travel for awhile and may not be able to attend:

- Our understanding is that Fallbrook Properties intends to continue to utilize Merrymeeting Drive as the main entrance for Fallbrook Woods and the new entrance across from Nevada Avenue as the main entrance to Fallbrook Commons. If so, we disagree with this approach - the sole primary entrance for both facilities should be across from Nevada Avenue and Merrymeeting Drive should be the service/emergency vehicle ingress access.
    - This is a concern based on the estimate of ~100 employees who will be employed at the facility and using an already heavily utilized private road for vendor vehicles, emergency vehicles and increased visitor vehicles
    - While the intent is for people going to Fallbrook Commons to use the new entrance, those coming down Ray Street from Allen Ave Ext will use the first entrance road they see, which will be Merrymeeting Drive. This alone will increase the traffic volume on Merrymeeting Drive.
    - A traffic mitigation plan for Merrymeeting Drive needs to be developed to ensure the safety of the residents of Fallbrook Condominiums who use this road as the sole entrance to our homes as well as for recreational walking, bike riding and dog walking.
    - As noted above, Merrymeeting Drive is a private road and is not maintained by the city of Portland. The increased usage of the road, with the development of Fallbrook Commons, is beyond the original intent and among other things will lead to increased road degradation. Additionally, there is an increased risk of liability if a property or personal injury were to occur on our private road

Additional traffic concerns:

- Years ago the city posted a sign stating 'No Trucks' at the beginning of Ray Street on the Allen Ave Ext end. We assume this is an attempt to reduce the amount of commercial cut through traffic that vehicles use as an alternative to get from Washington Avenue to Allen Ave Ext. Ray Street, and all of the side streets off of it, are residential and minimizing excessive traffic is paramount. With the proposed Fallbrook Commons project, is it the city's intent to re-classify Ray Street as non-residential and remove that signage and thereby allowing heavy truck usage? If that is not the intention, what is the enforcement plan to ensure commercial traffic doesn't use Ray Street to the excess?
- Several years ago the city installed Stop signs at the intersection of Merrymeeting Drive and Ray Street as a 'traffic calming' effort. As residents who are in clear view of this intersection it is apparent that a majority of drivers ignore the stop signs and speed right through the intersection. This includes commercial vehicles, city trash trucks and city school buses. This creates more of a hazard than not having the signage there.
    - As a result of drivers ignoring the Stop signs, vehicle speed on Ray Street often exceeds the posted 25MPH limit. Vehicles ignoring the signs and traveling southeast on Ray Street approach the hill at an increased speed, crest the hill and continue down it past the intersection of Nevada Avenue and the proposed main entrance to Fallbrook Commons. As the new main entrance to the facility will be located at the base of this hill, it will create an unsafe condition for vehicles exiting the entrance as well as for the school children who are dropped off by the city buses at Merrymeeting Drive and have to walk on Ray Street. As there are no sidewalks in this area, the safety aspect is compounded. The location of the new main entrance creates a 'blind entrance' hazard.
        - Fallbrook Properties and Sebago Technics stated they have assessed the traffic impact at the new proposed entrance and found it acceptable. However, no study has been demonstrated for the overall neighborhood traffic and safety impact. The City of Portland should assess the overall traffic situation and work with Sebago to improve an already unsafe traffic condition.
- Public transportation:
    - There is currently no year round public bus transportation on Ray Street. During the school year the city buses stop along Ray Street (and in front of Merrymeeting Drive) in the morning and in the afternoon primarily to pickup/drop off students. This service is open to residents only during those scheduled times.
    - The current location of the St. Joseph's facility is ideal for workers and visitors to utilize the city of Portland bus system as there is currently a bus stop on Washington Avenue at the entrance to St Joseph's

    - The new location of Fallbrook Commons does not afford this option for employees and visitors as there is no access point off of Washington Avenue and no year round public transportation on Ray Street, as mentioned above.
        - This is a disservice to those employees of Fallbrook Commons who for financial reasons rely on public transportation
- Alternative location:
    - Has Fallbrook Properties/Sebago Technics considered expanding/renovating the current St. Joseph's Manor site, which already has the infrastructure, vehicle entrance off of Washington Ave and public transportation availability in place?
- Environmental impact:
    - Has an impact assessment been conducted to determine if there'll be any detrimental impact of water runoff to the Fallbrook watershed impacting wildlife, flora and eventually the Back Bay watershed?

Thank you for your consideration of these points during the Planning Board's review of the proposed project.

v/r,
Paul & Kym Cournoyer
Fallbrook Condominiums
Portland, Maine

Google Groups

Re: PL-000925-2019

Paula Urbach <nurseurbach@gmail.com> Feb 21, 2020 12:10 PM
Posted in group: **Planning Board**

Hi Jennifer,

I would like to add that after seeing the plan for this business project, my concerns are amplified. This building is massive and totally inappropriate for an area designated for single family residences. They are requesting to build on a hill, which would mean that the structure would dominate the landscape. Light pollution and noise pollution would be a problem. Additionally the construction would take 2 yrs, clear-cutting and demolishing the natural area, which would be a major aggravation to anyone living in the area.

Thank you, Paula Urbach

On Wed, Feb 19, 2020 at 11:58 AM jmy <jmy@portlandmaine.gov> wrote:

> Hello,
>
> Thanks for your email. We appreciate the time you have taken to offer your thoughts, and will include your comments in the materials and as part of the public record.
>
> If you have any questions, please contact our office.
>
> Jennifer Munson, Office Manager
> jmy@portlandmaine.gov | (207) 874-8719| Fax (207) 756-8258
>
> City of Portland, Department of Planning and Urban Development
> 389 Congress St., 4th Floor, Portland, ME 04101
>
> On Tuesday, February 18, 2020 at 2:52:24 PM UTC-5, Paula Urbach wrote:
>
> > Dear Planning Board Members,
> >
> > I am writing with concern regarding an application of construction proposed by Fallbrook Senior Care Development, LLC. I received notice that this company is applying for a permit to amend the Site Location of Development Act and intending to file a Natural Resource Protection Act.
> >
> > As a resident of Portland, North Deering neighborhood, I have serious concerns about these proposed changes. Any construction in the area would severely affect my health and my wellbeing. The woods provide valuable fresh air, oxygen, and windbreak, as well as invaluable peace and quiet. The woods are home to many flocks of migratory songbirds and beneficial insects, woodpeckers, hawk, deer, fox, reptiles, and amphibians. I believe the area in discussion serves as a greenway for the wildlife and allows the wildlife to function normally and maintain their health. Many people enjoy walking through the woods, which connects to Portland Trails areas such as Pine Grove. Destruction of these woods would encroach on wildlife habitat, with the result that the displaced fauna would likely become a nuisance in the residential neighborhood.
> >
> > This application should be rejected on the grounds that the owner has already built to capacity his property with a concentrated living facility and condominiums. Overdeveloping this area would lead to more crowding, noise, burden on tax-maintained infrastructure, and could negatively affect the health, quality of life, and property values of the community. This is a residential area of single-family homes. The proposed business is not appropriate for this area and construction of this scale would profoundly change the landscape. I have serious concerns about this proposal and feel that more information on all outcomes is needed.
> >
> > -- Thank you,
> > Paula Urbach, PMH-NP

781-304-8656

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

--
Paula Urbach, PMH-NP

Google Groups

fallbrook woods

Paula Urbach <nurseurbach@gmail.com> Jun 16, 2020 11:31 AM
Posted in group: **Planning Board**

Dear board members,

Just an additional comment: It seems that people have a hard time articulating how we benefit from nature. Hopefully you as city planners understand how nature and green spaces positively affect our health in many specific ways. Nature filters pollutants and provides oxygen. Nature has restorative effects on our nervous system, respiratory system, and overall health through actions of the parasympathetic nervous system.

One of the neighbors mentioned in the meeting that he was taking care of elderly relatives living at home. It occurred to me that in-home care is really the model of care we as a city should be supporting, rather than expensive and depressive care facilities. Elderly people are happier at home., and in-home care is often better and more cost effective.

Thank you, Paula Urbach

--
Paula Urbach, PMH-NP

To: City of Portland, Planning and Development Office

From: Peter Minvielle
25 Merrymeeting Drive

Re: Site Location for Fallbrook Commons

Parcel: 400D 023001

Attached please find my more significant conclusions as to the proposed "campus" location for Fallbrook Commons, the successor Nursing care facility to ST Joseph's Manor.

I have reduced my comments / concerns to a minimum. (I was heading to a submittal of over 2500 words but curtailed my writing in order to meet time constraints).

I also wish to acknowledge and thank staff at Portland's Planning Department and Maine's Department of Environmental Protection as to the source(s) for public information and as to the review process itself.

Re: Site Location for Fallbrook Commons

Parcel: 400D 023001

Major Credits

The site, grading, landscape, erosion and remediation plans, etc. are amazing in scope and detail. (Would that the residents of Florida Avenue have drier backyards!)

A Concern

The internal vehicle flow anticipated at the two sites will depend almost entirely as to how well such traffic separation is enforced. Otherwise drivers (employees, visitors, and suppliers, etc.) will choose exits/entrances at their convenience and there will not be the orderly and controlled flow and parking suggested in the proposal. Are there enforcement plans?

Major Concerns

The submittal seems to assume there will be no or very little impact/interaction between the proposed fallbrook Commons and its abutters, with the exception of fallbrook Woods. In the latter case both fallbrook institutions see a synergistic effect. Indeed one might ultimately see/describe the setting as a nursing care "campus."

Was the public informed that this "campus" would be de facto the second or third largest nursing care facility (by combined bedcount/occupancy) in Cumberland County?

Given such large, prominent, regional and atleast somewhat "public" institutes (St Joseph's Manor, fallbrook Woods, and now also the proposed fallbrook Commons), one would think that there would have been some sort of "open public" presentation/discussion. After all the project is already planned out even to the flower color of certain plantings .... Certainly not in the spirit of the healthcare

RE: Site Location for Fallbrook Commons

Parcel: 400D 023001

planning and development legislation.

Further, to the best of this writer's knowledge, none of the local Portland area daily or weekly publications (or radio and TV media) have been notified of such major changes or have, for some unknown reason, chosen to remain silent. Yet the project is proposed to be completed by the end of 2021 ...

An Overriding Concern

While we have many concerns at various levels as to the proposed location of Fallbrook Commons, my biggest concern is safety. According to a November 12, 2019 report from the landscape architect, there are "no threats" to public safety.

It appears that these words might apply only to the infrastructure within the boundaries of the proposed facility and do not account for any impact of any increased vehicular traffic on City streets, in this case the intersection with and the traffic on Ray St. I conservatively estimate there would be 44,000 to 66,000 entrances/exits each year (all new to the Ray St traffic count). And here comes the scary part... Due to the side-saddle shape of Ray Street's hill, every car that leaves/enters on the new road would be potentially within or activating a blind spot for another driver(s), with the exception of the driver heading up Ray St. towards Allen Ave from the Maine Ave plain.

Ray St above Florida Avenue is already a dangerous street (likewise from Allen Ave): a poorly designed, well-outdated, low visibility, pre-Eisenhower macadam with water flow/drainage frequently crossing the street from one side to the other, no shoulders, little sidewalk coverage, and still used by school kids, bicyclists, dogwalkers, and too many drivers who have no regard for stop signs, speed limits, etc.

As indicated above, safety is my first concern. If nothing else comes from my readings/writings, the situation begs for an unbiased traffic engineering study. The neighborhood and city deserve such a study.

Thank you for the opportunity to express my concerns.

Meeting follow-up

Sabrina Christian <schristian026@gmail.com> Jun 10, 2020 12:28 PM
Posted in group: **Planning Board**

Dear Portland Planning Board,

I listened in on the Fallbrook agenda item during the workshop meeting yesterday (6/9) and I just wanted to send a note to say thank you. I have never been a part of these types of public meetings before, so I had no idea what to expect or how the meeting structure typically works. Although I did not speak myself (however I think my neighbors contributed beautifully!) I was incredibly impressed at how patient the Board was in making sure everyone had their chance to be heard, and not rushing the process or seeming eager to get past the public comment phase in any way. Then, I was pleasantly surprised to hear the discussion that resulted after both parties (applicant and public) made their remarks: I was very appreciative that the Board had clearly kept notes of the public comments, and made sure to address each individual item with the applicant team – even after we went 1.5 hours over the prescribed schedule!

Before the meeting I was unsure if this item would be quickly dismissed or not taken very seriously, meant to humor us neighbors who are upset about the project (large companies vs small insignificant neighborhood scenario), but as the meeting went on I did not get that impression at all. I am glad that it appears the Board sees the validity in our objections, and I am hopeful that we can all work together on a resolution for this project that will appease everyone. Now, after the fact, I would assume that this is likely how most town planning board meetings are run, but nonetheless I can't help but feel that the Portland board clearly emulates the overall standards and care of the wonderful city of Portland that I appreciate so much. I just wanted to send along a sincere thank you and appreciation for how the meeting was handled yesterday, as someone who is new to this realm. I look forward to our discussions in the future.

Take care! Best regards,

Sabrina Christian

(110 Florida Ave)

A Letter Regarding the Fallbrook Nursing Home Project

Sabrina Christian <schristian026@gmail.com> May 26, 2020 5:21 PM
Posted in group: **Planning Board**

Dear Portland Maine Planning Board,

I own a home at 110 Florida Ave in Portland. I purchased my house 4 years ago and appreciate it so much for its location and neighborhood quality in this portion of Portland. The wooded land and wildlife that have been evident throughout my years here give this area a lovely, country atmosphere where you wouldn't know you were still in a city. This neighborhood is a mix of young and older adults, young families with small children, single adults, and retirees. I have highly enjoyed the sense of community which has been present, and have felt it to be a great place to live.

However, the recent notification and meeting with the proposed builders of Fallbrook LLC about a large-scale skilled nursing facility that will be built in the wooded section abutting our neighborhood has been quite a shock to all of us. We have of course been notified that Fallbrook LLC (with the cooperation of Maine Medical Center) has decided to build a facility and in doing so will completely remove the entire wooded section in the neighborhood, covering wet lands and placing parking lots up to the allowed distances from property lines.

Now families in the neighborhood have been quickly selling their homes to avoid the anticipated approval by city planning board for this immense construction project. They along with the rest of us feel this will not only change the neighborhood, but will have significant impact on land, housing values, drainage, wildlife, wetlands, noise, traffic, safety, and loss of community.

I am sure you have been receiving several versions of this letter from others, but I would like to state a few of the reasons why I personally highly oppose this project, as a member of this city and neighborhood, and as an environmentally-conscious citizen.

My first concern is fairly obvious, I'm sure. People's homes on Florida Ave would be directly abutted against the parking lot of this new project. In order to achieve this, first there will be continued construction and blasting for months during excavation of cutting down all of the trees. Construction noise and traffic will take over our once-quiet and calm neighborhood, one of the things I love most about it. This will cause stress for all of us who will be forced to directly watch our once-wooded backyards be completely decimated and replaced with concrete and bricks. If this project goes through, I will undoubtedly begin considering also selling my home to move to a new quiet, peaceful neighborhood without a parking lot in my backyard - something I never would have considered before learning of this project. The impending decisions on this project have undoubtedly brought significant stress to myself and my neighbors, even before any construction has begun.

There are a multitude of environmental issues that I would also like to note. The undeveloped land in question is complete wetlands and absorbs most of the water. Currently many of our houses along the border of the proposed building area do have some flooding, but this is mostly mitigated by the property makeups. However the proposed building plan will remove all of the trees and land mass and replace it with a building and large tarred section of driveway - this will significantly increase the potential for large amounts of runoff that would normally be absorbed by the forested area. Furthermore, removing all of the trees which currently absorb wind and severe weather could also cause potential further problems for the structures/trees once they are no longer there to absorb these impacts. Will any of us with our remaining properties have any recourse should this negatively impact our homes in such a way? Overall it does not seem that this area of wetlands would be the most prudent, efficient place to build.

Just as importantly, this area has a vast variety of wildlife who live in and among this land. There are deer and fawns, foxes, coyotes, racoons and their kits, hawks, owls, turkeys, ducks and ducklings, bats, tree frogs, migratory birds, and the list goes on. Simply in my own backyard, just recently I witnessed a family of turkeys roaming around. I have also personally seen a groundhog, raccoons, deer, squirrels of course, not to mention the variety of lovely birds, including hummingbirds! Living in the city, this is invaluable for me. Removing this environment will significantly impact the ecological balance of the wildlife that lives in this area. I will be heartbroken for all of the lost wildlife and still-wild area that still exists even within our relatively well-populated neighborhood.

Finally, this project will cause reduction in value for those of us still living here. Per neighbors who have spoken to real estate agents, building this facility in the proposed manner is also going to negatively affect property values, causing a 5-10% reduction in value. Again, if this project is approved I will seriously have to consider whether I want to remain in this location - a true tragedy for me as I had hoped to own this home for years to come.

Of course I am not an expert, but to me it seems that there might be another space of land better suited to this project, which won't need to be squeezed into the midst of a previously peaceful neighborhood. The area is complete wetlands; surely it would be more cost effective and efficient to build at a better-suited location (which wouldn't also negatively impact a significant number of people and the quality of their homes)?

Please consider, if this were your backyard, would you want the beautiful, wild woods and all of the wildlife that comes with it to be replaced by the removal of trees, and cold, hard concrete and buildings? This project will tear apart our wooded backyards, which in my case was one of the primary reasons for purchasing a home in this location to begin with.

I sincerely hope the Portland Planning Board is closely reviewing this project and will make a wise, prudent, and honestly – compassionate – decision on its outcome. Perhaps there is an alternative building site which makes more financial and ecological sense, with not as many significant negative ramifications. Or perhaps, if we cannot save our neighborhood from this decision, some compromises can be made which would allow us at least retain a portion of this important wooded area.

If you read this to the end, thank you so much. I believe you can see many valid reasons (and even many others which I have saved for the sake of length) to reconsider this devastating project in this location. I appreciate your attention to this matter and I request that this e-mail be placed into the public record for the review for this site. Please do not hesitate to reach out if needed.

Best regards,

Sabrina Christian
110 Florida Ave, Portland ME
schristian026@gmail.com

No to Fallbrook Nursing Home

Sue Rowan <rowan.0425@gmail.com> Jun 30, 2020 10:31 AM
Posted in group: **Planning Board**

I am an abutting property owner of the proposed Nursing Home development. I reside at Fallbrook Woods condominium, #18.

After 20 years in South Portland my husband and I choose this location for it's convenience, peaceful quiet and abundance of nature. It's a wonderful walkable neighborhood with many homes and families surrounding the proposed development site. If the sight is developed with size and scope proposed, the neighborhood will be negatively changed forever. The wetlands, home to several species including ducks, frogs and turtles, will be destroyed. The woods will be torn down, eliminating habitat of fox, coyote and a multitude of birds.

The current Memory Care Center blends in well, with a small size and minimal vehicle traffic. The much larger proposed Nursing Home requires an enlarged road, new sidewalk, a multitude of parking spaces, increased traffic 24 hours, noise and lights. It will negatively impact the value of homes and the quality of life this residential area now provides.

It is too large a project for this sight.

Susan Rowan
18 Merrymeeting Drive
Portland ME 04103
207-671-3043

Att. 1

Portland Maine | Yes. Google's good here.

Andrew Tufts <atufts@portlandmaine.gov>

60 Merrymeeting Drive - Comments on reissued plans

1 message

Mike Tremblay <mtremblay@portlandmaine.gov> Fri, Jul 17, 2020 at 11:23 AM
To: Andrew Tufts <atufts@portlandmaine.gov>

Andrew,

I have the following comments on the reissued plans for 60 Merrymeeting Drive, and on the CM plan which I did not comment on before.

- The applicant appears to have addressed most of my previous comments. Outstanding comments include: HP signage/snow removal challenge and staircase between the upper-level courtyard and parking area.

- The Applicant proposes 83 paved parking spaces and 20 overflow/special event parking spaces on structural lawn. This pushes the total parking spaces to 103. A fifth accessible parking space is required. This may be accomplished using the width of the currently proposed accessible parking area, plus one or two additional standard spaces, by restriping the HP Van spaces as two 8-foot spaces and one shared 8-foot buffer area, at a width savings of 3 feet for each pair of HP spaces. See sketch below.

- On a related note, the Applicant may choose to slightly reduce the size of their parking area by providing standard HP spaces rather than HP van spaces, down to the minimums prescribed in ADA (every 6 HP spaces must contain at least one HP Van space). However, van accessibility may be extremely important for this site; in which case, it is appropriate to use more van accessible spaces than required.

- It is assumed that the overflow parking spaces will be utilized by staff of the facility during events, not by guests, as these spaces are essentially tandem spaces and it will be difficult to manage if guests are using them. The Applicant should clarify.

- The Applicant is providing 18 compact parking spaces which are 8 feet in width. This is below the 20% threshold permitted in the Technical Manual only if the 20 event parking spaces are included. Most of the time, the site will function as an 83-space site, where the compact spaces will be 21.7% of total spaces. It is recommended that the Applicant receive a waiver for compact spaces at the site. DPW would support such a waiver as the compact spaces reduce the parking area somewhat.

- Compact spaces should be marked as such so that larger vehicles park in standard size spaces if possible.

- Understanding that the existing Fallbrook Woods site likely has similar peak demand for parking, the Applicant should explore any possibilities for shared parking, so that the overall number of parking spaces can be reduced further.

CM plan

- The applicant should provide, for DPW approval, a detailed dewatering plan prior to issuance of a building permit (preferably prior to approval of the project). The site will likely need to be dewatered continuously throughout the project's construction. A dewatering area was identified on the CM plan, but more details should be provided.

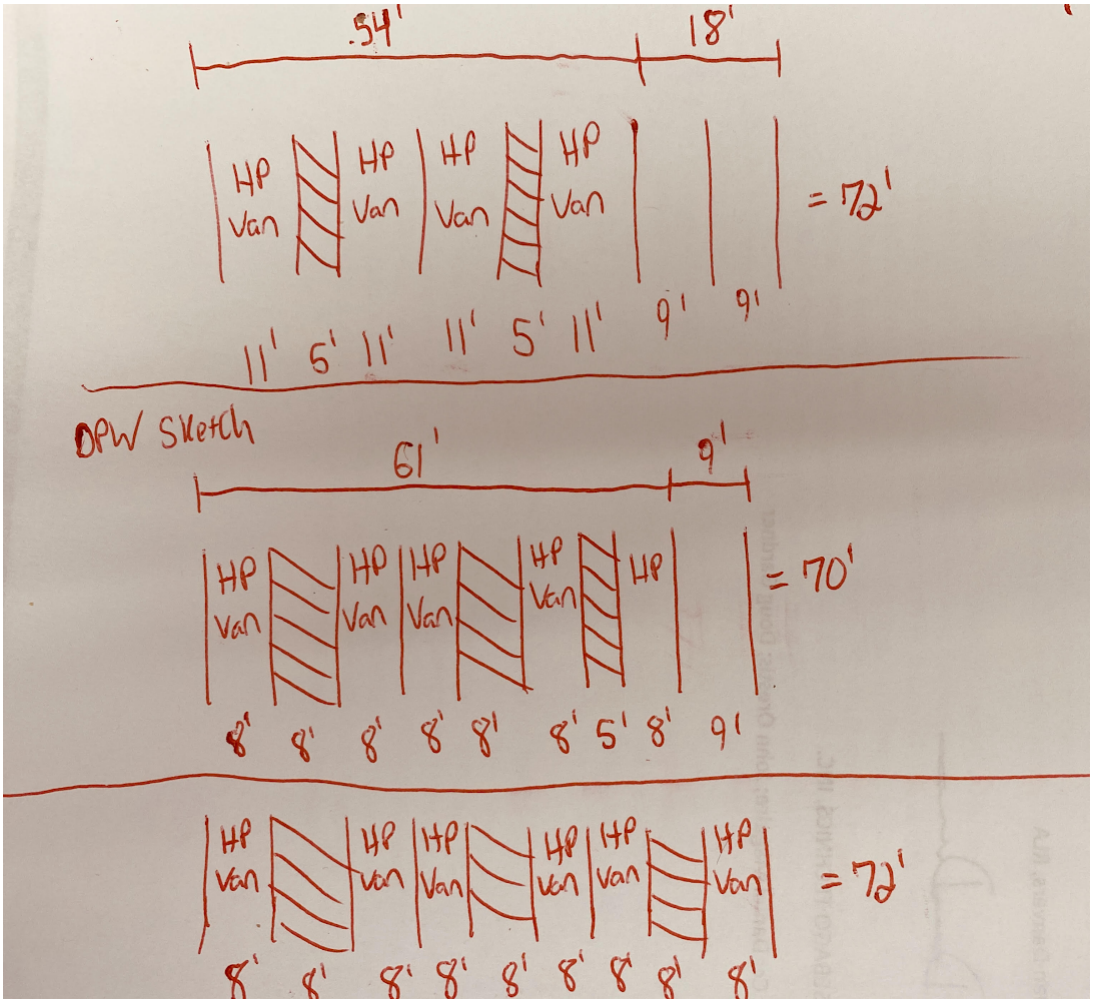
- The CM plan should be resubmitted using Merrymeeting Drive as the primary site access. The driveway accessing Ray Street directly should be used for emergency access/egress only.

- The CM plan should show erosion and sedimentation control measures around the construction boundary.

- The CM plan should show the boundaries of tree clearing, and should show where trees will be preserved/protected.

I'll let you know if I think of any more...

-Mike



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

June 4, 2020
18347

Andrew Tufts
Department of Planning and Urban Development City of Portland
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Response to Comments for Fallbrook Commons
Parcel ID: 400 D 023001

Dear Andrew:

A neighborhood meeting for the Fallbrook Commons project was held on February 18th at Fallbrook Woods, approximately 30 of neighbors attended the meeting. We have made a number of revisions to the plans based on comments and concerns raised at the meeting. These concerns were primarily related to the proposed entrance off of Ray Street, the parking areas at the existing facility (Fallbrook Woods), and pedestrian access along Merrymeeting Drive.

The applicant proposes the following changes to the project:

- The proposed access from Ray Street opposite Nevada Avenue has been revised to be an Emergency Only Entrance. This emergency access driveway will be gated with a Knox box for emergency access only to both the proposed and existing facilities.
- The primary entrance to the proposed facility will be from the Merrymeeting Drive, through the existing facility.
- Sidewalks have been added along Merrymeeting Drive for pedestrians and the existing roadway will be repaved to improve its condition
- The parking area at the existing facility (Fallbrook Woods) will be modified and expanded to relocate existing on street parking from Merrymeeting Drive to the facility's parking lot.

We have included revised sections of the original application to reflect the project design, revised plans, and offer the following response to staff comments received in February 2020.

Response to Comments- Planning and Urban Development

Comments from- Mike Tremblay: *"There is a crest vertical curve on Ray Street approximately 200 feet northwest of the site driveway. Vehicles traveling along Ray Street may not be able to see a vehicle entering or exiting the site driveway, depending on the speed of the approaching vehicle and weather conditions. The stopping sight distance for a vehicle traveling 30mph is 200 feet, assuming a flat roadway surface. The marked speed limit on Ray Street is 25mph, but prevailing speeds may be higher. The Applicant should provide sight distance analysis at the site driveway. If sight distance is found to be insufficient, the applicant should provide solutions."*

Response: Sebago Technics traffic engineer has measured sight distance to be 270' from the Ray Street entrance exceeding the requirements for the posted 25 mph speed limit and a 30MPH assumed speed. The applicant has revised the plans to make the entrance off Ray Street opposite Nevada Avenue a gated

emergency fire entrance only. The applicant proposes to use Merrymeeting Drive as the primary entrance to the proposed facility. Additionally, the applicant proposes to improve the pedestrian and vehicular access along Merrymeeting Drive by repaving the road and adding a sidewalk from Ray Street to the new facility as shown on the plans attached to this submission.

Comment from- Mike Tremblay: *"In the bay of parking immediately outside the main entrance to the site, there are accessible parking signs that appear to be installed directly into the ground between parking spaces. This would appear to be challenging to plow/maintain and may result in damage/removal of the signs. A raised area where these signs could be mounted is suggested."*

Response: The applicant is proposing signs on bollards within the parking area to protect them from plowing / mechanical damage. A detail further of the sign on bollard is provided on sheet 16.

Comment from- Mike Tremblay: *"There are 92 parking spaces proposed on-site. There is little information provided about the anticipated parking demand. Given that the site has significant wetlands impacts, right-sizing the parking lots is of paramount importance. The applicant should provide justification for the parking supplied on-site."*

Response: Parking for 92 vehicles is proposed to accommodate the anticipated staffing and visitor requirements of the facility and is based on the applicants experience at similar facilities of this size and use. The facility is expected to employ up to 113 Full time equivalent (FTE) employees as submitted in projections with the Maine Department of Health and Human Services. The staff occurs in shifts. with 55 employees during the day shift, 25 during the evening shift and 10 employees during the night shift. The applicant's experience has been that providing parking for day shift employees with an allowance of approximately one visitor space per 2.5 beds meets the requirements for a typical day use for family visitors, and specialty service vehicle needs at their other facilities.

Comment from- Mike Tremblay: *"Of the 92 proposed parking spaces, 4 are universally accessible. ADA guidelines require 10% of spaces to be accessible for outpatient medical facilities, and 20% of spaces to be accessible for mobility rehabilitation facilities. Understanding that the proposal is for an assisted living/nursing care facility, and thus does not fall under one of the above categories, the number of accessible spaces provided on-site should be considered carefully, as the minimum amount required may not be appropriate."*

Response: This facility is not an outpatient medical facility or a rehabilitation facility, the parking count meets the ADA 208.2.3 Residential Facilities Standards. Residents of this facility will not have cars, leaving all parking spaces to be for guests, employees, and other Non-residents (208.2.3.3). This section refers the requirements back to the standard ADA parking table (Table 208.2) requiring 4 spaces. All ADA spaces at Fallbrook Commons will be Van Accessible.

Comment from- Mike Tremblay: *"None of the accessible spaces are provided in the lower satellite parking area containing the majority of parking spaces. It appears these spaces serve a different level of the building than the main entrance. The applicant should consider the appropriateness of providing a portion of, or additional, accessible spaces in the lower lot. Note that this lot appears to be closest to the courtyard area, which could be the best area for a resident to wait for a relative to pick them up, etc. in this case, the parking area closest to the courtyard would be the lower parking lot. "*

Response: All ADA spaces have been located nearest the primary entrance to the building for employees, guests, and visitors. All public access to the building is controlled through the main entrance. The courtyard entrances are for egress and maintenance/staff access only and are not open to visitors or residents from the outside the front door is the primary entrance for staff and is the only entrance for visitors.

Comment from- Mike Tremblay: *"None of the six parking spaces serving the service entrance, presumably provided for employees, is accessible. "*
Response: The service area is for contractors and facilities maintenance vehicles. Employees and other visitors will use the upper lots.

Comment from- Mike Tremblay: *"Understanding that there is a significant grade challenge, and that this area is currently proposed to be landscaped, the apparent desire line between the courtyard and the lower parking area is a direct line between the courtyard and lower parking area. The Applicant should consider providing a staircase serving this desire line, in addition to the accessible route already proposed. "*

Response: The courtyards are not accessible to the public from the outside. The gates are for egress and maintenance access only. The desire line from the parking areas will be to the front door of the facility.

Comment from- Mike Tremblay: *"The intersection of the site driveway with the internal driveway between sites appears to have two of the three legs under stop control. This is irregular and not recommended. An all-way stop, or partial stop control where only the site driveway has a stop sign, is recommended. "*

Response: The intersection has been revised to an all-way stop.

Comment from- Benjamin Pearson: *"2000-gallon external grease interceptor proposed. A junction manhole is required with channel where grease interceptor outlet connects to sanitary sewer. (See sheet 10 of 19) / Utility Plan 1. Circled in red below. "*

Response: Sewer Man Hole (SMH) 1 has been added to Utility drawing 2.

Comment from- Benjamin Pearson: *"No construction management plan narrative - map provided. A CMP using newest template will be required with building permit submittal. "*

Response: A construction management plan, and map have been provided as section 37 in our application documents. Uploaded 01.08.2020. We have also uploaded this plan to the Construction Management Plan section of E-plan for clarity.

Response to Comments- Lauren Swett from Woodard and Curran

Comment from- Lauren Swett: *"The project is required to conform with Maine DEP Chapter 500 Stormwater Regulations as well as with the City of Portland Section 5 of the Technical Manual. Conformance with the Basic, General and Flooding Standards is required. "*

Response:

- Basic Standards – The Applicant has proposed erosion and sedimentation control measures in conformance with the Basic Standards.
- General Standards – The Applicant has proposed an under drained soil filter, gravel wetland, and roof drip edge filters to treat the proposed project area.
- Flooding Standards – The proposed project will not increase flows in the post-development condition, in conformance with the Flooding Standards.

Comment from- Lauren Swett: *"The Applicant should evaluate the steepness of some of their pipes. In particular pipes SD-21 and RD-4 are steep, due to the proposed change in grade. RD-1 is also relatively steep. Please consider potential velocity issues at the ends of these pipes. "*

Response: Given the relatively small tributary areas and corresponding flow rates we do not have a concern regarding the slopes at these locations. To address the concern, we have adjusted the grades of SD-12 at the upstream and downstream structures. We have revised the alignment of the roof drains and added connection/drop structures at the top of the slope to flatten the grade.

Comment from- Lauren Swett: *"Pipe SD-18 is missing from the Stormdrain Pipe Data tables. "*

Response: Pipe SD-18 has been added to the tables

Comment from- Lauren Swett: *"Wall drains are noted to be connected to CB-8. Please clarify the depth of these connections to verify that the pipe can connect to the structure with all of the other proposed stormdrain connections. "*

Response: Inverts for the wall drain inverts have been added to the labels. The wall drains enter above the site drainage pipes to accommodate the connection.

Comment from- Lauren Swett: *"Ability to serve confirmation will be required from utilities, including the Portland Water District for domestic and fire water services and the Department of Public Works for sewer. "*

Response: We have reached out to Portland Water District and are working with them on the sizing of the domestic, Fire, and Sewer services.

Response to Comments- Robert Bartels- PWD

Comment from- Robert Bartels: *"We are going to want to see the public water main extended through the site from Merrymeeting Drive to the entrance at Ray Street. The hydrant can then be public and the domestic service will not need a meter pit. Please update your design to show a public water main in an easement through the access drive. Please use the attached as reference. Connect the two 8" mains."*

Response: We have complied with this request. Changes will be shown on the next round of drawings.

Response to Comments- Jason Grant- Life Safety CEO

Comment from- Robert Bartels: *"The hydrant should be moved to somewhere in the vicinity of the arrow marked on the attached plan."*

Response: We have relocated the hydrant to the desired location. This change will be reflected on the next round of drawings.

Thank you for your time and consideration during your review. We look forward to the planning board workshop and continued feedback from staff.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel M Danvers, RLA
Maine Licensed Landscape Architect

Cc: Daniel Maguire / John Orestis / Doug Gardner

Att. 3

Portland Maine | Yes. Google's good here.

Andrew Tufts <atufts@portlandmaine.gov>

60 Merrymeeting Drive - Traffic Review Comments

2 messages

Tom Errico <thomas.errico@tylin.com> Mon, Jun 1, 2020 at 6:10 PM
To: "atufts@portlandmaine.gov" <atufts@portlandmaine.gov>

How is This?

Hi Andrew – I have conducted a review of the site plan application materials as it relates to traffic impacts and offer the following comments.

- The applicant's traffic engineer conducted a trip generation estimate for the project according to accepted traffic engineering methods. According to guidance in the Trip Generation Manual, Institute of Transportation Engineers, 10th Edition, the proposed project would be expected to generate 23 vehicles during the weekday AM peak hour (18 entering and 5 exiting) and 27 vehicles during the weekday PM peak hour (11 entering and 16 exiting). During the worst-case peak hour, the project will generate 41 vehicles (18 entering and 23 exiting). As noted by the applicant, this level of trip generation does not warrant a traffic study per the City Technical Manual (there is a High Crash Location on Allen Avenue near Allen's Corner that is close to ½ mile from the project site). I concur that a traffic study is not required. I would further note that that this level of traffic would not be expected to create safety or mobility issues. During the morning and evening commute peak hours (typically 7:30 to 8:30AM and 4:30 to 5:30PM), the project would add one vehicle to Ray Street about every 2 to 3 minutes.

- Based on the trip generation estimate provided by the applicant the proposed project does not require a MaineDOT Traffic Movement Permit.

- The applicant is required to submit a Construction Management Plan and as such a plan has been provided. A specific construction vehicle routing plan has not been noted and I would suggest that the applicant provide a suggested routing to minimize impact to the neighborhood.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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Memorandum
Planning and Urban Development Department
Planning Division

To: Brandon Mazer, Chair and Members of the Portland Planning Board
From: Andrew Tufts, Planner
Date: September 15, 2020
Re: Fallbrook Commons, 60 Merrymeeting Drive, Fallbrook Commons Development LLC
Project #: PL-000925-2019 CBL: 400 D023
Meeting: September 15, 2020

Figure 1: Parcel outline - Source: City of Portland Maine Parcel Viewer

I. INTRODUCTION

Fallbrook Commons Development LLC, has submitted a Level III Site Plan and Conditional Use application for the development of a two-story, 58,197 square-foot skilled nursing facility at 60 Merrymeeting Drive. The subject property is an 8.28 acre parcel along with approximately 55 linear feet of street frontage on Ray Street. The site is zoned R-3, in which institutional developments are allowed as a conditional use.

The Planning & Urban Development Department sent 228 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the September 3rd & September 4th editions of the Portland Press Herald.

Applicant: Fallbrook Commons Development LLC

Consultants: Dan Danvers, L.A. (Sebago Technics, (Landscape Architect)), Michael Pednault, AIA (Gawron Turgeon Architects) Charles Marchese (Sebago Technics (Surveying))

II. REQUIRED REVIEWS

Review	*Applicable Standards*
Site Plan	*Section 14-526*
Conditional Use in the R-3 zone	*Section 14-88*
General Conditional Uses	Section 14-474

III. PROJECT DATA

Existing Zoning	R-3 Residential
Existing Use	*Senior Care Facility- Wooded Lot*
Proposed Use	*Long Term Care Facility*
Parcel Size	8.28 Acres

	Existing	*Proposed*	*Net Change*
Building Footprint	0	37,455 SF	+ 37,455 SF
Building Floor Area	0	58,197 SF	+ 58,197 SF
Impervious Surface Area	0	117,172 SF	+ 117,172 SF
Parking Spaces	0	83	+ 83
Bicycle Parking Spaces	0	10	+ 10

Figure 2: Existing conditions - Source: Google Earth

IV. EXISTING CONDITIONS

The development site is located on Merrymeeting Drive which is accessed via Ray Street. The parcel, which is currently undeveloped, is approximately 8.28 acres in size and is one portion of the original 12.78 acre parcel of Fallbrook Woods. The site was originally permitted through the state; first as part of a phased subdivision plan and then as part of Fallbrook Woods senior center development. The site is located in the North Deering neighborhood, and is bordered by the Ray Street to the east, Florida Avenue to the south, Gertrude Avenue & a wooded area to the west, and the existing Fallbrook Woods facility to the north along with Merrymeeting Condominiums. The surrounding properties are all residential. No sidewalks currently exist on site.

The development site generally slopes downward from a high knob in the western-central portion of the parcel to the north, south and east, with about 24 feet of surface relief across the site. An existing gravel service road for the adjacent Fallbrook Woods facility is located on the north side of the site. The site is within the watershed of an unnamed stream that is a tributary of the Presumpscot River and wetlands are known to exist on the parcel. The wetlands on this site were delineated by Sebago Technics in September of 2018 and are classified as Palustrine Forested (PFO) wetlands. The vegetation in these PFO wetlands primarily consists of maple, speckled alder, cinnamon fern, sensitive fern, and jewelweed. Upland vegetation primarily consists of white pine and red oak. A vernal pool survey was conducted on May 6th, 2019 and no vernal pools were identified on the property.

The Maine Department of Inland Fisheries and Wildlife (IF&W) reviewed the site and found there to be no essential habitats or fisheries habitats that have been mapped. IF&W noted that there was the possibility that the site falls within the migration path of several species of bat. A project review was completed by the Maine Natural Areas Program (MNAP) which found there to be no documented rare botanical features within the project area.

Sebago Technics, Inc. completed a boundary and topographic survey of the site in May & July of 2019, as well as February of 2020. An easement exists for Merrymeeting Drive.

Figure 3: Contextual Site Plan - Source: Sebago Technics

V. PROPOSED DEVELOPMENT

The proposed development includes a two-story, 58,197 square-foot skilled nursing facility. The purpose of this project is to replace St. Joseph's Rehabilitation and Residence, a 121-bed licensed nursing care center built in 1974, that no longer meets current standards for nursing care centers. St. Joseph's is currently owned by Maine Medical Center. In collaboration with Maine Medical Center, Sandy River Company and North Country Associates would create a new licensed nursing care facility to replace the St. Joseph's facility.

The project includes a new 90-bed licensed nursing care center located next to the Fallbrook Woods assisted living facility. The campus approach would allow visitors to access both facilities, provide a smooth transfer for assisted living residents that might need nursing care services, and allow an opportunity for shared support services and management. The development would include three separate "neighborhoods" within the building with a shared commercial kitchen, community areas, and two parking areas totaling 92 parking spaces. Fallbrook Commons proposes a main entrance off Ray Street, and an emergency connection to Merrymeeting Drive.

This project would happen as one phase, which would involve clearing the incidental vegetation, ledge removal, site preparations for the building, and implementation of stormwater management measures. In addition to the Site Plan & Conditional Use Review, this application requires an amended Site Location of

Development (SLODA) and a Natural Resource Protection Act (NRPA) permit. The stormwater from the site will be collected using best management practices consistent with Maine Department of Environmental Protection (DEP) Chapter 500 standards.

The following easements are included with the proposed development:

- A twenty-foot access easement has been proposed from Ray street to Merrymeeting Drive, to benefit Fallbrook Woods.
- A fifteen-foot grading easement has been proposed along the proposed lot division line to benefit Fallbrook Commons.
- A proposed utility easement along the south east property line from the paper street Topsham Street to Merrymeeting drive, to benefit Fallbrook Woods. Discussions are on-going with Portland Trails to agree upon an access easement across the properties.
- The applicant is working with Portland Water District to provide an additional utility easement for an eight-inch main connecting Ray Street to Merrymeeting Drive.

These easements will be included on drawings as they are completed.

VI. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

Approximately 33 public comments have been submitted to date. The comments include but are not limited to the following concerns:

- Project scale/ density
- Light & noise pollution
- Environmental impact
- Wetland impacts
- Flooding
- Inappropriate use
- Increased traffic flow – safety
- Wildlife habitat
- Lower property value
- Privacy reduction
- Lack of public transportation
- Stress
- Construction management
- Impact to abutters

A neighborhood meeting was held on the evening of February 18, 2020 at the Fallbrook Woods lobby at 6:00 p.m. for the proposed project. Approximately 30 members of the public attended. Attending on behalf of the development team were Will Conway, Dan Danvers, and Aaron Hunter of Sebago Technics; Daniel Maguire & Doug Gardener as the applicants; and Michael Pednault representing Gawron Turgeon Architects. The applicant began the presentation by introducing the development team. They then provided some insight into the history of the project, and explained the intent for programming, and handed it off to Will Conway from Sebago Technics to explain the site plan, parking, landscaping, stormwater, and utility elements. Following Will's explanation, Michael Pednault from Gawron Turgeon Architects was introduced to explain the proposed building's exterior, interior, and programming. At the end of Michael's presentation, the applicant opened the meeting to the public for questions.

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

The owner of the property is Fallbrook Properties, LLC. The applicant provided a copy of the warranty deed, recorded at the Cumberland County Registry of Deeds in CCRD Book 31613 page 255, which demonstrates their right, title and interest in the property. The applicant team cited their experience and qualifications to demonstrate capacity to design and construct the project.

VIII. ZONING ANALYSIS

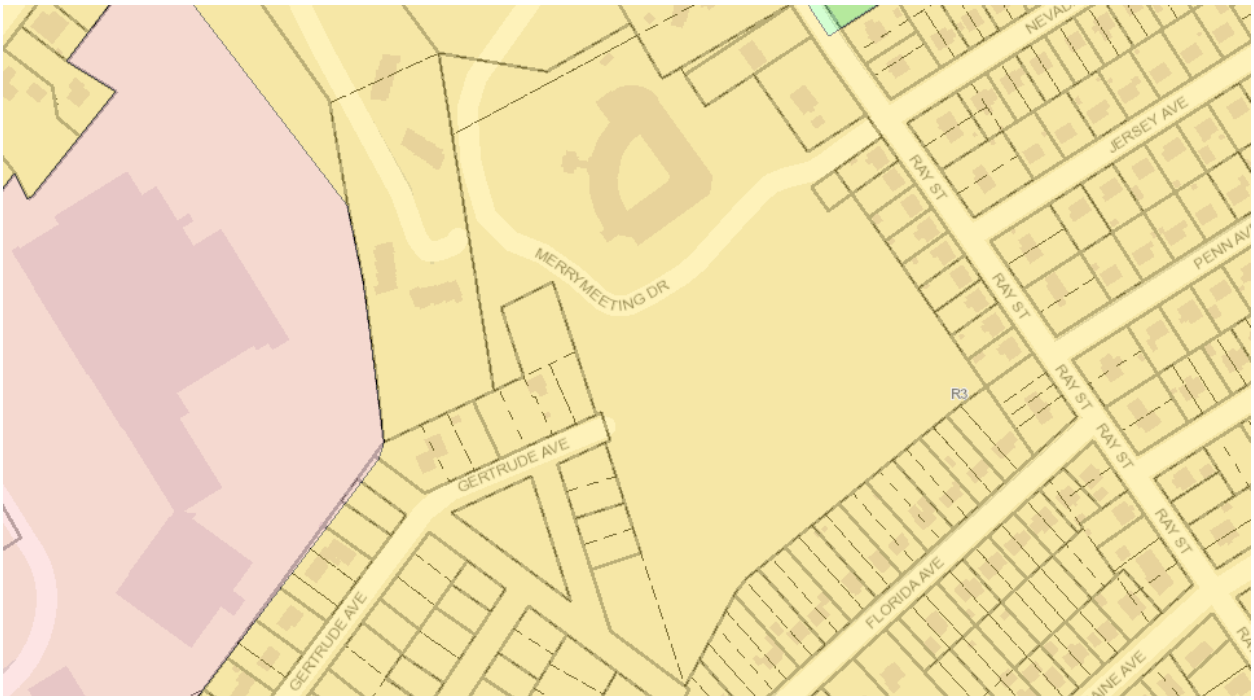


Figure 4: Zoning Map – Source: City of Portland GIS Maps

Dimensional requirements for this project are dictated by the R-3 residential zone. The purpose of the R-3 residential zone is to provide for medium-density residential development characterized by single-family homes on individual lots and also to provide for planned residential unit developments on substantially sized parcels. Such development shall respond to the physical qualities of a site and complement the scale, character and style of the surrounding neighborhood. Though primarily a residential zone, like other R-zones, it also allows for limited institutional and other non-residential uses, most of which are reviewed as conditional uses.

The proposed project has been assessed by City staff and was determined to meet dimensional requirements for the R-3. These requirements are included as a table on the following page.

Zoning Requirements	R-3	Provided	+/-
Minimum Lot Size	2 AC	8.28 AC	+ 6.28 AC
Minimum Street Frontage	50 ft.	55 ft	+ 5 ft.
Front Yard Minimum	25 ft.	248 ft. scaled	+ 223 ft.
Min. Rear Yard	25 ft.	83 ft. scaled	+ 58 ft.
Min. Yard Right	14 ft. (2 stories)	88 ft. scaled	+ 74 ft.
Min. Yard Left	14 ft. (2 stories)	87 ft. scaled	+ 73 ft.
Maximum Lot Coverage	35%	34%	- 1%
Minimum Lot Width	65 ft.	523 ft.	+ 458 ft.
Maximum Structure Height	35 ft.	34 ft. - 4 in.	- 8 in.
Parking Minimum	73	83	+ 10
Bicycle Parking	10	10	--

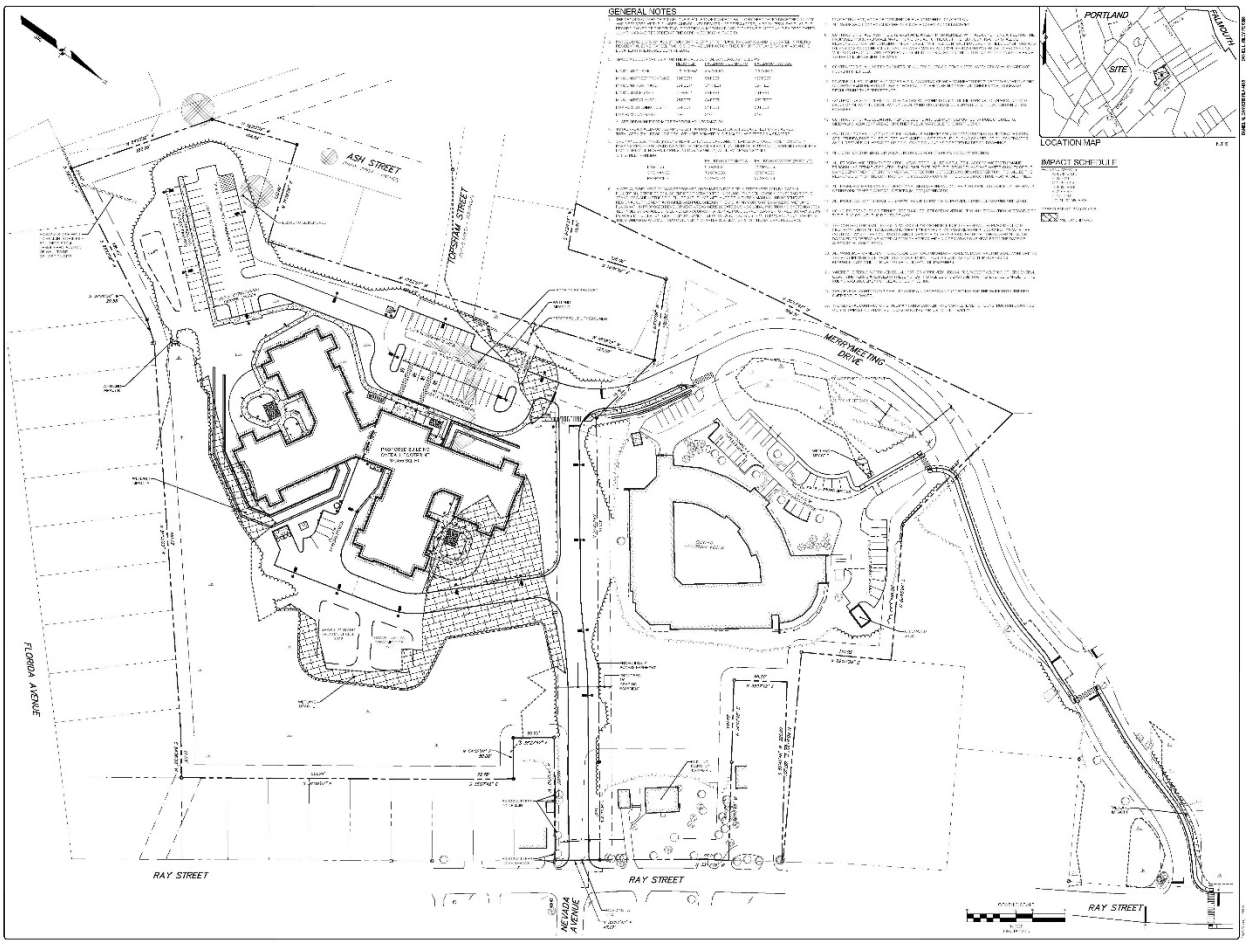


Figure 5: Site Plan - Source: Sebago Technics

IX. DEVELOPMENT REVIEW

Summary of Planning Board Workshop - June 9, 2020

Planning staff introduced the project, followed by the applicant's presentation. Public comment was provided for approximately 60 minutes. The board then answered questions raised by the public and went on to deliberation. Key discussion items included:

- Parking: the proposal called for 93 spaces, exceeding the required amount by 20. The Board stated they would like to see this number revisited and reduced.
- Light trespass: the board encouraged the applicant to enhance the landscape buffer around the parking areas.
- Retaining walls: the board expressed concern around the scale and uninterrupted span of retaining wall facing Ray Street, and encouraged the applicant to address and soften this feature.
- Conditional Use standards: the board asked for a more thorough explanation of how the proposed project meets the conditional use standards for the R-3 zone.

A. ZONE-SPECIFIC CONDITIONAL USE STANDARDS – SEC. 14-88

a. *In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas.*

Applicant Response: The project incorporates a land division. The lot being created is currently undeveloped, and its proposed principle use will be a Long-Term Care Facility. All improvements affiliated with the proposed development are contained within the site and do not encroach on surrounding neighborhoods.

Staff Analysis: The applicant has demonstrated that the use expansion cannot be contained within the current site as the land division will result in separate ownership. The proposed development meets the required setbacks from neighboring parcels. The applicant has provided landscape screening around all structures and parking areas.

b. *In the case of a use or use expansion which constitutes a combination of the above-listed uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative.*

Applicant Response: The proposed development satisfies this requirement.

Staff Analysis: The proposed development has a combined lot size of 12.72 acres, satisfying this requirement.

B. GENERAL CONDITIONAL USE STANDARDS – SEC. 14-474

The conditional use standards overlap with many individual site plan standards, and staff will determine overall consistency with conditional use standards via the applicant's responses to staff and Board comments.

a. *The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone.*

Applicant Response: This project will not generate a substantial increase in vehicle traffic to surrounding roadways. The number of parking spaces proposed is right-sized for the operations affiliated with the facility, and are proportionate for the level of care provided. St Joseph's, which is being replaced, operates 24 hours a day and has over 120 parking spaces.

Staff Analysis: The use of the proposed facility is such that the inhabitants will not require vehicles, and only staff and visitors will drive to and from the site. The volume and type of vehicle traffic is not anticipated to be substantially greater than other institutional uses of similar or greater intensity in the R-3 zone. Examples of allowable conditional uses within the R-3 zone that have the potential to generate greater traffic volume than the proposed use include schools, hospitals and places of assembly. Following the first workshop, the applicant submitted revised plans showing a

reduction of 9 parking spaces, from 92 to 83. Of those 83, 66 would be paved, while 17 would be structured turf overflow parking for events.

b. *The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.*

Applicant Response: The project will perform in accordance with the performance standards of the ordinance.

Staff Analysis: Following the first workshop, the applicant has relocated the dumpsters further from adjacent properties to reduce the possibility of odor. Additional landscape screening has been added around the parking areas to prevent light trespass. Upon review of the application, staff feel that the project will perform in accordance with the performance standards of the ordinance.

c. *The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.*

Applicant Response: The project will not have a substantial negative impact on surrounding properties, is designed in accordance with Portland's technical manual, and will adhere to the performance standards outlined in the ordinance.

Staff Analysis: At the first workshop, the Planning Board issued concern around the height of the retaining walls facing adjacent properties. The applicant has since enhanced the planting plan along the walls to include a robust mix of trees, shrubs, and vines. Staff finds this design to adequately soften and disguise the height of the wall.

C. SITE PLAN STANDARDS (Section 14-526)

The proposed development has been reviewed by staff for conformance with the relevant review standards of Portland's site plan ordinance and applicable regulations. Staff comments are listed below.

1. *Transportation Standards*

a. Impact on Surrounding Street Systems and Access and Circulation

Access to the site is proposed by way of Merrymeeting Drive, an existing private roadway serving the Merrymeeting Condominiums and the existing Fallbrook Woods Assisted Living Facility. Merrymeeting Drive intersects Ray Street at an existing all-way stop controlled intersection. At this intersection location, Ray Street is classified as an urban local roadway with a posted speed limit of 25 miles per hour. The project proposes to provide improvements to this intersection including new stop signs, stop bars, and a new marked pedestrian crossing across Ray Street. This crossing would connect a proposed sidewalk on Merrymeeting Drive with the existing sidewalk on the eastern side of Ray Street.

It is also proposed to construct an emergency-only access drive connecting the proposed facility directly with Ray Street. This restricted access drive would intersect Ray Street opposite Nevada Avenue. A locked gate, equipped with a Knox Box, would be installed to prevent unauthorized use.

The proposed development has provided traffic analysis that has been reviewed by City Staff and Consultants. Thomas Errico, PE, Consulting Traffic Engineer has provided the following comments in regard to traffic impacts:

- The applicant's traffic engineer conducted a trip generation estimate for the project according to accepted traffic engineering methods. According to guidance in the Trip Generation Manual, Institute of Transportation Engineers, 10th Edition, the proposed project would be expected to generate 23 vehicles during the weekday AM peak hour (18 entering and 5 exiting) and 27 vehicles during the weekday PM peak hour (11 entering and 16 exiting). During the worst-case peak hour, the project will generate 41 vehicles (18 entering and 23 exiting). As noted by the applicant, this level of trip generation does not warrant a traffic study per the City Technical Manual (there is a High Crash Location on Allen Avenue near Allen's Corner that is close to ½ mile from the project site). I concur that a traffic study is not required. I would further note that that this level of traffic would not be expected to create safety or mobility issues. During the morning and evening commute peak hours (typically 7:30 to 8:30AM and 4:30 to 5:30PM), the project would add one vehicle to Ray Street about every 2 to 3 minutes.

- Based on the trip generation estimate provided by the applicant the proposed project does not require a MaineDOT Traffic Movement Permit.

- The applicant is required to submit a Construction Management Plan and as such a plan has been provided. A specific construction vehicle routing plan has not been noted and I would suggest that the applicant provide a suggested routing to minimize impact to the neighborhood.

b. Sidewalks

There are no existing sidewalks on site. The proposed internal sidewalk would lead from the proposed facility (Fallbrook Commons) to the existing facility (Fallbrook Woods). From there, the applicant is proposing a sidewalk along Merrymeeting Drive, that would connect to Ray Street's sidewalk.

c. Public Transit Access

Bus service is available on Ray Street only on days that schools are open. The closest daily, year-round bus service is on Washington Avenue. The facility would have a private shuttle service for residents.

d. Parking

The proposed project is required to provide 73 parking spaces and is proposing to provide 83 parking spaces on site, resulting in 10 additional spaces beyond the requirement. Of the 83 spaces, 66 are proposed to be paved, while 17 are to be structured turf for overflow and event parking. The facility is expected to employ up to 113 full time equivalent (FTE) employees as submitted in projections to the Maine Department of Health and Human Services. The staffing occurs in shifts, with 55 employees during the day shift, 25 during the evening shift and 10 employees during the night shift. The applicant's experience has been that providing parking for day shift employees with an allowance of approximately one visitor space per 2.5 beds meets the requirements for a typical day use for family visitors, and specialty service vehicle needs at their other facilities.

Of the 83 proposed parking spaces, 4 are universally accessible. All ADA spaces have been located nearest the primary entrance to the building for employees, guests, and visitors. Six spaces are proposed in the service area at the back of the facility, and are for contractors and facilities maintenance vehicles.

Mike Tremblay P.E., Senior Engineer, has provided a number of comments that are found in the response to comments. (SEE ATTACHMENT G)

e. Bicycle Parking

The applicant is proposing up to 10 bicycle spaces. The bike rack is proposed to be located at the buildings entrance.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

The development has been designed to preserve and protect significant natural features. A Tier 2 Natural Resource Protection Act (NRPA) application has been filed with the Maine Department of Environmental Protection for any proposed wetland impacts. The NRPA Permit was submitted to City Staff on June 5th. Maine Inland Fisheries and Wildlife reviewed the site and found there to be no essential habitats or fisheries habitats that have been mapped. IF&W noted that there was the possibility that the site falls within the migration path of several species of bat. All site clearing should be done outside of the protected bats roosting season. A project review was completed by the Maine Natural Areas Program (MNAP) which found there to be no documented rare botanical features within the project area. Following the first workshop, an appeal has been filed to the DEP challenging the issuance of the NRPA permit. This is ongoing evaluation by the DEP.

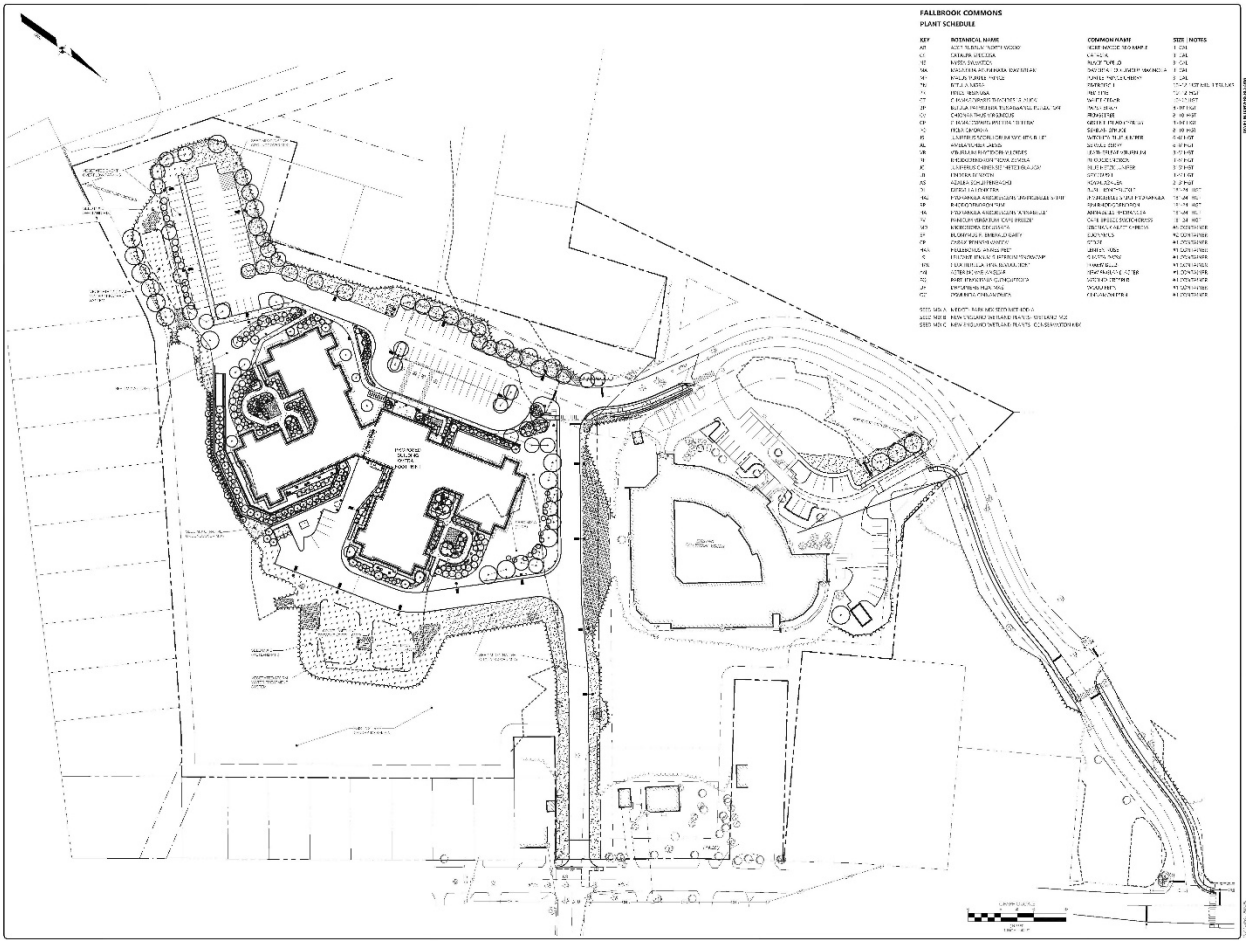


Figure 6: Landscape Plan - Source: Sebago Technics

b. Landscaping and Landscape Preservation

The proposed development involves the partial clearing of site vegetation to allow for site development. Existing tree cover was incorporated into the landscaping plan providing a wooded buffer between the proposed development and existing abutters. No trees with a 10-inch DBH or greater within the setback are to be impacted, as shown on the site plan. Vegetation will be protected during construction in accordance with tree preservation standards listed in Section 4 of the Technical Manual.

A planting schedule is included on the landscape plan that features native trees & shrubs such as Red Maple, Black Tulepo, White Cedar, Service Berry, Viburnum, and Spicebush. Much of the understory groundcover is designed to be seeded using three New England seed mixes, two for wetland areas, and one for parks.

Following the first workshop, the applicant revised the landscape plan to incorporate additional plantings to enhance buffers along the parking areas and retaining walls.

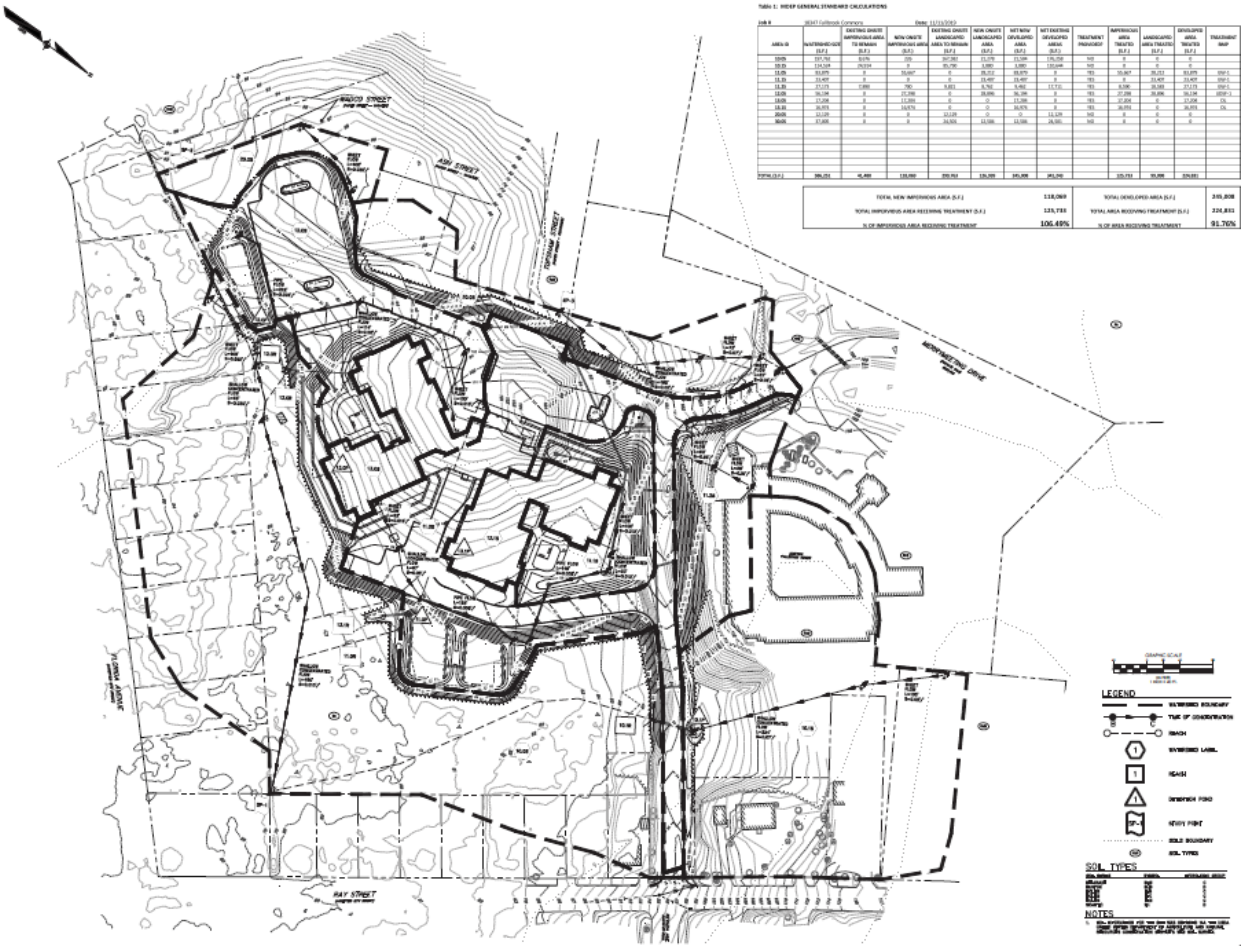


Figure 7: Post-Development SW - Source: Sebago Technics

c. Water Quality, Storm Water Management and Erosion Control

Development of the project site would result in an increase of approximately 118,068 square feet of impervious area. Since the project will disturb more than one (1) acre of land area, Maine DEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. The project avoids adverse impacts by implementing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 4) during construction and postconstruction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

To mitigate the changes in hydrologic patterns due to the development of this project, an under drained soil filter, a gravel wetland, and a roof drip edge filters have been included in the proposed stormwater management infrastructure. Through the use of the proposed BMP's, 100% of new impervious area and 91.8% of new developed area will be receiving treatment. This exceeds the requirements for the Maine DEP General Standards. The

project exceeds 100% of the new impervious area treated by directing untreated offsite impervious area to the proposed gravel wetland.

Since the planned project will create less than three (3) acres of impervious surface, Maine DEP Chapter 500 Flooding Standards are not required to be met. However, the Flooding Standard has been met as a local requirement. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site does not exceed the peak flows of stormwater prior to undertaking the project. The project is also required to meet the standards required for a Site Location of Development permit. A SLOD application has been submitted to DEP, reviewed by planning staff, and found to be in accordance with site plan standards.

Lauren Swett, P.E., Consulting Civil Engineer, has provided the following comments in regard to stormwater and erosion control:

***Comment**: The Applicant should evaluate the steepness of some of their pipes. In particular pipes SD-21 and RD-4 are steep, due to the proposed change in grade. RD-1 is also relatively steep. Please consider potential velocity issues at the ends of these pipes. "*
***Response:** Given the relatively small tributary areas and corresponding flow rates we do not have a concern regarding the slopes at these locations. To address the concern, we have adjusted the grades of SD-12 at the upstream and downstream structures. We have revised the alignment of the roof drains and added connection/drop structures at the top of the slope to flatten the grade.*

***Comment** "Pipe SD-18 is missing from the Stormdrain Pipe Data tables. "*
***Response:** Pipe SD-18 has been added to the tables.*

***Comment**: "Wall drains are noted to be connected to CB-8. Please clarify the depth of these connections to verify that the pipe can connect to the structure with all of the other proposed stormdrain connections."*
***Response:** Inverts for the wall drain inverts have been added to the labels. The wall drains enter above the site drainage pipes to accommodate the connection.*

***Comment:** "Ability to serve confirmation will be required from utilities, including the Portland Water District for domestic and fire water services and the Department of Public Works for sewer. "*
***Response:** We have reached out to Portland Water District and are working with them on the sizing of the domestic, Fire, and Sewer services.*

4. Site Design Standards

a. Snow and Ice Loading

The buildings have been designed and located such that accumulated snow and ice will not fall onto adjacent properties or public ways. Snow will be removed from the parking lots and stockpiled within the site perimeter or if necessary, removed from the site.

b. View Corridors

The site is not located within any corridors identified in the Downtown Vision View Corridor Protection Plan.

c. Historic Resources

The development is not located within a designated historic district.

d. Exterior Lighting

All new exterior lighting at the site will be full cutoff with no light emitted above the horizontal plane, and in accordance with Section 12 of the Technical Manual. A photometric lighting plan has been prepared by Hubbel Lighting Consultants to demonstrate illumination levels throughout the site will be consistent with City standards.

e. Noise and Vibration

All heating, ventilation, air conditioning equipment including air handlers and generators are designed to meet local, state, and federal emissions and noise requirements. All construction will take place between 7 a.m. and 7 p.m.

f. Signage and Wayfinding

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

g. Zoning Related Design Standards

The R-3 zone does not have any zone-specific design standards and the Site Plan Ordinance does not include design review for this use.

h. Construction Management Plan

The construction management plan and narrative were submitted and reviewed by city staff. A site analysis conducted by S.W. Cole provided the following guidance for the proposed construction:

- *Some areas of shallow bedrock were encountered at the explorations; thus blasting for bedrock removal should be anticipated. The depth of blasting should be controlled to less than 1 foot below footing subgrades and 2 feet below floor slab, pavement and utility subgrades.*

- *Subgrades across the site will consist of sensitive silts and clays. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays when wet. Excavation of soil bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.*

- *Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.*

X. NEXT STEPS

1. Address staff comments
2. Address additional comments of the Planning Board
3. Prepare final plan submission, including site plan submittal requirements as included in 14-527(e) and (f) for review by the Planning Board
4. Hold Planning Board Hearing

XI. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Public Comments
2. Comment Response Letters
3. Traffic Comments

APPLICANT'S SUBMITTALS

A - COVER LETTER
B – CHECKLIST
C - RIGHT, TITLE & INTEREST
D - FINANCIAL CAPACITY
E - TECHNICAL CAPACITY
F - ZONING ANALYSIS TABLE - EXISTING LOT
G - ZONING ANALYSIS TABLE - PROPOSED LOT
H - NEIGHBORHOOD MEETING
I - LETTER ON PROJECT NEED
J - JEFF SANDERS_LETTER OF SUPPORT
K - MHPC RESPONSE LETTER
L - SLODA 2020-03-02
M - STORMWATER REPORT
N - TRAFFIC MEMO
O - TRANSPORTATION ANALYSIS

P - SITE PLAN STANDARDS
Q - CONSTRUCTION MANAGEMENT NARRATIVE
R - RESPONSE TO COMMENTS
S - EVIDENCE OF APPROVALS
T - EXTERIOR LIGHTING
U - NARRATIVE OF PLAN CHANGES
V - LETTER TO PLANNING BOARD 6.29.20

PLANS

P1. COVER
P2. EXISTING CONDITIONS
P3. OVERALL SITE PLAN
P4. GRADING PLANS
P5. UTILITY PLANS
P6. LANDSCAPE PLAN
P7. 7. FLOOR PLAN - LOWER LEVEL
P8. 8. FLOOR PLAN - MAIN LEVEL
P9. ARCHITECTURAL RENDERING
P10. PRE-DEVELOPMENT STORMWATER
P11. POST-DEVELOPMENT STORMWATER
CONSTRUCTION MANAGEMENT PLAN
P12. ELEVATIONS
P13. PHOTOMETRIC PLAN
P14. PROPOSED LOT DIVISION PLAN
P15. 15. SITE PLAN RENDERING

Att. A

TRAFFIC MOVEMENT PERMIT APPLICATION

FOR

191 Marginal Way

Commercial Building

PREPARED FOR: Earle W. Noyes & Sons

PREPARED BY: William J. Bray, PE

May 2020

Provisionally Adopted 1/10/00

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 1/2000
ID #

Date: Received

****

PERMIT APPLICATION – TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. § 704 – A

Please type or print:

This application is for:

Traffic 100-200 PCE's **X**
Traffic 200 + PC-E's _____

Name of Applicant: **Earle W. Noyes & Sons**

Address: **127 Oxford Street, Portland, Maine 04101** Telephone: **1-(800)-341-7576 Ext. 218**

Name of local contact or agent: **William J. Bray, P.E., Traffic Solutions**

Address: **17 Mountview Drive, Gorham, Maine 04038**

Telephone: **(207) 400-6890**

Name and type of development: **191 Marginal Way Re-development Project**

Location of development including road, street, or nearest route number: **The existing 191 Marginal Way site is located on the eastside of Marginal Way south of Franklin Arterial**

City/Town/Plantation: **Portland** County: **Cumberland,** Tax Map: **24 Block C** Lot: **21**

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? Yes ____ No **X**

Was this development started prior to obtaining a traffic permit? **Yes**

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30 – A, chapter 187)?
Yes: **X** No: _____

Is this project located within a compact area of an urban compact municipality? Yes, **X** No _____

Is this development or any portion of the site currently subject to state or municipal enforcement action? **No**

Existing DEP or MDOT permit number (if applicable): _____

Name(s) of DOT staff person(s) contacted concerning this application:

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: _____

1/2000

CERTIFICATION

The traffic engineer responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approvals is complete and accurate to the best of his/her knowledge.

Signature: William J. Bray Re/Cert/Lic No.: 490

Name (print): William Bray

Date: April 28, 2020

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

William J. Bray — Signature of applicant

4/28/20 — Date

NOTICE OF INTENT TO FILE

Please take notice that:

Earle W. Noyes & Sons

Is intending to file a Maine Department of Transportation Traffic Movement Permit application with the City of Portland under their delegated review authority pursuant to the provisions of 23 M.R.S.A. § 704–A on or about

May 1, 2020

The application is for:

An existing commercial office and retail development located at 191 Marginal Way in the City of Portland.

The existing 17,300± square foot commercial building includes a total of five leasable spaces with existing tenants occupying two of the five spaces. ConvenientMD Urgent Care and Aetna Insurance presently are existing building tenants. The remaining three spaces are leased and are under construction; they include a veterinary office, dental office and a proposed Dunkin' Donuts shop.

Access to the existing 191 Marginal Way site is provided through two driveway entrances located on the north and south corners of the site that connect directly with Marginal Way.

The proposed project will generate a total of 176 trips in the weekday AM peak hour of the site and an additional 55 trips in the weekday PM peak hour.

At the following location: **191 Marginal Way, south of the Marginal Way/Franklin Arterial intersection.**

A request for a public hearing must be received by the City, in writing, no later than 20 days after the application is found by the City to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the City of Portland's Planning and Urban Development office, during normal working hours.

Written public comments may be sent to the Department of Transportation, Traffic Engineering Division, 16 State House Station, Augusta, Maine 04333.

191 Marginal Way Commercial Building

Traffic Movement Permit Application

Property Abutter List

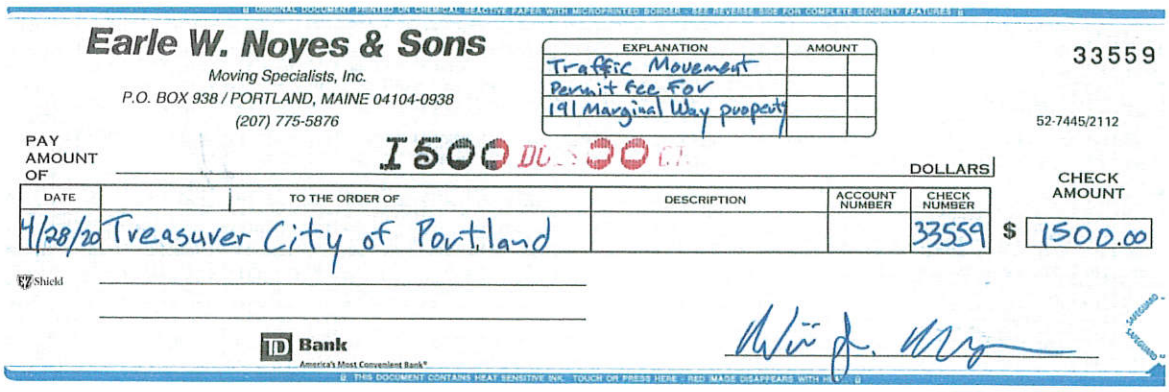
Marginal Way Properties, Inc.
984 Memorial Drive #504
Cambridge, MA 02138

161 Marginal Way, LLC
PO Box 7525
Portland, ME 04112

Perry E. Iron and Metal Co.
115 Lancaster Street
Portland, ME 04101

Carbo Company
One Canal Plaza, 5th Floor
Portland, ME 04101

Somerset Development, LLC
One Canal Plaza
Portland, ME 04101



Earle W. Noyes & Sons
Moving Specialists, Inc.
P.O. BOX 938 / PORTLAND, MAINE 04104-0938
(207) 775-5876

EXPLANATION	AMOUNT
Traffic Movement Permit fee For 191 Marginal Way property	

33559

52-7445/2112

PAY AMOUNT OF: I500 DOLLARS 00 CTS

CHECK AMOUNT: $ 1500.00

DATE	TO THE ORDER OF	DESCRIPTION	ACCOUNT NUMBER	CHECK NUMBER
4/28/20	Treasuver City of Portland			33559

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SECTION 1

A. SITE PLAN

The Marginal Way property was formerly occupied by a 9,375 square foot NAPA Auto Parts store and a 5,590 square foot AAA Auto Repair Center.

In July, 2016 the Applicant submitted a site plan application to the City's Planning and Urban Development Department to re-develop and re-purpose the Marginal Way property. The proposed project included removal of the existing site buildings and construction of a new 17,300± building. The proposed building would be sub-divided creating five leasable spaces ranging in size between 1,745 square feet to nearly 6,000 square feet. Currently, two of the five tenant spaces are leased and occupied by ConvenientMD Urgent Care and Aetna Insurance. The remaining three rental spaces are leased and are under construction; they include a veterinary office, dental office and a proposed Dunkin' Donuts shop.

Access to the existing 191 Marginal Way site is provided through two driveway entrances located on the north and south corners of the site that connect directly with Marginal Way.

The City's approval of the 191 Marginal Way multi-tenant building, which was received on January 17, 2017, included the following condition of approval (Condition #1) related to site trip generation: "*Prior to issuance of certificates of occupancy for each tenant fit-up, the applicant shall provide updated trip generation numbers for review and approval by the City's Department of Public Works. If a Traffic Movement Permit is triggered, an application must be submitted for review and approval by the Department of Public Works and the Planning Board.*"

The existing building tenants, combined, are expected to generate in excess of 100 passenger car equivalent trips thus requiring a MaineDOT Traffic Movement Permit.

SECTION 1

B. EXISTING AND PROPOSED SITE USES

The Marginal Way property was formerly occupied by a 9,375 square foot NAPA Auto Parts store and a 5,590 square foot AAA Auto Repair Center.

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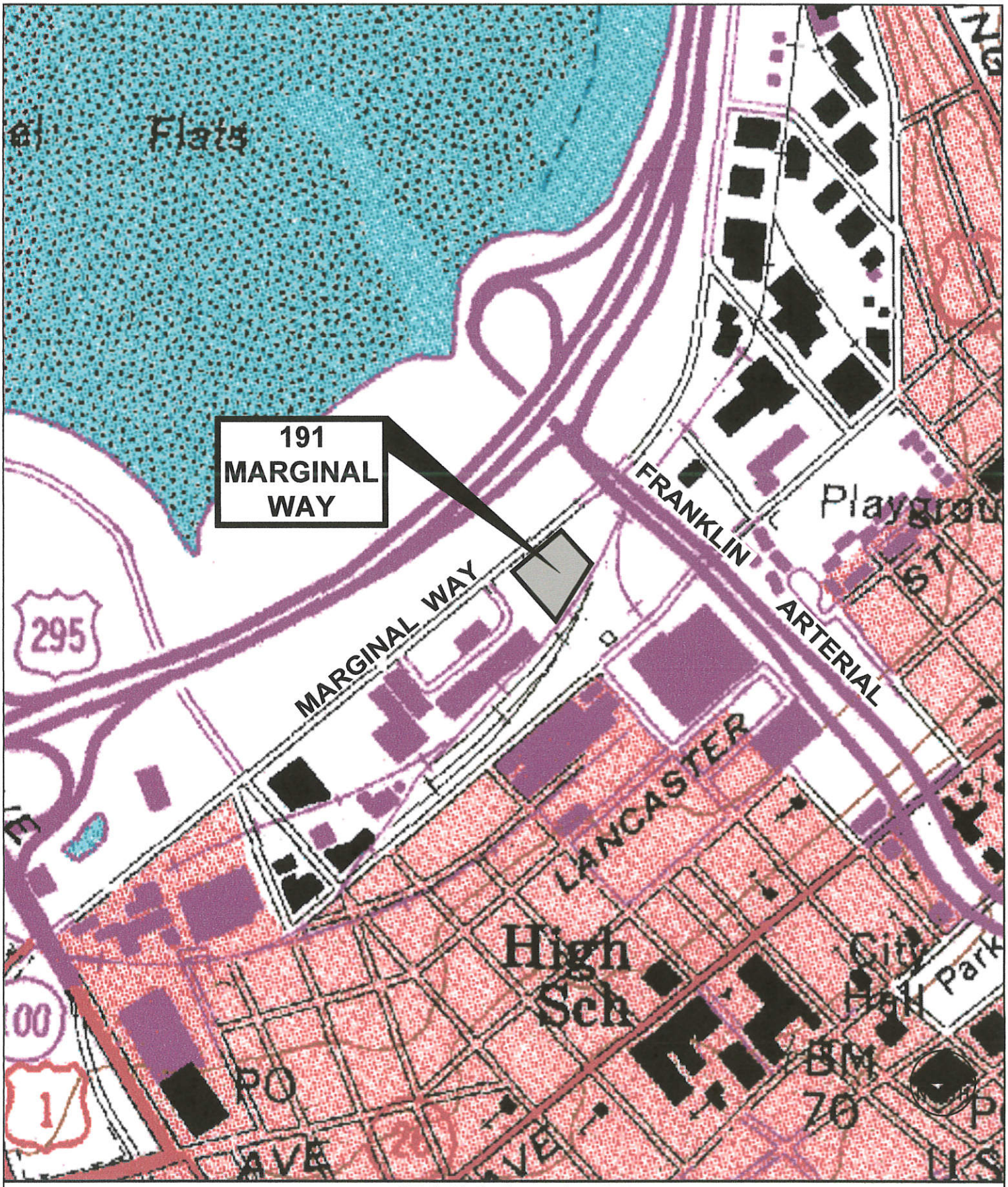
The existing building tenants, combined, are expected to generate in excess of 100 passenger car equivalent trips thus requiring a MaineDOT Traffic Movement Permit.

C. SITE AND VICINITY BOUNDARIES

The attached regional map depicts the existing 191 Marginal Way site in the City of Portland.



U.S.G.S. Location Map

191 Marginal Way, Portland, Maine

U.S.G.S. Portland West, State-7.5 Minute Series (Topographic)

Design: –	Date: APRIL 2020
Draft: CDD	Job No.: –
Checked: –	Scale: 1" = 500'±
File Name: 191 MARGINAL WAY LOCATION MAP.dwg	

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Figure
1

D. PROPOSED USES IN THE GENERAL VICINITY OF THE PROPOSED DEVELOPMENT

Traffic generated by projects that have been approved by the Planning Board and/or the Maine Department of Transportation, yet are not opened, must be included in the estimate of pre-development traffic. The City of Portland's Planning and Urban Development Department will be consulted to identify any and all development projects whose peak hour trips potentially impact the study area.

E. TRIP GENERATION

Site Trip Generation: Trip generation estimates were prepared for the existing multi-tenant building site applying standard trip rate information presented in the 10th edition of the Institute of Transportation Engineers (ITE) **TRIP GENERATION** publication and existing on-site survey data.

Calculation Procedures

Trip estimates for the 191 Marginal Way site were based upon the following level of development:

5,044sf ConvenientMD Urgent Care facility.
5,923sf Aetna Insurance Company.
2,400sf Rarebreed Veterinary.
1,970sf Roots Dental.
1,745sf Dunkin' Donuts without Drive-Through Window Service.

Trip generation estimates for the Aetna Insurance, Rarebreed Veterinary, Roots Dental and Dunkin' Donuts sites are estimated based upon the following land-use codes presented in the 10th edition of the ITE publication.

Land-Use #640 Animal Hospital/Veterinary Clinic

AM Peak Hour (Street)	= 3.64 trips per 1,000sf of floor area
PM Peak Hour (Street)	= 3.53 trips per 1,000sf of floor area
AM Peak Hour (Generator)	= 3.73 trips per 1,000sf of floor area
PM Peak Hour (Generator)	= 3.83 trips per 1,000sf of floor area

Land Use #715 – Single Tenant Office Building

AM Peak Hour (Street)	= 1.80 trips per 1,000sf of floor area
PM Peak Hour (Street)	= 1.73 trips per 1,000sf of floor area
AM Peak Hour (Generator)	= 1.80 trips per 1,000sf of floor area
PM Peak Hour (Generator)	= 1.73 trips per 1,000sf of floor area

Land-Use #720 Medical-Dental Office Building

AM Peak Hour (Street)	= 2.78 trips per 1,000sf of floor area
PM Peak Hour (Street)	= 3.46 trips per 1,000sf of floor area
AM Peak Hour (Generator)	= 3.53 trips per 1,000sf of floor area
PM Peak Hour (Generator)	= 4.10 trips per 1,000sf of floor area

Land Use #936 – Coffee/Donut Shop without Drive-Through Window

AM Peak Hour (Street)	= 101.14 trips per 1,000sf of floor area
PM Peak Hour (Street)	= 36.31 trips per 1,000sf of floor area
AM Peak Hour (Generator)	= 79.91 trips per 1,000sf of floor area
PM Peak Hour (Generator)	= 28.23 trips per 1,000sf of floor area

Trip generation for the existing ConvenientMD Urgent Care facility represents on-site traffic data gathered on November 26 and 28, 2018. Copies of the data is attached for reference. The traffic data shows the medical care facility generates a total of 11 trips in the morning peak hour and a slightly higher volume of 16 trips in the evening peak hour.

Table 1, as follows, provides the expected trip generation values for each of the designated peak hour time periods:

Table 1
Peak Hour Trip Generation
Summary

	Proposed Land-Use Identification					
Peak Hour Trip Generation	**ConvenientMD**	**Aetna Insurance**	**Rarebreed Veterinary**	**Roots Dental**	**Dunkin' Donuts**	**Total Trip Generation**
AM Peak Hour (Street)	11 trips	11 trips [3]	9 trips	5 trips	176 trips	212 trips
PM Peak Hour (Street)	16 trips	10 trips [4]	8 trips	7 trips	63 trips	104 trips
AM Peak Hour (Generator)	11 trips [1]	11 trips	9 trips	7 trips	139 trips	177 trips
PM Peak Hour (Generator)	16 trips [2]	10 trips	9 trips	8 trips	49 trips	92 trips

NOTES:
(1) AM Peak Hour (Generator) trip value assumed same as AM (Street) value.
(2) PM Peak Hour (Generator) trip value assumed same as PM (Street) value.
(3) AM Peak Hour (Street) trip value assumed same as AM (Generator) value.
(4) PM Peak Hour (Street) trip value assumed same as PM (Generator) value.

The proposed multi-tenant building can be expected to generate a total of **212** trips during the AM peak hour of the street; **104** trips in the evening peak hour of the street and a total of **177** trips in the morning peak hour of the generator and **92** trips in the evening peak hour of the generator.

Traffic Solutions
William J. Bray, P.E.
17 Mountview Drive
Gorham, ME 04038
(207) 400-6890
trafficsolutions@maine.rr.com

December 17, 2018

Bruce W. Bisbano, AIA NCARB
Principal Architect
Bisbano + Associates, Inc.
188 Valley Street
Providence, RI 02909

RE: Aetna Insurance – Traffic Projections

Dear Bruce:

It is my understanding Aetna Insurance has filed an application with the City's Permitting and Inspections Department for occupancy of approximately 6,000sf of space within the newly renovated 191 Marginal Way property. Chris Stacey, The City's Zoning Specialist, has advised peak hour trip generation forecasts must be provided for the proposed project and combined with existing site trip generation to determine if a MaineDOT Traffic Movement Permit is required for the overall site. This detailed information responds to a Condition of Approval for the project that states:

> *"The Applicant or owner needs to provide updated trip generation numbers prior to Certificate of Occupancy for each fit-up. If the Applicant will go over 100 trips, a formal MaineDOT Traffic Movement Permit will need to be obtained for the site."*

Traffic Solutions has prepared peak hour trip forecasts for the proposed Aetna Insurance office space based upon the ninth edition of the Institute of Transportation Engineers "**TRIP GENERATION**" publication. The noted publication provides peak hour trip rates for numerous land-use categories. Land-use category #715 - Single Tenant Office Building provides the following equations for estimating peak hour trips during both the morning and evening peak commuter hours:

AM Peak Hour: $T = 1.67(x) + 21.93$
PM Peak Hour: $T = 1.52(x) + 34.60$

(x) equals building area divided by 1,000sf

Accordingly, the proposed 6,000sf office space can be expected to generate a total of 32 trips during the "*morning*" peak hour and a total of 44 trips in the *"evening"* peak hour.

Vehicle trips generated by the existing single site tenant, ConvenienceMD, were determined with the collection of on-site peak hour trip data. Manual traffic surveys were conducted on November 26th and 28th to establish the volume of peak hour trips entering and exiting the 191 Marginal Way site. Technicians recorded all trips entering and exiting the site in 15-minite intervals at both site driveways between 7:30 and 9:30 AM and, again, between 3:00 and 6:00 PM. Table 1, as follows, provides a summary of the traffic survey data:

Table 1
Trip Generation Data
ConvenienceMD

Time Period	Entering Trips	Exiting Trips	Total Trips
7:30 to 7:45 AM	3	1	4
7:45 to 8:00	4	0	4
8:00 to 8:15	3	0	3
8:15 to 8:30	1	0	1
8:30 to 8:45	3	2	5
8:45 to 9:00	0	1	1
9:00 to 9:15	4	1	5
9:15 to 9:30	2	3	5
AM Peak Hour (8:30 to 9:30)	9	7	16
3:00 to 3:15 PM	1	3	4
3:15 to 3:30	0	0	0
3:30 to 3:45	1	0	1
3:45 to 4:00	3	3	6
4:00 to 4:15	0	0	0
4:15 to 4:30	1	1	2
4:30 to 4:45	2	1	3
4:45 to 5:00	3	0	3
5:00 to 5:15	1	2	3
5:15 to 5:30	0	2	2
5:30 to 5:45	2	1	3
5:45 to 6:00	0	1	1
PM Peak Hour (4:15 to 5:15PM)	7	4	11

As highlighted in Table 1, the ConvenienceMD office generates a total of 16 trips in the morning peak hour and a total of 11 trips in the evening peak hour.

Combined, the ConvenienceMD and proposed Aetna Insurance office space will generate a total of 48 trips during the AM peak hour and a total of 55 trips in the PM peak hour.

In summary, the total projected peak hour trip forecasts (48 AM and 55 PM) for the 191 Marginal Way development site are well below MaineDOT's 100 trip threshold value, whereby, an applicant is required to file for and obtain a Traffic Movement Permit.

If you have questions or require further explanation please contact me at 207-400-6890.

Very truly yours!

William J. Bray, PE

F. SITE TRIP ADJUSTEMENTS

Trip Generation Credit: MaineDOT allows a trip generation credit to be taken for on-site uses that have been operational within the last 10 years. Trip generation for the prior site uses: 9,375 square foot NAPA Auto Parts Store and the 5,590 square foot AAA Auto Service Center were prior site uses that were operational within the last 10-years. Accordingly, the peak hour trips generated by each prior site use can be applied as a trip credit in estimating the "net" change in peak hour trips of the existing mixed-use development. The following excerpt from an August 6, 2016 Traffic Assessment Report completed for the 191 Marginal Way site establishes the peak hour trip generation of the prior NAPA Auto Parts Store and the AAA Auto Service Center businesses:

Existing Site Trip Generation

- *NAPA Auto Parts Store*

  Peak hour trip generation was estimated for the existing NAPA Auto Parts Store based upon manual turning movement counts collected during both peak commuter time periods. Manual turning movement counts were collected on Tuesday, July 12 between the hours of 7:00 to 9:00 a.m. and, again, between 3:00 and 6:00 p.m. From a summary of the data, it was determined that the NAPA Store generates a total of 23 trips in the AM peak hour and a total of 32 trips in the evening peak hour (Copies of the data are attached).

- *AAA Auto Service Center*

  Peak hour trip generation was estimated based upon the following land-use category presented in the ninth edition of the ITE Handbook:

  Land-Use Code #942 – Automobile Care Center

  Street Peak Hour – AM Peak = 2.25 trips/1,000sf building area
  Street Peak Hour – PM Peak = 3.11 trips/1,000sf building area

  The AAA Auto Service Center building generates approximately 13 trips in the morning peak hour and 17 trips in the evening peak hour.

Total Existing Site Traffic

*Combined, the existing NAPA Auto Parts Store and former AAA Auto Service Center generate approximately **36** trips in the AM peak hour and **49** trips in the PM peak hour.*

"Net" Change in Site Trip Generation – (Street) Peak Hour Time Periods

The 191 Marginal Way site will generate a "net" volume of **176** trips in the AM peak hour of the street and a total of **55** trips in the PM peak hour of the street time period subject to the MaineDOT's Traffic Movement Permit regulations.

Shared-Use Adjustment: A finite number of employees, patients and/or visitors of each of the proposed building tenant spaces, except the Dunkin' Donuts shop will patronize the Dunkin' store during the morning peak hour without generating additional off-site vehicular trips. These multi-purpose trips, if not accounted for, overestimate the actual vehicular traffic impacts of the 191 Marginal Way site.

The National Cooperative Highway Research Program's (NCHRP) 684 Internal Trip Capture Estimation Tool provides a process for estimating the number of shared or captured trips generated by a development project. Copies of the spreadsheets used in the analysis follow. The summarized internal capture rates, as determined from the NCHRP 684 Worksheet Section 5-A, provide the following internal capture rates (percentages) applicable to the 191 Marginal Way site development uses:

Trip Capture Percent	Total	Entering Trips	Exiting Trips
AM Peak Hour	14%	12%	15%
PM Peak Hour	2%	2%	2%

Traffic Solutions, to conservatively forecast the number of internally captured or shared trips generated by the 191 Marginal Site, has applied a 12% captured trip rate for the AM peak hour and a 2% captured trip rate for the PM peak hour.

Accordingly, a total of 25 internal captured or shared trips are generated by the 191 Marginal Way site in the morning peak hour and a negligible volume of 2 trips in the evening peak hour. Accordingly, the adjusted volume of site trips generated in the morning peak hour that travel to and from the proposed site onto the adjacent street system are reduced to a total of 187 trips. A shared trip adjustment was not applied to the evening peak hour due to the insignificant volume of projected shared trips generated in the evening peak hour.

Other Modes of Transportation Adjustment: Both employees and visitors alike are expected to utilize other modes of transportation traveling to/from the 191 Marginal Way site commercial development site. These other transportation modes might include transit, ridesharing, bicycle travel or walking. Traffic Solutions, very conservatively, is projecting 10% of the site generated trips will in fact use a mode of transportation other than the auto.

Tables 2 and 3, as follows, provides a summary of the site trip adjustments applied:

Table 2
Peak Hour Trip Adjustment(S) Summary
AM Peak Hour

Building Use	Total Trips	Shared Trip Adjustment (1)	Other Modes Adjustment (2)	Total Adjusted Trips
ConvenientMD	11 trips	-1	-1	**9 trips**
Aetna Insurance	11 trips	-1	-1	**9 trips**
Rarebreed Veterinary	9 trips	-1	-1	**7 trips**
Roots Dental	5 trips	-1	0	**4 trips**
Dunkin Donuts	176 trips	- 21	-15	**140 trips**
TOTAL	**212 trips**	**-25**	**-18**	**169 trips**

NOTES:
(1) Total shared use adjustment was spread proportionally amongst each site use.
(2) Total other modes adjustment was spread proportionally amongst each site use.

Table 3
Peak Hour Trip Adjustment(s) Summary
PM Peak Hour

Building Use	Total Trips	Shared Trip Adjustment	Other Modes Adjustment (1)	Total Adjusted Trips
ConvenientMD	16	-0	-2	**14**
Aetna Insurance	10	-0	-1	**9**
Rarebreed Veterinary	8	0	-1	**7**
Roots Dental	7	-0	-1	**6**
Dunkin Donuts	63	-0	-6	**57**
TOTAL	**104**	**-0**	**-11**	**93**

NOTES:
(1) Total other modes adjustment was spread proportionally amongst each site use.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Mixed Use Site - Portland, ME	**Organization:**	Traffic Solutions
Project Location:	191 Marginal Way	**Performed By:**	JAR MMI
Scenario Description:	Mixed Use Site - AM Peak	**Date:**	4/27/2020
Analysis Year:	2020	**Checked By:**	
Analysis Period:	AM Peak Hour	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	715, 640, 720	14,913	SF	38	26	12
Retail				0		
Restaurant	936	1,673	SF	139	71	68
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]				0		
Total				177	97	80

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	8	0	0	0
Retail	0		0	0	0	0
Restaurant	4	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	177	97	80
Internal Capture Percentage	14%	12%	15%
External Vehicle-Trips[3]	153	85	68
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	15%	67%
Retail	N/A	N/A
Restaurant	11%	6%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	Mixed Use Site - Portland, ME
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	26	26	1.00	12	12
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	71	71	1.00	68	68
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	8	0	0	0
Retail	0		0	0	0	0
Restaurant	21	10		0	3	2
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	16	0	0	0
Retail	1		36	0	0	0
Restaurant	4	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	14	0		0
Hotel	1	0	4	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	4	22	26	22	0	0
Retail	0	0	0	0	0	0
Restaurant	8	63	71	63	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	8	4	12	4	0	0
Retail	0	0	0	0	0	0
Restaurant	4	64	68	64	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Mixed Use Site - Portland, ME	**Organization:**	Traffic Solutions
Project Location:	191 Marginal Way	**Performed By:**	JAR MMI
Scenario Description:	Mixed Use Site - PM Peak	**Date:**	4/27/2020
Analysis Year:	2020	**Checked By:**	
Analysis Period:	PM Peak Hour	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				43	18	25
Retail				0		
Restaurant				49	24	25
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]				0		
Total				92	42	50

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	1	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	92	42	50
Internal Capture Percentage	2%	2%	2%
External Vehicle-Trips[3]	90	41	49
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	6%	0%
Retail	N/A	N/A
Restaurant	0%	4%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

Project Name:	Mixed Use Site - Portland, ME
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	18	18	1.00	25	25
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	24	24	1.00	25	25
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	1	0
Retail	0		0	0	0	0
Restaurant	1	10		2	5	2
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	6		7	0	0	0
Restaurant	5	0		0	0	0
Cinema/Entertainment	1	0	1		0	0
Residential	10	0	3	0		0
Hotel	0	0	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	17	18	17	0	0
Retail	0	0	0	0	0	0
Restaurant	0	24	24	24	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	25	25	25	0	0
Retail	0	0	0	0	0	0
Restaurant	1	24	25	24	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

G. SITE TRIP COMPOSITION

Site Trip Composition: A 2007 Dunkin' Donuts Trip Generation report prepared by Gorrill-Palmer, Inc., which has been accepted and adopted by the MaineDOT established, on average, approximately 15% of the total trips generated by a Dunkin' Donuts site are "*primary*" or new trips to the area; 70% are "*pass-by*" trips or vehicle trips already on the roadway system and; 15% are "*diverted-link*" trips or existing trips on adjacent roadways that shift travel patterns. The diverted link trips generated by the proposed Dunkin' store site are considered new or primary trips to the roadway system.

Peak hour trips generated by each of the remaining site uses for this application are considered "*primary*" or "*new*" trips to the street system.

Table 4, as follows, presents the trip composition values for each of the site uses:

Table 4
Site Trip Composition Summary

Peak Hour Time	Total Adjusted Trips	Primary Trips	Pass-By Trips
AM Peak Hour (Street)			
- ConvenientMD	9	9	0
- Aetna Insurance	9	9	0
- Rarebreed Veterinary	7	7	0
- Roots Dental	4	4	0
- Dunkin Donuts	140	42	98
Total	**169**	**71**	**98**
PM Peak Hour (Street)			
- ConvenientMD	14	14	0
- Aetna Insurance	9	9	0
- Rarebreed Veterinary	7	7	0
- Roots Dental	6	6	0
- Dunkin Donuts	57	17	40
Total	**93**	**53**	**40**

Accordingly, the proposed site will generate: **98** "*pass-by*" and **71** "*primary*" trips in the morning peak hour of the street and a total of **40** "*pass-by*" and **53** "*primary*" trips in the evening peak hour of the street.

G. TRIP DISTRIBUTION

The Institute of Transportation Engineers handbook provides the following directional distribution rates for the 191 Marginal Way site uses:

Land-Use #640: Animal Hospital/Veterinary Clinic
AM Peak Hour (Street) = 67% enter/33% exit
PM Peak Hour (Street) = 40% enter/60% exit

Land-Use #715: Single-Tenant Office Building
AM Peak Hour (Street) = 89% enter/11% exit (1)
PM Peak Hour (Street) = 15% enter/5% exit (2)

Land-Use #720: Medical-Dental Office Building
AM Peak Hour (Street) = 78% enter/22% exit
PM Peak Hour (Street) = 28% enter/72% exit

Land-Use #936: Coffee/Donut Shop without Drive-Through Window
AM Peak Hour (Street) = 51% enter/49% exit
PM Peak Hour (Street) = 50% enter/50% exit

ConvenientMD Urgent Care Facility (3)
AM Peak Hour (Street) = 56% enter/44% exit
PM Peak Hour (Street) = 64% enter/36% exit

NOTES:
(1) Distribution splits for the AM peak hour of the street based upon AM peak hour of generator data.
(2) Distribution splits for the PM peak hour of the street based upon PM peak hour of generator data.
(3) Directional splits determined based upon existing field counts collected on-site in 2018.

Table 5, below, provides a summary of the site trip volumes projected to enter and exit the site during each noted peak hour time period:

Table 5
Peak Hour Trip Directional Distribution
Summary

Peak Hour Time Period	Primary Trip		"Pass-By" Trip		Total Trips	
	Enter	Exit	Enter	Exit	Enter	Exit
AM Peak Hour (Street)	41	30	49	49	90	79
PM Peak Hour (Street)	24	29	20	20	44	49

H. TRIP ASSIGNMNET

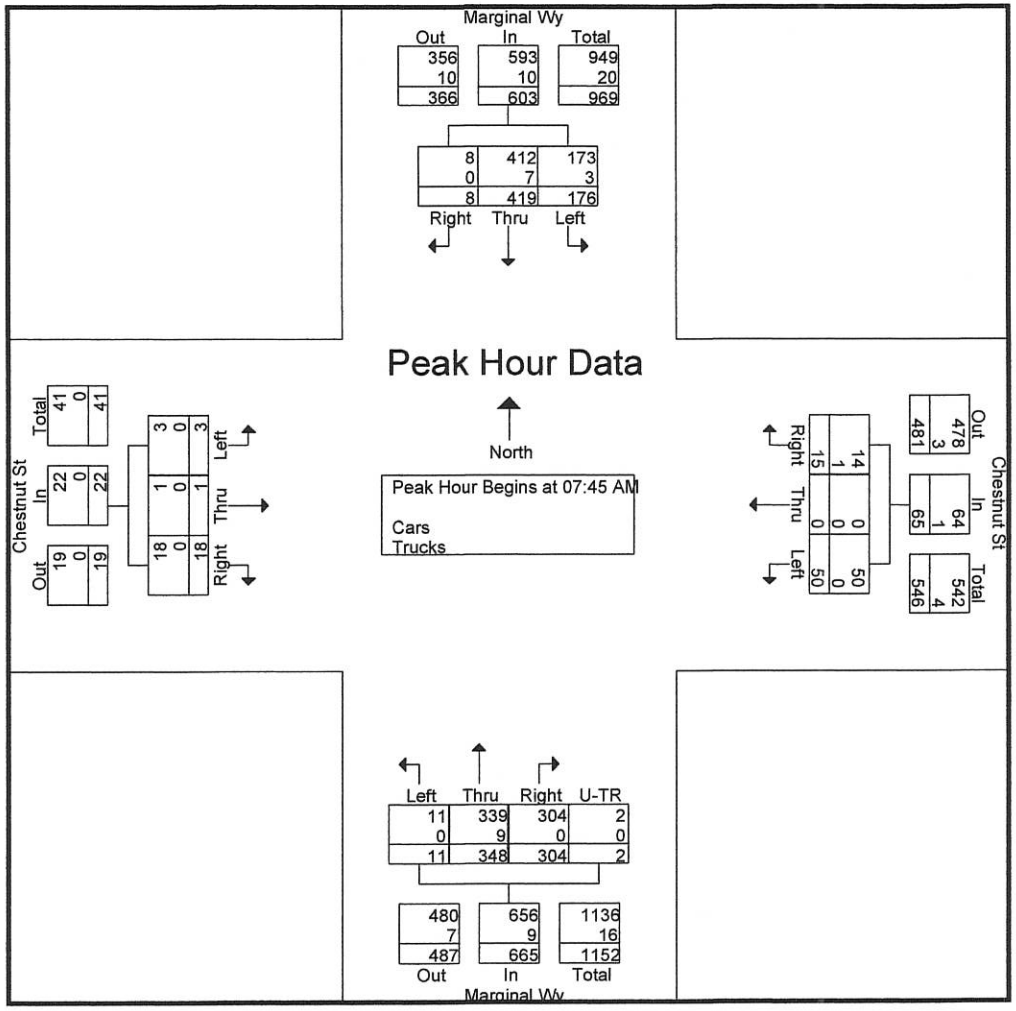
Site trips generated by the 191 Marginal Way commercial building at full occupancy were directionally assigned to the Marginal Way corridor based upon peak hour traffic data collected on September 10, 2019 at the Franklin Arterial/Marginal Way intersection. The traffic data suggests that approximately 65% of the traffic on Marginal Way in the morning peak hour travels east and 35% west. The directional splits found in the evening peak hour show a reverse pattern occurs with 55% of the traffic traveling east and 45% west.

The site trips were further assigned through both the Franklin Arterial and Chestnut Street intersections with Marginal Way based upon intersection traffic surveys collected at both locations in 2019. Copies of both traffic count data are attached for reference.

Figures 1 and 2 illustratively present the site trip assignments for both commuter peak hour time periods.

N/S Street : Marginal Way
E/W Street: Chestnut Street
City/State : Portland, ME
Weather : Rain / Cloudy

File Name : 19482001
Site Code : 19482001
Start Date : 10/23/2019
Page No : 5



Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

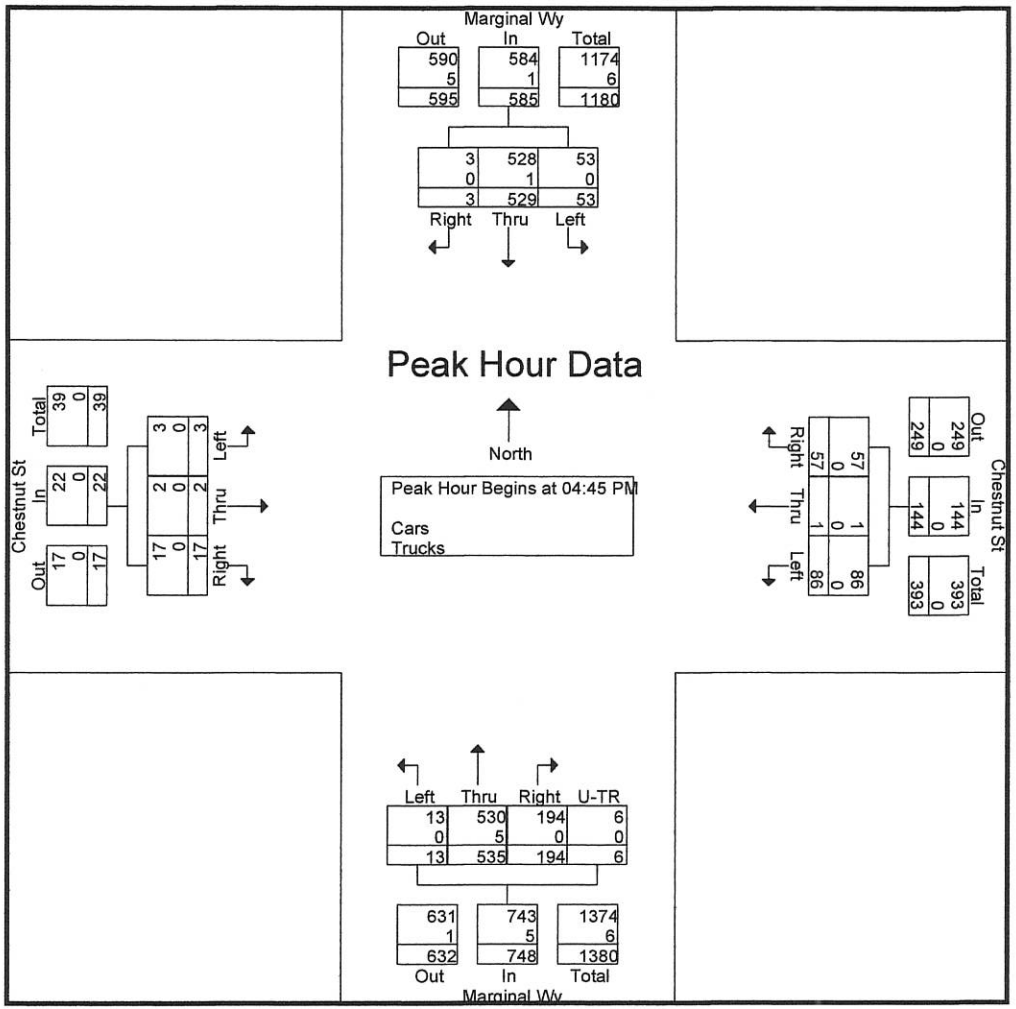
	07:45 AM				08:00 AM				08:00 AM					08:15 AM			
+0 mins.	42	104	**2**	148	13	0	4	17	2	**92**	66	**1**	161	0	**1**	5	6
+15 mins.	**60**	98	2	160	12	0	**6**	**18**	3	88	**83**	1	**175**	**1**	0	5	6
+30 mins.	40	**127**	2	**169**	**15**	0	3	18	3	88	71	0	162	0	1	6	7
+45 mins.	34	90	2	126	13	0	5	18	**6**	90	77	0	173	1	0	**8**	**9**
Total Volume	176	419	8	603	53	0	18	71	14	358	297	2	671	2	2	24	28
% App. Total	29.2	69.5	1.3		74.6	0	25.4		2.1	53.4	44.3	0.3		7.1	7.1	85.7	
PHF	.733	.825	1.000	.892	.883	.000	.750	.986	.583	.973	.895	.500	.959	.500	.500	.750	.778

Accurate Counts

978-664-2565

N/S Street : Marginal Way
E/W Street: Chestnut Street
City/State : Portland, ME
Weather : Rain / Cloudy

File Name : 19482001
Site Code : 19482001
Start Date : 10/23/2019
Page No : 11



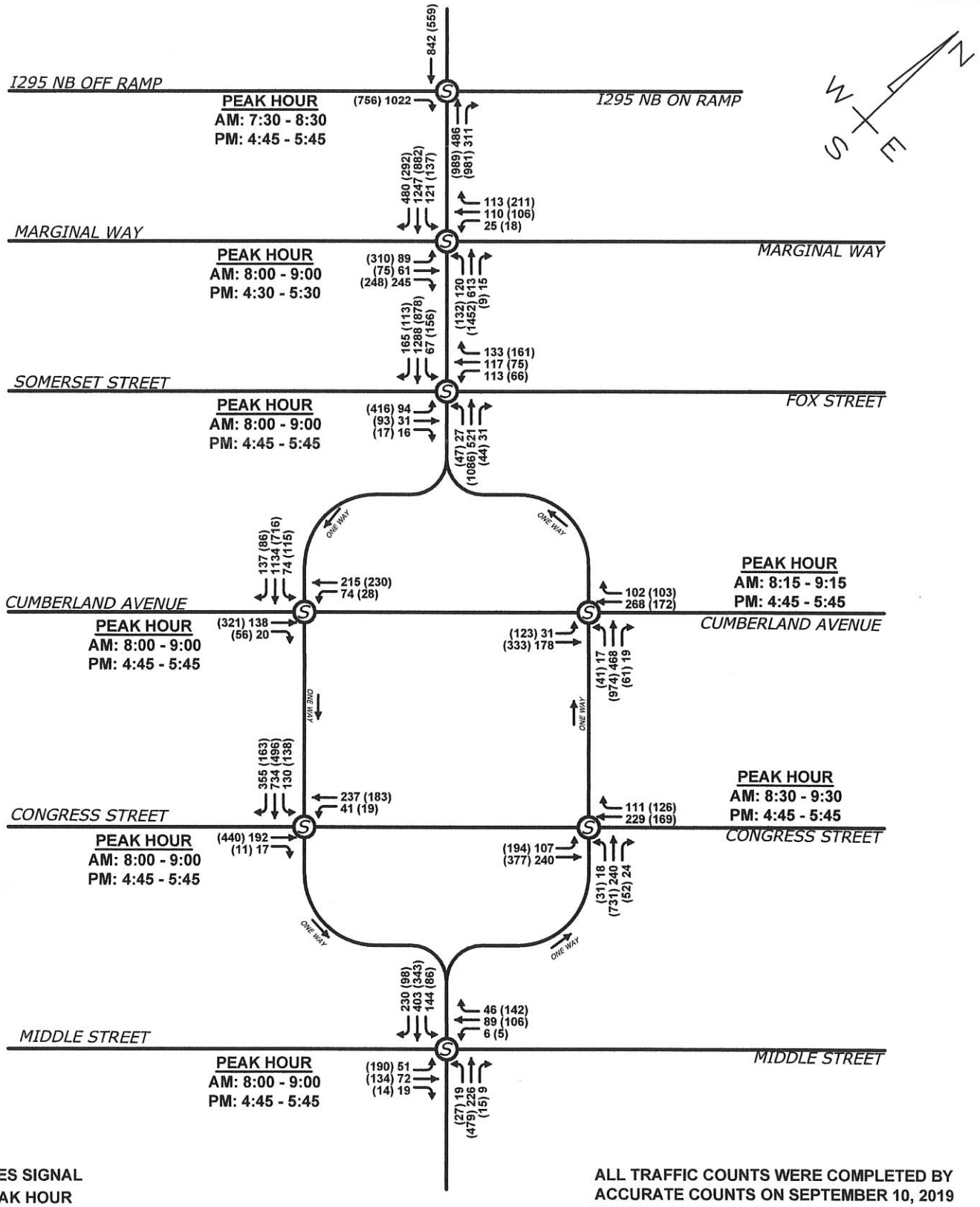
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:45 PM					03:15 PM			
+0 mins.	17	113	0	130	22	0	18	40	1	126	**59**	**3**	189	0	**1**	4	5
+15 mins.	19	136	0	155	16	**1**	11	28	2	134	49	2	187	1	1	8	**10**
+30 mins.	6	**178**	**2**	**186**	**26**	0	**19**	**45**	4	**139**	37	1	181	0	0	**9**	9
+45 mins.	**20**	111	0	131	24	0	15	39	**6**	136	49	0	**191**	**2**	0	6	8
Total Volume	62	538	2	602	88	1	63	152	13	535	194	6	748	3	2	27	32
% App. Total	10.3	89.4	0.3		57.9	0.7	41.4		1.7	71.5	25.9	0.8		9.4	6.2	84.4	
PHF	.775	.756	.250	.809	.846	.250	.829	.844	.542	.962	.822	.500	.979	.375	.500	.750	.800

Raw Volumes

Figure No. 2



(S) DENOTES SIGNAL
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

ALL TRAFFIC COUNTS WERE COMPLETED BY ACCURATE COUNTS ON SEPTEMBER 10, 2019 FROM 7:30 AM TO 9:30 AM AND 4:00 PM TO 6:00 PM

FRANKLIN STREET CORRIDOR
PORTLAND, MAINE

Design:	TPG	Scale:	NONE
Draft:	TPG	Date:	FEBRUARY 2020
Checked:	RED	File Name:	Revised Franklin Street.dwg

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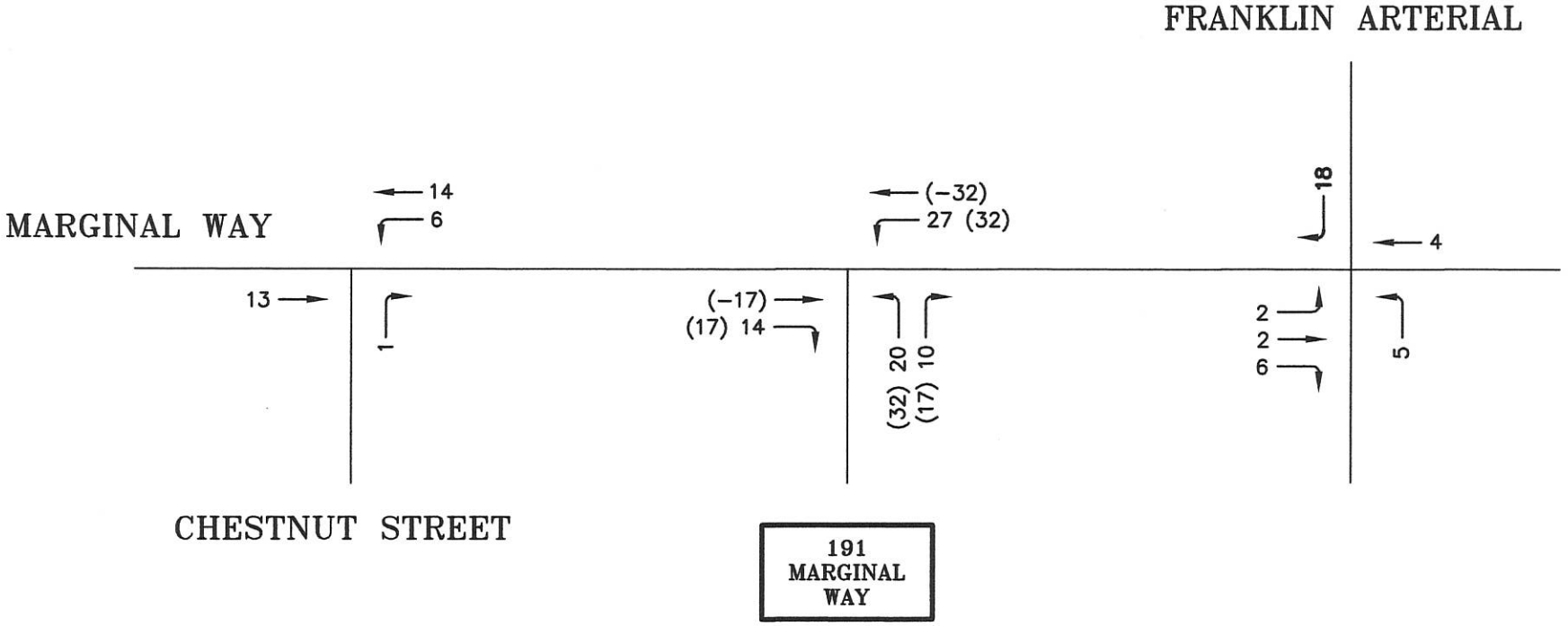


LEGEND

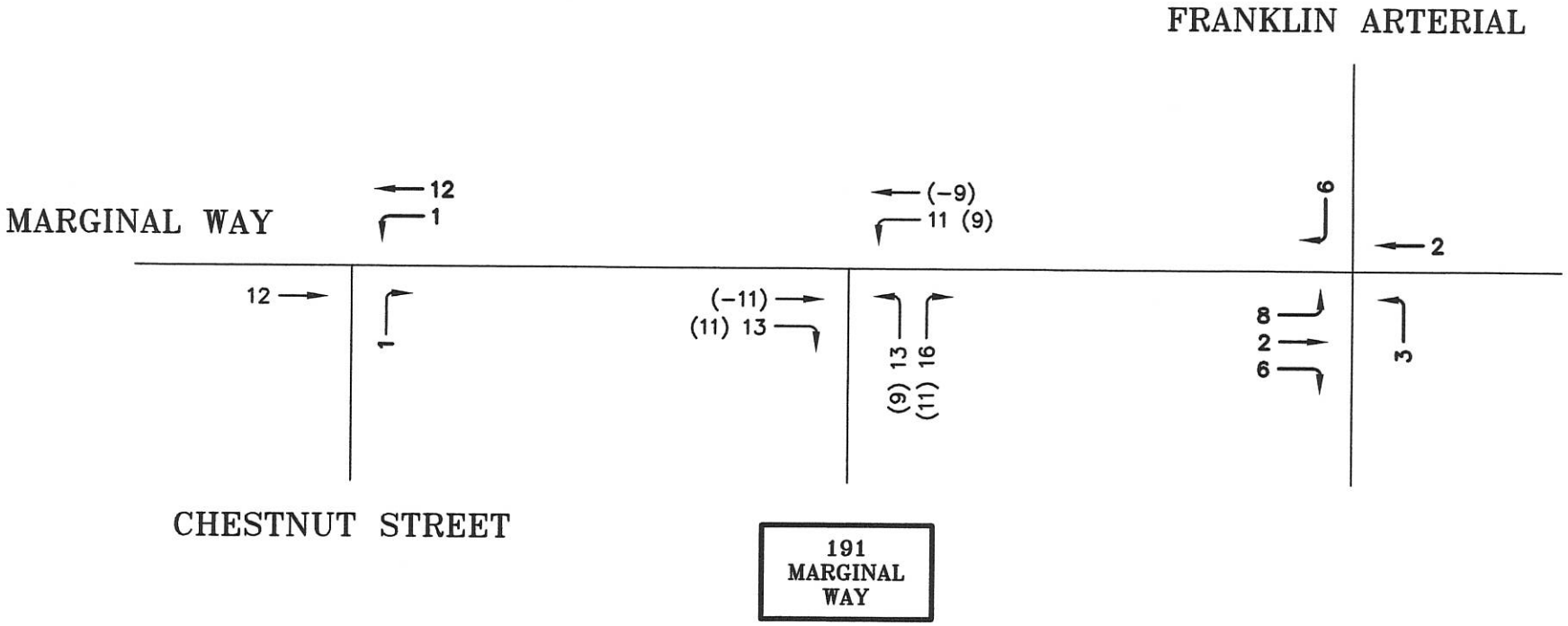
XX = PRIMARY TRIPS

(XX) = PASS-BY TRIPS

SITE TRAFFIC ASSIGNMENT
AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\191 MARGINAL WAY\PLANSET\191 MARGINAL WAY.DWG

Project Name and Location: 191 MARGINAL WAY COMMERCIAL BUILDING	TRAFFIC SOLUTIONS
DATE: MAY, 2020 FIGURE: 1	17 MOUNTVIEW DRIVE, GORHAM, MAINE 04038



LEGEND

XX = PRIMARY TRIPS

(XX) = PASS-BY TRIPS

SITE TRAFFIC ASSIGNMENT
PM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\191 MARGINAL WAY\PLANSET\191 MARGINAL WAY.DWG

Project Name and Location: 191 MARGINAL WAY COMMERCIAL BUILDING	TRAFFIC SOLUTIONS
DATE: MAY, 2020 FIGURE: 2	17 MOUNTVIEW DRIVE, GORHAM, MAINE 04038

SECTION 2

TRAFFIC ACCIDENTS

The Maine Department of Transportation's (MaineDOT) Accident Records Section provided three-year (2017 through 2019) safety records for the section of Marginal Way between Chestnut Street and Franklin Arterial, a distance of 0.25 miles. MaineDOT's report is presented as follows:

2017 - 2019 Accident Summary

Location	Number of Accidents	Critical Rate Factor
1. Chestnut Street @ Marginal Way	15	3.99
2. Franklin Arterial @ Marginal Way	55	1.25
3. Marginal Way btw. Chestnut Street and Raised Median at Franklin Arterial	25	2.38

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 chart shows, each of the reported locations meet MaineDOT's criterion as a high crash location. MaineDOT provided a vehicle collision diagram for each location that provides explicit detail on each reported vehicle crash. Copies of the crash diagrams are attached.

A brief summary of MaineDOT's detailed review of each location follows:

Location #1: Chestnut Street @ Marginal Way: Seven (7) of the reported 15 collisions at this intersection were "angle" crashes, with the majority of the crashes involving a motorist turning left from the Chestnut Street approach struck by a motorist traveling west on Marginal Way. The remaining eight crashes reported for the intersection occurred for varying reasons within the intersection.

Location #2: Franklin Arterial @ Marginal Way: There are three very prominent crash patterns occurring within the intersection: (21) "rear-end" collisions, (11) "angle" crashes and (10) vehicle "side-swipe" accidents. The "rear-end" crashes primarily occurred on the west approach of Franklin Arterial and south approach of Marginal Way. Eight (8) of the 11 total "angle" crashes involved a motorist either turning right to travel east on Franklin Arterial or turning left from the north approach of Marginal Way being struck by a through vehicle traveling south to north on Marginal Way. Seven (7) of the 10 "sideswipe" crashes involved motorists traveling west to east on Franklin Arterial. It appears that one or both of the drivers were changing lanes as they crossed the intersection. Ten of the 15 crashes were classified as "rear-end" collisions involving through vehicles.

Location #3: Marginal Way between Chestnut Street and Traffic Island at Franklin Arterial: Nine (9) of the 25 crashes were vehicles turning left from Marginal Way to the AT&T/Planet Dog businesses. Six (6) additional crashes, again left-turn accidents, were motorists turning into the Planet Fitness driveway entrance. The remaining nine crashes reported for the road segment were more randomly located within the road section.

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

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

Portland: Marginal Way from Chestnut St (node 72190) to Franklin St arterial (node 19000)

REPORT PARAMETERS

Year 2017, Start Month 1 through Year 2019 End Month: 12

Route: **0560477**	Start Node: **72190**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19000**	End Offset: **0**	☐ **Exclude Last Node**
Route: **3210333**	Start Node: **19000**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **71634**	End Offset: **0**	☑ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
72190	0560477 - 0.33	Int of CHESTNUT ST MARGINAL WY	2	15	0	0	1	3	11	26.7	2.728	1.83	0.46	3.99
												Statewide Crash Rate:	0.16	
71634	0560477 - 0.50	Non Int MARGINAL WY	2	1	0	0	0	0	1	0.0	2.289	0.15	0.48	0.00
												Statewide Crash Rate:	0.16	
19000	0560477 - 0.54	Int of FRANKLIN ST FRANKLIN ST ART MARGINAL WAY N	9	55	0	0	1	11	43	21.8	13.415	1.37	1.09	1.25
												Statewide Crash Rate:	0.75	
Study Years:	3.00	**NODE TOTALS:**		71	0	0	2	14	55	22.5	18.432	1.28	0.85	1.52

Crash Summary I

Sections																
Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
72190	71634	4348447	0 - 0.17	0560477 - 0.33	0.17	2	25	0	0	1	5	19	24.0	0.00778	1070.98	449.52	2.38
Int of CHESTNUT ST MARGINAL WY				RD INV 05 60477											Statewide Crash Rate: 220.55		
71634	19000	4210710	0 - 0.04	0560477 - 0.50	0.04	2	0	0	0	0	0	0	0.0	0.00092	0.00	768.49	0.00
Non Int MARGINAL WY				RD INV 05 60477											Statewide Crash Rate: 220.55		
19000	71634	4210711	0 - 0.04	3210333 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00092	0.00	768.49	0.00
Int of FRANKLIN ST MARGINAL WAY	FRANKLIN ST ART MARGINAL WY			RD INV 3210333											Statewide Crash Rate: 220.55		
Study Years: 3.00				**Section Totals:**	0.25		25	0	0	1	5	19	24.0	0.00961	866.98	428.50	2.02
				Grand Totals:	0.25		96	0	0	3	19	74	22.9	0.00961	3329.20	586.12	5.68

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

LOW NODE: **72190** HIGH NODE: **71634** REGION: **1** U/R: **URBAN**

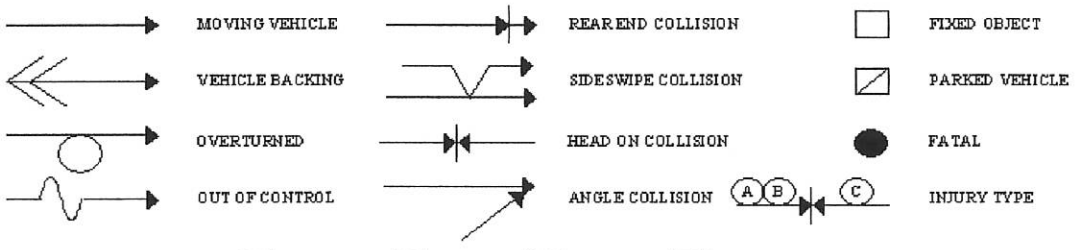
DESCRIPTION: **Marginal Way - Chestnut St to Franklin St Median**

RTE # / RD #: **0560477** DATE DRAWN: **4/23/2020** DRAWN BY: **Michelle**

STUDY FROM: **1/1/2017** STUDY TO: **12/31/2019**

CRASH RATE: **1070.98** CRF: **2.38** % INJURY: **24** TOTAL CRASHES: **25**

LEGEND



PAVEMENT: D - DRY, I - ICY, W - WET, S - SNOW

WEATHER: C - CLEAR, F - FOG, R - RAIN, SL - SLEET, S - SNOW, CL - CLOUDY

TIME: A - AM, P - PM

Portland

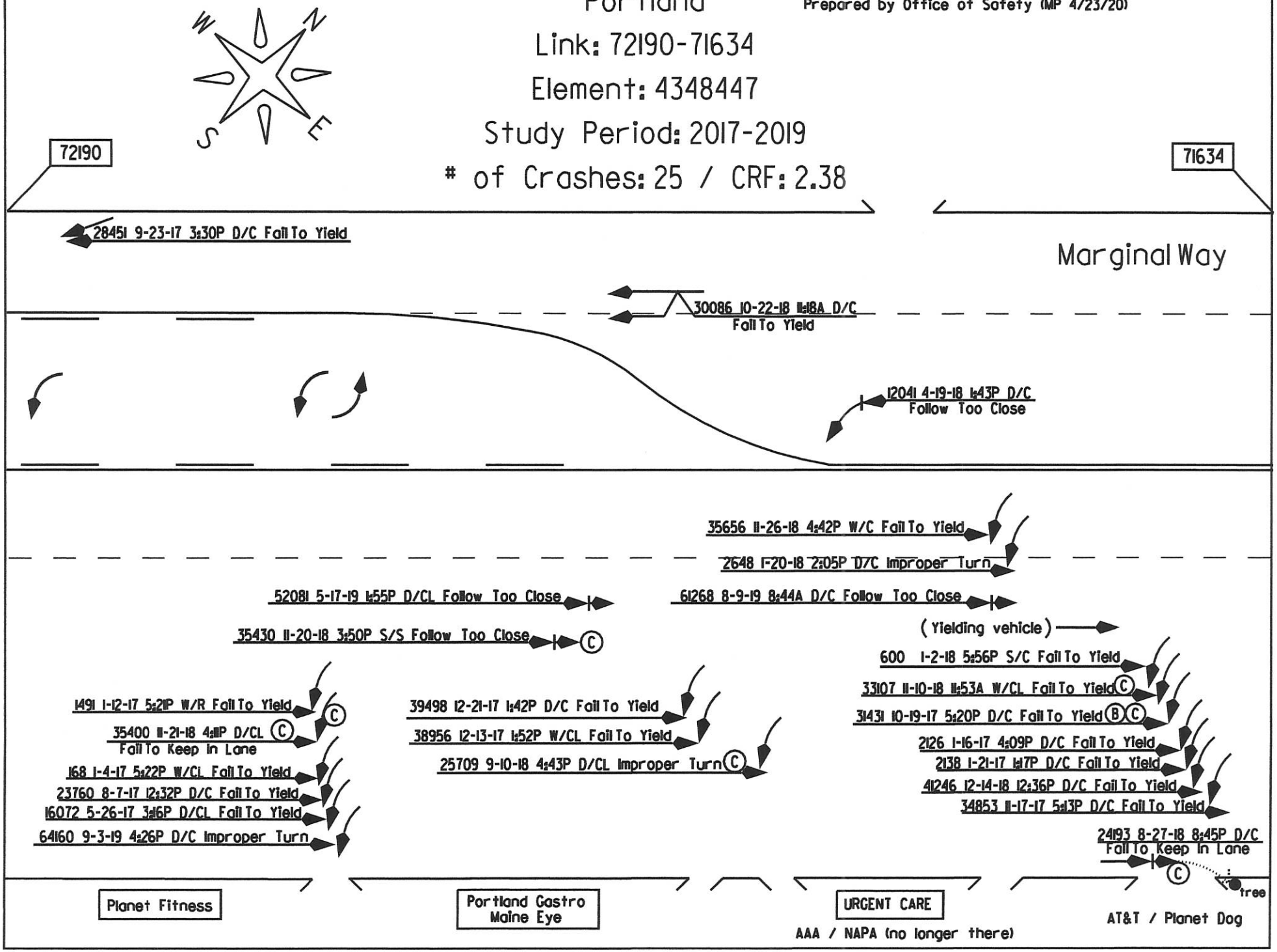
Prepared by Office of Safety (MP 4/23/20)

Link: 72190-71634

Element: 4348447

Study Period: 2017-2019

# of Crashes: 25 / CRF: 2.38



H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

LOW NODE: **19000** HIGH NODE: **0000** REGION: **1** U/R: **URBAN**

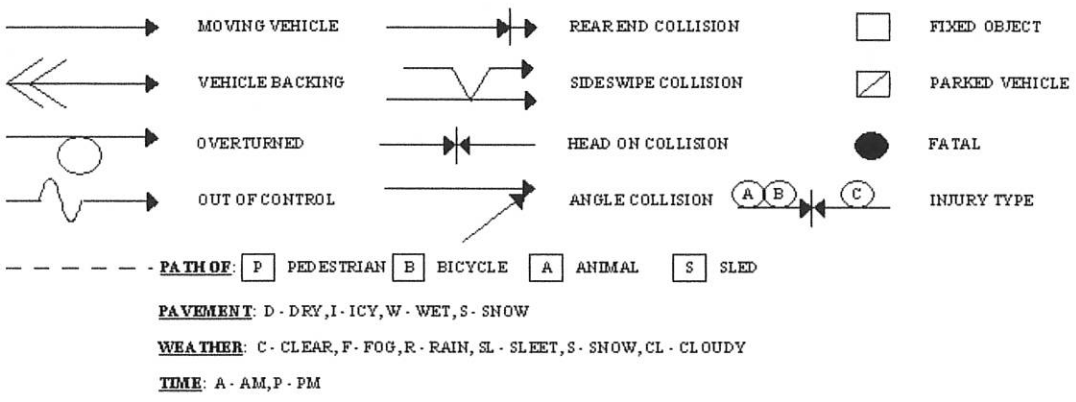
DESCRIPTION: **Intersection of Marginal Way & Franklin St.**

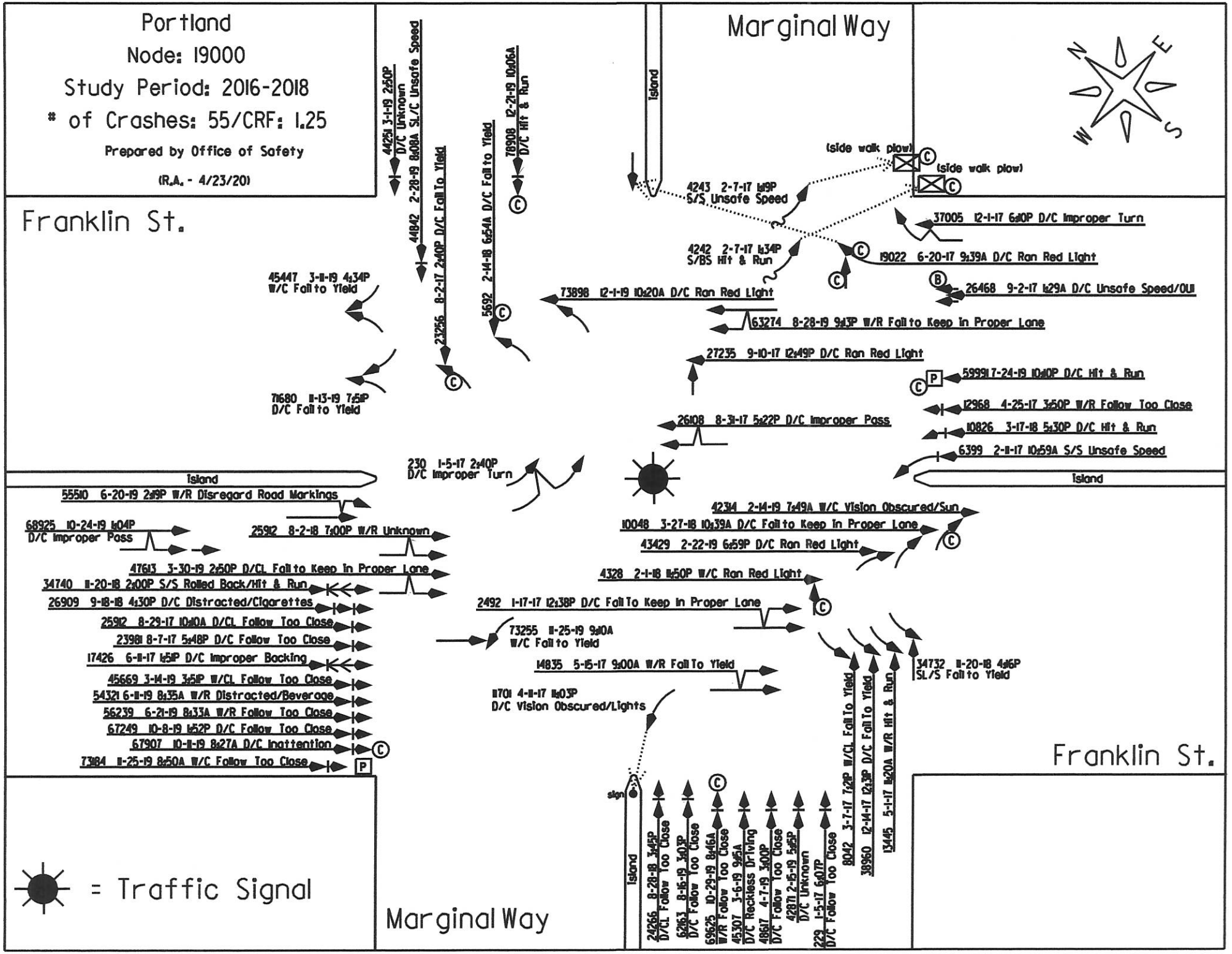
RTE # / RD #: **0001A** DATE DRAWN: **4/23/2020** DRAWN BY: **Rachel**

STUDY FROM: **1/1/2017** STUDY TO: **12/31/2019**

CRASH RATE: **1.37** CRF: **1.25** % INJURY: **21.8** TOTAL CRASHES: **55**

LEGEND




Portland
Node: 19000
Study Period: 2016-2018
# of Crashes: 55/CRF: 1.25
Prepared by Office of Safety
(R.A. - 4/23/20)
Marginal Way
Franklin St.
Island
(side walk plow)
(side walk plow)
4243 2-7-17 1:19P S/S Unsafe Speed
37005 12-1-17 6:10P D/C Improper Turn
4242 2-7-17 1:34P S/BS Hit & Run
19022 6-20-17 9:39A D/C Ran Red Light
26468 9-2-17 1:29A D/C Unsafe Speed/OUI
73898 12-1-19 10:20A D/C Ran Red Light
63274 8-28-19 9:13P W/R Fail to Keep in Proper Lane
27235 9-10-17 12:49P D/C Ran Red Light
59991 7-24-19 10:10P D/C Hit & Run
12968 4-25-17 3:50P W/R Follow Too Close
10826 3-17-18 5:30P D/C Hit & Run
6399 2-11-17 10:59A S/S Unsafe Speed
26108 8-31-17 5:22P D/C Improper Pass
230 1-5-17 2:40P D/C Improper Turn
42314 2-14-19 7:49A W/C Vision Obscured/Sun
10048 3-27-18 10:39A D/C Fail to Keep in Proper Lane
43429 2-22-19 6:59P D/C Ran Red Light
4328 2-1-18 11:50P W/C Ran Red Light
2492 1-17-17 12:38P D/C Fail To Keep in Proper Lane
73255 11-25-19 9:10A W/C Fail to Yield
14835 5-15-17 9:00A W/R Fail To Yield
11701 4-11-17 11:03P D/C Vision Obscured/Lights
34732 11-20-18 4:16P SL/S Fail to Yield
8042 3-7-17 7:12P W/CL Fail To Yield
38960 12-14-17 12:13P D/C Fail To Yield
13445 5-1-17 11:20A W/R Hit & Run
24266 8-28-18 3:45P D/CL Follow Too Close
6263 8-15-19 3:10P D/C Follow Too Close
69625 10-29-19 8:46A W/R Follow Too Close
45307 3-6-19 9:15A D/C Reckless Driving
48617 4-7-19 3:10P D/C Follow Too Close
42811 2-15-19 5:15P D/C Unknown
229 1-5-17 6:01P D/C Follow Too Close
sign
44251 3-1-19 2:50P D/C Unknown
44842 2-28-19 8:08A SL/C Unsafe Speed
23256 8-2-17 2:40P D/C Fail To Yield
78908 12-21-19 10:06A D/C Hit & Run
5692 2-14-18 6:54A D/C Fail to Yield
45447 3-11-19 4:34P W/C Fail to Yield
71680 11-13-19 7:51P D/C Fail to Yield
55510 6-20-19 2:19P W/R Disregard Road Markings
68925 10-24-19 1:04P D/C Improper Pass
25912 8-2-18 7:00P W/R Unknown
47613 3-30-19 2:50P D/CL Fail to Keep in Proper Lane
34740 11-20-18 2:00P S/S Rolled Back/Hit & Run
26909 9-18-18 4:30P D/C Distracted/Cigarettes
25912 8-29-17 10:10A D/CL Follow Too Close
23981 8-7-17 5:48P D/C Follow Too Close
17426 6-11-17 1:51P D/C Improper Backing
45669 3-14-19 3:51P W/CL Follow Too Close
54321 6-11-19 8:35A W/R Distracted/Beverage
56239 6-21-19 8:33A W/R Follow Too Close
67249 10-8-19 1:52P D/C Follow Too Close
67907 10-11-19 8:27A D/C Inattention
73184 11-25-19 8:50A W/C Follow Too Close
= Traffic Signal
Marginal Way
Franklin St.

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

LOW NODE: **72190** HIGH NODE: **0000** REGION: **1** U/R: **URBAN**

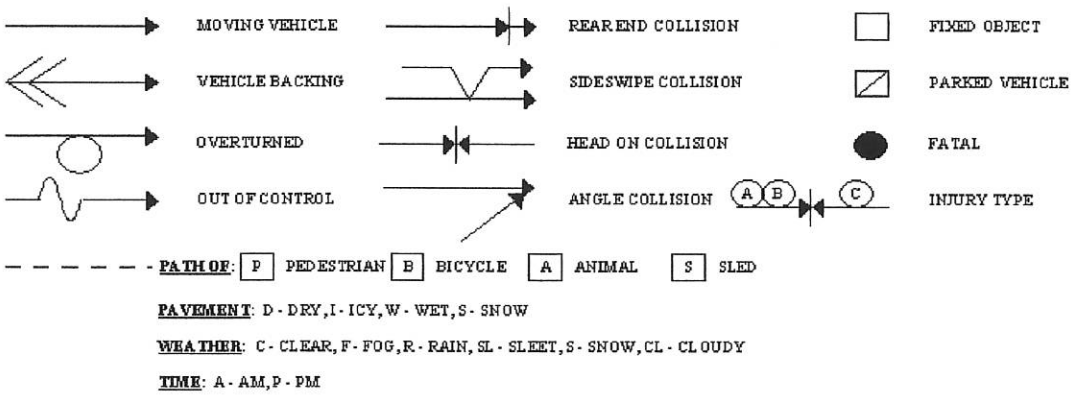
DESCRIPTION: **Jct of Marginal Way & Chestnut St**

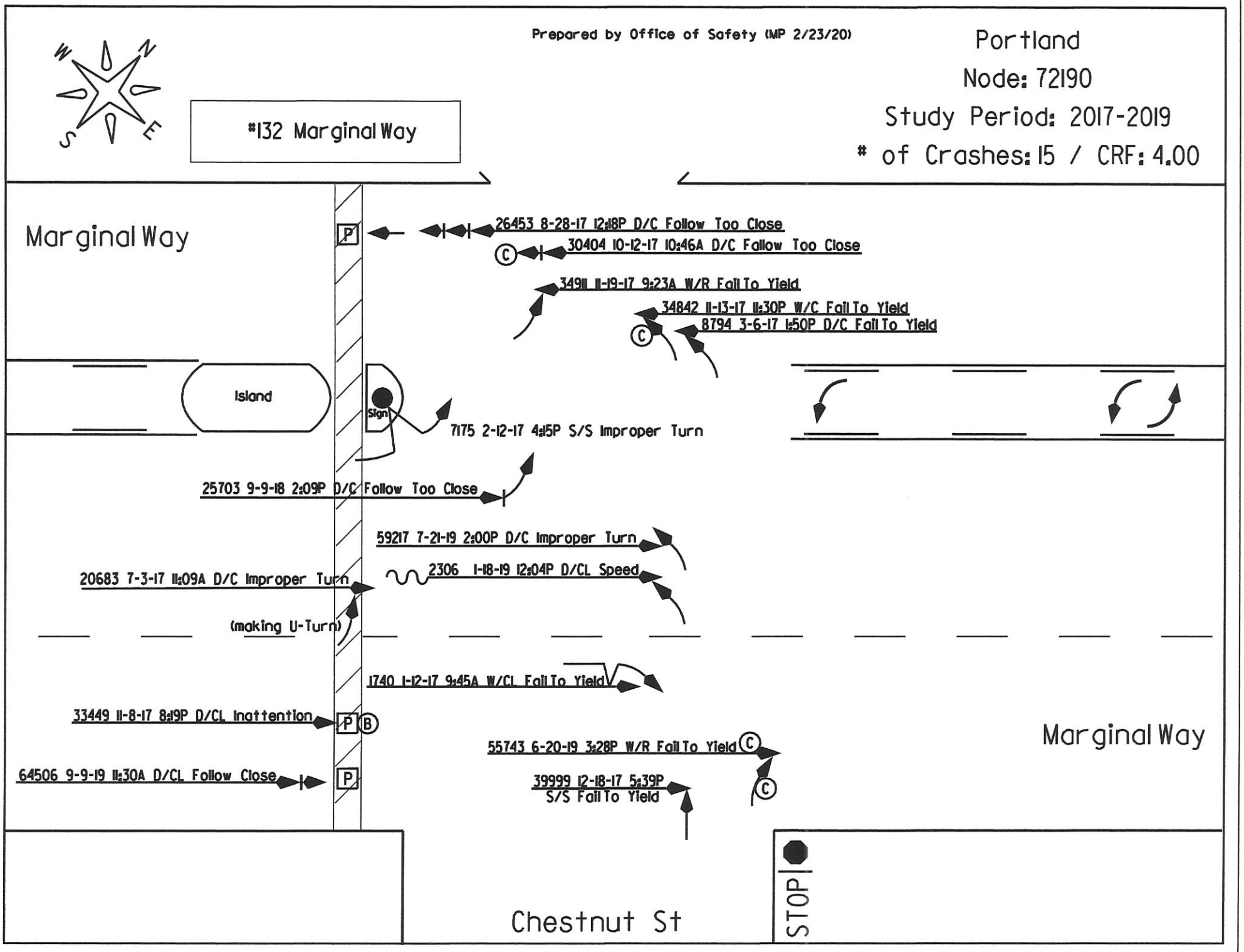
RTE # / RD #: **0560135** DATE DRAWN: **4/23/2020** DRAWN BY: **Michelle**

STUDY FROM: **1/1/2017** STUDY TO: **12/31/2019**

CRASH RATE: **1.83** CRF: **4** % INJURY: **26.7** TOTAL CRASHES: **15**

LEGEND




Prepared by Office of Safety (MP 2/23/20)
Portland
Node: 72190
Study Period: 2017-2019
# of Crashes: 15 / CRF: 4.00
#132 Marginal Way
Marginal Way
26453 8-28-17 12:18P D/C Follow Too Close
30404 10-12-17 10:46A D/C Follow Too Close
3491L 11-19-17 9:23A W/R Fail To Yield
34842 11-13-17 11:30P W/C Fail To Yield
8794 3-6-17 1:50P D/C Fail To Yield
Island
Sign
7175 2-12-17 4:15P S/S Improper Turn
25703 9-9-18 2:09P D/C Follow Too Close
59217 7-21-19 2:00P D/C Improper Turn
2306 1-18-19 12:04P D/CL Speed
20683 7-3-17 11:09A D/C Improper Turn
(making U-Turn)
1740 1-12-17 9:45A W/CL Fail To Yield
33449 11-8-17 8:19P D/CL Inattention
55743 6-20-19 3:28P W/R Fail To Yield
64506 9-9-19 11:30A D/CL Follow Close
39999 12-18-17 5:39P S/S Fail To Yield
Marginal Way
Chestnut St
STOP

SECTION 3

A. ENTRANCE/EXIT LOCATION

Access to the existing 191 Marginal Way site is provided through two driveway entrances located on the north and south corners of the site that connect directly with Marginal Way.

B. ENTRANCE AND EXIT PLAN VIEW

The City's Standards, which are consistent with the Maine Department of Transportation's Highway Entrance and Driveway Rules, require the following sight distances:

Sight Distance Standards

Speed Limit	Sight Distance
25 mph	200 feet
30	250
35	305
40	360
45	425
50	495
55	570

Marginal Way is currently posted at 30mph in the vicinity of the 191 Marginal Way property, which requires an unobstructed sightline of 250 feet. Acceptable sight distance is provided in both directions of travel at both existing site driveways.

C. ENTRANCE/EXIT DESIGN

The Applicant received City approval for the 191 Marginal Way property on January 17, 2017 and all requirements of that approval have been completed and approved by the City, with the exception of Condition #1, which relates to the requirement for filing for and receiving a MaineDOT Traffic Movement Permit.

Planning & Urban Development Department
Jeff Levine, AICP, Director

Planning Division
Stuart O'Brien, Director

January 17, 2017

Peter Noyes
Earle W. Noyes & Sons
PO Box 938
Portland, ME 04104

Stephen Bushey
Stantec, Inc.
778 Main Street, Suite 8
South Portland, ME 04106

Project Name: 191 Marginal Way Redevelopment
Address: 191 Marginal Way, Portland, ME
Project ID: 2016-179
CBL: 24-C-21
Applicant: Earle W. Noyes & Sons
Planner: Nell Donaldson

Dear Mr. Noyes:

On January 17, 2017, the Planning Authority approved with conditions a Level II site plan for the redevelopment of 191 Marginal Way. The decision is based upon the application as submitted by Stantec, Inc., with plan revisions dated December 16, 2016. The proposal was reviewed for conformance with the standards of the City of Portland's site plan ordinance, Article V of the land use code. The Level II site plan is approved with the following waivers and conditions:

A. WAIVERS

Driveway separation: Section 1.7.2.7 of the city's Technical Manual establishes standards for the location and spacing of driveways. On the recommendation of the city's traffic engineer, the Planning Authority finds that extraordinary conditions exist or undue hardship may result from strict compliance with these standards, that the public interest and purposes of the land development plan are secured with the proposed variation in the standards, and waives the driveway separation standard to allow curb cuts as proposed on the site and pavement marking plans prepared by Stantec and dated 12/16/16.

Aisle width: Section 1.1.4 of the city's Technical Manual establishes an aisle width standard of 24 feet for right angle parking. On the recommendation of the city's traffic engineer, the Planning Authority finds that extraordinary conditions exist or undue hardship may result from strict compliance with these standards, that the public interest and purposes of the land development plan are secured with the proposed variation in the standards, and waives the aisle width standard to allow a 22 foot aisle in the front parking area.

B. CONDITIONS OF APPROVAL

The Planning Authority found that the plans are in conformance with the site plan standards of the land use code subject to the following conditions of approval, which must be met prior to the issuance of a building permit unless stated otherwise:

1. Prior to issuance of certificates of occupancy for each tenant fit-up, the applicant shall provide updated trip generation numbers for review and approval by the city's Department of Public Works. If a Traffic Movement Permit is triggered, an application must be submitted for erview and approval by the Department of Public Works and the Planning Board;
2. All building entrances facing the street frontage of the lot shall remain operable in accordance with *Section 14-299(o)* of the city's Land Use Code;
3. The applicant shall provide a revised pavement marking plan for review and approval by the Department of Public Works;
4. The applicant shall provide a construction management plan for review and approval by the Department of Public Works;
5. The applicant shall provide revised plans meeting ADA requirements for ramps and sidewalks for review and approval by the Department of Public Works;
6. The applicant shall provide evidence of a Notice of Intent to Comply with the Maine Construction General Permit for review and approval by the Planning Authority and the Department of Public Works;
7. Prior to installation of the proposed grease trap, the applicant shall provide final utility plans for review and approval by the Department of Public Works;
8. The applicant shall provide a revised grading plan noting that sediment barriers will be provided downgradient of all proposed work, particularly along the western side of the site adjacent to the abutting property for review and approval by the Department of Public Works;
9. The applicant shall revise the landscaping plan to address inconsistencies with the civil drawings for review and approval by the Department of Public Works;
10. The applicant shall revise the brick sidewalk detail for review and approval by the Department of Public Works;
11. The applicant shall provide revised architectural drawings meeting the window transparency standard of the B-7 design standards and guidelines for review and approval by the city's Urban Designer;
12. The applicant shall provide a revised lighting plan meeting maximum illumination levels of Technical Manual *Section 12* for review and approval by the Planning Authority;
13. Prior to the issuance of a certificate of occupancy, the applicant shall provide specifications for proposed signs, meeting the standards of the B-7 zone and the City of Portland Design Manual, for review and approval by the Zoning Administrator.
14. Prior to certificate of occupancy, the applicant shall provide evidence of mutual easements for right of passage through the proposed interparcel connection to the adjacent property to the east for review and approval by the city's Planning Authority and Corporation Counsel; and
15. Prior to construction of the proposed connection to the Bayside Trail, the applicant shall obtain a temporary construction license from the City of Portland for all work proposed on city property for review and approval by Corporation Counsel.

The approval is based on the December 16, 2016 plan set. A final, revised plan set must be submitted for staff review and approval prior to the issuance of permits.

STANDARD CONDITIONS OF APPROVAL

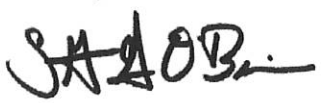
Please note the following standard conditions of approval and requirements for all approved subdivision and site plans:

1. **Develop Site According to Plan** The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning Board or the Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.
2. **Separate Building Permits Are Required** This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Inspection Division.
3. **Site Plan Expiration** The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.
4. **Performance Guarantee and Inspection Fees** A performance guarantee covering the site improvements, an inspection fee payment of 2.0% of the guarantee amount, and seven (7) final sets of plans plus one final digital copy must be submitted to and approved by the Planning Division and Public Services Department prior to the release of a subdivision plat for recording at the Cumberland County of Deeds, and prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.
5. **Defect Guarantee** A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
6. **Preconstruction Meeting** Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator, Public Service's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan. The site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.
7. **Department of Public Services Permits** If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)
8. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*,dwg), release AutoCAD 2005 or greater.

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Nell Donaldson at (207) 874-8723.

Sincerely,



Stuart O'Brien
Planning Division Director

Attachments:

1. Memo from Thomas Errico. Consulting Traffic Engineer, 1/6/17
2. Memo from Lauren Swett, Consulting Civil Engineer, 1/6/17

cc:

Jeff Levine, Director of Planning and Urban Development
Alexander Jaegerman, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Philip DiPierro, Development Review Coordinator, Planning
Ann Machado, Inspections Division
Tammy Munson, Inspection Division Director
Lannie Dobson, Administration, Inspections Division
Gayle Guertin, Administration, Inspections Division
Michael Bobinsky, Public Services Director
Jane Ward, Administration, Public Services
Jeff Tarling, City Arborist, Public Services
Captain Chris Pirone, Fire Department
Thomas Erriso, P.E., TY Lin Associates
David Senus, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File

Katherine Earley, Engineering Services Manager, Public Services
Bill Clark, Project Engineer, Public Services
David Margolis-Pineo, Deputy City Engineer, Public Services
Doug Roncarati, Stormwater Coordinator, Public Services
Greg Vining, Associate Engineer, Public Services
Michelle Sweeney, Associate Engineer
John Low, Associate Engineer, Public Services
Matt Doughty, Field Inspection Coordinator, Public Services
Mike Farmer, Project Engineer, Public Services

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

191 Marginal Way - Final Traffic Comments

Tom Errico <thomas.errico@tylin.com> Fri, Jan 6, 2017 at 9:31 AM
To: Helen Donaldson <HCD@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Jeff Tarling <jst@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>

Hi Nell – the following represents a status update of my previous comments based upon a review of the revised site plan and Marginal Way improvement plans.

1. The site plan should consider an inter-parcel connection to Planet Dog. Current conditions seem to indicate that vehicle cross-circulation currently occurs. In conjunction with the connection, the applicant should provide rights for Planet Dog vehicles to travel through the project site. As discussed in later comments, I'm concerned about the location of the proposed easterly driveway in respect to Franklin Street traffic conditions and also believe providing opportunities for Planet Dog vehicles to use the westerly project driveway will have a positive effect on motorist safety.

Status: Based upon concerns regarding safety conditions on Marginal Way and that the easterly driveway does not comply with City driveway spacing standards, the applicant shall provide a connection to Planet Dog. A plan shall be provided for review and approval.

1/6/2017 Status: The plans include this connection and therefore I support a waiver from City standards as it relates to driveway separation. I have no further comment.

2. I continue to review the trip generation analysis and at this time do not approve the estimate provided by Bill Bray, PE. Please noted the following:

- The trip generation for the retail portion of the development should be based on Land Use code 820 Shopping Center. Use of the Land Use code Specialty Retail is not appropriate given limit data. I would also note that if a restaurant use is a possibility, the worst-case trip generation estimate should be used.
- The applicant should provide data for the proposed Medical Quick Care use that supports the data provided by ITE. Information from the proposed tenant presenting traffic information at existing operating sites is suggested.

Status: The applicant has provided updated information and I find the trip generation to be reasonable. I would note that the trip generation estimate shall be updated to reflect actual tenant businesses prior to the issuance of a certificate of occupancy. I would note that if a Traffic Movement Permit is triggered, review of the project by the Planning Board is required.

1/6/2017 Status: See above status comment.

3. A parking demand analysis should be provided that accounts for project land uses and opportunities for shared use. The analysis should be based on ITE and Urban Land Institute information or local sources.

Status: The applicant has provide a parking demand analysis and my general conclusion is that the site will provide an excess parking supply. Based upon the traffic count conducted for the Medical Quick Care site, it is very unlikely that all 30 parking spaces will be required.

1/6/2017 Status: I have no further comment.

4. The applicant shall provide supporting documentation for seeking a waiver from the City's technical standards for driveway separation. I would note that the easterly driveway does concern me from a safety perspective, as it is located in close proximity to the Franklin Street intersection and vehicle queues typically extend back along Marginal Way and would block the project driveway. I believe safety would potentially be compromised for both the left-turning vehicles exiting the site (where vehicles stacked on Marginal Way would block sight lines) and for left-turning vehicles entering the site (where vehicles stacked on Marginal Way would prevent entry movements).

Status: Given the issues noted in my original comment, it is recommended that the applicant implement roadway improvements along their Marginal Way frontage that were identified as part of the Bayside Transportation Master Plan. The implementation shall consider transition towards the Franklin Street intersection and transition toward Chestnut Street. The exact extent of improvements shall take into account existing conditions and how the changes along the frontage can safely transition to match existing roadway conditions. The applicant shall be responsible for preparing a plan of the suggested changes, for review and approval by the City Planning Authority. As an alternative, a monetary contribution equal to the suggested improvement shall be provided, for use by the City for project implementation, as long as the improvements are constructed prior the issuance of a building occupancy permit.

1/6/2017 Status: The applicant has provided pavement marking plans and I generally find them to be reasonable. The primary concern regarding the plans are details on how Marginal Way eastbound will transition from two lanes west of Chestnut Street to one lane east of Chestnut Street. It is my understanding that DPW has committed to implementing the necessary improvements west of Chestnut Street to allow for appropriate travel lane transition conditions. Accordingly, this issue does not need to be addressed by the applicant. I would note that there are some minor pavement marking adjustments that the City would like to incorporate and the City can coordinate those changes with the applicant as a condition of approval. I would note that all work in conjunction with the pavement marking plan is the responsibility of the applicant including methods for removing existing pavement markings and necessary signage, etc. The applicant will be responsible for development of a construction management plan for review and approval.

5. As noted previously, driveway operations and safety is a concern given proximity to abutting driveways and the general heavy traffic levels on Marginal Way. The current site plan depicts 12 parking spaces along the Marginal Way frontage that are accessed via a parking aisle located very close to Marginal Way. In my professional opinion traffic movements into these 12 spaces will complicate entry and exit maneuvers onto Marginal Way and revisions to the plan should be considered.

Status: I would suggested that the applicant consider compact size parking spaces to allow for an 8-foot sidewalk on Marginal Way.

1/7/2017 Status: I find the current plan to be acceptable and support waivers from City standards for aisle width and parking stall dimensions.

6. The plans depict a sidewalk connection to the Bayside Trail that terminates at the rear property line. It is suggested that the applicant provide a complete connection to the trail.

Status: The plans have been revised and I have no further comment.

7. The long-term vision for the Bayside area is extension of Pearl Street to Marginal Way. The proposed Midtown project has accounted for the design of such a connection. It is likely that an extended Pearl Street would be located on both the subject property and the abutting property to the west. The applicant should provide information that notes such a connection is feasible given the details of the site plan under review.

Status: In my professional opinion the project site layout does not preclude a future connection, when considering use of both the subject and abutting properties. I have no further comment.

Additional Comment

- **There are a few sidewalk ramp locations that the applicant should review and modify such that they are fully accessible and ADA compliant. In general, these locations consist of ramp configurations where the ramp flare is located along the pedestrian travel route, thus creating an inaccessible route due to slope conditions. The locations for possible modification include:**
  - **The westerly driveway ramps into the site. All ramps from Marginal Way to the building corner.**

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
TYLIN INTERNATIONAL

12 Northbrook Drive

Falmouth, ME 04105

207.781.4721 (main)

207.347.4354 (direct)

207.400.0719 (mobile)

207.781.4753 (fax)

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T 207.774.2112
F 207.774.6635

MEMORANDUM

TO: Nell Donaldson, Planner
FROM: Lauren Swett, PE & Ghazal Kayal, EIT
DATE: January 6, 2017
RE: 191 Marginal Way Redevelopment, Level II Site Plan Application Response to Comments

---

Woodard & Curran has reviewed the Response to Comments for the Level II Site Plan Application for the proposed 191 Marginal Way Redevelopment project located in Portland, Maine. The project involves the re-development of the NAPA/AAA site at 191 Marginal Way to provide medical office and retail uses and associated pedestrian and vehicular access, parking, and utilities infrastructure.

Documents Reviewed by Woodard & Curran

- Response to Comments and attachments, dated December 19, 2016, prepared by Stantec Consulting Service Inc., on behalf of Earl W. Noyes & Sons.
- Engineering Plans, dated December 16, 2016, prepared by Stantec, on behalf of Earl W. Noyes & Sons.

Comments *(Comments from prior memos are included in italics)*

1) *The proposed project will disturb over one acre and therefore requires a MaineDEP Construction General Permit Notice of Intent. Copies of all permits should be forwarded to the City upon receipt.* Applicant has acknowledged and will provide upon receipt.
2) *Per Section 13 of the City's Technical Manual, the Applicant is required to submit a Boundary Survey that has been Stamped by a Maine Licensed Professional Surveyor. At this time, an unstamped Boundary Survey marked as "Preliminary" has been submitted. A stamped Boundary Survey should be provided as part of the Final Site Plan Application.* Applicant has acknowledged and will provide upon receipt.
3) *The Applicant has noted that a possible use that may be considered for the Site is a Restaurant; the Applicant has provided a detail for a grease trap, but has not noted a location for it on the plans or provided any design information. This information should be provided as part of the Final Site Plan submission if a restaurant is proposed.* Applicant has added a grease trap and has noted that the location may need to be adjusted depending on the final restaurant tenant. The Applicant should coordinate with Rachel Smith at Portland Public Works (874-8833) on final location and sizing requirements if a restaurant tenant is selected.
4) The City of Portland requires that all Level II site plan applications 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 (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). 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. *However, sediment barriers should be provided downgradient of all proposed work, particularly along the western side of the Site adjacent to the abutting property.*
   b) General Standard: The project will result in a net decrease in impervious area. As such, the project is not required to include any specific stormwater management features for stormwater quality control. The Applicant will be utilizing roof drain cartridge treatment units and a Filterra Tree Box to provide some stormwater treatment on the site, and they have acknowledged that they will coordinate with the City for possible credit towards their stormwater fees.
   c) Flooding Standard: The project will result in a net decrease in impervious area. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.

5) Some of the site layout geometry shown on the landscaping plan does not appear to match the site civil plans, i.e. the connector driveway to the abutting property appears to be wider and the islands appear to be slightly different. These inconsistencies should be clarified on final construction plans.
6) Two details are provided for brick sidewalk. A detail in conformance with the City of Portland technical standards should be utilized for brick sidewalks within the Marginal Way Right-of-Way.
7) The Applicant has addressed all other comments at this time.

SECTION 4

TITLE, RIGHT OR INTEREST

The attached property deed, which was signed on December 22, 1986, provides documentation of the Applicants ownership of the 191 Marginal Way property.

073915

ANDREW J. W. REDMOND, of North Anson, Maine, Trustee of Redmond Land Trust (which trust was dated February 2, 1973, and recorded in the Cumberland County Registry of Deeds in Book 3358, Page 11, and amended by an Amendment of Declaration of Trust dated February 2, 1973, said amendment recorded in the Cumberland County Registry of Deeds in Book 3372, Page 251), by the power conferred by law, and every other power, in consideration of One ($1.00) Dollar and other good and valuable consideration, paid by EARL W. NOYES & SON ., a Maine corporation, of Portland, Maine, the receipt whereof I do hereby acknowledge, do hereby grant, remise, release, bargain, sell and convey, and forever quit-claim unto the said EARLE W. NOYES & SON , its successors and assigns forever, a certain lot or parcel of land together with any and all improvements, structures or buildings now or hereafter located thereon, situated generally on the southeasterly side of Marginal Way, so-called, in said City of Portland, and being more particularly bounded and described as follows:

Beginning at a point marked by an iron in the southeasterly sideline of Marginal Way, two hundred twenty and five hundredths feet (220.05') southwesterly from an iron marking the intersection of the southeasterly line of Marginal Way with the southwesterly line of Franklin Street (as said southwesterly line of Franklin Street existed in 1945), which point of beginning also marks the most westerly corner of land conveyed by the Clement Realty Co. to Mobil Oil Corporation by deed dated June 23, 1966, and recorded in the Cumberland County Registry of Deeds, Book 2962, Page 552; thence southwesterly along the southeasterly sideline of Marginal Way three hundred sixteen and eighty-seven hundredths feet (316.87'), more or less, to land now or formerly of Haverty Development Corporation; thence southeasterly along the division line between land now or formerly of said Haverty Development Corporation and the land herein described by an included angle of ninety degrees (90°) with the southeasterly sideline of Marginal Way, for a distance of two

hundred sixty-five and four tenths feet (265.4'), more or less, to an iron and land now or formerly of Portland Terminal Company; thence northeasterly by said Portland Terminal Company land on a course of North Thirty-five degrees Thirty-seven Minutes East (N 35° 37' E) for a distance of Two Hundred Fifty-five and Thirty Hundredths Feet (255.30') to an iron set in the ground; thence on a course of North Thirty-two degrees Forty-four Minutes East (N 32° 44' E) for a distance of Sixty-one and Eighty Hundredths feet (61.80') to an iron set in the ground; thence on a course of North twenty-eight degrees thirty minutes East (N 28° 30' E) by said Portland Terminal Company land, eight and fifty-four hundredths feet (8.54'), more or less, to land of said Mobil Oil Corporation; thence northwesterly along the line of land of said Mobil Oil Corporation for a distance of One Hundred Eighty-five and Twenty-seven Hundredths feet (185.27'), more or less, to Marginal Way and the point of beginning.

The aforedescribed premises are conveyed subject to a certain easement in a fifteen foot (15') strip of land lying next adjacent to said land now or formerly of Haverty Development Corporation, which easement was granted to the City of Portland by deed of Clement Realty Co., dated January 17, 1963, and recorded in the Cumberland County Registry of Deeds in Book 2803, Page 477.

The aforedescribed premises are also conveyed subject to another certain easement of the Portland Terminal Company given by H. Walker Noyes, Jr. dated May 19, 1972 and recorded in the Cumberland County Registry of Deeds, Book 3270, Page 375 relating to right to pass by foot and by vehicle on and along a portion of the above described premises.

The aforedescribed premises are also conveyed subject to an Indenture of Lease between Redmond Realty Co. and Noyes Tire Co. dated January 15, 1973, and an Assignment of Lease from Noyes Tire Co. to Goodyear Tire & Rubber Company dated February 28, 1985.

The above described premises being the same as those conveyed to Redmond Realty Co. by deed of H. Walker Noyes, Jr. to Redmond Realty Co. dated February 1, 1973, and recorded in the Cumberland County Registry of Deeds in Book 3356, Page 329.

The above described premises being the same as those conveyed to Andrew Redmond, as Trustee of The Redmond Land Trust, by deed of Redmond Realty Co. dated February 2, 1973, and recorded in Cumberland County Registry of Deeds in Book 3358, Page 17.

TO HAVE AND TO HOLD the same, together with all the privileges and appurtenances thereunto belonging, to the said EARLE W. NOYES & SON, as aforesaid.

E.R.

IN WITNESS WHEREOF, said ANDREW REDMOND, as Trustee aforesaid, has executed this instrument, this 22nd day of December, 1986.

Signed, Sealed and Delivered
in the Presence of:

REDMOND LAND TRUST

By: Andrew Redmond
Andrew Redmond, Trustee

STATE OF MAINE
CUMBERLAND, ss.

December 22, 1986

Personally appeared ANDREW REDMOND, Trustee of the Redmond Land Trust, and acknowledged the execution of the foregoing instrument to be the free act and deed of said Trust and his free act and deed in said capacity.

Before me,

Notary Public ROBERT E. PRETI

CERTIFICATE

I, ANDREW J. W. REDMOND (a/k/a Andrew Redmond), individually and as Trustee of the Redmond Land Trust, do hereby certify and affirm that the Redmond Land Trust is in existence; that the terms thereof as reflected in the Amendment of the Declaration of Trust dated February 2, 1973, are still in full force and effect; that I am the solee Trustee of said trust; and that I have full power and authority, as Trustee thereof, to execute the foregoing deed and to sell and dispose of the property therein described in my capacity as aforesaid.

DATED this 22nd day of December, 1986.

Andrew J. W. Redmond
Andrew J. W. Redmond

STATE OF MAINE
CUMBERLAND, ss.

December 22, 1986

Personally appeared, the above-named ANDREW J. W. REDMOND and made oath that the foregoing statements by him are true and correct.

Before me,

~~Notary Public~~ ROBERT E. PRETI
ATTORNEY AT LAW

RECEIVED
REGISTER OF DEEDS

SECTION 5

PUBLIC OR PRIVATE RIGHTS-OF-WAY

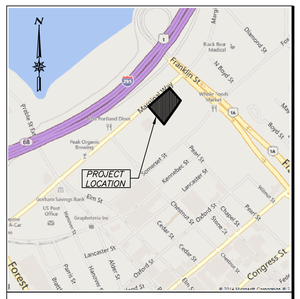
Three easements are recorded for the 191 Marginal Way parcel of land; they include the following:

- 15-foot wide easement for replacing and maintaining sewer and drain lines dated January 17, 1963.
- 20-foot wide easement for the purpose of ingress and egress benefiting Portland Terminal Company dated May 19, 1972.
- 26-foot wide permanent easement to the State of Maine centered on the former location of the mainline tract dated March 21, 2003.

SECTION 6

SCHEDULE

The remaining three tenant spaces located in the 191 Marginal Way commercial building are expected to be constructed and occupied by mid to late fall 2020.



VICINITY MAP
N.T.S.

GRID NORTH
WEST ZONE 1802

SEE NOTE 1

SOMERSET STREET

PEARL STREET

"POTENTIAL LOCATION OF PEARL STREET EXTENSION AS SHOWN ON THE PLAN REFERENCED IN NOTE 4.a."

N/F
CITY OF PORTLAND
19057/107
24-C-10 & 25-B-6

N/F
161 MARGINAL WAY, LLC
22252/277
25-B-1

N/F
CITY OF PORTLAND
19057/107
24-C-10 & 25-B-6

#5 REBAR
0.1' B.G.

CHAIN LINK FENCE

#5 REBAR
FLUSH

#5 REBAR W/CAP
(UNREADABLE)
0.1' A.G.
(HELD FOR LINE)

2-1/2" CHAIN LINK
FENCE POST

PAVED BICYCLE PATH

APPROXIMATE CENTERLINE LOCATION OF FORMER RAILROAD TRACKS

GRAVEL PATH

STATE PLANE COORDINATES:
N = 302600.58
E = 2927817.73

N59°34'21"E
254.43' (254.90')

CAPE COD BERM

PAVED PARKING

3/4" IRON PIPE
0.6' B.G.
(HELD)

#5 REBAR
0.7' B.G.
(HELD)

#5 REBAR
0.5' B.G.
(HELD)

S32°48'55"W
61.88' (61.80')

S26°49'51"W
8.97' (8.71')

SEE NOTE 8.c.

CONCRETE STRIP

DRAIN MANHOLE
(SEWER COVER)
RIM=8.46
INV IN=4.46
INV IN=4.26 (2)
INV OUT=4.16

SEE NOTE 8.a.

DRAIN MANHOLE
RIM=9.31
SUMP=2.81
NO PIPES VISIBLE

SEE NOTE 8.b.

DRAIN MANHOLE
(SEWER COVER)
RIM=9.78
INV IN=4.03
INV OUT=3.93

VERTICAL GRANITE CURB

CHAIN LINK FENCE

TOTAL LOT AREA
71,576 S.F.
1.64 Ac.

2 PROPANE TANKS

N40°59'52"W
265.17' (265.17')

4 STORY OFFICE BUILDING

PAVED DRIVE

PAVED PARKING

PAVED DRIVE

N/F
MARGINAL WAY
PROPERTIES, INC.
8575/92
24-C-1

1 STORY BUILDING
"PLANET DOG"
&
"AT&T STORE"

12" WATER LINE

S40°58'52"E
185.35' (185.17')

CAPE COD BERM

PROPANE TANK

1 STORY BUILDING
"AAA AUTO CARE CENTER"

FFE = 11.26

1 STORY BUILDING
"NAPA AUTO PARTS"

FFE = 11.66

DRAIN MANHOLE
(SEWER COVER)
RIM=10.53
INV IN=5.83
INV IN=5.83
INV OUT=5.73

PAVED PARKING

6 SIGNS
"STATE VEHICLE
PARKING ONLY"

DRAIN MANHOLE
RIM=10.74
INV IN=3.64
INV IN=3.64
INV OUT=3.54

0.32'

0.30'

#5 REBAR FOUND
UNDER SIDEWALK

DETAIL
N.T.S.

PROJECT BENCHMARK
D.O.T. DISK "POR-14"
ELEV = 10.13 (CITY OF
PORTLAND DATUM)

8" C.I.
S=0.004

DRAIN MANHOLE
(SEWER COVER)
RIM=10.91
INV IN=5.31
INV OUT=5.21

315.17' (316.87')
N49°01'08"E

CATCH BASIN
RIM=9.4
INV OUT=5.51

3'

6"x6" GRANITE OFFSET
MONUMENT IN STEEL CASING
(HELD FOR 3' OFFSET)

STATE PLANE COORDINATES:
N = 303007.45
E = 2927881.76

MAG NAIL
W/BRASS DISK

CATCH BASIN
RIM=8.99
INV OUT=4.53

CATCH BASIN
RIM=9.33
INV IN=6.03
INV OUT=5.93

VERTICAL GRANITE
CURB, TYPICAL

SEWER MANHOLE
(CATCH BASIN GRATE)
RIM=9.70
INV IN= -6.20
INV OUT= -6.80

SEWER MANHOLE
RIM=10.44
INV IN= -6.56
INV OUT= -6.66

DRAIN MANHOLE
(SEWER COVER)
RIM=9.30
INV IN=3.90
INV IN=3.80
INV OUT=3.75

MARGINAL WAY
(ACCEPTED, PAVED, PUBLIC)

S=0.0008

S=0.002

202'±

303'±

110'±

78'±

89'±

S=0.014

S=0.045

S=0.004

STATE PLANE COORDINATES:
N = 302800.76
E = 2927643.83

CATCH BASIN
RIM=8.44
INV OUT=4.04

DRAIN MANHOLE
(SEWER COVER)
RIM=10.05
INV IN=4.15
INV IN=4.15
INV IN=3.65
INV OUT=3.35

CATCH BASIN
RIM=9.33
INV OUT=4.93

DRAIN MANHOLE
(SEWER COVER)
RIM=10.05
INV IN=3.35
INV IN=3.15
INV OUT=3.15

TO FRANKLIN ARTERIAL

TO PREBLE STREET

100'

NOTES

7. THE WIDTH OF MARGINAL WAY IS 100' BASED ON THE PLAN REFERENCED IN NOTE 4.d. THE LAYOUT IS BASED ON MONUMENTATION FOUND AND REBUILDING PROPERTIES FROM ARCHIVE PLANS.

8. REFERENCE IS MADE TO THE FOLLOWING EASEMENTS OF RECORD:
   a. A 15' WIDE EASEMENT FOR THE PURPOSE OF CONSTRUCTING, MAINTAINING, OPERATING, REPAIRING, REPLACING OR REMOVING PUBLIC SEWER AND DRAIN LINES, DATED JANUARY 17, 1963, RECORDED IN DEED BOOK 2803, PAGE 477.
   b. A 20' WIDE EASEMENT FOR THE PURPOSE OF INGRESS & EGRESS BENEFITING PORTLAND TERMINAL COMPANY, DATED MAY 19, 1972, RECORDED IN DEED BOOK 3270, PAGE 325.
   c. A 26' WIDE PERMANENT EASEMENT TO THE STATE OF MAINE CENTERED ON THE FORMER LOCATION OF THE MAIN LINE TRACK TO THE STATE OF MAINE, DATED MARCH 21, 2003, RECORDED IN DEED BOOK 19057, PAGE 107.

10. ELEVATIONS AND CONTOURS ARE BASED ON CITY OF PORTLAND DATUM FROM D.O.T. DISK POR-14. SEE PLAN FOR TBM DESCRIPTION.

12. THE UTILITIES SHOWN ON THIS PLAN WERE FROM FIELD OBSERVATION ONLY. THERE MAY BE OTHER UTILITIES EXISTING THAT ARE NOT SHOWN. CONTACT DIG-SAFE (888)DIG-SAFE PRIOR TO ANY EXCAVATION WORK.

LEGEND

- #5 REBAR WITH PLASTIC CAP (UNLESS NOTED OTHERWISE)
- FOUND IRON PIPE (SIZE & TYPE AS NOTED)
- FOUND MONUMENT (SIZE & TYPE AS NOTED)
- FOUND IRON ROD
- FOUND CAPPED IRON ROD (NUMBER AS NOTED)
- FOUND SURVEY DISK (STAMPED AS NOTED)
- UTILITY POLE (NUMBER AS NOTED)
- GUY WIRE ANCHOR
- HYDRANT
- CATCH BASIN
- SEWER MANHOLE
- DRAIN MANHOLE
- WATER VALVE
- FOUND DECIDUOUS TREE
- FOUND CONIFEROUS TREE
- FOUND BUSH
- BOUNDARY LINE
- EASEMENT LINE
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- RIGHT-OF-WAY LINE
- ABUTTER LINE
- OVERHEAD UTILITY
- SEWER LINE
- WATER LINE
- GAS LINE

N/F NOW OR FORMERLY OWNED BY
1234/567 DEED BOOK AND PAGE (CCRD)
12-A-34 TAX MAP-BLOCK-LOT
(123.45') PARENTHESIS DENOTE RECORD DATA

NOTES

1. THE BASIS OF BEARING FOR THIS SURVEY IS THE MAINE STATE COORDINATE SYSTEM, WEST ZONE, GRID NORTH.
2. DEED AND PLAN BOOK REFERENCES ARE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
3. RECORD OWNERSHIP OF THE PARCEL SURVEYED CAN BE FOUND IN A DEED FROM REDMOND LAND TRUST TO EARL W. NOYES & SON DATED DECEMBER 22, 1986 AND RECORDED IN DEED BOOK 7569, PAGE 299.
4. REFERENCE IS MADE TO THE FOLLOWING PLANS:
   a. "SUBDIVISION RECORDING PLAT OF PROPERTY LOCATED ON BAYSIDE RAIL YARD, PORTLAND, MAINE FOR DOWNTOWN PORTLAND CORPORATION" BY SGC ENGINEERING, LLC, DATED OCTOBER 30, 2008, RECORDED IN PLAN BOOK 209, PAGE 36.
   b. "161 MARGINAL WAY EXCHANGE PLAN OF CHESTNUT STREET EXT. AREA FOR CITY OF PORTLAND" BY SEBAGO TECHNICS, DATED JANUARY 20, 2004, RECORDED IN PLAN BOOK 205, PAGE 39.
   c. "CITY OF PORTLAND RAIL YARD AREA FOR BAYSIDE SURVEY, FORMERLY PORTLAND TERMINAL CO., RAIL YARD" BY OEST ASSOCIATES, INC., DATED MAY, 2002, MDOT FILE NO. 3-485.
   d. PLAN OF LAND ON MARGINAL WAY AND FRANKLIN STREET FOR MARGINAL WAY PROPERTIES, INC." BY OWEN HASKELL, INC., DATED FEBRUARY 7, 2002, CITY ARCHIVE PLAN NO. 988-29.
   e. "LAND TITLE SURVEY OF CHESTNUT STREET EXT. AREA FOR THE CITY OF PORTLAND" BY SEBAGO TECHNICS, DATED AUGUST 1, 2003, CITY ARCHIVE PLAN NO. 882.
   f. "FIVE LIVER PARTIAL SETTLEMENT PLAN OF CHESTNUT STREET EXT. AREA" BY SEBAGO TECHNICS, DATED JANUARY 20, 2004, CITY ARCHIVE PLAN NO. 920-13B.
   g. "PLAN OF PROPERTIES FOR THE FORE RIVER COMPANY, BY HTA-OEST ASSOCIATES, INC., DATED JULY, 1988, CITY ARCHIVE PLAN NO. 1004-13.
5. THE PARCEL SURVEYED IS IDENTIFIED ON THE CITY OF PORTLAND TAX ASSESSOR'S MAP 24, BLOCK C, PARCEL 21 AND MAP 25, BLOCK B, PARCEL 9.
6. THE PARCEL SURVEYED IS LOCATED IN THE B7 ZONE/DISTRICT*. PORTIONS OF BULK AND SPACE REQUIREMENTS ARE AS FOLLOWS:
   MINIMUM LOT AREA = NONE
   MINIMUM FRONTAGE = NONE
   SETBACKS:
   FRONT = NONE
   SIDE = NONE
   REAR = NONE

   MAXIMUM SETBACKS: SEE CITY OF PORTLAND CODE OF ORDINANCE SECTION 14-298.

   *OTHER MUNICIPAL AND STATE OVERLAY ZONES MAY EXIST AND APPLY. BEFORE PROCEEDING ON ANY PROJECT WE RECOMMEND VERIFYING CURRENT ZONING / SETBACKS / RESTRICTIONS WITH THE APPROPRIATE AGENCIES.

Revision:	By:	Date:	Change:
1	JAP	1/13/17	ADDED SET MONUMENTATION

PROJECT: 25349.2	DRAWING NAME: 25349-2.DWG	
DATE: NOVEMBER 11, 2016	SCALE: 1"= 30'	FB # 400 E. FB YES
FIELDED BY: JAP / BS	FIELD DATE: 9/27/2014	DRAWN BY: JAP

Drawing Name and Location:
BOUNDARY AND TOPOGRAPHIC SURVEY
191 MARGINAL WAY, PORTLAND, MAINE

Owner:
EARL W. NOYES & SONS
P.O. BOX 938, PORTLAND, MAINE 04104

Prepared For:
PETER NOYES
511 BLACKSTRAP ROAD, FALMOUTH, MAINE 04105

SURVEYING • ENGINEERING • LAND PLANNING
Northeast Civil Solutions
INCORPORATED
381 PAYNE ROAD, SCARBOROUGH, MAINE 04074
tel 207.883.1000 800.882.2227
fax 207.883.1001
e-mail / website info@northeastcivilsolutions.com www.northeastcivilsolutions.com

0 30' 60' 120'

STAMP AND SIGNATURE

TROY F. McDONALD
MAINE P.L.S. No. 2080

1/13/2017
DATE

STATE OF MAINE
TROY F. McDONALD #2080
PROFESSIONAL LAND SURVEYOR

E:\Land Projects\25000\25349.2-Noyes-191 Marginal Way Portland\dwg\25349-2.dwg

CITY OF PORTLAND, MAINE - SPACE AND BULK REGULATIONS FOR ZONE B-7	
191 MARGINAL WAY	
Dimensional Requirements	**Required**
Minimum Lot Size	None
Minimum Frontage	None
Minimum Front Yard Setback	None required except as provided in maximum street setback below
Minimum Side Yard Setback	None Required
Minimum Rear Yard Setback	None Required
Maximum Street Setback	Ten (10) feet
Minimum Building Wall Length	1. Minimum seventy-five (75%) of lot street frontage within ten (10) feet of the street; or 2. Minimum twenty-five (25%) of building perimeter within ten (10) feet of the street.
Maximum Building Lot Coverage	One hundred (100) percent
Maximum Residential Density	None
Maximum Building Height	105'
Minimum Building Height	Minimum of 3 Floors

NOTE:

SECTION 14-299
(o) BUILDING ENTRANCES:
ALL BUILDINGS SHALL HAVE A MINIMUM OF ONE (1) PUBLIC PEDESTRIAN ENTRANCE FACING THE STREET FRONTAGE OF THE LOT. SUCH BUILDING ENTRANCES SHALL ALSO BE REVIEWED UNDER THE B-7 BAYSIDE DESIGN STANDARDS

SIGN LEGEND

R1-1 24"x24" A — STOP
R7-8 12"x18" B — RESERVED PARKING
R7-8 12"x18" R7-8P 12"x6" C — RESERVED PARKING / VAN ACCESSIBLE
12"x24" D — CONVENIENT MD PARKING ONLY
12"x24" E — CONVENIENT MD PARKING ONLY
W11-2 24"x24" F
R7-116 12"x18" G — TWO HOUR PARKING
12"x18" H — COMPACT VEHICLES ONLY
12"x18" I — COMPACT VEHICLES ONLY

PROPOSED BUILDING PLANS ARE PROVIDED BY CWS ARCHITECTS DATED 11.11.2016

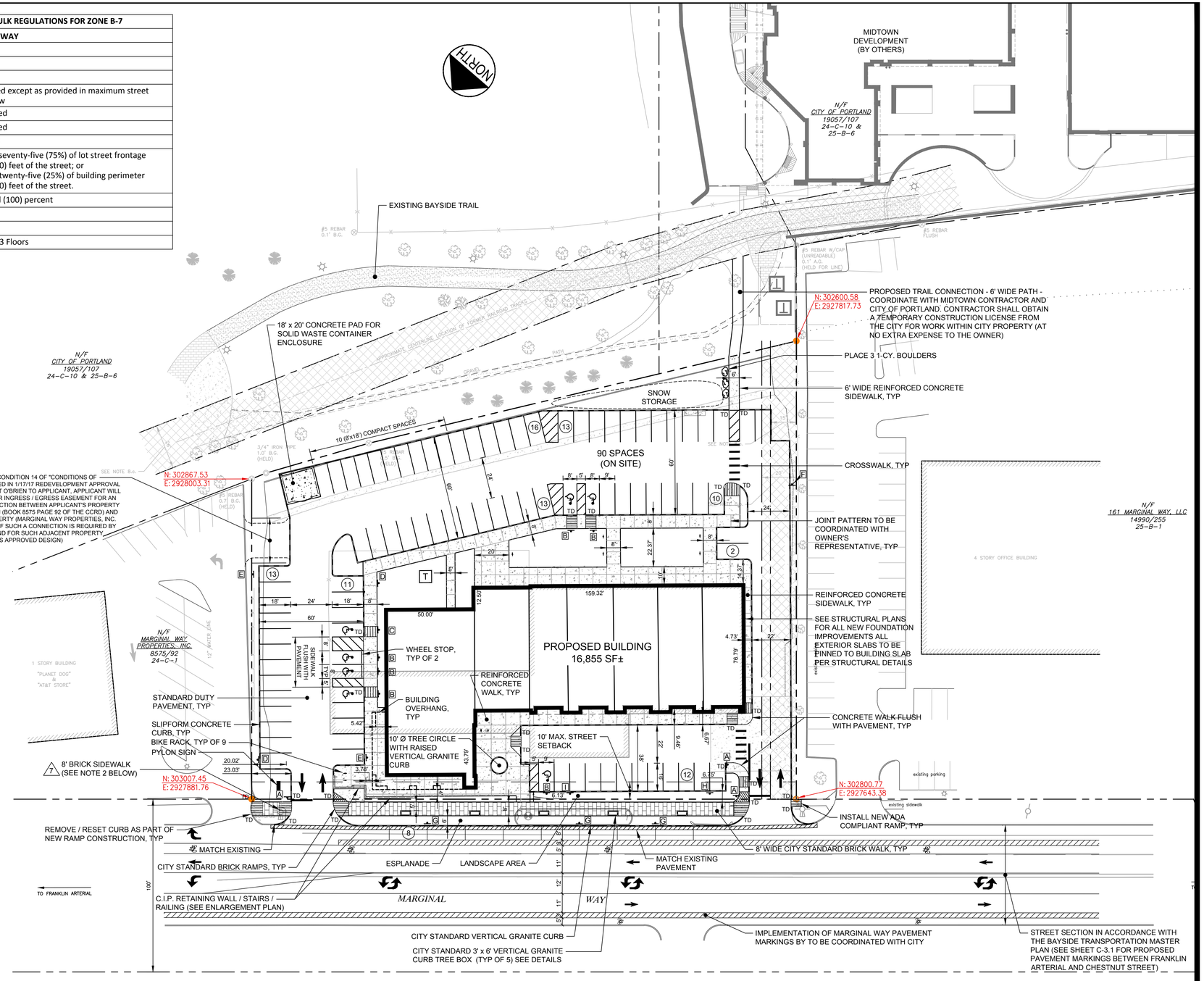
PROPOSED TOTAL PARKING SPACES: 90

PLAN REFERENCE:

BACK COVE SOUTH STORAGE CONDUIT PAVEMENT MARKING PLAN STATIONS 34+00 TO 46+00 - CONTAINED IN BAYSIDE TRANSPORTATION MASTER PLAN REPORT

FLOOD ZONE NOTE

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 13B, WHICH BEARS AN EFFECTIVE DATE OF JULY 17,1986 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.



NOTE:

1. THE OWNER SHALL BE RESPONSIBLE FOR THE CONTROL OF LIGHT LEVELS ON THE PROPERTY TO MAINTAIN A MAXIMUM COVERAGE OF 5.0 FC IN ACCORDANCE WITH THE CITY OF PORTLAND SITE LIGHTING TECHNICAL STANDARDS. THIS MAY INCLUDE THE USE OF DIMMER CONTROLS TO ACHIEVE COMPLIANCE.
7 2. THE SIDEWALK SHALL BE CONSTRUCTED WITH A MINIMUM CLEARANCE OF 5' ON ONE SIDE OF THE UTILITY POLE.

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30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
Tel. 207.883.3355
www.stantec.com

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Notes

REVISION	DATE	BY	APPD.
8 RECORD PLANS	8.11.27	SRB	YY.MM.DD
7 FINAL PLANS TO CITY	17.04.12	SRB	CITY
6 ISSUED FOR: CONTRACT DOCUMENTS / FINAL PLANS TO CITY	17.02.22	SRB	CITY
5 ISSUED FOR: CONTRACT DOCUMENTS / FINAL PLANS TO CITY	17.02.03	SRB	CITY
4 REISSUED FOR CITY PERMIT - FINAL SUBMISSION	16.12.15	SRB	CITY
3 REVISED PER CITY COMMENTS AND RESUBMITTED	16.11.10	SRB	CITY
2 REVISED PER CITY COMMENTS AND RESUBMITTED	16.10.12	SRB	CITY
1 ISSUED FOR CITY PERMIT	16.07.22	SRB	CITY

File Name: 195350354 SP | DED DWN. | SRB CHKD. | SRB DSGN. | 16.07.19 DATE

Permit-Seal

STATE OF MAINE — STEPHEN R. BUSBEY — 11/27/18 — LICENSED PROFESSIONAL ENGINEER

P.E. STEPHEN
LIC. #7429

Client/Project

EARL W. NOYES & SONS

191 MARGINAL WAY REDEVELOPMENT

PORTLAND, MAINE

Title

SITE LAYOUT PLAN

Project No. 195350354 | Scale 1" = 30'

Sheet

C-3.0

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CITY OF PORTLAND
Planning & Urban Development Department

PLAN AMENDMENT FOR SITE PLAN GENERAL DOCUMENT AND DRAWINGS CHECKLIST Please submit each document as a separate PDF file Please confirm by electronically checking the boxes to the left	
GENERAL APPLICATION DOCUMENTS	
Yes ☑ NA ☐	Written Statement of the Proposed Amendment(s) (Identify any conditions of approval being met and any changes to waivers)
Yes ☑ NA ☐	Any supporting documents of the original application that are being revised. (Revisions should be clearly identified)
DRAWINGS	
Yes ☐ NA ☑	All amended plans affected by the proposed revisions. The plans shall clearly depict proposed modifications.

Att. C

GORRILL PALMER

707 Sable Oaks Drive, Suite 30
South Portland, Maine 04106
207.772.2515

June 17, 2020

Mr. Christian Roadman
Planning and Development Department
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

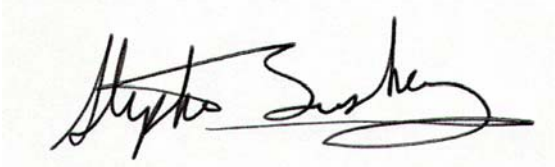
Subject: **Level III Site Plan Review**
191 Marginal Way –
Applicant: Earle W. Noyes & Sons
Tax Map 024/Block C/21
Traffic Movement Permit
Letter of Response #2

Dear Christian:

On behalf of **Earl Noyes & Sons** (Applicant), our office is providing the accompanying correspondence resulting from a dialogue the applicant has had with the abutting landowner of the property at 211 Marginal Way. In accordance with the city directive taken during the Traffic Permit application Scoping meeting that occurred on June 16, 2020, the applicant contacted the landowner to ascertain their interest in reopening a discussion on the use of a shared driveway between the properties, whereby the abutting property vehicular movements could travel thru the 191 Marginal Way site. This could potentially lend itself to closing of the abutter's driveway opening, which is considered less than desirable by the City due to its proximity to the Franklin Arterial intersection. The attached letter outlines the neighbor's position at this time; therefore, it appears no further action can be taken by the applicant on this matter. Please accept the attached correspondence for your records and let us know if you have any questions.

Sincerely,

Gorrill-Palmer Consulting Engineers



Stephen Bushey, PE
Senior Associate
Phone: 207-772-2515 x286
sbushey@gorrillpalmer.com

c: Peter Noyes, Earle Noyes & Sons
Morris Fisher, Boulos
Bill Bray, Traffic Solutions
Attachment – Abutting neighbor correspondence
U:\3698-191 Marginal Way Traffic Permitting Assistance - Portland, ME\P Applications\LOR #2

THE CANAAN COMPANY
INVESTMENT · DEVELOPMENT · MANAGEMENT

In St. Thomas
Post Office Box 600137
St. Thomas, USVI 00801-6137
Telephone 340.690.1742

In Boston
984 Memorial Drive
Cambridge, MA 02138
Telephone 617.873.0850

jtranum@gmail.com

June 16, 2020

Christian Roadman, Planner
City of Portland
389 Congress St.
Room 312
Portland, ME 04101

RE: **Shared Entrance From Marginal Way**

Dear Mr. Roadman:

Earle W. Noyes & Sons, Inc. owns the property at 191 Marginal Way adjacent to my property at 211 Marginal Way. Peter Noyes and I have discussed combining our entrances a number of times over the years. However, for a variety of reasons, this is not of interest to me.

Should you have any questions I will be happy to discuss them with you.

Sincerely,

Joel Tranum

Att. D

Traffic Solutions
William J. Bray, P.E.
17 Mountview Drive
Gorham, ME 04038
(207) 400-6890
trafficsolutions@maine.rr.com

July 22, 2020

Thomas A. Errico, P.E.
Senior Associate-Traffic Engineering Director
T.Y. Lin International, Inc.
12 Northbrook Drive
Falmouth, Maine 04105

RE: #191 Marginal Way Development -Traffic Movement Permit (Section #7)

Dear Tom:

This letter provides written responses to each action item identified by your office at the Traffic Movement Permit Scoping Meeting held on June 16, 2020. Referencing your written meeting notes, the following items are to be fully addressed in support of the Applicant's Traffic Movement Permit application:

- The Section #7 study shall include turning movements at each driveway during both peak hours.
- There are three HCL's in the area. The applicant shall conduct a review of crashes for the Marginal Way segment and identify strategies that may mitigate crash patterns, if possible.
- The City's Traffic Engineer noted that the pavement markings on Marginal Way were modified in November 2017. It appears 2019 crashes are lower than prior years. The applicant should assess if the pavement marking changes in 2017 improved safety.
- The applicant shall conduct an evaluation of driveway safety and how best to address safety concerns. Strategies that direct motorists to the westerly driveway should be considered. It is likely this will happen naturally.
- The applicant should revisit the driveway connections to Bayside Bark Property to the east). Documentation shall be provided regarding this item.

Detailed responses are provided for each of the five noted action items, as follows:

The Section 7 study shall include turning movements at each driveway during both peak hours.
Supporting Evidence: The original Traffic Movement Permit application includes Site Traffic Assignment figures for both street peak hours, with Figure 1 representing the AM peak hour and Figure 2 the PM peak hour. This trip assignment process directed all site trips to/from a "*central*"

site entrance, based upon existing travel patterns found on Marginal Way fronting the 191 Marginal Way site. Updated and revised Figures 1 and 2 illustratively present expected turning movement counts at each of the two site driveway entrances for the AM and PM peak hours, respectively.

The travel assignment process considered the following "key" items in directing the site traffic through each of the site driveways:

- Most of the site trips in the morning peak hour are generated by the recently opened Dunkin' Donuts store. The trip estimates show about 80% of the site trips are generated by the Dunkin' Donuts store. Dunkin's "*on-the-go*" service is provided through designated spaces located in both the front and in the rear parking lots at 191 Marginal Way. Dunkin' customers routinely stop daily at the same store location to purchase their coffee and other products; and, as a result, each driver will select daily, based upon their experiences/routine, which driveway to either enter and/or exit the site.
- The directional flow of traffic in the morning peak hour traveling along Marginal Way is predominately east to west (about 65%). Motorists approaching 191 Marginal Way from the east will likely enter the site through the most easterly driveway except when vehicle queuing in the eastbound Marginal Way approach at Franklin Arterial extends beyond the driveway entrance.
- All site trips generated in the morning peak hour traveling west to east, about 35% of the total site traffic, will enter through the most westerly site driveway.
- Site trips leaving the property in the morning peak hour are more likely to use the westerly driveway simply because there are less delay issues and vehicle conflicts to contend with in exiting the property; except site traffic directionally traveling east upon exiting the site will do so through the most easterly site driveway.
- Site trip distribution in the evening peak hour is expected to be far more complex with motorists selecting their entry and exit location more impulsively based upon traffic loadings found on Marginal Way.

There are three HCL's in the area. The applicant shall conduct a review of crashes for the Marginal Way segment and identify strategies that mitigate crash patterns, if possible.
Supporting Evidence: MaineDOT's 2017 through 2019 Crash Report for the section of Marginal Way between Franklin Arterial and Chestnut Street identifies the road segment as a high crash location with a total of 25 crash incidents and a critical rate factor of 2.38. MaineDOT's collision diagram for the segment shows that nine (9) of the 25 crashes were "*angle*" crashes involving vehicles turning left into the Bayside Bark and AT&T driveway entrance, located just east of the 191 Marginal Way site. Six (6) additional crashes; again, left-turn accidents, were motorists turning into the Planet Fitness driveway entrance, located west of the 191 Marginal Way site. The remaining ten crashes reported for the road segment were more randomly located within the road section. Further research of the crash data notes that five of the nine left-turning "angle" crashes occurring at the Bayside Bark/AT&T driveway entrance occurred during the evening peak commuter hours; whereas, zero crashes occurred in the morning peak hours. A similar "*time of day*" pattern is identified for the six left-turn "angle" crashes reported at the Planet Fitness driveway entrance with four of the six total crashes occurring in the evening commuter hours.

Field observations were conducted during both the morning and afternoon peak commuter hours to visually identify other possible contributing factors for the higher than expected number of left-turning "*angle*" crashes reported for this section of Marginal Way. Although traffic volumes at the time of the operations survey were about 40% less than pre-Covid 19 conditions, the identified issues were clearly distinguishable. These issues include:

- Vehicle speeds, most notably from west to east on Marginal Way, routinely exceed the posted speed limit of 30mph.
- Motorists desiring to turn right from Marginal Way onto Franklin Arterial create a second travel lane well in advance of the signalized intersection at Franklin Arterial. A part of the field survey purposively included legally parking in front of the 191 Marginal Way site and observing the actions of approaching drivers. After multiple close calls involving approaching vehicles in the unmarked travel lane nearly striking the survey vehicle, this exercise was terminated.
- Existing congestion found at the Chestnut Street/Marginal Way intersection, including both motor vehicle and pedestrian traffic, limits the number of safe vehicle "*gaps*" for a motorist to turn left into the Planet Fitness driveway entrance.

Each of these field observations either directly or indirectly contribute to the higher than expected frequency of vehicle accidents reported for the noted portion of Marginal Way.

The City's planned road improvement project for this section of Marginal Way and beyond, when completed, will have a very profound impact on improving road safety in this section of Marginal Way. The proposed City plan calls for signalization of the Chestnut Street/Marginal Way intersection which will help safely apportion vehicle and pedestrian movements through the intersection. The traffic signal, sequencing through multiple operational phases, is expected to provide increased vehicle "gaps" for traffic turning left into properties located on the southeast side of Marginal Way.

The City is encouraged to consider a modification of the improvement plan for Marginal Way that incorporates a more traditional road design for the right-turn lane at Franklin Arterial. Alternatively, perhaps the existing on-street parking lane fronting the 191 Marginal Way property could be framed with carefully designed raised curb extensions that force all motorists to travel in a single lane in advance of the designated right-turn lane.

The City's Traffic Engineer noted that the pavement markings on Marginal Way were modified in November 2017. It appears 2019 crashes are lower than prior years. The applicant should assess if the pavement marking changes in 2017 improved safety.
Supporting Evidence: MaineDOT's collision diagram for the Franklin Arterial/Marginal Way intersection identifies a total of 15 reported crashes for the eastbound approach of Marginal Way during the most current study years of 2017 through 2019. A review of the crash report shows four crashes were reported in 2017; four accidents in 2018 and a slight up-tick of seven crashes in 2019. Further crash detail, which currently is not available through the MaineDOT, would be necessary to more accurately evaluate what impact the striping work may have resulted in. At this time, it is unclear whether there has been an improvement.

The applicant shall conduct an evaluation of driveway safety and how best to address safety concerns. Strategies that direct motorists to the westerly driveway should be considered. It is likely this will happen naturally.

Supporting Evidence: Peak hour trip estimates developed for the commercial property at 191 Marginal Way show the heavier volume of site generated trips will occur in the morning peak hour, with a total of 169 trips and a much lower volume of 93 trips projected for the evening peak hour. The Dunkin' store is expected to generate about 80% of the morning peak hour trips and roughly 60% in the evening peak hour. Typically, Dunkin' customers purchase morning coffee and other bakery products at the same store site on a daily basis; as a result, the Dunkin' customers are very knowledgeable of expected road conditions and will routinely select, based upon prior experiences, which of the site driveways is the most easily accessed during the morning peak hour. Prevailing travel conditions found on Marginal Way at Franklin Arterial in the evening peak hour are, in most instances, heavily congested with average vehicle queues extending well beyond the easterly site driveway; as a result, site traffic whether entering or exiting the 191 Marginal Way property is expected to ingress/egress the property through the westerly site driveway because of the likely delays attempting entry or exit movements through the easterly driveway.

In an effort to encourage greater use of the westerly driveway we are recommending the installation of a small Dunkin' entrance sign, at the westerly site driveway similar to the image shown below.

We are reasonably confident that the greater majority of site entry and exit movements in the evening peak hour will occur through the westerly driveway because travel conditions found on Marginal Way near Franklin Arterial will dictate the use of the westerly driveway. Motorists entering or exiting the site in the morning peak hour are far more likely to use both site driveways, totally dependent upon prevailing travel conditions found on Marginal Way. MaineDOT's road safety data for the years of 2017 through 2019 show very few motor vehicle accidents were reported in the AM peak hour. In fact, zero left-turn entry crashes were reported for the morning peak hour at the Bayside Bark/AT&T driveway, which is the location of the highest concentration of motor vehicle accidents on the section of Marginal Way in the vicinity of the 191 Marginal Way property. During the morning peak hour, the heaviest volume of through traffic travels east to west

and, as a result, does not conflict with motorists attempting left-turn entry movements to any property located on the south side of Marginal Way.

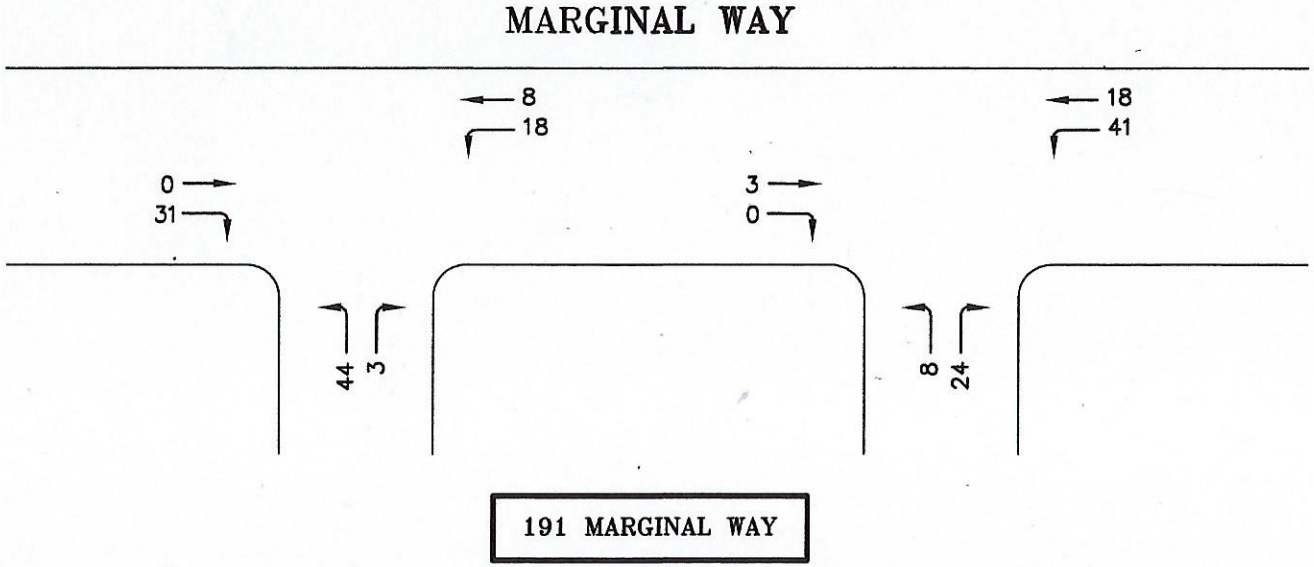
The applicant should revisit the connections to Bayside Bark. Documentation shall be provided regarding this item.
Supporting Evidence: Mr. Joel Tranum, owner of the Bayside Bark and AT&T properties, forwarded a copy of a letter to the City addressed to Christian Roadman, Planner, dated June 16, 2020 informing the City that for a variety of reasons he is not interested in combining the driveways between both properties. A copy of the letter is attached for reference.

We appreciate your review of this supporting information to each of the five action items stemming from the project scoping meeting. Please contact me directly with additional information you may require prior to your final report and recommendations to the Planning Board. As I am sure you are aware, the Applicant is most anxious to receive the required Traffic Movement Permit for the property in the timeliest manner. Thank you in advance for your understanding and effort in expediting the review and approval of the permit application documents.

Very truly yours,

William J. Bray, P.E.

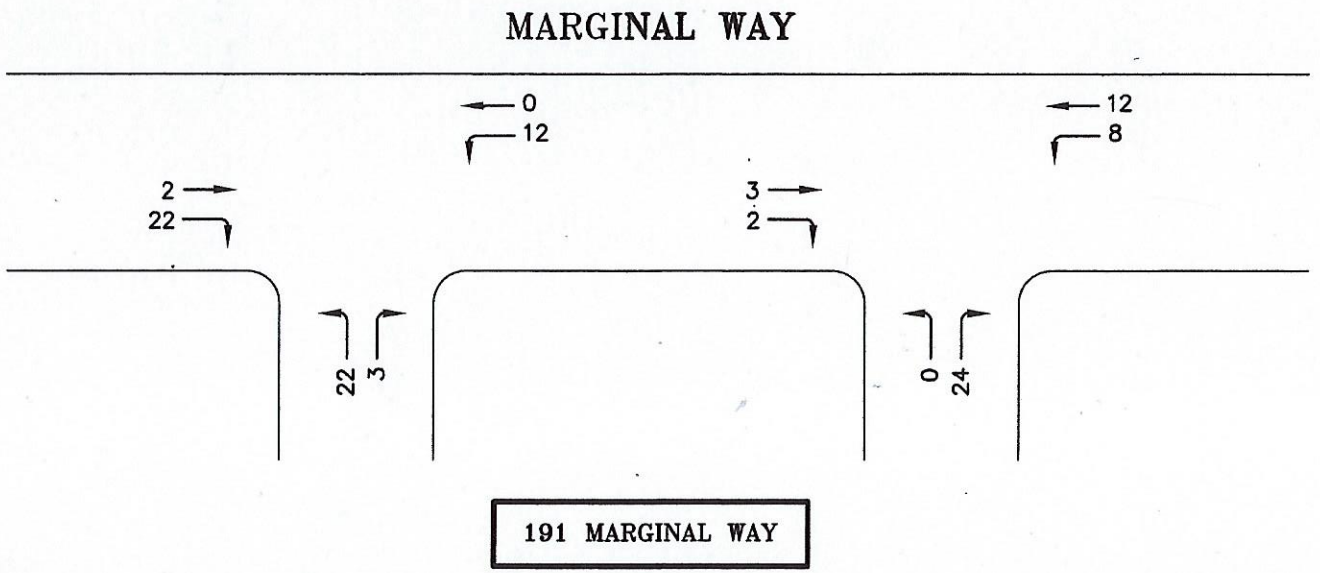
cc: Peter Noyes, Earl W. Noyes & Sons
Morris Fisher, Boulos Co.
James Rather, City of Portland Planning Department.
Stephen Bushey, P.E. Gorrill-Palmer, Inc.



SITE TRIP ASSIGNMENT
AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\191 MARGINAL WAY\PLANSET\191 MARGINAL WAY FIGURES.DWG

Project Name and Location: 191 MARGINAL WAY COMMERCIAL BUILDING	TRAFFIC SOLUTIONS
DATE: JULY, 2020 FIGURE: 1	17 MOUNTVIEW DRIVE, GORHAM, MAINE 04038



SITE TRIP ASSIGNMENT
PM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\191 MARGINAL WAY\PLANSET\191 MARGINAL WAY FIGURES.DWG

Project Name and Location: 191 MARGINAL WAY COMMERCIAL BUILDING	TRAFFIC SOLUTIONS
DATE: JULY, 2020 FIGURE: 2	17 MOUNTVIEW DRIVE, GORHAM, MAINE 04038

THE CANAAN COMPANY
INVESTMENT · DEVELOPMENT · MANAGEMENT

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Post Office Box 600137
St. Thomas, USVI 00801-6137
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In Boston
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Cambridge, MA 02138
Telephone 617.873.0850

jtranum@gmail.com

June 16, 2020

Christian Roadman, Planner
City of Portland
389 Congress St.
Room 312
Portland, ME 04101

RE: **Shared Entrance From Marginal Way**

Dear Mr. Roadman:

Earle W. Noyes & Sons, Inc. owns the property at 191 Marginal Way adjacent to my property at 211 Marginal Way. Peter Noyes and I have discussed combining our entrances a number of times over the years. However, for a variety of reasons, this is not of interest to me.

Should you have any questions I will be happy to discuss them with you.

Sincerely,

Joel Tranum

CITY OF PORTLAND, MAINE - SPACE AND BULK REGULATIONS FOR ZONE B-7	
191 MARGINAL WAY	
Dimensional Requirements	**Required**
Minimum Lot Size	None
Minimum Frontage	None
Minimum Front Yard Setback	None required except as provided in maximum street setback below
Minimum Side Yard Setback	None Required
Minimum Rear Yard Setback	None Required
Maximum Street Setback	Ten (10) feet
Minimum Building Wall Length	1. Minimum seventy-five (75%) of lot street frontage within ten (10) feet of the street; or 2. Minimum twenty-five (25%) of building perimeter within ten (10) feet of the street.
Maximum Building Lot Coverage	One hundred (100) percent
Maximum Residential Density	None
Maximum Building Height	105'
Minimum Building Height	Minimum of 3 Floors

NOTE:

SECTION 14-299
(o) BUILDING ENTRANCES:
ALL BUILDINGS SHALL HAVE A MINIMUM OF ONE (1) PUBLIC PEDESTRIAN ENTRANCE FACING THE STREET FRONTAGE OF THE LOT. SUCH BUILDING ENTRANCES SHALL ALSO BE REVIEWED UNDER THE B-7 BAYSIDE DESIGN STANDARDS

SIGN LEGEND

STOP	RESERVED PARKING	RESERVED PARKING / VAN ACCESSIBLE	CONVENIENT MD PARKING ONLY	CONVENIENT MD PARKING ONLY
R1-1 24"x24" A	R7-8 12"x18" B	R7-8 12"x18" R7-8P 12"x6" C	12"x24" D	12"x24" E
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PROPOSED BUILDING PLANS ARE PROVIDED BY CWS ARCHITECTS DATED 11.11.2016

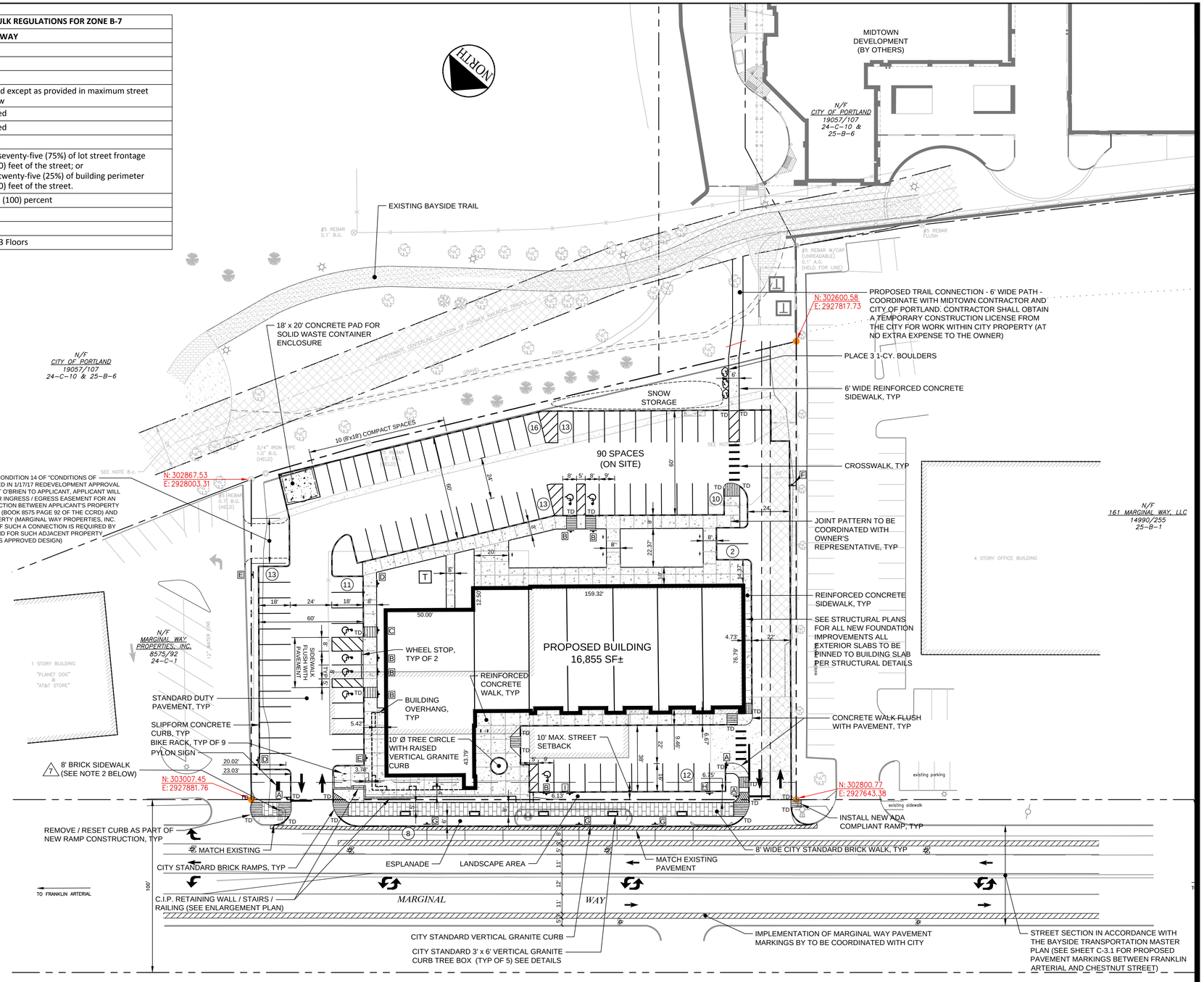
PROPOSED TOTAL PARKING SPACES: 90

PLAN REFERENCE:

BACK COVE SOUTH STORAGE CONDUIT PAVEMENT MARKING PLAN STATIONS 34+00 TO 46+00 - CONTAINED IN BAYSIDE TRANSPORTATION MASTER PLAN REPORT

FLOOD ZONE NOTE

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE C OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 13B, WHICH BEARS AN EFFECTIVE DATE OF JULY 17,1986 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.



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1 inch = 30 ft.

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Consultants

Notes

REVISION	DED	SRB	SRB	SRB	SRB	SRB	SRB	SRB	SRB	APP'D.	BY
8 RECORD PLANS	CITY	16.07.22	MW/MLOD
7 FINAL PLANS TO CITY	CITY	16.06.22	MW/MLOD
6 ISSUED FOR: CONTRACT DOCUMENTS / FINAL PLANS TO CITY		16.12.15	MW/MLOD
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1 ISSUED FOR CITY PERMIT		17.02.22	MW/MLOD
		17.04.12	MW/MLOD
		19.01.22	MW/MLOD

File Name: 195350354 SP | DED DWN. | SRB CHKD. | SRB DSGN. | 16.07.19 DATE

Permit-Seal

STATE OF MAINE — STEPHEN R. BUSBEY — 01/22/19 — LICENSED PROFESSIONAL ENGINEER

P.E. STEPHEN
LIC. #7429

Client/Project
EARL W. NOYES & SONS

191 MARGINAL WAY REDEVELOPMENT

PORTLAND, MAINE

Title
SITE LAYOUT PLAN

Project No.
195350354

Scale
1" = 30'

Sheet
C-3.0

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Portland, Maine | Yes. Life's good here.

Planning & Urban Development Department

Planning & Urban Development Department
Jeff Levine, AICP, Director

Planning Division
Stuart O'Brien, Director

January 17, 2017

Peter Noyes
Earle W. Noyes & Sons
PO Box 938
Portland, ME 04104

Stephen Bushey
Stantec, Inc.
778 Main Street, Suite 8
South Portland, ME 04106

Project Name: 191 Marginal Way Redevelopment
Address: 191 Marginal Way, Portland, ME
Project ID: 2016-179
CBL: 24-C-21
Applicant: Earle W. Noyes & Sons
Planner: Nell Donaldson

Dear Mr. Noyes:

On January 17, 2017, the Planning Authority approved with conditions a Level II site plan for the redevelopment of 191 Marginal Way. The decision is based upon the application as submitted by Stantec, Inc., with plan revisions dated December 16, 2016. The proposal was reviewed for conformance with the standards of the City of Portland's site plan ordinance, Article V of the land use code. The Level II site plan is approved with the following waivers and conditions:

A. WAIVERS

Driveway separation: Section 1.7.2.7 of the city's Technical Manual establishes standards for the location and spacing of driveways. On the recommendation of the city's traffic engineer, the Planning Authority finds that extraordinary conditions exist or undue hardship may result from strict compliance with these standards, that the public interest and purposes of the land development plan are secured with the proposed variation in the standards, and waives the driveway separation standard to allow curb cuts as proposed on the site and pavement marking plans prepared by Stantec and dated 12/16/16.

Aisle width: Section 1.1.4 of the city's Technical Manual establishes an aisle width standard of 24 feet for right angle parking. On the recommendation of the city's traffic engineer, the Planning Authority finds that extraordinary conditions exist or undue hardship may result from strict compliance with these standards, that the public interest and purposes of the land development plan are secured with the proposed variation in the standards, and waives the aisle width standard to allow a 22 foot aisle in the front parking area.

B. CONDITIONS OF APPROVAL

The Planning Authority found that the plans are in conformance with the site plan standards of the land use code subject to the following conditions of approval, which must be met prior to the issuance of a building permit unless stated otherwise:

1. Prior to issuance of certificates of occupancy for each tenant fit-up, the applicant shall provide updated trip generation numbers for review and approval by the city's Department of Public Works. If a Traffic Movement Permit is triggered, an application must be submitted for erview and approval by the Department of Public Works and the Planning Board;
2. All building entrances facing the street frontage of the lot shall remain operable in accordance with *Section 14-299(o)* of the city's Land Use Code;
3. The applicant shall provide a revised pavement marking plan for review and approval by the Department of Public Works;
4. The applicant shall provide a construction management plan for review and approval by the Department of Public Works;
5. The applicant shall provide revised plans meeting ADA requirements for ramps and sidewalks for review and approval by the Department of Public Works;
6. The applicant shall provide evidence of a Notice of Intent to Comply with the Maine Construction General Permit for review and approval by the Planning Authority and the Department of Public Works;
7. Prior to installation of the proposed grease trap, the applicant shall provide final utility plans for review and approval by the Department of Public Works;
8. The applicant shall provide a revised grading plan noting that sediment barriers will be provided downgradient of all proposed work, particularly along the western side of the site adjacent to the abutting property for review and approval by the Department of Public Works;
9. The applicant shall revise the landscaping plan to address inconsistencies with the civil drawings for review and approval by the Department of Public Works;
10. The applicant shall revise the brick sidewalk detail for review and approval by the Department of Public Works;
11. The applicant shall provide revised architectural drawings meeting the window transparency standard of the B-7 design standards and guidelines for review and approval by the city's Urban Designer;
12. The applicant shall provide a revised lighting plan meeting maximum illumination levels of Technical Manual *Section 12* for review and approval by the Planning Authority;
13. Prior to the issuance of a certificate of occupancy, the applicant shall provide specifications for proposed signs, meeting the standards of the B-7 zone and the City of Portland Design Manual, for review and approval by the Zoning Administrator.
14. Prior to certificate of occupancy, the applicant shall provide evidence of mutual easements for right of passage through the proposed interparcel connection to the adjacent property to the east for review and approval by the city's Planning Authority and Corporation Counsel; and
15. Prior to construction of the proposed connection to the Bayside Trail, the applicant shall obtain a temporary construction license from the City of Portland for all work proposed on city property for review and approval by Corporation Counsel.

The approval is based on the December 16, 2016 plan set. A final, revised plan set must be submitted for staff review and approval prior to the issuance of permits.

STANDARD CONDITIONS OF APPROVAL

Please note the following standard conditions of approval and requirements for all approved subdivision and site plans:

1. **Develop Site According to Plan** The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning Board or the Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.
2. **Separate Building Permits Are Required** This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Inspection Division.
3. **Site Plan Expiration** The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.
4. **Performance Guarantee and Inspection Fees** A performance guarantee covering the site improvements, an inspection fee payment of 2.0% of the guarantee amount, and seven (7) final sets of plans plus one final digital copy must be submitted to and approved by the Planning Division and Public Services Department prior to the release of a subdivision plat for recording at the Cumberland County of Deeds, and prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.
5. **Defect Guarantee** A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.
6. **Preconstruction Meeting** Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator, Public Service's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan. The site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.
7. **Department of Public Services Permits** If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)
8. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*,dwg), release AutoCAD 2005 or greater.

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Nell Donaldson at (207) 874-8723.

Sincerely,

Stuart O'Brien

Stuart O'Brien
Planning Division Director (BB)

Attachments:

1. Memo from Thomas Errico. Consulting Traffic Engineer, 1/6/17
2. Memo from Lauren Swett, Consulting Civil Engineer, 1/6/17

cc:

Jeff Levine, Director of Planning and Urban Development
Alexander Jaegerman, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Philip DiPierro, Development Review Coordinator, Planning
Ann Machado, Inspections Division
Tammy Munson, Inspection Division Director
Lannie Dobson, Administration, Inspections Division
Gayle Guertin, Administration, Inspections Division
Michael Bobinsky, Public Services Director
Jane Ward, Administration, Public Services
Jeff Tarling, City Arborist, Public Services
Captain Chris Pirone, Fire Department
Thomas Erriso, P.E., TY Lin Associates
David Senus, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File
Katherine Earley, Engineering Services Manager, Public Services
Bill Clark, Project Engineer, Public Services
David Margolis-Pineo, Deputy City Engineer, Public Services
Doug Roncarati, Stormwater Coordinator, Public Services
Greg Vining, Associate Engineer, Public Services
Michelle Sweeney, Associate Engineer
John Low, Associate Engineer, Public Services
Matt Doughty, Field Inspection Coordinator, Public Services
Mike Farmer, Project Engineer, Public Services

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

191 Marginal Way - Final Traffic Comments

Tom Errico <thomas.errico@tylin.com> Fri, Jan 6, 2017 at 9:31 AM
To: Helen Donaldson <HCD@portlandmaine.gov>
Cc: Katherine Earley <kas@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Jeff Tarling <jst@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>

Hi Nell – the following represents a status update of my previous comments based upon a review of the revised site plan and Marginal Way improvement plans.

1. The site plan should consider an inter-parcel connection to Planet Dog. Current conditions seem to indicate that vehicle cross-circulation currently occurs. In conjunction with the connection, the applicant should provide rights for Planet Dog vehicles to travel through the project site. As discussed in later comments, I'm concerned about the location of the proposed easterly driveway in respect to Franklin Street traffic conditions and also believe providing opportunities for Planet Dog vehicles to use the westerly project driveway will have a positive effect on motorist safety.

Status: Based upon concerns regarding safety conditions on Marginal Way and that the easterly driveway does not comply with City driveway spacing standards, the applicant shall provide a connection to Planet Dog. A plan shall be provided for review and approval.

1/6/2017 Status: The plans include this connection and therefore I support a waiver from City standards as it relates to driveway separation. I have no further comment.

2. I continue to review the trip generation analysis and at this time do not approve the estimate provided by Bill Bray, PE. Please noted the following:

- The trip generation for the retail portion of the development should be based on Land Use code 820 Shopping Center. Use of the Land Use code Specialty Retail is not appropriate given limit data. I would also note that if a restaurant use is a possibility, the worst-case trip generation estimate should be used.
- The applicant should provide data for the proposed Medical Quick Care use that supports the data provided by ITE. Information from the proposed tenant presenting traffic information at existing operating sites is suggested.

Status: The applicant has provided updated information and I find the trip generation to be reasonable. I would note that the trip generation estimate shall be updated to reflect actual tenant businesses prior to the issuance of a certificate of occupancy. I would note that if a Traffic Movement Permit is triggered, review of the project by the Planning Board is required.

1/6/2017 Status: See above status comment.

3. A parking demand analysis should be provided that accounts for project land uses and opportunities for shared use. The analysis should be based on ITE and Urban Land Institute information or local sources.

Status: The applicant has provide a parking demand analysis and my general conclusion is that the site will provide an excess parking supply. Based upon the traffic count conducted for the Medical Quick Care site, it is very unlikely that all 30 parking spaces will be required.

1/6/2017 Status: I have no further comment.

4. The applicant shall provide supporting documentation for seeking a waiver from the City's technical standards for driveway separation. I would note that the easterly driveway does concern me from a safety perspective, as it is located in close proximity to the Franklin Street intersection and vehicle queues typically extend back along Marginal Way and would block the project driveway. I believe safety would potentially be compromised for both the left-turning vehicles exiting the site (where vehicles stacked on Marginal Way would block sight lines) and for left-turning vehicles entering the site (where vehicles stacked on Marginal Way would prevent entry movements).

Status: Given the issues noted in my original comment, it is recommended that the applicant implement roadway improvements along their Marginal Way frontage that were identified as part of the Bayside Transportation Master Plan. The implementation shall consider transition towards the Franklin Street intersection and transition toward Chestnut Street. The exact extent of improvements shall take into account existing conditions and how the changes along the frontage can safely transition to match existing roadway conditions. The applicant shall be responsible for preparing a plan of the suggested changes, for review and approval by the City Planning Authority. As an alternative, a monetary contribution equal to the suggested improvement shall be provided, for use by the City for project implementation, as long as the improvements are constructed prior the issuance of a building occupancy permit.

1/6/2017 Status: The applicant has provided pavement marking plans and I generally find them to be reasonable. The primary concern regarding the plans are details on how Marginal Way eastbound will transition from two lanes west of Chestnut Street to one lane east of Chestnut Street. It is my understanding that DPW has committed to implementing the necessary improvements west of Chestnut Street to allow for appropriate travel lane transition conditions. Accordingly, this issue does not need to be addressed by the applicant. I would note that there are some minor pavement marking adjustments that the City would like to incorporate and the City can coordinate those changes with the applicant as a condition of approval. I would note that all work in conjunction with the pavement marking plan is the responsibility of the applicant including methods for removing existing pavement markings and necessary signage, etc. The applicant will be responsible for development of a construction management plan for review and approval.

5. As noted previously, driveway operations and safety is a concern given proximity to abutting driveways and the general heavy traffic levels on Marginal Way. The current site plan depicts 12 parking spaces along the Marginal Way frontage that are accessed via a parking aisle located very close to Marginal Way. In my professional opinion traffic movements into these 12 spaces will complicate entry and exit maneuvers onto Marginal Way and revisions to the plan should be considered.

Status: I would suggested that the applicant consider compact size parking spaces to allow for an 8-foot sidewalk on Marginal Way.

1/7/2017 Status: I find the current plan to be acceptable and support waivers from City standards for aisle width and parking stall dimensions.

6. The plans depict a sidewalk connection to the Bayside Trail that terminates at the rear property line. It is suggested that the applicant provide a complete connection to the trail.

Status: The plans have been revised and I have no further comment.

7. The long-term vision for the Bayside area is extension of Pearl Street to Marginal Way. The proposed Midtown project has accounted for the design of such a connection. It is likely that an extended Pearl Street would be located on both the subject property and the abutting property to the west. The applicant should provide information that notes such a connection is feasible given the details of the site plan under review.

Status: In my professional opinion the project site layout does not preclude a future connection, when considering use of both the subject and abutting properties. I have no further comment.

Additional Comment

- **There are a few sidewalk ramp locations that the applicant should review and modify such that they are fully accessible and ADA compliant. In general, these locations consist of ramp configurations where the ramp flare is located along the pedestrian travel route, thus creating an inaccessible route due to slope conditions. The locations for possible modification include:**
  - **The westerly driveway ramps into the site. All ramps from Marginal Way to the building corner.**

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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MEMORANDUM

TO: Nell Donaldson, Planner
FROM: Lauren Swett, PE & Ghazal Kayal, EIT
DATE: January 6, 2017
RE: 191 Marginal Way Redevelopment, Level II Site Plan Application Response to Comments

---

Woodard & Curran has reviewed the Response to Comments for the Level II Site Plan Application for the proposed 191 Marginal Way Redevelopment project located in Portland, Maine. The project involves the re-development of the NAPA/AAA site at 191 Marginal Way to provide medical office and retail uses and associated pedestrian and vehicular access, parking, and utilities infrastructure.

Documents Reviewed by Woodard & Curran

- Response to Comments and attachments, dated December 19, 2016, prepared by Stantec Consulting Service Inc., on behalf of Earl W. Noyes & Sons.
- Engineering Plans, dated December 16, 2016, prepared by Stantec, on behalf of Earl W. Noyes & Sons.

Comments *(Comments from prior memos are included in italics)*

1) *The proposed project will disturb over one acre and therefore requires a MaineDEP Construction General Permit Notice of Intent. Copies of all permits should be forwarded to the City upon receipt.* Applicant has acknowledged and will provide upon receipt.
2) *Per Section 13 of the City's Technical Manual, the Applicant is required to submit a Boundary Survey that has been Stamped by a Maine Licensed Professional Surveyor. At this time, an unstamped Boundary Survey marked as "Preliminary" has been submitted. A stamped Boundary Survey should be provided as part of the Final Site Plan Application.* Applicant has acknowledged and will provide upon receipt.
3) *The Applicant has noted that a possible use that may be considered for the Site is a Restaurant; the Applicant has provided a detail for a grease trap, but has not noted a location for it on the plans or provided any design information. This information should be provided as part of the Final Site Plan submission if a restaurant is proposed.* Applicant has added a grease trap and has noted that the location may need to be adjusted depending on the final restaurant tenant. The Applicant should coordinate with Rachel Smith at Portland Public Works (874-8833) on final location and sizing requirements if a restaurant tenant is selected.
4) The City of Portland requires that all Level II site plan applications 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 (Technical Manual, Section 5. II. Applicability in Portland. C. a. and City of Portland Code of Ordinances Sec. 14-526. Site plan standards. (b). 3. b.). 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. *However, sediment barriers should be provided downgradient of all proposed work, particularly along the western side of the Site adjacent to the abutting property.*
    b) General Standard: The project will result in a net decrease in impervious area. As such, the project is not required to include any specific stormwater management features for stormwater quality control. The Applicant will be utilizing roof drain cartridge treatment units and a Filterra Tree Box to provide some stormwater treatment on the site, and they have acknowledged that they will coordinate with the City for possible credit towards their stormwater fees.
    c) Flooding Standard: The project will result in a net decrease in impervious area. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.

5) Some of the site layout geometry shown on the landscaping plan does not appear to match the site civil plans, i.e. the connector driveway to the abutting property appears to be wider and the islands appear to be slightly different. These inconsistencies should be clarified on final construction plans.
6) Two details are provided for brick sidewalk. A detail in conformance with the City of Portland technical standards should be utilized for brick sidewalks within the Marginal Way Right-of-Way.
7) The Applicant has addressed all other comments at this time.

Portland Maine Yes. Google's good here.

Christian Roadman <croadman@portlandmaine.gov>

191 Marginal Way - Traffic Movement Permit

Tom Errico <thomas.errico@tylin.com> Fri, Sep 11, 2020 at 3:50 PM
To: Christian Roadman <croadman@portlandmaine.gov>

Hi Christian – I have reviewed the Section 7 Traffic Study prepared by the applicant in support of the Traffic Movement Permit. The Section 7 Study complies with requirements identified at the June 16, 2020 Scoping meeting. Based upon safety issues identified along Marginal Way the applicant shall be required to meet the following conditions.

- Upon future redevelopment of the easterly adjacent property, the applicant shall facilitate the construction of a driveway connection to that property, and will be responsible for the costs to build that connection up to their property line.

- The applicant shall install signage and update pavement markings to prohibit left-turns out of their easterly driveway.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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PLANNING BOARD REPORT
PORTLAND, MAINE

Traffic Movement Permit
191 Marginal Way
PL-001137-2020
Earle W. Noyes and Sons, Inc.

Submitted to: Portland Planning Board **Public Hearing Date:** 9/15/2020	**Prepared by:** Christian Roadman, Planner **Date Prepared:** 9/11/2020

The surrounding context of 191 Marginal Way, highlighted in teal

I. INTRODUCTION AND SITE HISTORY

On January 17 2017 the City of Portland Planning Authority approved a level II site plan application for redevelopment of 191 Marginal Way (between Franklin Arterial and Chestnut Street) into five commercial spaces. The site previously housed an auto parts store and an auto repair center.

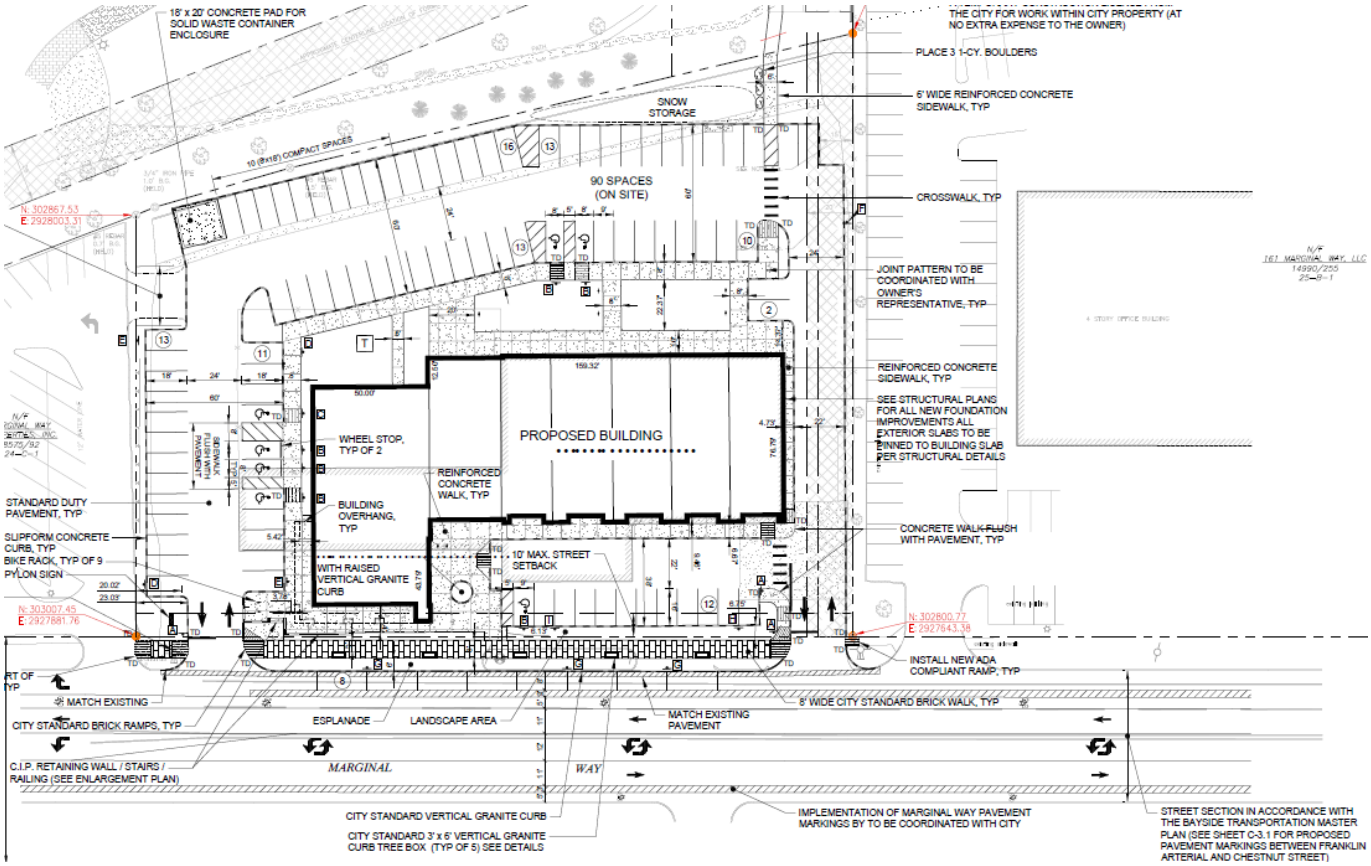
At the time of the proposed redevelopment project, a traffic movement permit was not required, as the project did not generate 100 or more passenger car equivalents (PCEs) trips during its peak hour of traffic generation. (Future tenancy was not known). A condition of approval required that, prior to issuance of certificates of occupancy for these tenant spaces, updated trip numbers must be provided. If those subsequent estimates triggered the need for a traffic movement permit (TMP), an application for one would be submitted for review and approval by the Planning Board.

II. CURRENT & PROPOSED DEVELOPMENT

In early 2020, a Dunkin Donuts franchise sought to occupy one of the available tenant spaces. Trip estimates revealed that expected trip generation would require a TMP. However, because of drastic reductions in traffic evident during the beginning months of the Covid-19 pandemic, which resulted in initial total traffic impacts far below TMP thresholds, a temporary certificate of occupancy was granted by the City.

Currently three businesses operate onsite: the urgent care clinic, a health insurance company, and the Dunkin Donuts. In order to obtain a permanent certificate of occupancy for the Dunkin Donuts, and also to be able to seek occupancy by other tenants for the remaining two commercial spaces, the property owner needs a TMP.

III. SITE PLAN CONTEXT



A portion of the site plan for the previously approved (and now built) project at 191 Marginal Way.

191 Marginal Way is located in the West Bayside area of the peninsula, close to Franklin Street. In part because the project's 2017 site plan application involved partial reuse of an existing building, the project did not rise to the level of

Planning Board review; level II site plans are reviewed by planning staff. Therefore, the Planning Board does not have recent history with this property or project.

As noted above, the existing development includes an urgent care clinic, an insurance provider, a Dunkin Donuts, and two remaining commercial spaces. Those spaces are expected to be filled by a veterinarian and a dental office.

The site in question is only accessible from Marginal Way. The City of Portland may wish to continue Pearl Street to Marginal Way (per the City's Bayside Transportation Master Plan), which would likely provide frontage along that potential street extension. (At present, Pearl Street ends at Somerset Street, to the project property's south). During the 2017 level II site plan review of the existing development, Pearl Street's potential extension was acknowledged. The approved development project was designed so that it would not preclude a future Pearl Street extension.

191 Marginal Way is two parcels down from Franklin Street. Its eastern abutter, which currently houses Planet Dog and AT & T, is at the corner but can only be accessed from Marginal Way. In 2017, City staff encouraged the project site to develop a connection between the project property and its easterly abutter. A condition to this effect was included in the level II site plan approval letter (**Attachment 1**). Such a cross-property connection would provide additional traffic movement flexibility and potentially reduce some demand on Marginal Way. While the abutting property owner was not and is not currently interested in such a connection (**Attachment C**), a suggested condition of the TMP approval is provision by the applicant for a future site connection.

IV. TMP REVIEW

TMPs are a requirement of the Maine Department of Transportation (DOT), but the City of Portland has delegated review of them from the DOT. Delegated review requires that TMP applications be approved or denied by the Planning Board, though they generally come under review at the same time as a site plan or subdivision proposal. This instance, of a standalone TMP application following site plan approval, is unusual but not unprecedented. The City's consulting traffic engineer leads the review of Portland's TMP applications.

The applicant / property owner has two anticipated tenants (a dental office and a veterinary clinic) for their remaining available commercial spaces. This allowed for generation of expected traffic numbers for the entire development. The entire development (including all expected tenants) should generate approximately 176 trips in its weekday morning peak hour and 55 trips in its weekday afternoon peak hour above those previously generated by the auto repair store and center which previously existed on site. The applicant also identified three nearby high-crash locations (Chestnut Street at Marginal Way, Franklin Arterial at Marginal Way, and Marginal Way between Chestnut Street and the raised median at Franklin Arterial) as part of their TMP application (**Attachment A**).

During his review of the TMP application, the City's consulting traffic engineer asked the applicant to provide a traffic study addressing:

- turning movements at each of the project's two site driveways and potential safety strategies
- possible strategies to mitigate crashes along the corresponding segment of Marginal Way
- whether 2017 pavement marking changes to Marginal Way improved safety
- a potential direct driveway connection to the easterly abutting property (Planet Dog and AT & T)

The applicant subsequently submitted a traffic study (**Attachment D**) addressing each of the items above, which the consulting traffic engineer reviewed and deemed acceptable (**Attachment 2**). While applicants are sometimes tasked with making changes to roadways or traffic patterns to mitigate the effects of their traffic generation, the City has already planned and funded a project along Marginal Way that upon completion will mitigate most of the impacts of the project. The consulting traffic engineer, with the advice of the Department of Public Works, therefore only recommended site-specific conditions of approval.

V. PROPOSED MOTIONS

Traffic Movement Permit

On the basis of the application, plans, reports, and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on September 15, 2020 for application PL-001137-2020 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan [is / is not] in conformance with 23 MRSA 704-A and Chapter 305 Rules and Regulations pertaining to Traffic Movement Permits, subject to the following conditions of approval:

1) Upon future redevelopment of the easterly adjacent property, the applicant shall facilitate the construction of a driveway connection to that property, and will be responsible for the costs to build that connection up to their property line.

2) The applicant shall install signage and update pavement markings to prohibit left-turns out of their easterly driveway.

XIII. ATTACHMENTS

Report Attachments

1. 191 Marginal Way Level II Site Plan Approval Letter
2. Consulting Traffic Engineer Review Email 9/11/2020

Applicant's Submittals

A. Traffic Movement Permit Application
B. Site Plan Amendment Checklist
C. Follow-Up Letter re: Traffic Movement Permit Scoping Meeting
D. Section 7 Traffic Study

Plans

P1. Site Layout Plan from 191 Marginal Way Level II Site Plan Approval Process

Planning and Urban Development Department
Planning Division

Subject: Design Review – 337 Cumberland Avenue
Written by: Caitlin Cameron, Urban Designer
Date of Review: Thursday August 27, 2020

The proposed development for the residential and day care development at 337 Cumberland Avenue was reviewed against the B3 Downtown Business Zone design standards. The final review was conducted by Caitlin Cameron, Urban Designer, Andrew Tufts, Planner, and Deb Andrews, Historic Preservation Program Manager. The project is not within the Pedestrian Activities District or Encouragement areas.

Staff Comment
The following comments are meant to bring to the Board's attention the topics discussed and areas of concern.

The surrounding built context includes a variety of building types, eras, and uses. City policy and the B-3 design standards are supportive of infill development with urban character that strengthens the street wall, increases density of uses, creates active frontages.

(1)a.1. Relationship to the pedestrian environment: . . .within the first 35 feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment. Factors to be considered: 1) storefronts and building facades 2) building entrances 3) blank facades 4) special features

Storefront/Facades: Staff raised concern about ground level façade design on Cumberland Avenue at the residential building entrance – the level of transparency and material placement was discussed to find ways to create a more active and welcoming ground floor interface with the public realm. The revised plans reflect a simplification of the material palette. The wood siding turns the corner to indicate the change in use to the day care entrance. The window size and placement are restricted by the floor levels at this façade and the need for some privacy of the classroom setting. Transparent windows are provided into the active spaces but reflect the office and classroom uses rather than a storefront level of transparency.

Entrances: The primary residential entrance is oriented and directly accessible to the street. More emphasis was introduced with a change in material (tile), extended canopy, and recess. There are several entrances to the day care facility – the canopy and gate on Cumberland, as well as the recessed entrance, high level of transparency, and material change help to differentiate the residential from the day care entrance.

Blank Facades: The Portland Street façade is primarily structured parking and yard areas – the zoning maximum for inactive façade was address by introducing a higher percentage of screen

material and breaking the brick wall at intervals. Although the use at this location is parking structure and not very active, the breaks in the wall and the texture and visual transparency of the screen now address the zoning dimensional standards. The brick walls provide a base to the building and durability at grade. The gauge of the screen opens up at the play deck level where the activity will be visible. The applicant is no longer proposing an art element as part of this wall.

(1)d. Sidewalk areas and open space: The design of publicly accessible sidewalk areas and open space shall complement the general pattern of the downtown pedestrian environment, . . . enhance the attractiveness, comfort, security, and usability of the pedestrian environment. Factors to be considered include design, placement, character, durability, and quality of the following: sidewalk materials, landscape, lighting, pedestrian amenities, relationship to existing development.

The sidewalks and streetscapes will be developed according to the Technical Manual standards and Sidewalk Material policy.

The most visible and active edges of the property are faced by fencing around the day care facilities. Although this provides an active and visible interface, there is little amenity for the pedestrian experience. Staff appreciate that the fence allows for passers-by to see the church architecture which is still visible in this design.

More landscaping, especially at the Cumberland Avenue entrance might be more appropriate to meet the increase setback requirements. The City Arborist also commented that additional landscape would be desirable where it can be implemented.

(1)d.1. General: Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the downtown, surrounding built environment and streetscape.

It is appropriate to place taller buildings in this location. There is considerable grade change throughout these two blocks contributing to some of the design decisions. The existing church building provides a challenge – the design successfully attaches to this historic, low-rise structure with the use of a connector "hyphen" that provides physical connection of the uses but also keeps the two architectural expressions separate, giving breathing room to the church. The contemporary, simple expression of the residential building is an appropriate foil to the historic church architecture with its more elaborate roof forms and historic character. The roof forms at the connector are complex but set back and will not be visible from most perspectives.

The scale and massing of the new residential building is appropriate for the downtown setting and keeps the established street walls created on Cumberland Avenue and Portland Street.

Staff point out that buildings on these downtown streets typically have a clear, directional face. In the workshop, Staff raised the question whether the façade composition should be revised to create a stronger orientation/directionality for the building. The Planning Board did not have strong preference with regards to this orientation – the design remains as proposed in the workshop.

Staff and the applicant determined that the red brick was not a successful strategy in relating the new, contemporary design to its context or the Chapel because it felt like a superficial gesture and added to the complexity of the material palette in a context that has simple material selection and placement. The red brick was removed from the design to address the standards by simplifying the overall palette, which is more in keeping with the composition of similar buildings, while also allowing for an authentic distinction between the existing, historic chapel and the contemporary residential building.

Generally, staff support the choice to make this building clearly different from the church/day care and finds the contemporary design and grey palate to successfully fit into the existing streetscape. The simple and consistent material placement, dark grey/neutral color are also found to be an appropriate choice in this context. The articulation, material texture, detail, and massing variation provide visual interest.

(1)d.2.Standards for increasing setback beyond street build-to line: This is covered in the zoning section of the Planning Board memorandum for July 21, 2020. The Board must make a determination on whether the project meets the criteria to exceed build-to line on Cumberland Avenue – this is related to the zoning dimensional standards.

(1)f. Shadow impact on open space: Not applicable - the project is not adjacent to any public plazas, parks, or other publicly accessible open space. The project may cast some afternoon shadow on the private open space at Portland and Preble.

(1)g. Wind impacts: Significant wind impacts are not anticipated for a 6-7 story building on a street with buildings of similar height.

(1)h. Setbacks from existing structures: The proposal attaches to an existing historic church building and will be in close proximity to the neighboring building. The new addition was designed to provide a respectful "hyphen" between the smaller scale church and the taller residential mid-rise. Staff find the transition to be appropriate in scale and meets the intent of the standard to not create detrimental impact on that building. The new addition will replace an existing, one-story building with a party wall condition to the neighbor. The new residential building will keep a minimum 5' setback from the neighboring building so as to not block the windows or impact the structural integrity.

(1)i. Building tops: Not applicable – the project does not exceed 150 feet in height.

Portland Maine | Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

Att. 2

337 Cumberland Avenue comments

Mike Tremblay <mtremblay@portlandmaine.gov> Thu, Aug 27, 2020 at 3:55 PM
To: Caitlin Cameron <ccameron@portlandmaine.gov>

Caitlin,

Here are my comments for 337 Cumberland that I'd like to see addressed, or incorporated as a condition of approval, before the Planning Board hearing on September 15:

1. Parking Supply
Parking supply is significantly lower than the parking demand. If it is the Applicant's intent to ask the Planning Board for a lower requirement, the new requirement must be justified in a parking analysis conducted by a traffic engineering PE registered in Maine in order to be supported by DPW. It is likely that DPW will recommend that the Applicant offset some parking demand by licensing off-site spaces; the discrepancy between proposed supply and anticipated demand is likely significant.

2. Shared Parking
The parking area's shared use condition is likely not feasible. The parking management memo provided to the City in July indicated that residents would be free to use the parking area from 5:30pm-6:30am, and that the spaces would be used by staff of the daycare use during the hours of 6:30am-5:30pm. It is extremely unlikely that the residential users of the parking in this development will have vacated their space every morning by 6:30am; this is very early for a work-based trip, and it assumes that vehicles will be used daily, which is not necessarily the case, especially in the emerging era of mandated or voluntary work-from-home. It is likely that daycare staff will arrive on-site with few, if any, spaces available to them.
Shared parking arrangements are generally supported by the City; however, typically, shared parking strategies work best when parking supply more closely resembles latent demand. In this case, the parking demand for *either* use would seem to exceed supply; as such, both residents and daycare staff will need to find parking elsewhere, and parking located on-site will be in high demand.

3. Tandem spaces
DPW would not support any parking layout that relies on coordination between residents of different units to move vehicles. This expectation is simply unrealistic, as it would require any resident who is blocking in another resident's vehicle to be constantly available to move their car if needed, or would require sharing of keys, etc. Tandem spaces must either be managed by a valet, or must be shared by users within the same workspace, where workers generally are present during their entire shift. Prior to the previous submission, it was DPW's understanding that only the daycare use would be using the valet spaces.

4. Driveway
The driveway is currently drawn with a granite curb running across the width of the sidewalk. The driveway should be constructed with granite "bugs" or radial curb that terminates before the functional width of the sidewalk; the sidewalk should not experience any material changes along its length along the project frontage.

5. Utility trenches and moratorium repair
The Applicant indicated that they would be unable to stub in utilities ahead of MaineDOT paving work on Cumberland Avenue in prior months. As such, utilities need to be installed in a moratorium street, per MaineDOT standards, which call for pavement repair of no less than 100 feet in length, for the width of the roadway affected up to the pavement seam or opposite granite curb. This represents the entire width of Cumberland Avenue (about 47 feet) over the 100 foot required distance.

6. Street parking
The Applicant is proposing changes to street parking. The applicant should clarify what those changes consist of (number of spaces changing, from what, and to what). Changes that affect existing neighbors may need to be mitigated.

7. Accessible Spaces
The Applicant proposes 3 accessible spaces; however, only 1 is needed. This may result in underutilization of the parking area, unless it is expected that these spaces will be needed for a particular reason. Otherwise, it is recommended that the Applicant simply unmark two of the spaces as accessible, while keeping the dimensions and clear areas the same. If, in the future, more accessible spaces are needed, they would be readily available.

I think that's all we discussed; let me know if you think I missed anything.

-Mike

Mike Tremblay, P.E.
Senior Engineer

Engineering Division
Department of Public Works
City of Portland, ME
mtremblay@portlandmaine.gov
P. 207.874.8881 F. 207.874.8852

CITY OF PORTLAND, MAINE

To: Caitlin Cameron, Urban Designer, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: August 26, 2020

Subject: 337 Cumberland Avenue- Inclusionary Zoning

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 units shall be 10% of the total number of bedrooms in the development.

The development located at 337 Cumberland Avenue proposes the creation of 60 dwelling units of rental housing consisting of nineteen (19) studio, sixteen (16) one-bedroom, fifteen (15) two-bedroom, and ten (10) three-bedroom units. The applicant has elected to provide forty-eight (48) units of low-income housing. Of those units, thirty-six (36) are targeted towards households earning at or below 50% AMI, and twelve (12) units target households earning at or below 60% AMI. Twelve (12) out of the 60 units will remain unrestricted. Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of six (6) units with a total of 8 bedrooms for households earning at or below 100% AMI. As the applicant has elected to provide 80% of its units affordable at 50-60% AMI, they are providing a greater percentage of affordable units (80% versus the IZ requirement of 10%) at lower income targets (50-60% AMI versus the IZ requirement of 100% AMI) than required by the Ensuring Workforce Housing Ordinance. As such, the project has met the minimum requirements set forth in Section 14-487.

In addition to the above information, the applicant received approval by the City Council for Housing Trust funds and an Affordable Housing TIF. As the recipient of housing subsidies, the applicant would be required to maintain an on-going affordability term of 90 years for receipt of

Housing Trust Funds, and 30 years for receipt of an Affordable Housing TIF. Comparatively, Division 30, Section 14-487 (e) 7 sets the minimum term of affordability at 20 years for projects in which at least 50% of the units would be affordable to rental households earning at or below 100% AMI. As such, the project meets the minimum requirements set forth in Section 14-487.

Staff recommends the Board Approve this Conditional Use provided the Applicant maintains a minimum of six units of housing at or below 100% AMI for a minimum of twenty years. Should the Applicant fail to maintain these minimum housing guidelines then the Applicant and the City should enter into an agreed upon Affordable Housing Agreement (AHA). The Affordable Housing Agreement would outline the details of the affordability restrictions placed on six (6) Workforce Units and would be filed as covenant to the property's deed with the Cumberland County Registry of Deeds.

Sincerely,

Victoria Volent
Housing Program Manager

Att. 4

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

337 Cumberland Avenue

Mike Tremblay <mtremblay@portlandmaine.gov> Thu, Sep 10, 2020 at 2:23 PM
To: James Rather <jrather@portlandmaine.gov>
Cc: Caitlin Cameron <ccameron@portlandmaine.gov>, Tom Errico <thomas.errico@tylin.com>

James,

After review of the parking management plan provided by the applicant for 337 Cumberland Avenue, I have the following comments and concerns:

- The Applicant indicated that the shared parking arrangement between the residential use and the daycare use is no longer being pursued in the previously provided form; instead, the spaces would be leased to YFO, who would have the ability to allow shared spaces as they see fit. This alleviates my concern about unrealistic shared parking expectations; however, this means that the number of on-site spaces for the 48 affordable and 12 market rate residential units would be zero.

- The Applicant's parking study, submitted in June 2020, indicates a demand of 49 spaces for all uses (25 spaces for the 48 affordable units, 7 spaces for the market-rate residential units, and 17 spaces for the daycare). This indicates that the parking supply provided (16 spaces) is not quite sufficient to meet the daycare's requirements. More significantly, all of the 32 spaces required by the residential uses would not be available on-site.

- The Applicant indicated that a shared vehicle would be located in the garage, reducing their parking demand by 8 (sic - it would actually be 7) spaces. However, this has been dropped from the proposal since the parking study was completed. As such, the actual parking demand exceeding capacity is 33 spaces, not 25 spaces as indicated in the parking study.

- The Applicant indicated that they plan to make up for this gap in demand by providing leased parking offsite or paying into the City's pay-in-lieu program. DPW recommends that off-site parking be identified for at least a majority of the 33 spaces, as parking demand is otherwise likely to be accommodated by public on-street parking.

- The Applicant's resubmitted turn templates show that maneuvers into the site into numerous spaces can be done comfortably. No further action is requested.

Thanks,
Mike

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

Portland Maine Yes. Google's good here.

Caitlin Cameron <ccameron@portlandmaine.gov>

337 Cumberland - PB report

jrather@portlandmaine.gov <jrather@portlandmaine.gov> Thu, Sep 10, 2020 at 2:04 PM
To: John Peverada <jbp@portlandmaine.gov>
Cc: Caitlin Cameron <ccameron@portlandmaine.gov>

(adding Caitlin)

Thanks, John.

From: John Peverada <jbp@portlandmaine.gov>
Sent: Wednesday, September 9, 2020 3:10 PM
To: James Rather <jrather@portlandmaine.gov>
Subject: Re: FW: 337 Cumberland - PB report

Hi James,

Thanks for sending this my way. I had a problem with my computer this morning. You may have noticed that I was on the 191 Marginal Way meeting, but my microphone did not work.

In previous meetings related to this project, I have stated that I am opposed to reducing the off street parking requirement for this building below what the zoning ordinance requires. Most landlords that I talk to say that most of their tenants have 2 or more cars, AND in many cases two families are sharing one apartment, or teenagers have cars, and others have overnight guest.

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

I fully understand that more housing on the peninsula could be beneficial, however I think that everyone (City, landlord & tenants) could benefit if the off street parking requirement were on a sliding scale such as:

One off street parking space per every efficiency & 1 bedroom unit

Two off street parking spaces per every 2 & 3 bedroom unit

Three off street parking spaces per every 4 bedroom unit and beyond

Or if the number of parking spaces were based on the square footage of the unit.

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

I have been overruled on this one, so if the developer is confident that additional off street parking is not necessary, than **I would like to have a condition of approval be added that residents of this property will not be eligible for residential parking permits,** similar to what was done for the Avesta project at 72 Oak St., and Pearl Place II.

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

Thanks

John

On Wed, Sep 9, 2020 at 11:18 AM <jrather@portlandmaine.gov> wrote:

> Hi John,
>
> Sending this to you, as I didn't see you at Dev Rev this morning. 337 Cumberland Ave is on for a Planning Board hearing next Tuesday. To summarize:
>
> - They will need to account for 33 spaces via an in-lieu fee contribution or via off-site parking lease in one of the local garages. We don't know the proportion of in-lieu fee vs leased spaced they intend to provide, but based on the code, a condition can be worded to allow them to pursue both options
> - They propose to reconfigure some of the on-street parking in the immediate vicinity to accommodate a loading zone between 7am and 5:30pm. DPW is fine with this.
>
> Would you like to weigh in on this at all before we finalize the materials for the hearing?
>
> Excerpts from the draft report:
>
> ***Traffic - Access, Circulation, Loading and Servicing***
>
> The current proposal keeps one curb cut onto Portland Street for a single entry/exit for all parking spaces. Pick-up/drop-off plan for the day care facility will continue to take place on Cumberland Avenue. The applicant requests the Planning Board to approve changes to the on-street parking designation (Attachment P) which has been reviewed and supported by Senior Traffic Engineer Jeremiah Bartlett. Staff stipulate that the loading zone should be limited to the hours of operation for the day care. The Planning Board must approve changes to on-street parking in this case. The area and signage are indicated on the site plan and will be as follows:
>
> *The plan is to remove all the existing parking signage along the project frontage on Cumberland Avenue. This currently shows (from east to west):*
>
> - *60 ft of 5 Minute Passenger Loading Zone between the corner of Preble Street and the frontage of Marias*
> - *48' +/- of 30 Minute Vehicle Loading Zone along the frontage of Marias terminating just short of the western end of Marias frontage*

102 Exchange Street Portland, ME 04101 | (207) 842-2888 | kaplanthompson.com

June 01, 2020

Att. A

NEW MIXED USE BUILDING
337 CUMBERLAND AVENUE, PORTLAND ME
FOR THE PORTLAND HOUSING DEVELOPMENT CORPORATION

The following outlines how the proposed project has been designed to meet the applicable standards of the City of Portland associated with Level III: Site Plan review.

GENERAL DOCUMENTS - PROJECT DESCRIPTION

The site of the proposed new 7-story building is at 337 Cumberland Avenue (formerly Maria's Restaurant), immediately next door to the existing Youth and Family Outreach child-care "chapel" building at 331 Cumberland Avenue. The project developer is the Portland Housing Development Corporation, the real estate development arm of the Portland Housing Authority.

The new building will include residential units for the Portland Housing Authority (PHA) above provide much-needed expanded childcare space on the ground floor for Youth and Family Outreach (YFO). A connection at ground floor on Cumberland Avenue and basement level will link the existing "chapel" building to the new building. Covered parking for approximately 21 cars plus building support spaces and facilities will be at Basement level with at grade access from Portland Street.

- The building will have 6 stories on the Cumberland Avenue side and 7 stories on the Portland Street side, due to the slope of ground across the site.
- Total floor area of the new building is +/- 65, 570 sf (gross enclosed space, incl garage).
- Total floor area of the existing chapel is +/- 6,380 sf (gross enclosed space).
- The upper five floors will include a total of 60 new residential apartments with a mixture of unit sizes including twenty (20) studio apartments, fifteen (15) 1 BR, fifteen (15) 2 BR, and ten (10) 3 BR apartments.
- 80% of the apartments will be permanently Affordable and 20% will be Market Rate with no differentiation of apartment size or interior finishes.
- The Youth and Family Outreach and Portland Housing portions of the building will each have a separate entrance off Cumberland Avenue.
- Vehicle access to the garage will be off Portland Street.
- Exterior space around both the existing chapel and the new building will offer a variety of exterior play environments and landscaped areas for the childcare facility.
- There will be landscaped areas surrounding the existing chapel at grade plus new elevated outdoor play spaces, including above the parking garage. The elevated outdoor spaces will have several planting areas but will primarily have artificial turf or pavers.

The project also includes significant alterations to the interior of the existing chapel building, while the exterior is expected to remain largely unchanged in appearance.

The project seeks to increase the number of children and staff to at least 107 children and 28 Full Time Equivalent staff in the combined existing and new spaces.

102 Exchange Street Portland, ME 04101 | (207) 842-2888 | kaplanthompson.com

June 01, 2020

Att. B

NEW MIXED USE BUILDING
337 CUMBERLAND AVENUE, PORTLAND ME
FOR THE PORTLAND HOUSING DEVELOPMENT CORPORATION

The following outlines how the proposed project has been designed to meet the applicable standards of the City of Portland associated with Level III: Site Plan review.

GENERAL DOCUMENTS – RIGHT, TITLE, AND INTEREST

The site of both the proposed new building and the existing "chapel" building, at 337 and 331 Cumberland respectively, are owned by Youth and Family Outreach.

- 337 Cumberland Avenue, LP has an Option to Lease Agreement with Youth and Family Outreach.
- Portland Housing Development Corporation is acting as Development Agent for the redevelopment.
- 331 Cumberland was initially acquired by YFO in 1850. Their name at that time was Trustees of the Portland Ministry at Large. In 2009thename was changed to Youth and Family Outreach.
- 337 Cumberland initially acquired by YFO in 2018.

Enclosed documents:

- Deeds of 331 and 337 Cumberland.
- Option to Lease Agreement
- Documentation showing name change from Trustees of the Portland Ministry at Large to Youth and Family Outreach.

350

KNOW ALL MEN BY THESE PRESENTS, That

I Mary Preble of Portland in the County of Cumberland, Widow

in consideration of ~~the sum of~~ one Dollar to me paid by the Trustees of the Portland Ministry at large a corporation established by the laws of Maine, and of my desire to promote the objects of their Associates ~~the receipt whereof~~ ~~do hereby acknowledge~~, do hereby give, grant, ~~bargain~~, sell and convey unto the said Trustees, their Successors ~~heirs~~ and assigns forever, the following described parcel of land situated in said Portland, viz: beginning at the corner made by the Southwesterly side of Preble Street & the Northwesterly side of Cumberland Street, thence Northwesterly by Preble Street to Portland Street, thence by Portland Street as said Street runs sixty eight feet to land owned by me, & now occupied by Miss Haines, thence Southeasterly by said land as the fence now stands to Cumberland Street, thence by Cumberland Street sixty eight feet to the first bounds.

Provided however, and this deed is upon the express conditions, viz. That said Trustees shall, within two years from this date erect on said land a chapel for the benefit of the Poor under the charge of said Ministry at large, and further, that the land hereby conveyed shall be used for no other purpose, than that mentioned above, and provided further that said building when erected shall be placed at least as far back from Cumberland Street as the house on the adjoining lot owned by me, and shall also be placed at least ten feet Northeasterly from the fence, which now divides this lot from the one before mentioned occupied by Miss Haines, and upon the violation of any of the conditions mentioned said land shall revert back to said Mary Preble or her heirs.

To Have and to Hold the aforegranted ~~and bargained~~ premises, ~~with all the privileges and appurtenances thereof~~ to the said Trustees of the Portland Ministry at Large their ~~heirs~~ and assigns, ~~to their use and behoof~~ forever. for the purpose & upon the conditions aforesaid

Successors with all the privileges & appurtenances thereof

And I do covenant with the said Trustees ~~heirs and assigns,~~ that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same ~~to the said~~ ~~to hold~~ as aforesaid: and that I and my heirs ~~shall and~~ will warrant and defend the same to the said Trustees their Successors and ~~heirs and~~ assigns forever, against the lawful claims ~~and demands~~ of all persons.

See Book 170 Page 73

In Witness Whereof, I the said Mary Preble have hereunto set my hand and seal this Seventeenth day of September in the year of our Lord, one thousand eight hundred and fifty.

Signed, Sealed and Delivered in presence of

Mary Preble [LS]

1001940052854

QUITCLAIM DEED WITH COVENANT

KNOW ALL PERSONS BY THESE PRESENTS, that, **ANTHONY M. NAPOLITANO, GREGORY J. NAPOLITANO** and **FRANCIS W. NAPOLITANO**, each of Portland, Maine, for consideration paid, grant to **YOUTH AND FAMILY OUTREACH**, a Maine nonprofit corporation with a mailing address of 331 Cumberland Avenue, Portland, Maine 04101, with QUITCLAIM COVENANT, certain real property, together with any improvements thereon, located in the City of Portland, County of Cumberland and State of Maine, and being more particularly described as follows:

Parcel One (14 Portland Street):

A certain lot or parcel of land with the buildings thereon, situated in the City of Portland, County of Cumberland and State of Maine, on the southerly side of Portland Street and numbered 16 on said street, bounded as follows:

COMMENCING at the westerly corner of said side of said street of land now or formerly belonging to the heirs of the late George Worcester; thence running on said street westerly thirty-four (34) feet and seven (7) inches to a stake and to land now or formerly belonging to the heirs of the late James Bedlow; thence South 33 degrees East, eighty-six (86) feet to a cross fence and to land now or formerly belonging to the heirs of the late Major Sweetser; thence easterly by line of said Sweetser land thirty (30) feet and two (2) inches to said Worcester land; thence North 33 degrees West, seventy-three and one-half (73 ½) feet by line of said Worcester land to point of commencing, together with the privilege of passing and repassing through a lane laid by Elijah Kellogg adjoining the westerly side of said premises, twelve (12) feet in width and extending from said street to said Sweetser land, said lane to be kept open and unencumbered forever for the benefit of all who are or may be interested in the property adjoining said premises being the homestead of the late John Dain, at the time of his decease, for a further description of which reference may be had to the deed of Charles Staples to said John Damn dated September 1, 1837, recorded in the Cumberland County Registry of Deeds in Book 155, Page 290.

ALSO, a certain lot or parcel of land with any buildings thereon, situated in Portland, in the County of Cumberland and State of Maine, bounded and described as follows:

BEGINNING on the southerly side of Portland Street at a point thirty-six and twenty-nine hundredths (36.29) feet westerly from the northwesterly corner of Chapel lot; thence running westerly by said Portland Street thirty-six and twenty-nine hundredths (36.29) feet to the lot now or formerly of John Darin; thence southeasterly at an included angle 62 degrees 57' by the easterly sideline of said Dain land to a post eighty (80) feet distant by said sideline from the southerly sideline of Portland Street; thence northeasterly at an included angle of 93 degrees 47' thirty and forty-three hundredths (30.43) feet to other

MAINE REAL ESTATE TAX PAID

land formerly of George Worcester; thence northwesterly on a straight course sixty-four and ninety-eight hundredths (64.98) feet to the point begun at.

TOGETHER with a right of way six (6) feet wide over and across the lot or land adjoining the lot hereby conveyed on its easterly side and subject to a right of way two (2) feet along the easterly side of the lot hereby conveyed, creating a passageway of eight (8) feet wide, which is forever to be kept open for the benefit of both of said lots and extending from Portland Street southerly to a point not less than twenty-five (25) feet from the rear line of said lots which is to be used in common by the owners and occupants of said lots, all as more fully described in a deed from Josephine L. Dalton to the Elm Realty Co., dated July 20, 1938 and recorded in the Cumberland County Registry of Deeds in Book 1556, Page 239, to which deed and the record thereof reference is hereby made for a more particular description of said right of way.

A certain lot or parcel of land with the buildings thereon, situated in the City of Portland, County of Cumberland and State of Maine, on the south side of Portland Street, bounded as follows: Beginning on the line of said Portland Street at the Northwesterly corner of the Preble Chapel Lot; thence running Southeasterly by the Westerly side line of the said Chapel Lot, fifty (50) feet to a stake; thence Southwesterly at an angle with the last named course, ninety degrees, one minute (90 degrees 1') thirty and forty-three hundredths (30.43) feet to a stake; thence Northeasterly at an angle of ninety-two degrees nineteen minutes (92 degrees 19') with the last course, sixty-four and ninety-eight hundredths (64.98) feet to said Portland Street; thence Easterly at an angle of sixty-three degrees twenty-five minutes (63 degrees 25') with the last named course, by the South side line of said Street, thirty-six and twenty-nine hundredths(36.29) feet to the point begun at, containing eighteen hundred and eighty-two (1882) square feet, more or less.

Being the same premises conveyed to Anthony M. Napolitano, Gregory J. Napolitano and Francis W. Napolitano in the following instruments: (a) Deed of Distribution by Anthony M. Napolitano, Personal Representation of the Estate of Madeline A. Napolitano, dated November 1, 2018 and recorded in the Cumberland County Registry of Deeds in Book 35266, Page 280; and (b) Deed of Distribution by Anthony M. Napolitano, Personal Representation of the Estate of Anthony J. Napolitano, dated November 1, 2018 and recorded in the Cumberland County Registry of Deeds in Book 35266, Page 282.

Parcel Two (337 Cumberland Avenue):

A certain lot or parcel of land with the buildings thereon, situated on the northerly side of Cumberland Avenue, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the northerly side of Cumberland Avenue at the southwesterly corner of the Preble Chapel lot; thence running westerly by said Cumberland Avenue to land formerly of M. H. Sweetser; thence northerly by said Sweetser land to land formerly of George

Worcester; thence easterly by said Worcester land to said Preble Chapel lot; thence southerly by said Preble Chapel lot to said Cumberland Avenue at the point of beginning.

Being the same premises conveyed to Anthony M. Napolitano, Gregory J. Napolitano and Francis W. Napolitano in the following instruments: (a) Deed of Distribution by Anthony M. Napolitano, Personal Representation of the Estate of Madeline A. Napolitano, dated November 1, 2018 and recorded in the Cumberland County Registry of Deeds in Book 35266, Page 284; and (b) Deed of Distribution by Anthony M. Napolitano, Personal Representation of the Estate of Anthony J. Napolitano, dated November 1, 2018 and recorded in the Cumberland County Registry of Deeds in Book 35266, Page 285.

IN WITNESS WHEREOF, Anthony M. Napolitano, Gregory J. Napolitano, and Francis W. Napolitano, have set their hands and seals this 21st day of March, 2019.

Witness: to all

Anthony M. Napolitano

Witness:

Gregory J. Napolitano

Witness:

Francis W. Napolitano

STATE OF MAINE
COUNTY OF CUMBERLAND, ss. March 21, 2019

Then personally before me appeared the above named Anthony M. Napolitano, Gregory J. Napolitano, and Francis W. Napolitano, and acknowledged the foregoing instrument to be their free acts and deeds.

~~Notary Public~~/Attorney at Law
Nicholas T. Ucker

Received
Recorded Register of Deeds
Mar 21,2019 03:33:00P
Cumberland County
Nancy A. Lane

OPTION TO LEASE AGREEMENT

THIS OPTION TO LEASE AGREEMENT dated as of the 30th day of April, 2020 (the "Agreement"), is entered into by and between **YOUTH AND FAMILY OUTREACH**, a Maine non-profit corporation with a mailing address at 331 Cumberland Avenue, Portland, Maine 04101 ("Landlord"), and **337 CUMBERLAND AVENUE, LP**, a Maine limited partnership with a mailing address at 14 Baxter Boulevard, Portland, Maine 04101 ("Tenant").

RECITALS

WHEREAS, Landlord is the owner of a certain parcel of land with the improvements thereon located at 331 Cumberland Avenue, Portland, Maine, described in a deed recorded in the Cumberland County Registry of Deeds in Book 225, Page 350 (the "Church Property") and is the owner of a certain parcel of land with the improvements thereon located at 337 Cumberland Avenue and in Portland, Maine described in a deed recorded in said Registry of Deeds in Book 35530, Page 234 (the "337 Cumberland Property") (the Church Property and the 337 Cumberland Property are referred to herein collectively as the "Premises"); and

WHEREAS, the Landlord and Portland Housing Development Corporation ("PHDC") have entered into a Joint Development Agreement for the renovation of the Church Property and the development and construction of a new affordable housing project on the 337 Cumberland Property (collectively the "Project"); and

WHEREAS, PHDC and Landlord each owns a 50% interest in the general partner of the Tenant, which shall develop the Project; and

WHEREAS, Landlord wishes to grant to Tenant, and Tenant wishes to accept, an option to enter into a long term ground lease for the land comprising the Premises (the "Ground Lease"), and provided that the Tenant exercises its option and the Ground Lease is executed, Landlord has agreed to simultaneously convey to Tenant, and Tenant has agreed to accept from Landlord, a bill of sale or other suitable instrument of conveyance conveying the buildings located on the Premises (the "Buildings"), all subject to the terms set forth in this Agreement.

NOW, THEREFORE, in consideration of one dollar ($1.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Grant of the Option; Option Period; Extension; Exercise of Option. The Landlord hereby grants to the Tenant the exclusive right and option to lease the Premises, or a portion thereof (the "Option") for a period extending through December 31, 2023 (the "Option Period"). The Ground Lease shall have a term of ninety (90) years, or such shorter or longer term as may be required by the lenders and investors of the Tenant and total rent shall be $1.00 for the term of the Ground Lease, together with the payment of all operating expenses for the Premises by the Tenant. The Ground Lease shall contain such other commercially reasonable terms as the parties may mutually agree upon. Tenant may

exercise the Option at any time during the Option Period by giving written notice to Landlord of its intent to exercise the Option (the "Option Notice"). Notice delivered to Landlord or sent to Landlord by certified mail, return receipt requested, at the above address shall be sufficient.

2. Closing. If Tenant exercises the Option, the parties shall enter into the Ground Lease consistent with the terms of this Agreement within ninety (90) days after the date of the Option Notice.

3. Conveyance of the Buildings to the Tenant. If Tenant exercises its Option, Landlord hereby agrees that simultaneously with the execution of the Ground Lease, Landlord shall transfer to Tenant the Buildings, by good and sufficient [Bill of Sale] or other transfer instrument satisfactory to Tenant, conveying good and clear title to the Buildings, so that the Tenant will own the buildings on the leased land, subject to the terms of the Lease. It is the intent of the parties that the Tenant be treated as the owner of the buildings for federal income tax purposes. The purchase price for the Buildings shall be One Dollar ($1.00).

4. Title Matters; Subordination of Landlord's Fee Interest to Tenant's Financing. Landlord agrees to convey good and marketable leasehold title to the Premises to Tenant, free and clear of liens and encumbrances, other than existing covenants, conditions and easements of record that will not adversely affect the development and financing of the Project by Tenant. Landlord also agrees that there shall be no liens or encumbrances on the underlying fee title, and agrees, if requested by Tenant, to subordinate the Landlord's fee interest in the Premises to Tenant's construction and permanent leasehold mortgage financing, including any extensions, renewals, or replacements thereof.

5. Representations. Landlord represents, covenants and warrants to and agrees with Tenant as follows:

a. Landlord has the legal right, power and authority to enter into this Agreement and to perform all of its obligations hereunder, and the execution and delivery of this Agreement and the performance by Landlord of the obligations hereunder will not conflict with, or result in breach of any regulation, order, judgment, injunction or decree of any court or governmental authority or any agreement or instrument to which Landlord is a party or by which Landlord is bound.

b. There are no agreements or contracts affecting the Premises or any use of the Premises that would not be terminable at will by Tenant without penalty from and after the execution of the Lease.

c. Tenant represents, covenants and warrants to Landlord that Tenant has the legal right, power and authority to enter into this Agreement and to perform all of its obligations hereunder, and the execution and delivery of this Agreement and the performance by Tenant of its obligations hereunder: (i)

have been duly authorized by all requisite action; and (ii) will not conflict with, or result in a breach of, any of the terms, covenants and provisions of the by-laws or articles of organization of Tenant or any law or any regulation, order, judgment, writ, injunction or decree of any court or governmental authority, or any agreement or instrument to which Tenant is a party or by which it is bound.

6. Notices. Whenever notice is given or required to be given by either of the parties hereto to the other, it shall be deemed to have been given if in writing and mailed by certified or registered mail, return receipt requested, postage prepaid, or hand delivered, addressed to the parties at the address set forth in the first paragraph above or to such other address(es) as either party shall have last designated by like notice in writing. All notices shall be effective upon hand delivery or mailing, whichever first occurs. All notices to Landlord shall be also sent to its counsel, Cito Selinger, Curtis Thaxter, One Canal Plaza, Portland, Maine 04101. All notices to Landlord shall be also sent to its counsel, Gary Vogel, Drummond Woodsum, 84 Marginal Way, Portland, Maine 04101.

7. Further Assurances. The parties agree that up to and after the date of closing, they shall do such things and execute, acknowledge and deliver any and all additional instruments, documents and materials as either party may reasonably request to fully effectuate the purposes of this Agreement.

8. Memorandum of Option. The parties hereto agree that this Option to Lease shall not be recorded, but that a memorandum of this option containing a description of the Premises, the names of the parties and the term of the Option may be recorded in the Cumberland County Registry of Deeds upon the request of either Landlord or Tenant.

9. Tenant's Access and Insurance. Tenant and others whom Tenant may designate shall have the right, at all reasonable times, upon reasonable notice to Landlord, at Tenant's sole cost and expense, risk and hazard, and without unreasonable disruption to Landlord's activities on or about the Premises, to enter upon the Premises to examine and/or show the same and make, or cause to be made, engineering studies with respect thereto, including, without limitation, surveying, conducting test borings in order to determine sub-soil conditions, and in general conducting all other tests, analysis and studies of the Premises which Tenant deems prudent in connection with Tenant's intended development or use of the Premises. Any contractors performing any inspections, tests shall carry appropriate liability insurance. Tenant shall restore or shall cause the Premises to be restored following any testing as reasonably as possible to its pre-existing condition, unless otherwise agreed by Landlord, and Tenant shall indemnify, defend and hold Landlord harmless from and against all claims, suits and demands for personal injury (including death) and property damage suffered or incurred by Landlord as a result of Tenant's exercise of its rights under this Section. Tenant's indemnification obligation shall be deemed satisfied to the extent that an insurance carrier, providing coverage to Tenant or to any contractor performing any such inspection, has assumed the defense and agreed to provide coverage for any such claim. Prior to entering the Premises, and thereafter through the term of this Option, Tenant

shall provide to Landlord evidence of Tenant's liability insurance, which may be in the form of Tenant being named as an additional insured under PHDC's general liability policy of insurance. Tenant shall provide Landlord with a certificate of insurance with Landlord named as a certificate holder, evidencing such insurance coverage.

10. Construction of Agreement. This instrument, executed in duplicate, is to be construed as a Maine contract, is to take effect as a sealed instrument, sets forth the entire contract between the parties, is binding upon and inures to the benefit of the parties hereto and their respective heirs, devisees, executors, administrators, successors and assigns, and may be canceled, modified or amended only by a written instrument executed by both the Landlord and Tenant. The captions are used only as a matter of convenience and are not to be considered a part of this Agreement or to be used in determining the intent of the parties to it. Time is of the essence with respect to all dates set forth in this Agreement.

11. Risk of Loss. The risk of loss shall remain on Landlord at all times until closing.

12. Assignment. Tenant may assign this Agreement to any party affiliated with Tenant or in which Tenant or an affiliate of Tenant has an interest upon the written consent of Landlord, which shall not be unreasonably withheld.

[signatures on following pages]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

LANDLORD:

YOUTH AND FAMILY OUTREACH

By: _____
Camelia Babson-Haley
Its Executive Director

[Additional signatures on following page]

CBH

TENANT:

337 CUMBERLAND AVENUE, LP
By: YFO PHDC Development LLC,
its General Partner

By: _____ 6/1/2020
Cheryl Sessions
Its President

Part II

APPROVED

MAR 20 '79

BY GOVERNOR

CHAPTER

10

P & S LAW

STATE OF MAINE

IN THE YEAR OF OUR LORD NINETEEN HUNDRED SEVENTY-NINE

H. P. 253 — L. D. 298

AN ACT to Allow the Trustees of the Portland Ministry at Large to Seek Changes in its Articles of Incorporation.

Emergency preamble. Whereas, Acts of the Legislature do not become effective until 90 days after adjournment unless enacted as emergencies; and

Whereas, Trustees of the Portland Ministry at Large located at Portland, Maine, is a corporation created by the Private and Special Laws of Maine, 1850, chapter 341; and

Whereas, the Maine Revised Statutes, Title 13-B, section 1104, subsection 1, paragraph D, as amended, permits the corporate charter to contain specific provisions for the distribution of assets upon dissolution; and

Whereas, the Private and Special Laws of 1850, chapter 341, does not include such provisions; and

Whereas, it is advisable to make certain other changes in the governing instrument; and

Whereas, it is desirable to affect these changes prior to the end of the fiscal year of the corporation; and

Whereas, these changes are necessary to permit all required filings with the Internal Revenue Service in the most expeditious manner; and

Whereas, in the judgment of the Legislature, these facts create an emergency within the meaning of the Constitution of Maine and require the following legislation as immediately necessary for the preservation of the public peace, health and safety; now, therefore,

Be it enacted by the People of the State of Maine, as follows:

Sec. 1. P&SL 1850, c. 341, §§ 2 and 3, are repealed and the following enacted in their place:

Sec. 2. Property; how applied. The corporation may take and hold real and personal estate by donation or otherwise. And the estate thereof shall be faithfully applied to promote religious and charitable improvement and condition of the greater Portland community by such modes of relief and ministration as they may judge best suited to the object, all in support of and in furtherance of the purposes of the First Parish Society of Portland, Maine.

Sec. 3. Trustees; officers. The members of the present board of trustees shall resign at the request of the members of the First Parish Society of Portland, Maine. The board of trustees shall consist of 7 persons, 4 of whom shall constitute

a quorum; and they shall be such persons as are from time to time elected by the members of the First Parish Society of Portland, Maine; and, unless otherwise determined by the members, all trustees shall be elected for a term of 7 years or until their successors are elected, except that at the initial election, one trustee shall be elected to serve for a term of 7 years, one for 6 years, one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for one year. The board of trustees shall have power to enact bylaws not inconsistent with this charter and to elect a president, treasurer and such other officers as they may think necessary, who shall hold their offices until others are chosen in their stead. The minister of the First Parish in Portland may be elected to be a trustee, but if not so elected, shall "ex officio" belong to the board.

Sec. 2. P&SL 1850, c. 341, § 6, is enacted to read:

Sec. 6. Dissolution. In the event of the dissolution of the corporation, the real and personal estate of the corporation remaining after the payment of all of its debts shall be distributed to such religious or charitable organizations as the trustees may determine or, in the absence of the determination, to the First Parish Society of Portland, Maine.

Sec. 3. Validation. All prior acts and doings of the trustees of the Portland Ministry at large are ratified, made valid, binding and of full force.

Emergency clause. In view of the emergency cited in the preamble, this Act shall take effect when approved.

IN ~~H~~OUSE OF REPRESENTATIVES, ... 1979

Read twice and passed to be enacted.

.....Speaker

IN SENATE, ...1979

Read twice and passed to be enacted.

..... President

Approved..... 1979

.....Governor

Filing Fee $5.00

For Use By The Secretary of State

File No. .....

Fee Paid .....

C.B. .....

Date .....

NONPROFIT CORPORATION

STATE OF MAINE

STATEMENT OF INTENTION TO CARRY ON ACTIVITIES UNDER AN ASSUMED NAME

File No. 18500000ND Pages 1
Fee Paid $ 5.00
DCN 1941601500047 ANME
FILED
06/07/1994

Deputy Secretary of State

A True Copy When Attested By Signature

Deputy Secretary of State

Pursuant to 13-B MRSA §308, the undersigned, a corporation, (incorporated under the laws of the State of Maine), (incorporated under the laws of the State of Maine, and authorized to carry on activities in Maine), gives notice of its intention to carry on activities in this State under an assumed name.

FIRST: The name of the corporation is

Trustees of the Portland Ministry at Large

SECOND: The address of the registered office of the corporation in the State of Maine is

P.O. Box 370 Dts., 38 High Street, Portland, ME 04104
(street, city, state and zip code)

THIRD: The corporation intends to carry on activities under the assumed name of

Youth and Family Outreach

COMPLETE THE FOLLOWING IF APPLICABLE

FOURTH: If such assumed name is to be used at fewer than all of the corporation's places of activity in this State, the location(s) where it will be used is (are):

Dated: May 10, 1994

By Roy Wilson
(signature)

Roy Wilson, President-Board of Trustees
(type or print name and capacity)

By William Webster
(signature)

William Webster, Treasurer / Second Certifying Officer
(type or print name and capacity)

This document *MUST* be signed by (1) the **Clerk** *OR* **Secretary** OR (2) the **President** or a vice-president *AND* the **Secretary** or an assistant ...ary, or such other officer as the bylaws may designate as a 2nd certifying officer *OR* (3) if no such officers, then a majority of the ...s or such directors designated by a majority of directors then in office *OR* (4) if no directors, then the **members** or such of them ...d by the members at a lawful meeting.

...A-5 Rev. 88

SUBMIT COMPLETED FORMS TO: Secretary of State, Station 101, Augusta, Maine 04333

DME

Amended and Restated by the Board of Trustees, September 21, 2015

Amended and Restated Bylaws

Of

Youth and Family Outreach

ARTICLE I
NAME, HISTORY AND SEAL

This corporation is named "Youth and Family Outreach" (hereinafter, the "Corporation") and was founded in 1844 as an outreach affiliate of the First Parish Society. It was originally incorporated in 1850 as "Trustees of the Portland Ministry at Large." In 1979, the Corporation was granted independent status as a community outreach of the First Parish. In 1984, the Portland Ministry at Large began to focus its resources on social services for inner city youth. Since 1994, the Corporation has done business as "Youth and Family Outreach" and in 2009 it changed its legal name to "Youth and Family Outreach."

ARTICLE II
PURPOSE AND POWERS

The Corporation has been organized and is incorporated as a public benefit corporation under the Maine Nonprofit Corporation Act (Title 13-B, Sections 101 *et seq.* M.R.S.A., hereinafter the "Act") and shall be operated exclusively for charitable, religious, educational or scientific purposes within the meaning of § 501(c)(3) of the Internal Revenue Code of 1986, as amended, or corresponding provisions of any subsequent federal tax laws (the "Code"). Within these general purposes and without limiting the generality of the foregoing, the specific purposes of the Corporation shall be to promote the social well-being of the greater Portland community by such modes of relief and administration as the Trustees may judge best suited to the object, all in support of the principles and traditions of the Unitarian Universalist Association and The First Parish in Portland, Maine Unitarian Universalist (hereinafter, the "First Parish"). This Corporation does not promote any religious belief system.

In carrying out the foregoing purposes, the Corporation shall have all the powers granted to nonprofit corporations under the Act, including but not limited to the following activities:

(a) To hire, lease, buy, inherit or otherwise acquire and hold land, buildings, equipment or other real or personal property and to build, construct, operate and manage the said property for the purposes of the Corporation; to rent, lease, mortgage or sell all or any part of such real or personal property acquired by said Corporation as authorized by law; to take and hold by purchase, gift, devise or bequest, personal property or real estate and to use and dispose thereof only for the purposes for which the Corporation is organized.

(b) All property received by the Corporation, whether by gift, bequest, devise or otherwise, shall be exclusively to promote, carry on and further the activities,

objectives and purposes set forth in the Corporation's Articles of Incorporation (hereinafter, the "Articles") and these Bylaws.

(c) The Corporation shall be empowered to do everything necessary, proper, advisable or convenient for the accomplishment of the foregoing purposes, and to do all other things incidental to them, or connected with them, that are not forbidden by law, the Articles, or these Bylaws; provided, however, that the Corporation shall not engage in any transaction, or do or permit any act or omission, which shall operate to deprive it of its tax-exempt status as, or which is not permitted to be conducted or carried on by, a corporation described in § 501(c)(3) of the Code and the applicable regulations as they now exist or as they may hereafter be amended.

No substantial part of the activities of the Corporation shall consist of the carrying on of propaganda, or otherwise attempting to influence legislation or participating or intervening in any political campaign on behalf of any candidate for public office.

ARTICLE III
DEDICATION OF ASSETS

No part of the net earnings or assets of the Corporation, on dissolution or otherwise, shall inure to the benefit of any private individual, including any director, trustee, or officer of the Corporation. On liquidation or dissolution of the Corporation, after payment of the necessary expenses and obligations thereof, all its assets shall be distributed and paid over to such organization or organizations as the Board of Trustees may select and as are dedicated to purposes compatible with those of the Corporation, which organization or organizations shall have been recognized by the Internal Revenue Service as an organization described in Section 501(c)(3) of the Code.

ARTICLE IV
TRUSTEES

Section 1. Number of Trustees. The Board of Trustees of the Corporation (the "Board of Trustees" or the "Board") shall consist of not less than five members, and not more than nineteen members. The Minister of the First Parish may be elected a trustee but, if not so elected, shall "ex officio" belong to the board.

Section 2. Powers of the Board. The Board shall oversee the business, property and affairs of the Corporation.

Section 3. Qualifications of Trustees. The members of the Board (individually, a "Trustee" and, collectively, the "Trustees") shall be elected by the current members of the Board of Trustees (as set forth in Article IV, Section 5 below) and selected as persons most qualified by skills, training and experience to assist the Corporation to fulfill its stated missions. In recognition of the Corporation's long standing relationship by history and tradition with the Portland area Unitarian Universalist churches, the Trustees shall encourage qualified members or friends of these churches to apply to participate on the Board of Trustees.

Section 4. Financially Interested Persons. Notwithstanding any other provision of these Bylaws, as contemplated by Section 713-A of the Act, no more than 49% of the Trustees may be "financially interested persons," which term means:

(a) an individual who has received or is entitled to receive compensation from the Corporation for personal services rendered to the Corporation by that individual within the preceding 12 months, whether as a full-time or part-time employee, independent contractor, consultant or otherwise, excluding any reasonable payments made to Trustees for serving as Trustees. An individual is considered to receive compensation for services rendered to the Corporation by that individual if the individual is entitled to receive, other than as a shareholder of a publicly held corporation, a portion of the net income of a corporate or other business entity that provides, for compensation, personal services to the Corporation; or

(b) a spouse, brother, sister, parent or child of the individual described in subsection (a).

The failure to comply with this Article IV, Section 4 shall not, however, affect the validity or enforceability of any transaction entered into by the Corporation.

Section 5. Election and Terms of Office of Trustees. Qualified applicants are approved by majority vote of the Board of Trustees and then confirmed at the annual meeting of the First Parish. Trustees shall hold office for three years following the annual meeting when their election was confirmed and until such Trustee's successor shall have been elected and qualified, or until their earlier resignation or removal. Trustees may be re-elected to successive terms if it is in the best interest to meet the Corporation's mission. However, new members should be considered to maintain long-term stability and development of experience on the Board. Attempts should be made to stagger terms so that no more than one quarter of the Board membership is up for election in a given year.

The Trustees shall make reasonable efforts to ensure that a majority of the elected Trustees shall be members or friends of the First Parish or another Unitarian Universalist Church in the greater Portland community. If at any time there ceases to be a majority of Trustees who are such members or friends, the Board shall take reasonable steps to elect new Trustees who are such members or friends so that such members or friends again constitute a majority of elected Trustees, provided, however, that in no event shall a failure to maintain a majority of elected Trustees that are such members or friends affect the validity or enforceability of any transaction entered into by the Corporation or any action or decision of the Board with respect thereto.

Section 6. Vacancies, Resignation, and Removal. Any vacancy in the Board, including newly created trusteeships created by an increase in the number of Trustees, shall be filled at the time such vacancy arises or at any time thereafter by the Board at any meeting thereof. Any Trustee may resign from office by delivering a written resignation to the President or the Secretary. Any Trustee may be removed from office, with or without cause, upon the vote of two-thirds of the other Trustees then in office.

ARTICLE V
OFFICERS AND EXECUTIVE DIRECTOR

Section 1. Identity and Election. The officers of the Board shall be a President, Vice-President, Secretary, Treasurer and such other officers as may be elected by the Board of Trustees. All officers shall be elected from the membership of the Board of Trustees and shall be elected in such manner and perform such duties as prescribed

by these Bylaws. In addition, the Board shall select and hire an Executive Director, or person performing a similar function, which Executive Director shall perform such duties as prescribed in these Bylaws or as otherwise determined by the Board.

Section 2. Duties of Officers of the Board.

Section 2.1. President. The President of the Corporation shall preside at all times at the meetings of the Board of Trustees and appoint all standing committees, shall be responsible for giving proper notice to the full Board and Executive Committee of their meetings as well as compiling agendas for these meetings, and transact other such business as may of right pertain to the office. He/she shall be an ex officio member of all committees of the Board of Trustees and shall coordinate and monitor the performance of the committees.

Section 2.2. Vice-President. The Vice-President may be assigned by the President to perform the duties of the President during the President's absence.

Section 2.3. Secretary. The Secretary shall be responsible for recording the minutes and other records of the full Board and Executive Committee and shall perform all other duties normally pertaining to the office of secretary. The Secretary shall keep, in books for that purpose, all minutes and records of the full Board, the Executive Committee and all other duly authorized committees and subcommittees of the Board of Trustees, and shall assure that all Board members have access to these minutes and records. The Secretary shall have custody of and be entrusted with all legal documents and permanent records of the Corporation and shall keep them in a secure place, which may be at the Corporation's principal offices.

Section 2.4. Treasurer. The Treasurer shall have responsibility for the monies of the Corporation and shall make disbursements and perform such other duties with respect to finances as may be prescribed by the Board of Trustees or their designated authority (including the Finance Committee). He/she shall supervise the opening and management of a checking account for the monies of the Corporation as designated by the Board of Trustees and supervise the payment of obligation of the Corporation therewith. For unbudgeted expenditures of over $500, the Treasurer must first follow procedures as outlined by the Board or the Finance Committee. He/she shall annually be responsible for assisting the Executive Director with arranging the preparation and presentation to the Board of Trustees an accountant's audit report reflecting the financial affairs of the Corporation on an annual basis and as such other times as the Board may require. The Treasurer shall monitor the financial operations of the organization on a weekly basis by reviewing bank deposits, check signing, journal entries, and other similar functions performed by the bookkeeper of the Corporation or person performing similar functions. The Treasurer shall have custody of all stocks, bonds, and other securities belonging to the Corporation and shall have the power to buy, sell, or transfer any securities for the account of the Corporation when authorized to do so by the Finance Committee.

Section 2.5. Other Duties. All officers of the Board shall also assume all other duties as assigned by the President or the full Board.

Section 3. Duties of the Executive Director. The Executive Director shall serve as the chief executive officer of the Corporation, shall have charge of the general and day-to-day management of the business of the Corporation, and shall see that all orders and resolutions of the Board are carried into effect. The Executive Director shall also

perform such other duties and may exercise such other powers as from time to time may be assigned to him or her by these Bylaws or by the Board. During any period when the Corporation has no Executive Director for any reason, the Board shall appoint a person to exercise the authority of the Executive Director (or some portion thereof, as determined by the Board) until a successor is selected by the Board.

Section 4. Execution of Documents. Unless the Board of Trustees otherwise generally or in any specific instance provides:

A. Any contract, lease or other instrument shall be executed or endorsed on behalf of the Corporation by the President or Treasurer.

B. Any normal expenditure or receipt of Corporation funds may be managed and endorsed by the Treasurer of the Board of Trustees or Executive Director acting under guidelines established by the Finance Committee and approved by the Board of Trustees.

Section 5. Procedure for Election of Officers. The President, Vice-President, Secretary and Treasurer shall be elected by the Board of Trustees at the Annual Meeting of the Board of Trustees and shall serve for a term of one year and until their successors have been elected and qualified, or until their earlier resignation or removal. It shall require a majority of votes of the members of the Board of Trustees present and constituting a quorum at such Annual Meeting to elect officers.

Section 6. Vacancies, Resignation, and Removal. Any vacancy occurring in any office of the Corporation shall be filled at the time such vacancy arises or at any time thereafter by the Board at any meeting thereof. Any officer of the Board may resign from office by delivering a written resignation to the President or the Secretary. Any officer may be removed from office by the Board, with or without cause, upon the vote of a majority of the other Trustees then in office.

Section 7. Termination Procedure. At the expiration of the term of office, by termination or otherwise, of any officer or member of the Board of Trustees, or standing or special committee members, he/she shall turn over to his/her successor all money, property, papers, records and books of the Corporation that may be in his/her possession.

ARTICLE VI
COMMITTEES

Section 1. Committee Membership Appointment. The President of the Board (at the first meeting following his/her election) shall appoint all voting members of standing committees, which members shall include no less than two Board members in addition to other interested individuals on each committee. Board members shall comprise at least 50% of the voting membership of each committee.

Section 2. Committee Chairpersons. The President may appoint the chairperson of standing committees, or he/she may defer that appointment to the committees themselves.

Section 3. Voting in Committees. All committee decisions must be by majority vote.

Section 4. Committee Meetings. So far as practicable, the provisions of these Bylaws relating to the convening and conduct of meetings of the Board of Trustees shall govern the convening and conduct of meetings of each committee appointed hereunder.

Section 5. Authority of Committees. The committees are vested with the powers and duties described herein or as may be determined by the Board. However, the full Board of Trustees or the Executive Committee may overrule committee decisions.

Section 6. Joint Decisions Among Committees. If a decision is the responsibility of more than one committee, both committees must agree on the final decision. If, however, there is a disagreement, the issue must first be brought to the Executive Committee. If a consensus cannot be reached at this level, then the issue shall be brought to the full Board.

Section 7. Role in Decision-Making. If the Executive Director or any Trustee disagrees with the decision of a committee or committees, the issue must first be brought to the Executive Committee. If a consensus cannot be reached at this level, then the issue shall be brought to the full Board.

Section 8. Special Committees. Special committees shall be appointed by the President, the Executive Committee, or the Board as needed.

Section 9. New Standing Committees. The President of the Board, with the approval of the Executive Committee, may appoint new standing committees at any time.

Section 10. Supervision of Committees. The Board of Trustees shall supervise and coordinate the activities of the standing and special committees.

Section 11. List of Committees. The standing committees may include Executive, Finance, Development, Program, and Governance, or such other committees as may be appointed pursuant to the terms hereof.

Section 12. Ex-Officio Members. The Board President and Executive Director are ex-officio members of all committees.

ARTICLE VII
DUTIES OF COMMITTEES

Section 1. Executive Committee. The Executive Committee consists of the President, Vice-President, Secretary, and Treasurer. This committee shall function for the Board of Trustees between meetings of the Trustees and shall have full Board decision-making powers, subject to being overridden by a two-thirds vote of the full Board. This committee shall meet as deemed necessary by the President or Executive Director. Specific duties of the Executive Committee shall include:

(a) Select an Executive Director as needed.

(b) Conduct a written evaluation of the Executive Director not less than once every two years to be reviewed by the Trustees.

(c) Conduct an annual salary review of the Executive Director to be submitted to the Trustees for a final decision. In conjunction with this annual review, review progress on goals identified in written evaluation of Executive Director.

(d) Monitor program evaluation efforts, and when appropriate, review findings with the Trustees.

(e) Take action on any organizational issues of the Corporation requiring immediate attention between Board meetings.

Section 2. Finance Committee. The Finance Committee shall meet on a quarterly basis or as otherwise needed. The committee shall consist of the Treasurer, Executive Director, and at least one other Board member. The committee is responsible for overall direction and control of the assets of the Corporation and such other duties as may be delegated by the Board. Specific duties of the Finance Committee include:

(a) Arrange for and assist the Executive Director in the preparation of a yearly budget for final approval by the Trustees.

(b) Arrange for the preparation of quarterly (or monthly) reports on financial matters (e.g. the incoming source of funds or expenditures) for review by the Trustees.

(c) Assist the Executive Director with the compilation of information required for the annual audit of the financial operations of the organization by the Corporation's external auditor, and arrange for the external auditor to present the results of the annual audit to the Trustees.

(d) Recommend to the Board the investment or deposition of funds and report to the Board on a regular basis the condition of such investments.

(e) Assist the Executive Director in developing a capital improvement plan for all properties owned or leased by the Corporation to be approved by the Trustees.

(f) Report to the Board on such other financial matters as deemed appropriate by the Trustees.

Section 3. Development Committee. The Development Committee shall meet on a monthly basis, or otherwise as needed. The Development Committee is responsible for the development and implementation of the annual fundraising plan of the organization and such other duties as may be delegated by the Board. Specific duties of the Development Committee include:

(a) Review on an annual basis the sources of the Corporation's funding in conjunction with preparation of the budget by the Finance Committee.

(b) Plan, conduct and evaluate community fundraising events to benefit the Corporation.

(c) As requested by the Board, prepare contingency plans for meeting agency fundraising shortfalls if and when needed.

(d) Act as ambassador for the Corporation in developing community contacts, marketing, donations, volunteers, and so forth.

(e) Report to the Trustees on fundraising matters as deemed appropriate.

Section 4. Program Committee. The Program Committee shall meet on a monthly basis, or otherwise as needed. The Program Committee is responsible for the oversight of the programs implemented by the organization and such other duties as may be delegated by the Board. Agenda items will be determined by the Program Committee in consultation with the Executive Director to include program quality, human resources matters, budget items as they relate to the Corporation's programs, and program structure. Specific duties of the Program Committee include:

(a) Oversee and assist the Executive Director in performing program evaluations and use of quality metrics, to include at a minimum Maine State licensing and national accreditation, as applicable.

(b) Regular reporting to the full Board regarding professional development patterns and needs for staff.

(c) Prepare and review policies and procedures with respect to the programs implemented by the organization, including personnel policies.

(d) Report to the Trustees on the ongoing efficacy of the programs of the organization and any identified deficiencies with respect thereto.

Section 5. Governance Committee. The Governance Committee shall meet on a monthly basis, or otherwise as needed. The Governance Committee shall be responsible for the general governance processes of the Corporation and such other duties as may be delegated by the Board. Specific duties of the Governance Committee include:

(a) Review and draft amendments, as needed, to organizational policy documents (including conflict of interest policies), the Articles, and these Bylaws.

(b) Oversee Board recruitment efforts and make recommendations to the Board regarding the same.

(c) Maintaining, in conjunction with the Executive Director, Board member orientation and education materials.

(d) Organizing Board self-evaluation efforts and retreats or other programs designed for that purpose.

ARTICLE VIII
MEETINGS

Section 1. Annual Meeting. There shall be an Annual Meeting of the Board of Trustees in May each year or as soon thereafter as possible. The Annual Meeting may be extended to subsequent meetings if necessary.

Section 2. Regular and Special Meetings. The Board shall establish a schedule for regular meetings of the Board, which may be held without formal notice at such times and places as may be fixed by the Board. Special meetings of the Board of Trustees may be called by the President of the Board, Executive Director or any five members of the Board.

Section 3. Quorum and Manner of Acting. At any meeting of the Board, a majority of the current Trustees shall constitute a quorum for the conduct of business of the Board of Trustees. Not less than two Trustees shall constitute a quorum for the conduct of business of standing committees. The vote of a majority of Trustees at a meeting at which a quorum is or has been present shall be the act of the Board of Trustees unless the vote of a greater number is required elsewhere in these Bylaws or by law.

Section 4. Participation through Electronic Means. Trustees may participate in a meeting of the Board by means of a conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear one another at the same time, and participation by such means shall constitute presence in person at a meeting.

Section 5. Action by Consent. Any action required or permitted to be taken at a meeting of the Board, or of a committee of the Board, may be taken without a meeting if all of the Trustees, or all of the members of the committee, as the case may be, sign written consents setting forth the action taken or to be taken, at any time before or after the intended effective date of such action. Such consents shall be filed with the minutes of the Board meetings or committee meetings, as the case may be, and shall have, and may be stated by any officer of the Corporation to have, the same effect as a unanimous vote or resolution of the Board of Trustees or such committee at a duly convened meeting hereof. Any such action taken by unanimous written consents may, but need not be, set forth in such consents in the form of resolutions or votes.

Section 6. Notice. Notice of special meetings of the Board may be given by any shall be given by any usual means of communication, including hand delivery, courier, telephone, facsimile transmission or electronic mail at least five (5) business days prior to the time of the holding of the meeting, provided that in the event of an emergency or extraordinary circumstances, notice may be given only to such of the Trustees as it may be feasible to contact at the time and by such means as may be feasible at the time, and notice to any Trustee actually received by him or her at least 24 hours before the meeting shall be deemed sufficient, notwithstanding the method or means of communication selected or the time when sent. For the purposes of this Section, a "business day" is any day other than a Saturday, Sunday or legal holiday in Maine.

Section 7. Attendance as Waiver of Notice. Attendance of a Trustee at any meeting shall constitute a waiver of notice of such meeting, except if a Trustee attends for the express purpose, stated at the commencement of the meeting, of objecting to the transaction of any business because the meeting has not been lawfully convened.

ARTICLE IX

FINANCIAL MATTERS

Section 1. Deposit of Funds. All funds of the Corporation not otherwise employed shall be deposited in such banks or trust companies or with such bankers or other depositaries as the Board of Trustees or the Finance Committee may from time to time determine.

Section 2. Checks. Unless otherwise authorized by the Board, all checks greater than $2,500 that are drawn upon the account of the Corporation shall be signed by the Executive Director and the Treasurer (or, upon the approval of the Treasurer in circumstances where the Treasurer is unable to sign, the President).

Section 3. Fiscal Year. The fiscal year of the Corporation shall be October 1 through September 30.

Section 4. Audit. There shall be an annual audit of the books of the Corporation by qualified individuals as the Board of Trustees or Finance Committee may designate.

ARTICLE X
INDEMNIFICATION OF OFFICERS AND DIRECTORS

Section 1. Right to Indemnification.

(a) The Corporation shall in all cases indemnify, to the maximum extent permitted and in the manner provided by law (including the Act), any person who was or is a member of the Board of Trustees or officer of the Corporation, and may (subject to subsection (b) of this Section 1) indemnify any other person, who is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceedings, whether civil, criminal, administrative or investigative, by reason of, connected with or arising out of such person's service as a member of the Board of Trustees, officer, employee, or agent of the Corporation, against expenses, including attorneys' fees, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding; provided, however, that no indemnification shall be provided for any person with respect to any matter as to which such person shall have been finally adjudicated not to have acted in good faith and in the reasonable belief that such person's action or failure to act was in the best interests of the Corporation or, with respect to any criminal action or proceeding, as to which such person had reasonable cause to believe that such person's conduct was unlawful.

(b) Any indemnification described in subsection (a) of this Section 1, unless ordered by a court or required by these Bylaws, shall be made by the Corporation only as authorized in the specific case upon a determination that indemnification is proper under the circumstances and in the best interests of the Corporation, provided that no such determination shall be required with respect to any person who is or was a member of the Board of Trustees or officer of the Corporation. Subject to subsection (a) of this Section 1, indemnification of any member of the Board of Trustees or officer of the Corporation shall be required in all cases regardless of the capacity in which such person is or was made or threatened to be made a party to the action, suit or proceeding. The determination as to whether any person acted in good faith

and that indemnification is proper shall be made by the Board by a majority vote of a quorum consisting of Trustees who are not parties to such action, suit or proceeding, or if such a quorum is not obtainable, or even if obtainable, if a quorum of disinterested directors so directs, by independent legal counsel in a written opinion. Such a determination once made may not be revoked and, upon the making of that determination, the person being indemnified may enforce the indemnification against the Corporation by a separate action notwithstanding any attempted or actual subsequent action by the Board.

(c) Except in the case of any person who is or was a member of the Board of Trustees or officer of the Corporation, expenses incurred in defending a civil or criminal action, suit or proceeding shall be paid by the Corporation in advance of the final disposition thereof as authorized by the Board in the manner provided in subsection (b) upon receipt by the Corporation of an undertaking by or on behalf of the person to repay that amount unless it shall ultimately be determined that that person is entitled to be indemnified by the Corporation. Such undertaking shall be an unlimited general obligation of the person seeking the advance, but need not be secured and may be accepted without reference to financial ability to make the repayment. With respect to any person who is or was a member of the Board of Trustees or officer of the Corporation, such expenses shall in all cases be advanced by the Corporation, as reasonably requested from time to time, upon receipt by the Corporation, at the time of the initial advance, of such an undertaking.

(d) The foregoing rights of indemnification shall not be deemed exclusive of any other rights to which any person seeking indemnification under this Section may be entitled pursuant to any agreement, vote of disinterested Trustees, the Act or otherwise, and shall continue as to any such person who has ceased to be a member of the Board of Trustees or officer and shall inure to the benefit of the heirs, executors and administrators of such a person.

(e) Notwithstanding the foregoing provisions of this Section 1 or any other provision of these Bylaws, the Corporation shall not, by granting any indemnity or otherwise, engage in any conduct which permits the inurement to any private individual (within the meaning of Section 501(c)(3) of the Code) of any part of the net earnings of the Corporation.

(f) For purposes of this section, "good faith" means honesty in fact in the conduct or transaction concerned.

Section 2. Insurance. The Corporation may purchase and maintain insurance on behalf of any person who is or was a member of the Board of Trustees or officer of the Corporation against any liability asserted against such person and connected with or arising out of such person's service as a member of the Board of Trustees or officer of the Corporation.

ARTICLE XI
CONFLICT OF INTEREST POLICY

Section 1. Purpose. The purpose of the conflict of interest policy is to protect this Corporation's interest when it is contemplating entering into a transaction or arrangement that might benefit the private interest of a member of the Board of

Trustees or officer of the Corporation or might result in a possible excess benefit transaction. This policy is intended to supplement but not replace any applicable state and federal laws governing conflict of interest applicable to nonprofit and charitable organizations.

Section 2. Definitions.

(a) Interested Person. Any Trustee, officer, or member of a committee with executive committee delegated powers, who has a direct or indirect financial interest, as defined below, is an interested person.

(b) Financial Interest. A person has a financial interest if the person has, directly or indirectly, through business, investment, or family:

(i) An ownership or investment interest in any entity with which the Corporation has a transaction or arrangement,

(ii) A compensation arrangement with the Corporation or with any entity or individual with which the Corporation has a transaction or arrangement, or

(iii) A potential ownership or investment interest in, or compensation arrangement with, any entity or individual with which the Corporation is negotiating a transaction or arrangement. Compensation includes direct and indirect remuneration as well as gifts or favors that are not insubstantial.

A financial interest is not necessarily a conflict of interest. Under Section 3, Subsection (b), a person who has a financial interest may have a conflict of interest only if the Board or the appropriate committee decides that a conflict of interest exists.

Section 3. Procedures.

(a) Duty to Disclose. In connection with any actual or possible conflict of interest, an interested person must disclose the existence of the financial interest and be given the opportunity to disclose all material facts to the Board and members of committees with executive committee delegated powers considering the proposed transaction or arrangement.

(b) Determining Whether a Conflict of Interest Exists. After disclosure of the financial interest and all material facts, and after any discussion with the interested person, such interested person shall leave the Board, executive or other committee meeting while the determination of a conflict of interest is discussed and voted upon. The remaining Board or committee members shall decide if a conflict of interest exists.

(c) Procedures for Addressing the Conflict of Interest

(i) An interested person may make a presentation at the Board, executive or other committee meeting, but after the presentation, he/she shall leave the meeting during the discussion of, and the vote

on, the transaction or arrangement involving the possible conflict of interest.

(ii) The chairperson of the Board or committee shall, if appropriate, appoint a disinterested person or committee to investigate alternatives to the proposed transaction or arrangement.

(iii) After exercising due diligence, the Board or committee shall determine whether the Corporation can obtain with reasonable efforts a more advantageous transaction or arrangement from a person or entity that would not give rise to a conflict of interest.

(iv) If a more advantageous transaction or arrangement is not reasonably possible under circumstances not producing a conflict of interest, the Board or committee shall determine by a majority vote of the disinterested Trustees whether the transaction or arrangement is in the Corporation's best interest, for its own benefit, and whether it is fair and reasonable. In conformity with the above determination it shall make its decision as to whether to enter into the transaction or arrangement.

(d) Violations of the Conflicts of Interest Policy

(i) If the Board, executive or other committee has reasonable cause to believe an interested person has failed to disclose actual or possible conflicts of interest, it shall inform such person of the basis for such belief and afford the person an opportunity to explain the alleged failure to disclose.

(ii) If, after hearing the person's response and after making further investigation as warranted by the circumstances, the Board, executive or other committee determines the person has failed to disclose an actual or possible conflict of interest, it shall take appropriate disciplinary and corrective action.

Section 4. Records of Proceedings. The minutes of the Board, Executive Committee and all committees with executive committee delegated powers shall contain:

(a) The names of the persons who disclosed or otherwise were found to have a financial interest in connection with an actual or possible conflict of interest, the nature of the financial interest, any action taken to determine whether a conflict of interest was present, and the Board, executive or other committee's decision as to whether a conflict of interest in fact existed.

(b) The names of the persons who were present for discussions and votes relating to the transaction or arrangement, the content of the discussion, including any alternatives to the proposed transaction or arrangement, and a record of any votes taken in connection with the proceedings.

Section 5. Compensation.

(a) A voting member of the Board who receives compensation, directly or indirectly, from the Corporation for services is precluded from voting on matters pertaining to that member's compensation.

(b) A voting member of any committee whose jurisdiction includes compensation matters and who receives compensation, directly or indirectly, from the Corporation for services is precluded from voting on matters pertaining to that member's compensation.

(c) No voting member of the Board or any committee whose jurisdiction includes compensation matters and who receives compensation, directly or indirectly, from the Corporation, either individually or collectively, is prohibited from providing information to any committee regarding compensation.

Section 6. Annual Statements. Each member of the Board of Trustees shall annually sign a statement which affirms such person:

(a) Has received a copy of the conflicts of interest policy,

(b) Has read and understands the policy,

(c) Has agreed to comply with the policy, and

(d) Understands the Corporation is charitable and in order to maintain its federal tax exemption it must engage primarily in activities which accomplish one or more of its tax-exempt purposes.

ARTICLE XII
AMENDMENTS

These Bylaws may be amended by a two-thirds majority of the Board of Trustees present at any meeting of the Board of Trustees, provided that any proposed amendment shall be furnished in writing to the Board of Trustees at least two weeks in advance of the meeting.

Att. C

Gorham SAVINGS BANK
Banking is believing℠

May 4, 2020

City of Portland
ATTN: Planning Board
389 Congress Street
Portland, ME 04101

RE: 337 Cumberland Avenue, LP

To Whom It May Concern:

I am pleased to provide this letter in support of 337 Cumberland Avenue, LP. We believe they have the ability, cash, and financing resources available to successfully complete the construction-renovation project located at 337 Cumberland Avenue, Portland, Maine.

I welcome this opportunity to work with them on this project. Please feel free to contact me with any questions.

Sincerely,

Matthew W. Early
Senior Vice President

MWE/ckb

PORTLAND HOUSING DEVELOPMENT CORPORATION

Firm Profile

Development Experience

Established in 1983, Portland Housing Development Corporation (PHDC) is the real estate development arm of the Portland Housing Authority (PHA). PHDC is a 501(c)(4) non-profit organization that provides real estate development services for the preservation and expansion of affordable housing opportunities in Portland, Maine. PHDC creates permanently affordable housing for households in need and ensures the agency's portfolio remains viable for the long-term. It is governed by a seven-member volunteer board of directors.

PHDC staff have over 20 years of experience in real estate development, sustainable design, community planning, finance and construction. They have collectively developed nearly 2,000 affordable homes in their careers. PHDC utilizes private and public financing to renovate PHA's aging multifamily housing stock and create new units of attractive, affordable and workforce housing for Portland residents. Our in-house development staff are practiced in environmentally responsible building techniques, smart growth planning and community revitalization. PHDC staff are skilled in securing and assembling project financing from a broad range of local, state and federal sources. With a strong track record of on-time and on-budget projects, PHDC has the ability to reasonably project hard, soft and operating costs onto an array of project types.

PHDC's new construction and preservation projects provide residents with quality, energy-efficient homes in growing Portland neighborhoods and areas of opportunity. These projects help foster sustainable and diverse and vibrant communities near transit, schools, services, and jobs. PHDC's efforts, in concert with public and private partnerships, encourage community revitalization, create essential affordable housing opportunities, and contribute to a better built environment for future generations.

Development Approach

As a non-profit affordable housing developer, PHDC is guided by the following principals:

- Provide high-quality, safe, healthy and energy-efficient homes to residents.

- Provide attractive, desirable and marketable homes that instill a sense of pride in residents and neighbors.
- Provide homes that integrate with and add value and amenities to the surrounding neighborhood.

PHDC projects offer a continuum of permanent housing types and sizes to meet identified community needs. These include rental housing projects for families, seniors and persons with disabilities; supportive housing with services; and homeownership opportunities. PHDC also strives to accommodate economic diversity and mixed-incomes within our properties. Our portfolio accommodates a range of incomes groups – from extremely low-income families to middle-income households, and everything in between.

Our approach to multifamily design and development focus on achieving superior sustainability, livability, and community engagement in all our projects. We accomplish this through:

- Engaging residents, neighborhood and other local stakeholders to identify user values, community needs, project goals, constraints and opportunities.
- Completing master planning and a site analysis to determine a property's best use and complements the surrounding community character.
- Promoting smart growth principals, including concentrating on infill, low-impact and compact projects.
- Incorporating Passive House, green building practices and sustainable material usage to reduce energy and water utilization, conserve resources, minimize operating costs, and improve tenant health and wellbeing.
- Analyzing the 'first costs' and long-term lifecycle costs of each design decision to optimize a property's financial and environmental sustainability.
- Value engineering projects to maximize building performance and control costs.
- Including accessibility and universal design features that improve property visitability and adaptation to the changing needs and lifestyles of residents.
- Encouraging use of mass transit and alternative transportation options while minimizing land used for parking.
- Connecting residents to nature and open space through creative design.
- Utilizing placemaking principals that provide better health, food security, arts and community connectivity.

Property Management and Voucher Services

In addition to development activities, our agency manages long-term rental housing and rental assistance to more 6,500 residents, nearly 10% of the City's population. Through Low-Income Public Housing (LIPH) and the Housing Choice Voucher (HCV) programs, PHA and its affiliates serve low-income families, seniors, persons with disabilities and many more. This includes property management of nearly 1,000 units of LIPH and market-rate apartments, as well as the administration of 1,800 housing vouchers. PHA believes that providing safe, quality, affordable housing offers its residents the stability they need and the opportunity for success they deserve.

PHA employs an experienced Property Management and Compliance team with extensive training in programs including the Low Income Housing Tax Credit (LIHTC), LIPH, HCV, and Project-Based Section 8 subsidies. Our agency has a proven track record of compliance with HUD and annual audits.

On-site Property Management staff communicate with the Director of Property Management on a regular basis to formally review the status and condition of the project, to review outstanding issues and provide detailed reports on continuing operations of the property. Property Management personnel have experience preparing and monitoring annual budgets; resolving resident complaints; marketing and leasing vacant units; reviewing and approving reasonable accommodations requests; implementing risk management and crime preventative safety measures; performing site and unit inspections; coordinating maintenance activities and unit turnover work; and ensuring compliance with all federal, state and local regulations. PHA's Maintenance department provides 24-hour maintenance services, including routine, emergency, and preventative maintenance repairs and replacement.

Resident Services

Our agency's commitment to meeting resident needs led to the creation of the Resident Services department. Resident Services has a direct role in assessing community and resident needs and organizing to address those needs. Resident Services staff process referrals and connect residents with services and resources. They develop and operate programs that enable residents to gain educational, financial and self-sufficiency skills. Resident Services build collaborative relationships with area providers and solicit resources. Our long-term community partners include Shalom House, Opportunity Alliance, Head Start, Greater Portland Health, Sweetser, Good Shepard Food Bank, USM Nursing Program, and Boys & Girls Club. The Resident Services department also encourages and facilitates tenant organizations at our properties.

Development Awards and Recognition

- Bayside Anchor - 2018 PHIUS Award for Best Affordable Housing from Passive House Institute US (PHIUS)
- Bayside Anchor - 2017 Citation Award for Design from AIA Maine
- Portland Housing Authority - 2016 Mike Yandell Award from Avesta Housing
- Bayside Anchor – 2013 Lowering The Cost Of Housing Award from Enterprise Communities and Deutche Bank

Jay Waterman, LEED AP BD+C/HOMES

Director of Real Estate Development, Portland Housing Authority

Education

- B.A. History, Tufts University 1987
- M.A. Community and Regional Planning, University of New Mexico 1997
- M.A. Latin American Studies, University of New Mexico 1997

Professional Experience

Jay joined the staff of the Portland Housing Authority in January 2015 as the Director of Real Estate Development. Jay is responsible for all aspects of real estate development for the Housing Authority and its affiliate, Portland Housing Development Corporation. Jay has worked in the development of multi-family affordable housing for 20 years and has helped provide over 1,550 units of housing to low-income households. Jay has secured over $100 million of financing for numerous housing developments including LIHTC equity, State and Federal HOME funds, CDGB funds, private grant funds, energy efficiency grants, Federal Home Loan Bank AHP funds as well as tax-exempt bond and other amortizing and non-amortizing debt. Jay is formerly the Development Director for Avesta Housing, Maine's largest not-for-profit affordable housing developer. While at Avesta, Jay developed seven LIHTC projects and other affordable housing. Jay was also a Senior Associate at Thornton Tomasetti, a green building consulting and engineering firm based in New York, from 2008-2014.

Jay recently completed the development of Bayside Anchor, a mixed-income, mixed-use, 45-unit LIHTC affordable apartment community in Portland, Maine that is poised to receive Passive House certification as an extremely energy efficient building.

Professional Accreditation

- LEED for Homes Certified Green Rater (expired)
- LEED Accredited Professional - Building Design and Construction & HOMES

Professional Organizations

- Maine Affordable Housing Coalition - Member: 2004 to present
- Passivhaus Maine – Founding Member
- Northeast Sustainable Energy Association (NESEA) - Member

Affiliations

- Bayside Adapts - Climate Change Adaptation Task Force, City of Portland – 2016-2017
- East Bayside (Portland) EPA Brownfields Planning Steering Committee – 2016-2017
- Shalom House, President, Board of Directors 2015-2017; Housing Committee Chair – 2011-2015
- Town of Yarmouth Parks and Lands Committee Chair – 2017-2018

Portland Housing Development Corporation

PHDC was established by the Portland Housing Authority in 1983 as the non-profit affiliate responsible for financing and development of new affordable housing projects. Over the years it has helped to finance several small projects developed by local community organizations. In recent years, PHDC has become an integral part of Portland Housing Authority's 20 Year Strategic Plan to redevelop its 40+ year old Public Housing stock and develop new housing to help alleviate the severe housing shortage in Maine's largest City.

Matthew Peters

Member, Elysian Enterprises LLC

Matthew Peters will be providing project management services to Portland Housing Development Corporation in support of developing 337 Cumberland Ave.

Matthew Peters founded Elysian Enterprises LLC in 2018. He consults for Housing Authorities, housing non-profits, and Community Development Finance Institutions in Maine supporting these organizations in acquisition, ground-up development, and underwriting of affordable housing properties. Grounding principles for this work are creating equitable communities; complementing walkable neighborhoods; building healthy buildings; and celebrating beauty, art, and the natural environment.

Matt also is the Executive Director of Freeport Housing Trust based in Freeport, Maine. Prior to that Matt worked at Avesta Housing, one of the largest non-profit housing developers and owners in Northern New England for 7.5 years in roles ranging from project managing affordable housing developments, building out and overseeing the Asset Management department, and ending in an executive role overseeing the entire development and acquisitions pipeline for 3.5 years as Vice President of Real Estate Services.

During that time Matt was responsible for the project management of 6 transactions and worked on many other related aspects of developments including lead generation, underwriting, and applications. Matt was involved in the completion of over 20 new construction, major rehab, or acquisition deals. He has developed strong working relationships with MaineHousing, Rural Development, lenders, tax credit syndicators, and other professionals in the design and construction field.

Matt holds a Masters in Urban Planning from the University of Washington and graduated from Bowdoin College. He has received certifications such as Spectrum's C3P and Rural Development STAR trainings and LEED Accredited Professional and has attended LIHTC, HUD, and housing conferences and trainings around the country.

Proposal Submission

PORTLAND HOUSING AUTHORITY
MAINE

outh & Family Outreach

Kaplan Thompson Architects

January 21, 2020

Matt Peters
Development Officer
Portland Housing Authority
Portland, ME 04101

Dear Matt,

We are pleased to be invited to submit our Proposal to design the new building and adjacent renovation for the **Portland Housing Authority** in partnership with **Youth and Family Outreach** at 331-337 Cumberland Ave in Portland. The site is only a few blocks from our office, and this an amazing opportunity to improve the heart of City of Portland through affordable housing and expanding access to early care and family support.

We understand your partnership is looking for an architecture firm to design and provide construction administration for a proposed program which includes lightly renovating the Chapel at the corner of Preble and Cumberland Streets, and constructing a new seven story building with at least one level of parking below.

In our portfolio, you won't find only one kind of project. What you will find is a history of best fit. We take on only projects with strong environmental goals and distinct personality. If it's a multifamily building like this, you will find a core bent towards sustainability, and a striving for something that enhances the culture of the place residents love and brings people together. Our mission is to responsibly design buildings that inspire meaningful connections, put people and the environment first, and make the world a better place. The addition to this program of a Childcare center adds an educational element that not only is within our realm of experience but also speaks to the heart of our firm's community-centered mission.

Our aim would be to reflect the organization's mission throughout the entire design process. That is why we are proposing:

• To help create a project that honors the unique requirements of a joint **Portland Housing Authority** and **Youth & Family Outreach** project. The process will be integrated and collaborative. The result will be an outstanding project that meets the goals of both PHA and YFO with an eye on the common good; a place to improve the relationships between residents, children in the program, staff, and the larger Portland community.

• To staff the project team with those who understand the pragmatic and regionally appropriate aspects of excellent and forward-thinking design in New England, as experts who have proven experience developing LEED Platinum, Net Zero Energy, Passive House, and Living Building Challenge projects that meet Architecture 2030 goals.

Thank you again for giving us the opportunity to present our proposal. We are excited about your project and its possibilities and welcome the opportunity to have a deeper dialogue. In the meantime, if you have any questions or require further information, please do not hesitate to contact any of us at (207) 842-2888.

Best regards,

Phil Kaplan and Jesse Thompson
Principals
Kaplan Thompson Architects

Kaplan
Thompson
Architects

Firm Description

Kaplan
Thompson
Architects

Firm Profile

Philosophy

Kaplan Thompson Architects is dedicated to helping interesting people bring their challenging projects to life. Our company mission is to responsibly design buildings that inspire meaningful connections, put people and the environment first, and make the world a better place. We hope it is visible in all the work that we help create, with a wide range of budgets, project types and locations, and an opportunity for creative solutions.

We work on a wide range of project types: new homes, renovations, multi-family buildings of all scales, restaurants, and schools. We pride ourselves in the technical practice of planning buildings and are dedicated to high quality in all aspects of design. Our dedication to high-performance building enclosures is one of the factors that has led to our reputation as one of the leading green architecture studios in the northeast.

We believe in "The Not So Big Ego," a departure from architect as sole, independent creator of another's space. This attitude is fostered by close collaboration with our clients to craft a design process where we together discover the wants, needs, and personalities of both the building site and the client. This insight from all members of the design team allows everyone to work together one step at a time and to ensure that client goals are met.

Our style is to carefully listen to, assimilate, and interpret our clients' comments, and then to build ideas and concepts from that process, revealing a building both innovative and familiar. This process depends on frequent communication and early teamwork, often with builders at the table, and assures the best chance of meeting budgets. Designing a new space, or renovating an existing one should be a fulfilling experience.

Studio

Our studio is located on the top floor of an historic brick warehouse at the top of Portland's Old Port. We have brought as much of the natural Maine landscape into our workspace as possible, from beach rocks within translucent walls, to a rippling galvanized steel ribbon tack space covered in our sketches.

We move easily between hand sketching and digital tools and have the capacity to create 3D printed models, animated walkthroughs, and sophisticated renderings. We commonly work remotely with clients using web meeting software, which allows full immersion in your building from any web browser regardless of location.

We work in a collaborative manner, sharing conversation, technical innovations, and design ideas in a free-flowing, energetic, and creative environment. Our careful drawings and accurate construction documents build on this atmosphere to bring your project to life.

Firm Details

Kaplan Thompson Architects was established by Phil Kaplan and Jesse Thompson as an LLC partnership in Maine in 2007. The company currently has twelve employees and was the first in Maine to acquire a JUST Label to demonstrate our commitment to social equity.

Awards and Press

Our work has been featured in the New York Times, Washington Post, Boston Globe, USA Today, NPR, France 24, HGTV, and MPBN as well as books, countless websites, and national, New England and Maine based publications.

Phil Kaplan

Principal, AIA, LEED AP

Phil was raised in a household of designers and creative thinkers, and he remembers being transfixed by a set of wooden blocks he received from his parents as a child. Since then, he's been dreaming in three dimensions, and his ideas draw from background in psychology, physics, geography, music, language, math, and literature. Phil talks fast and thinks even faster, and he gets his energy from asking questions, especially "what if?" He's a natural extrovert, and his passion is for designing spaces that truly match the needs, goals, and real lives of our clients.

Born and raised in Baltimore, Phil attended Boston University, received his B.Arch. (with a Psychology Minor) from Carnegie Mellon University in Pittsburgh in 1991, and moved to Maine in 1997. He is a Maine, Massachusetts, and New Hampshire Licensed Architect, a member of the AIA, and a LEED Accredited Professional. He's given talks about his firm's work and sustainability efforts throughout the Northeast and has served as an exhibition juror, guest critic, and Adjunct Professor. He was a founder, in 2006, of The Portland Society for Architecture (PSA), a local design advocacy group. He has served as Board Chair of the Northeast Sustainable Energy Association, which helps high-performance and energy efficiency professionals improve their practices through collaboration and learning throughout New England and beyond, and has served on local boards in his current hometown of Falmouth, Maine as well. His podcast, Green Architects' Lounge, is featured on the Green Building Advisor website.

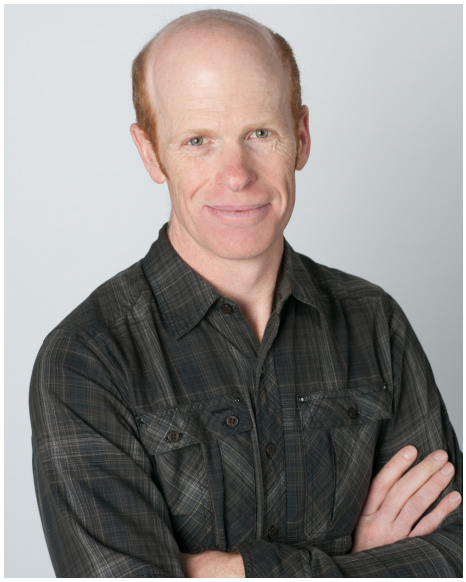
He has been lead designer on multiple AIA, PSA, and LEED Award winning projects since 2003.

Phil is a big believer in a foundational concept at Kaplan Thompson Architects: the "Not So Big Ego." His work in the community seeks to demystify the process of working with architects and to make great design accessible and attainable for more people, including the PSA's "10-Minute Architect" program, which provides free services to the community.

He lives with his wife, Masey, his 2 sons, Owen and Satchel, and niece, Lee.

RELEVANT PROJECTS:
Project Architect - Friends School of Portland
Project Architect - Maine Coast Waldorf School

Jesse Thompson



Principal, AIA, LEED AP, CPHC

Effecting social change both through his work and through community outreach, Jesse has become a national leader in building science and green design. Jesse is increasingly seen as an award-winning architect who is knowledgeable not just in the craft and details of the profession but who also has a deep holistic understanding of construction on the macro and micro level.

Jesse Thompson received his B.Arch from the University of Oregon in 1996. He is a Maine Licensed Architect (NCARB), a member of the AIA (The American Institute of Architects), a LEED (Leadership in Energy and Environmental Design) Accredited Professional and the first architect in northern New England to become a Certified Passive House Consultant. He also holds registrations in Virginia & Maryland. He was lead designer on three Maine AIA Award winning projects in 2012 and was recognized by MaineToday Media as one of its Forty Under 40 award recipients in 2011. Jesse was honored when his project, Flying Point, was selected as Fine Homebuilding's 2013 "Energy Smart Home of the Year." and by the USGBC for their LEED for Homes Best Single Family Home of 2014.

Jesse serves as President of the Maine Chapter of the American Institute of Architects and Co-chairs the Advocacy Committee of the Portland Society of Architects (PSA). He recently served on the steering committee for the PSA Symposium, "Rising Tides," a critical look at how the issues of climate change and rising sea levels will affect the city of Portland, which brought local and national experts on this topic together with concerned citizens in Maine.

Jesse's portfolio straddles the residential and commercial worlds, and has a deep knowledge of modern construction types and project planning. These projects have ranged from designing intimate residential additions to managing multi-million dollar construction projects. Jesse is Kaplan Thompson's director of technical and digital practices, maintaining our leadership in energy efficient construction techniques, software adoption, and digital construction management.

Jesse grew up in the Northeast Kingdom of Vermont, and lives in the Deering Center neighborhood of Portland with his family.

RELEVANT PROJECTS:
Project Architect - Bayside Anchor
Project Architect - West End Apartments
Project Architect - Blackstone Senior Living

Experience

Kaplan
Thompson
Architects

Bayside Anchor

Location: Portland, Maine

Completion Date: December 2016

Size: 37,815 sf

Program: 45 efficiency, 1-bedroom, and 2- bedroom apartments; 36 affordable units; 9 market rate units; Passive House Certification; Net Zero energy goal

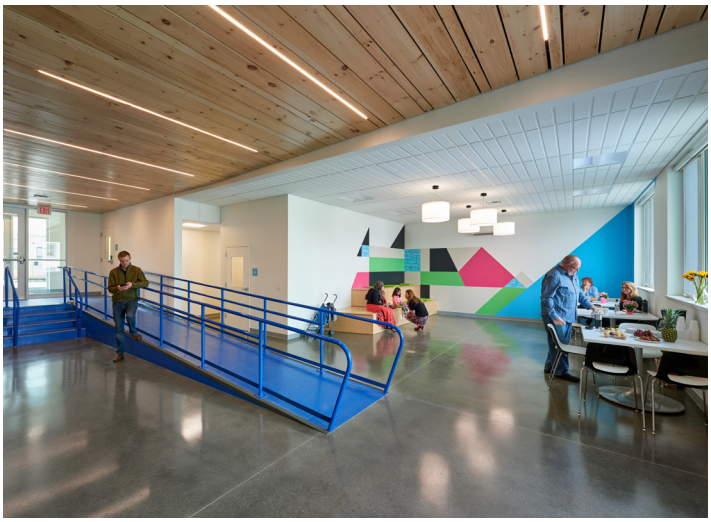
Construction Cost: $142 / SF

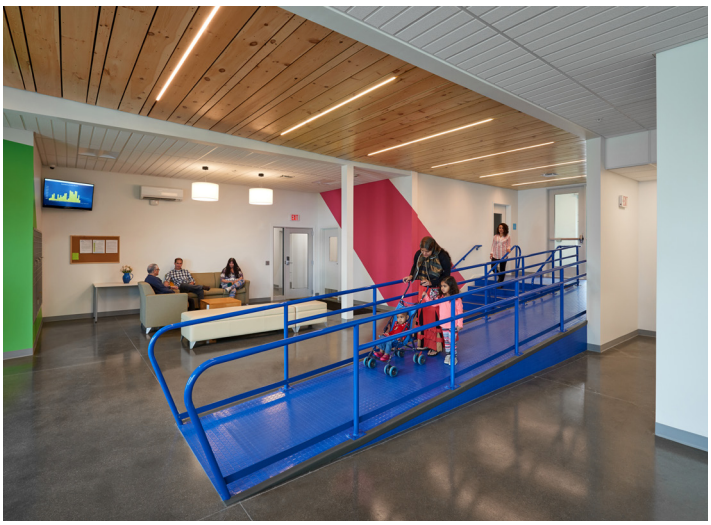
Recognition:

Lowering the Cost of Housing Competition Winner
AIA New England Citation Award

References:

Jay Waterman, Development Director
Portland Housing Authority
(207) 221-8009
jwaterman@porthouse.org
https://www.porthouse.org





Description:

The challenge: Bring 45 new affordable homes to Portland, Maine at a time when high rents and 1% vacancy rates have created a city-wide housing crisis. The building must be a best-in-class housing development that models sustainability, guarantees attainability for low-income residents, and serves as a community hub.

In 2013, Kaplan Thompson Architects partnered with the Portland Housing Authority, Avesta Housing, & Wright-Ryan Construction to win the national Lowering the Cost of Housing design competition, sponsored by Deutsche Bank and Enterprise Community Partners. The team was the only national winner, awarded for design innovation that prioritized energy efficiency, cost effective building technologies, & equitable urban development.

Bayside Anchor is a deeply sustainable, socially and technically innovative project located in urban Portland. The ambitious model project is the first new Portland Housing Authority building to be constructed in 40 years.

The project was built to the PHIUS+ Passive House standard for only $142 per square foot in 2016, well under the average cost for similar construction in Portland. The owner can count on minimal heating bills in Maine's cold winters for the life of the building, thanks to careful integration of a continuously-operating fresh air ventilation system and a meticulously air-sealed building enclosure that will meet the most stringent global standard available (0.05 CFM50 or 0.37 ACH50!). The building will meet or exceed Passive House standards thanks to detailed planning for its insulation, airtightness, high performance windows and doors, and solar gains.

Perhaps most importantly, Bayside Anchor is a vital social catalyst for the neighborhood, a place that is as beautiful in design as it is sustainable and affordable. The building includes artist-commissioned murals, a community police station, Housing Authority offices, and a Head Start Classroom on the ground floor, serving as a true anchor to the community.

Blackstone Senior Living

Location: Falmouth, Maine

Completion Date: February 2018

Size: 15,000 square feet new

Program: 19 units new, 1-bedroom, and 2- bedroom apartments to Passive House performance levels; plus significant rehabilitation of 20 existing units

Cost: $185 / sf

Scope: New Construction and rehabilitation

Reference:

Catherine Elliott
Avesta Housing
(207) 553-7780
CElliott@avestahousing.org

Description:

This new building of affordable housing for seniors is highly insulated with a fresh air ventilation system that captures heat leaving the building and continues to circulate fresh air throughout.

Care was taken to install features that would support them - handrails in the hallways, windows that help residents orient themselves, calming colors on walls, and bright and open floor plans.

We designed a classic New England shape with white clapboard sides and a high-pitched gable roof with a large, sheltering front porch for residents.

High-quality, durable, and affordable construction materials were used to provide longevity and meet accessibility standards today and tomorrow.

In addition a new Community Room was designed, and an all existing units on site were upgraded dramatically.

Parris Terraces

Location: Portland, Maine

Completion Date: June 2019

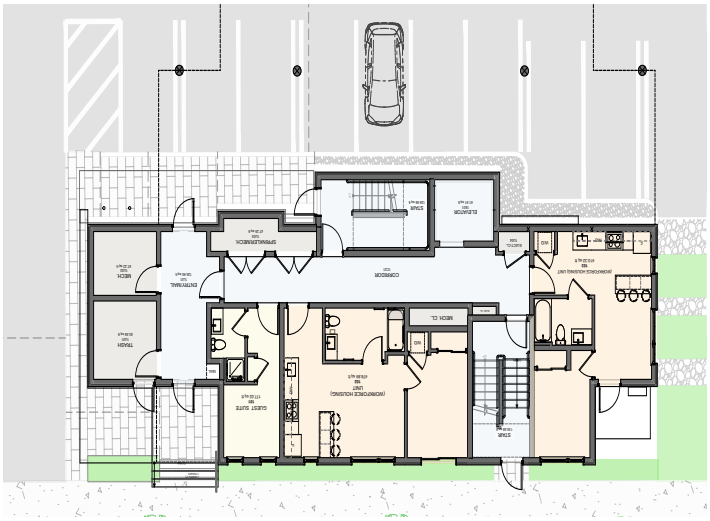
Size: 13,700 sf

Program: 23 efficiency, 1-bedroom, and 2- bedroom apartments; 36 affordable units; 9 market rate units; Passive House Certification; Net Zero energy goal

Cost: $220 / sq ft

Reference:

Jack Soley
Developer
(207) 808-4714
jsoley@eastbrowncow.com



Description:

Parris Terraces is a unique effort to create affordable homeownership in the City of Portland for people making up to 120% of median income without any subsidies, either local, state, or federal. The homes sold for less than $225,000 in a market where no other home or condominium is available for purchase for less than $275,000.

Each of the 23 units is designed to maximize fresh air and natural light with oversized windows and a full balcony with direct open-air access; three units on the fourth floor have sloped, extra high ceilings and larger windows.

Exterior finishes are vertical Maine white cedar at the first level and at the balconies, with painted fiber cement clapboard applied in a creative pattern of varying widths.

The Ecology School

Location: Saco, Maine

Completion Date: Phase 1 -September 2020

Size: Phase 1 - 16,000 sf

Program:

Phase 1 - Large 80 bed Dorm & Commons

Phase 2 - Small 40 bed Dorm, Staff Housing, Farmhouse Renovations & Barn

Est. Construction Cost:

Phase 1 - $11,412,725

Sustainability Goals:

Full Living Building Challenge and Living Community Challenge Certification, first in Maine

Reference:

Drew Dumsch, Executive Director

(207) 283-9951

drew@theecologyschool.org

http://www.theecologyschool.org

Description:

The Ecology School has a goal of becoming one of the nation's most sustainable residential environmental learning centers and building Maine's greenest buildings. The School's mission statement includes this hopeful sentence: "We accentuate the magic, mystery and wonder of nature so that students can better understand and care for the environment." The School brings students from schools across New England, from all walks of life, into the natural environment through overnights, field trips, school programs, and lessons that teach young people about environmental stewardship, sustainability, and the simple joy of getting outdoors. We knew that working with them on a brand new campus would be a labor of love, and we couldn't wait to get to to work.

The site is also almost entirely situated within a conservation easement, meaning that 90 percent of the land is under strict environmental protection rules that limit the kind of construction allowed.

After years of renting a site, The Ecology School set out to find a new home where they could truly set down roots. Their goals for the new spot are ambitious and important, committed to adhere to the Living Community Challenge guidelines: "the most advanced measure of sustainability in the built environment today." Kaplan Thompson owns the Living Building process for the project.

The new site is located at River Bend Farm, along the mighty Saco river just before it reaches the ocean. This is a permanent home for The Ecology School, and it will allow for year-round programming, longer residential programs, and adult and family programs. It includes a 105-acre organic farm with produce, livestock, and orchards, which will anchor lessons in sustainable agriculture and food systems.

In addition to attempting to meet rigorous Living Community Challenge guidelines, The Ecology School has the goal of making all their new buildings meet Net Zero Energy standards for electricity and water, including making sure that all the water used onsite could be reclaimed.

Kaplan Thompson leads a four-firm team that includes Scott Simons Architects, Briburn, and Richardson & Associates to understand the site's potential and the School's goals for improving every inch of its diverse riverfront property and educating everyone who comes on site. Each year, elementary and middle schools from across New England will be able to visit this new home and explore its ponds, river, and woods while learning about how to care for the natural world.

Will any of The Ecology School's students grow up to be green architects one day? We can hope so.

West End Apartments

Location: South Portland, Maine

Completion Date: 2020

Size: 58,000 sf; 5 stories

Program: 64 units: efficiency, 1-bedroom, 2- bedroom apartments, and 3- bedroom apartments; Passive House performance; Net Zero energy goal

Est. Construction Cost Phase 1: $185 / sf

Reference:

Tyler Norod
Avesta Housing
(207) 245-3344
TNorod@avestahousing.org

Description:

The site was designed to begin the process of creating a new downtown for South Portland's West End neighborhood, with numerous streetscape improvements including new street lights, street trees, a new bus stop, on-street car parking, and comfortable and safe pedestrian movement.

The 64-apartment mixed-use development utilizes a truss roof system in order to create a "solar mountain" roof, angled for maximum solar gain while also adding variation at the roof line.

Because this project would essentially be setting the precedent of what a downtown building should be in the West End, we wanted to be sure we were creating an active street level that engages with the street/sidewalk and scaling the building appropriately to promote densification and activity in the neighborhood, rather than the sprawl that exists.

Fitting in the parking requirements on-site was a challenge, as well as designing with a "kink" in the property line. We were able to incorporate the required parking by having several spaces tucked underneath the Upper Level's overhangs and landing columns appropriately to fit parking spaces.

Kaplan Thompson is currently working on a Phase II expansion for 2020 (see images to the right), comprised of an additional 40 units.

References

Kaplan
Thompson
Architects

Multifamily & Community References

Avesta Housing
Portland ME
Rebecca Hatfield, VP of Real Estate Development & Management
Tyler Norod, Development Officer
Catherine Elliott, Development Officer
Todd Rothstein, Director of Construction Services
(207) 553-7777

Preble Street
Portland, ME
Mark Swann
Donna Yellen
mswann@preblestreet.org
dyellen@preblestreet.org
(207) 775-0026

Essex North Development
Topsham, MA
Ara Aftandilian, President
ara@essex-north.com (978) 887-3640

Dakota Partners
Waltham MA
Evan Fink, Development Design Director
efink@dakotapartners.net (781) 899-4002;191

The Ecology School
Saco, ME
Drew Dumsch
drew@theecologyschool.org (207) 283-9951

Friends School of Portland
Cumberland, ME
Jenny Rowe
jenny@friendsschoolportland.org (207) 558-6212

Sustainability

Kaplan
Thompson
Architects

Commitment to Sustainability

Our team's commitment to sustainability should be measured first by our results. We designed one of the first LEED Platinum Net-Zero buildings in New England and were early leaders in adoption of the Passive House energy standard, including the design of one of the first Passive House schools in the country. We have also received multiple LEED for Homes National Awards from the USGBC for our sustainable projects.

We know that buildings consume around 40% of our country's resources, and in New England especially, surrounded by centuries-old buildings, we have proof that the decisions we make today we will live with for a very long time. Our dream is to build and enhance buildings that actually improve the air, water, and world around us. However, as we work toward this goal, the first rule shall be to do no harm. So to start, we encourage building smarter and smaller, and carefully re-using the buildings that our ancestors built with their enormous effort and energy.

We strive to allow natural light to wash over every space in the building, eliminating expensive, hot, and energy-wasting artificial lighting.

We endeavor to take full advantage of local human ingenuity and craftsmanship. We in New England are blessed with a quality of construction that is fading in the rest of the country. Sustainable buildings must also build a sustainable, local economy.

We believe strongly in designing for our local environment and ecosystem. This dedication becomes visible through the use of local and natural materials found in our area - materials like white cedar, tamarack, knotty pine, maple, oak, poplar, and granite. We try to find ways to use materials we can sustainably harvest from New England whenever possible, instead of shipping tropical hardwoods across the globe. This in turn ensures that we specify the lowest embodied materials and products available and reasonable.

For building systems, our design intentions follow a common thread. Focus attention and resources on the building enclosure, and spend less money and effort on complicated mechanical systems. Insulation never breaks down and has a lifespan longer than any piece of machinery. We test assumptions constantly, and learn from the most current building science.

We develop energy models of all our projects to allow us to make cost-benefit ratio decisions when evaluating building envelope options and mechanical systems.

And lastly, we find over and over that resource-saving choices actually have a positive impact on the construction and operating budget. Low water use fixtures are now no more expensive than standard fixtures, no-VOC paint is the same price as high-VOC paint, advanced wood framing uses less wood than standard framing without compromising structural performance. We have the tools in hand to reshape our built environment, and we need to make the smart choices that make smart buildings.

Atlantic Resource Consultants
Engineering Strategies and Solutions

541 US Route 1, Suite 21
Freeport, Maine 04032
Tel: 207.869.9050
www.arc-maine.com

FIRM PROFILE

Atlantic Resource Consultants is a recently formed Maine based company providing high value professional engineering services to clients throughout New England. The founding principals have over 100 years of combined experience in site analysis, land planning, civil engineering design and permitting on a wide variety of complex and challenging land development and infrastructure improvement projects.

Our forward thinking, strategic approach to design produces practical solutions that enhance projects and create value for our clients.

KEY SERVICES

Site Analysis and Selection

Feasibility Studies & Land Planning

Site/Civil Engineering Design

Stormwater Management

Land Use Permitting

Water Resource Planning

Resiliency and Sea Level Rise Planning

Construction Inspection & Administration

Data Gathering & Pre-Construction Services

MARKET SECTORS

Residential Development

Commercial Development

Municipal Infrastructure

Healthcare

Education

Athletic Facilities

Corrections and Public Safety

Resorts

Golf Course Development

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PRINCIPALS

Andrew Johnston, PE, LEED AP, CEng, CEnv, CWEM, MCIWEM

Andy graduated with a Bachelor's Degree in Civil Engineering from Brighton Polytechnic University in England in 1991. He also holds a Master's Degree in Coastal Zone Management from the University of Ulster. Through the 1990's he worked on design and construction of large-scale public works projects to improve surface water quality throughout the south of England. In 1998 he moved to the US and worked for an engineering company in Rhode Island, first as a design engineer and later as head of the Site/Civil Department. His major projects included leading design, permitting and construction oversight of residential, commercial, golf course and resort community developments.

Since moving to Maine in 2004, his work has included planning, design and permitting of major healthcare, infrastructure, assisted living and retirement communities, commercial, residential, retail and industrial facilities. He has taken an active role in development of new State and local stormwater and planning ordinances through participation in technical committees and focus groups. His experience and expertise have led to several opportunities to present his work at seminars and conferences throughout the region. Andy has an active interest in coastal resiliency planning and has published on this topic in a peer reviewed scientific journal.

He is a registered professional engineer in the States of Maine, New Hampshire, New York, Connecticut, Massachusetts and Rhode Island and a Chartered Professional Engineer, Chartered Water and Environmental Manager, Chartered Environmentalist and Member of the Chartered Institution of Water and Environmental Management in the United Kingdom. He is also LEED certified.

Jason Vafiades, PE, LEED AP

Jason graduated with a Bachelor's Degree in Civil and Environmental Engineering, University of Maine, Orono in 2005. He also holds a Master's of Fine Art's Degree in Creative Writing from the University of Maine, Orono in 2001 and a Bachelor's Degree in English Literature and Classical Studies from the University of Maine, Orono in 1999.

Jason has over 12 years' experience in civil engineering, hydrologic and hydraulic modeling, permitting, and project management in the States of Maine and Washington. He has provided design engineering, project management and construction administration services to a variety of projects, including residential, commercial, municipal and institutional components. He relies on his strong communication skills to manage project outcomes and realize successful delivery of project goals. He is a registered professional engineer in Maine and is LEED certified.

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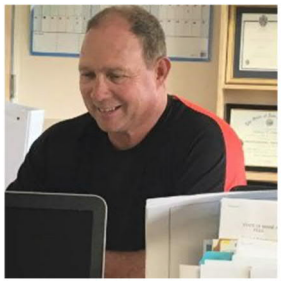
KEY PERSONNEL

Michael Vachon – Senior Designer/CAD Manager

Mike's has over 20 years' experience in the construction industry as a materials testing technician, survey crewman and designer and draftsman, and has worked for consulting engineering companies in Maine and New Hampshire. His expertise includes in-depth knowledge of Autodesk Civil3D, survey software and equipment, and site design. In addition to managing all drafting tasks at ARC, Mike undertakes site designs, preparation of permit submissions, and is responsible for file management.



Gordon "Gordie" Smith – Director of Construction Services

Gordie has over forty years of experience in Construction Administration and Inspections. He has worked on major infrastructure and private development projects throughout Maine and northern New England, including several multi-million dollar projects at the Portland International Jetport. His other experience includes construction administration on municipal roadway projects, wastewater collection and treatment projects and marine and port facilities. As Director of Construction Services, Gordie's duties at ARC include pre-construction data gathering, constructability reviews, and construction cost estimates in addition to construction administration.

Keegan Smith – Civil Engineering Technician

Keegan has worked for civil engineering firms for over ten years, performing construction inspection, estimating, surveying, and drafting. He has undertaken inspection work on major infrastructure projects at the Portland International Jetport including runway resurfacing and extensions. His other experience includes construction inspections for Portland Water District and the Town of Scarborough. Keegan's duties at ARC include pre-construction information gathering, processing and formatting, assisting with construction cost estimates, construction inspections and drafting.

Tony Panciocco, PE – Senior Civil Engineer

Tony graduated with a B.A in Economics from Tufts University in 1990 and a B.S. in Civil Engineering from Northeastern University in Boston in 2000. He has over twenty years of engineering experience on a variety of projects throughout New England including residential, commercial, and institutional projects. Tony is a licensed Civil Engineer in Maine, New Hampshire, Vermont and Connecticut and is a member of the American Society of Civil Engineers. At ARC Tony heads up our in office design and permitting team.

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Tel: 207.869.9050
www.arc-maine.com

Charlie Burnham, PE - Senior Civil Engineer

Charlie graduated with a B.S in Civil and Environmental Engineering from Clemson University in 2010. He has almost ten years of engineering experience on a variety of projects in Maine including wastewater treatment plant upgrades, pump stations, landfill improvements, residential subdivisions, and commercial development projects. Charlie is a licensed Civil Engineer in Maine, and is a member of the American Society of Civil Engineers. At ARC Charlie splits his time between design and permitting work and construction inspections.

Tori Wilson – Junior Civil Engineer

Victoria (Tori) Wilson graduated with a B.S. in Civil and Environmental Engineering from The University of Maine Orono and has been working with her family on a large project that consists of a Winery and Vineyard. Tori joined ARC in 2018 and assists with engineering designs, permit applications, hydrologic modeling, project administration and project management.

Andrew Johnston

PE, LEED AP, CEng, CEnv, MCIWEM

PRINCIPAL

Atlantic Resource Consultants
Engineering Strategies and Solutions

Andy has over 20 years' experience in site analysis, master planning, civil engineering design, permitting, and project management in the United States and the United Kingdom. He is adept at managing all stages of projects from concept to implementation. He has a proven record of accomplishment, both forming and managing teams of in-house staff and external consultants to ensure successful delivery of public and private projects across a wide range of market sectors. Recent work includes design, permitting and construction oversight for major resort, institutional, healthcare and athletic projects throughout New England.

EDUCATION

M.S., Coastal Zone Management, University of Ulster, Coleraine, N. Ireland, 2013

B.S., Civil Engineering, Brighton Polytechnic University, Brighton, England, 1991

REGISTRATIONS

Professional Engineer Registrations:

- State of Connecticut
- Commonwealth of Massachusetts
- State of Maine
- State of New Hampshire
- State of New York
- State of Rhode Island
- Chartered Engineer, United Kingdom Engineering Council
- Chartered Water and Environmental Manager, United Kingdom Chartered Institution of Water and Environmental Management
- Chartered Environmentalist, United Kingdom Society for the Environment
- LEED Accredited Professional, USGBC
- Maine DOT LPA Certification

MEMBERSHIPS

Member, Water Environment Federation
Member Chartered Institution of Water and Environmental Management

PUBLICATIONS

Johnston, A, Slovinsky, P, Yates, K., Assessing the vulnerability of coastal infrastructure to sea level rise using multi-criteria analysis in Scarborough, ME. Ocean and Coastal Management 95, 176-188, 2014.

RECENT PROJECT EXPERIENCE

Brunswick Elementary School at Jordan Acres

Site/civil design and permitting for a new 90,000sf elementary school at the site of the former Jordan Acres Elementary.

Hospice of Southern Maine, Hospice Center Scarborough, Maine

Site analysis, site planning, design and permitting for a new administrative and educational center for HSM.

Waldo County General Hospital Addition and Site Improvements, Belfast, Maine

Site/civil design and permitting for an emergency room addition and 40,000sf parking lot expansion at an existing medical center.

Tri-Town Track and Field, Freeport, Maine

Site/civil design and permitting for a major redevelopment of the athletic facilities, including a new track, artificial turf field, spectator seating, sports lighting and utility infrastructure.

Winslow High School Addition, Winslow, Maine

Site/civil design and permitting for major additions to the Winslow High School.

Maine Yankee ISFS Facility Improvements, Wiscasset, Maine

Design of site/civil infrastructure improvements that will facilitate operations and maintenance activities at the site and improve personnel safety.

Camp Keyes Reutilization Master Plan

Site/civil design for security improvements and reorganization of the MEARNG Camp Keyes Base, Augusta.

MSSPA facility Improvements, Windham, Maine

Site/civil design and permitting for major improvements to the MSSPA facility.

ARLGP Expansion, Westbrook Maine

Site/civil design and permitting for major expansion of the Animal Refuge League of Greater Portland facility.

Andrew Johnston
PE, LEED AP, CEng, CEnv, MCIWEM
PRINCIPAL

Atlantic Resource Consultants
Engineering Strategies and Solutions

OTHER SELECTED PROJECTS

Maine Correctional Center Feasibility Study, Windham, Maine
Feasibility study considering three site options for a major $190M consolidation of statewide correctional facilities.

MaineGeneral Alfond Center for Health, Augusta, Maine
Site/civil engineering and permitting for a new 600,000sf regional hospital in Augusta, Maine, including infrastructure and utility extensions to the site.

Maine Veterans' Homes New Skilled Nursing Facilities, Augusta and Scarborough, Maine
Site analysis, site/civil engineering design and permitting for two new 150,000sf residential nursing care facilities.

Pleasant Hill Road Improvements, Scarborough, Maine
Design of major road re-construction including improvements to horizontal and vertical geometry, road section, drainage and roadside protection.

Biddeford Savings Bank/ Starbucks, Scarborough, Maine
Site/civil engineering design and permitting for a bank and retail development on US Route 1.

Bellavita at Scarborough, Scarborough, Maine
Site/civil engineering design and permitting for a new 81-bed assisted living facility.

MaineHealth Professional Park, Scarborough, Maine
Site/civil engineering and permitting for a new 100,000sf professional medical office facility in a former retail center.

MaineGeneral Thayer Center for Health, Waterville, Maine
Site/civil engineering and permitting for a major redevelopment of Thayer Hospital in Waterville, Maine, including reconfiguration and addition of parking, circulation and entries.

Eastern Maine Medical Center Medical Office Building Bangor, Maine
Site/civil engineering design and permitting for a new 60,000sf medical office building opposite the airport.

Bangor International Airport Stormwater Improvements, Bangor, Maine
Design of stormwater improvements to treat residual deicing fluids and other airport related contaminants. Solutions included mechanical and wind-powered aeration, subsurface flow grave wetlands and bioretention.

Capehart Brook Watershed Management Plan, Bangor, Maine
Assisted the City of Bangor with development of the technical sections and solution options for the Capehart Brook watershed.

MaineGeneral Medical Office Building Vassalboro, Maine
Site/civil engineering and permitting for redevelopment of an existing building to provide a new medical office building.

MaineCoast Memorial Hospital Addition and Site Improvements, Ellsworth, Maine
Site/civil engineering and permitting for an emergency department addition and major site improvements.

Kennebec Valley Community College Classroom Building, Fairfield, Maine
Site/civil engineering design and permitting for a new classroom building, access, circulation, parking and utilities infrastructure at the KVCC Fairfield campus.

Massabesic High School Athletic Facility Improvements, Waterboro, Maine
Site/civil design and permitting for a major redevelopment of the athletic facilities, including a new track, artificial turf field, spectator seating, sports lighting and utility infrastructure.

Freeport High School Improvements, Freeport, Maine
Site/civil engineering design and permitting for a major new addition, circulation, parking and athletic field improvements.

Century Plaza Retail Center, Portland, Maine
Site/civil engineering and permitting for a new retail plaza on Marginal Way.

Somerset County Jail, Madison, Maine
Site/civil engineering design and permitting for a new 200 bed jail facility and Sheriff's Department.

Two Bridges County Jail, Wiscasset, Maine
Post-construction inspection, analysis and recommendation of solutions for settlement issues at a new jail facility.

Anthony P. Panciocco, Jr., PE.

SENIOR ENGINEER

Atlantic Resource Consultants
Engineering Strategies and Solutions

Tony has over 20 years' experience in civil engineering, hydrologic and hydraulic modelling, permitting, and project management in the Northeast. He has provided design engineering, permitting, project management and construction administration services to a variety of projects, including residential, commercial, municipal, industrial and institutional.

EDUCATION

B.S., Civil Engineering, Northeastern University, Boston MA, 2000

B.A., Economics, Tufts University, Medford, MA 1990

REGISTRATIONS

Professional Engineer Registrations:

- State of Maine
- State of New Hampshire
- State of Vermont
- State of Connecticut

MEMBERSHIPS

American Society of Civil Engineers

PROJECT EXPERIENCE

Carrier Woods Apartments, Scarborough, Maine
Site/civil design and permitting for an 84-unit apartment complex.

Dollar General Stores, Northern Maine
Site/civil design, permitting and construction administration for numerous Dollar General stores located throughout northern Maine.

Capisic Meadows Subdivision, Portland ME
Site/civil design and permitting for a 7-lot residential subdivision located in Portland Maine.

Big Babe's Tavern, South Portland ME
Site/civil design permitting and utility coordination for a new tavern and motel.

Homewood Park Subdivision, Old Orchard Beech ME
Roadway and stormwater design for a previously approved subdivision.

Maine Department of Correction, Women's Re-Entry Facility, Windham Maine
Site/civil design, permitting, and construction administration for an 80-bed, pre-release facility.

Waldo County General Hospital Medical Office Building, Belfast, Maine
Site/*civil design and permitting for a new Medical Office building on the campus of Waldo County Hospital.*

Unity College – Unity, ME
Site/civil infrastructure for a new residence hall for Unity College. The project included a two-story residence hall with a floor area of approximately 9,500 SF.

OTHER SELECTED PROJECTS

L.L. Bean Hunt/Fish Retail Store – Freeport, ME
Site/civil design and permitting for the Hunt/Fish Retail store.

Enterprise Business Park, Windham, ME
Site/civil design and permitting for a 12-lot commercial subdivision, including phosphorus removal calculations for a lake watershed.

Hilton Garden Inn Expansion, Portland/South Portland Maine
Site/civil design and permitting for a 7,500 square foot hotel expansion located in two municipalities.

Central Maine Medical Center ED/Lab Expansion – Lewiston, ME
Site/civil design for an Emergency Department and lab expansion project.

Maine General Alfond Center for Health Augusta, Maine
Site/civil engineering and permitting for a new 600,000sf regional hospital in Augusta, Maine, including infrastructure and utility extensions to the site.

102 Exchange Street Portland, ME 04101 | (207) 842-2888 | kaplanthompson.com

June 01, 2020

Att. D

NEW MIXED USE BUILDING
337 CUMBERLAND AVENUE, PORTLAND ME
FOR THE PORTLAND HOUSING DEVELOPMENT CORPORATION

The following outlines how the proposed project has been designed to meet the applicable standards of the City of Portland associated with Level III: Site Plan review.

CONSITENCY WITH CITY MASTER PLAN

The Housing component of the City's Comprehensive Plan includes the following points and policies:

- "Portland is in the midst of a housing shortage. Rents and purchase prices are escalating. Residents are struggling with their housing costs and many households have chosen or been forced to move to other municipalities."
- "When seeking solutions to Portland's housing needs and issues, the City will strive for innovation and creativity in the areas of urban design, expenditure of its financial resources, and the use and reuse of land and buildings to ensure that residential development fits within Portland's unique living environment."
- Policy #1: "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."
- Policy #5: Portland's Comprehensive Plan encourages a manageable level of growth that will sustain the City as a healthy urban center in which to live and work and to achieve a shared vision for Portland. Portland should encourage sustainable development patterns and opportunities within the City by promoting efficient land use, conservation of natural resources, and easy access to public transportation, services, and public amenities.

Portland continues to struggle with an inadequate supply of apartments serving all incomes.

The proposed 337 Cumberland Avenue will increase the supply of rental housing at rents serving a wide range of residents, with an emphasis in families. The inclusion of a daycare facility enhances the Downtown area as healthy urban center in which to live and work. The incorporation of the former Preble Chapel ensures a piece of Portland's rich architectural fabric is preserved and continues in it's original purpose serving the community by providing much-needed social services.

337 Cumberland Avenue is consistent with the City's Comprehensive Plan.

Att. E

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

May 27, 2020

Andrew D. Johnston, PE, LEED AP
Atlantic Resource Consultants
541 US-1, Suite 21
Freeport, ME 04032

Re: 337 and 331 Cumberland Avenue, Portland
Ability to Serve with PWD Water

Dear Mr. Johnston:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on April 30, 2020. Based on the information provided per plans dated May 27, 2020, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed and is valid for eighteen (18) months after the date of issue. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- For the property at 337 Cumberland Avenue, a new 6-inch fire service and a new 4-inch domestic water service, with a 1.5-inch meter, may be installed from the water main in Cumberland Avenue. The services should enter through the properties frontage on Cumberland Avenue at least 10-feet from any side property lines. The existing ¾-inch water service line with 5/8-inch meter is undersized for the intended use and must be retired per PWD standards, which includes shutting and cutting the service at the main and removing the service box and rod at street line.
- For the property at 331 Cumberland Avenue, a new 1.5-inch service, with a 1-inch meter, may be installed from the water main in Cumberland Avenue. The service should enter through the properties frontage on Cumberland Avenue at least 10-feet from any side property lines. The existing 1-inch service line with 5/8-inch meter is undersized for the intended use and must be retired per PWD standards, which includes shutting and cutting the service at the main and removing the service box and rod at street line. The existing 4-inch fire service may be reused as long as the fire sprinkler designer determines that the service line is sized appropriately.
- The Portland Water District does not have record of any other existing infrastructure in public roads and recommends a survey and test pitting be performed by the development team prior to construction. Any conflicts that arise during construction are at the risk of the developer and may result in job shutdown until new plans are submitted by the developer and reviewed and approved by PWD.
- An approved backflow prevention device must be installed on the service line directly after the meter and before the fire sprinkler riser prior to service activation. Please refer to the PWD website for more information on cross-connection control policies.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.

Existing Site Service

According to District records, the project site does currently have existing water service. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is an 12-inch diameter cast iron and a 12" diameter ductile iron water main in Cumberland Avenue and a public fire hydrant located approximately 50 feet from the site. The most recent static pressure reading was 88 psi.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the City of Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Robert A. Bartels, P.E.
Senior Project Engineer

Andy Johnston

From:	Cough, Jamie <Jamie.Cough@cmpco.com>
Sent:	Thursday, May 21, 2020 9:53 AM
To:	Andy Johnston
Subject:	New Development Project - 331-337 Cumberland Avenue, Portland, Maine CMP Ability to Serve Request and Three Phase Service Process
Attachments:	Easement_Information_Worksheet.doc; Standard Easement Sample.pdf; Jan 3.1 2020 EDET.XLSX

Atlantic Resource Consultants
541 US-1, Suite 21,Freeport, ME 04032
Andrew Johnston, PE, LEED AP, CEng, CEnv, MCIWEM
Principal

Project Description:

The project consists of construction of a new seven story building at 337 Cumberland Avenue, at the location of the current Marias Restaurant. The building will accommodate an expanded Youth and Family Outreach daycare facility on the first floor and sixty affordable apartment units on the upper floors. A building connector will be constructed between the new building and the former chapel building at 331 Cumberland Avenue, which will be lightly renovated and will continue to house the current daycare function.

Request for Ability to Serve Letter

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Handbook of Standard Requirements. If you have any questions on the process, or need help in completion of the documents, please contact me at 207-629-1489.

Here is our typical process for getting your three phase or CT rated single phase service installed. If you have any questions, please let me know. The underlined links will redirect you to the appropriate site for additional information. If this is a single phase service with all self-contained metering, the process is simplified, but still begins with a call to CMP.

Service Milestones for Three Phase Services and CT Rated Single Phase Services. Please refer to CMP Installation Checklists for other installations.

- Call 800-750-4000 option 4 to establish a new account (if needed) and an SAP work order. Please provide both of these to me.
- Submit Load information. Please complete the attached EDET (excel file) using load information. Please complete this and email back to me. If the loads are over 500 kw, more in depth load studies may be required with our Distribution Planning and Transmission Planning Departments. Be advised that these will involve more detailed load information, a load study agreement (signed contract), as well as other items. This additional study process may add up to two additional months to completion of the job.
- Submit the easement information worksheet. Please complete this form and either email or fax back to me.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.

- Preliminary meetings with CMP Advisor and Engineer to determine details of job (I will need to schedule with your electrician/contractor-please let me know who this is)
- Field planner design appointment to cost out job and develop CMP Invoice. The invoice is typically generated 5-6 weeks after the design appointment. This expires after 90 days from the invoice date.
- CMP submits invoice to the customer for payment (typically via email). Payment received from customer.
- Easements (based on easement information worksheet) sent out, signed and originals returned to CMP.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer or materials delivery, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

Please complete the attached forms (the specific instructions are on each form) and email them back to me at your earliest convenience.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements: CMP Handbook of Standard Requirements

You will be responsible for installing the customer connections, conduits, and metering in accordance with the CMP Handbook of Standard Requirements. The transformer will be sized based on your submitted load sheets.

Your deposit amount will be typically based on an estimated two month bill, calculated from your completed load sheet unless otherwise determined by CMP.

Metering:

All metering (including locations) must be preapproved by CMP.

Chapter 324 Interconnections:

Please be advised that if you plan to install solar/wind/hydro generation, you must complete an application under the MPUC mandated Chapter 324 Interconnection Standards. If you go to Chapter 324 Interconnection Standards and follow the instructions for the Small Generator Interconnection Procedures, CMP can do this work in parallel to your service request that will be handled by me. If you project is under 660 KW You will be able to have a Customer Net Energy Billing contract. Information concerning Customer Net Energy Billing can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing

Reallocation/Line Extensions:

Recently, changes were made to the three-phase construction policy, which require CMP to reallocate construction costs paid by customers. If applicable, those projects identified as “developments” do not qualify for reallocation of funds. Please see this document at our website for details about the reallocation conditions. Any reallocation charges will be specifically denoted on your invoice. The website address for this is: PolyphaseLineExtension .

This line extension will be part of Central Maine Power’s distribution system. In the event the property served under this Agreement is sold or otherwise conveyed, all rights and obligations of the Agreement shall stay with the property. Please note that if you rent or lease this property to another and you want to receive the reimbursement payments, you must make special arrangements with the Central Maine Power Company. Otherwise, any reimbursement payments will be sent to the “Customer” taking service at the service location.

Electricity Supplier Information:

Central Maine Power Company (CMP) will provide your facility with electric delivery service. If you don't already have a provider, you will need to make arrangements with a competitive electricity provider in order to receive electricity supply for your facility. In the event you fail to choose a competitive electricity provider, you will receive Standard Offer service arranged by the Maine Public Utilities Commission. If you wish to be served by a competitive electricity provider immediately upon establishment of delivery service, you must arrange for this service directly through your chosen competitive electricity provider, who must enroll your account no later than 5 PM on the business day prior initiation of delivery service by CMP. An up-to-date list of competitive suppliers can be found at the:

1) Maine Public Utilities Commission (MPUC) web site- Maine PUC
2) By calling the MPUC at (207) 287-3831

Attachments:

Excel Load Sheet (EDET)
Easement Worksheet and Sample Standard Easement

Regards,

Jamie

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-629-1489 office

==========

Please consider the environment before printing this email.

If you have received this message in error, please notify the sender and immediately delete this message and any attachment hereto and/or copy hereof, as such message contains confidential information intended solely for the individual or entity to whom it is addressed. The use or disclosure of such information to third parties is prohibited by law and may give rise to civil or criminal liability.

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CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
212 Canco Road
Portland, Maine 04103

Date: 05-27-2020

Bradley Roland, P.E.
Water Resources Division
Department of Public Works
212 Canco Road
Portland, ME 04103

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 331-337 CUMBERLAND AVENUE

Chart Block Lot Number: 33-K-5,6,7,9,10

Proposed Use: RESIDENTIAL / DAYCARE
Previous Use: RESTAURANT/DAYCARE
Existing Sanitary Flows: 1,582 GPD
Existing Process Flows: N/A GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

PORTLAND STREET

Site Category		
	Commercial *(see part 4 below)*	
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)* DAYCARE	X

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: NOT YET ASSIGNED Phone: _____
Owner/Developer Name: PORTLAND HOUSING AUTHORITY
Owner/Developer Address: 14 BAXTER BOULEVARD, PORTLAND, MAINE 04101
Phone: 207-415-3870 Fax: _____ E-mail: matt@elysiancommunities.com
Engineering Consultant Name: ATLANTIC RESOURCE CONSULTANTS
Engineering Consultant Address: 541 US ROUTE ONE, SUITE #21, FREEPORT, ME 04032
Phone: 207-869-9050 Fax: _____ E-mail: ANDYJ@ARC-MAINE.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: 11,541 GPD
Peaking Factor/ Peak Times: 5.75 / 07:00-08:00
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)*
MAINE SUBSURFACE WASTEWATER DISPOSAL REGULATION (FLOWS), TR-16 (PEAKING FACTOR)

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: 13

Size of External Grease Interceptor: SCHIER GB-75 DYNAMIC SEPARATOR UNIT

Retention Time: see attached calculations

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.

GREASE INTERCEPTOR CALCULATIONS

Reference No. 18603 Project Name: 337 Cumberland Avenue

Step 1: Flow rate to grease interceptor

Fixture flow rate: (cu in / 231) = gal x 0.75 / 2 min = 2 min flow rate

NAME	TYPE	DIMENSIONS	QTY	CU IN	FLOW RATE
Food Prep Sink	Prep Sink Two Bowls	21" x 21" x 14" (2)	1	12,348	20 GPM
Hand Wash Sink	2 Compartment Sink	21" x 21" x 14" (2)	1	12,348	20 GPM
Kitchen Dishwasher	Door Type (Dishwasher)	N/A	1	2,310	5 GPM
Mop Sink	Mop Basin	24" x 24" x 10"	1	5,760	9.35 GPM
Total					**54.35 GPM**

Step 2: Grease Production

Servings per day x Grease production value x Days between pump-outs = Grease output

Number of meals served per day: 120
Grease production value: 0.0455 lbs per serving (Cafeteria - Full Serve: High / Flatware)
Days between pump-outs: 90 days

120 x 0.0455 x 90 = 491.4 lbs of FOG

SCHIER MODEL	
GB-75	**Description:** Polyethylene Grease Interceptor **Dimensions:** Length: 46", Width: 32", Height: 38.5" **Flow Rates/Grease Capacities:** 75 GPM / 653.0 lbs **Liquid Capacity:** 125 gal

CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

Date: May 19, 2020 Revised July 7, 2020

Re: Wastewater Capacity Authorization

Address: 331-337 Cumberland Avenue
Applicant: Portland Housing Authority

Planner: Caitlin Cameron

Anticipated Wastewater Flow:

Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
Day Care Facilities Serving Meals	# Children	58	15 GPD	-870
Day Care Facilities Serving Meals	# Adults	16	12 GPD	-192
Eating Place – 1 Meal/Day	# Seat	40	10 GPD	-400
Eating Place – 1 Meal/Day	# Employees	10	12 GPD	-120
Proposed flow				
Day Care Facilities Serving Meals	# Children	107	15 GPD	1605
Day Care Facilities Serving Meals	# Adults	28	12 GPD	336
Multiple Family Dwelling Units	Studio	20	120	2400
Multiple Family Dwelling Units	1-Bedroom	15	120	1800
Multiple Family Dwelling Units	2-Bedroom	15	180	2700
Multiple Family Dwelling Units	3-Bedroom	10	270	2700
			Net Change	**+ 9,959**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

212 Canco Road, Ste B · Portland, ME 04103 · 207-874-8801
cbranch@portlandmaine.gov · www.portlandmaine.gov

Comments:
The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

You are reminded that the sewers you are proposing to connect into convey both sanitary and stormwater (Combined Sewer) and therefore a backflow preventer is suggested.

If the City can be of further assistance, please contact me at all 874-8840 or brad@portlandmaine.gov

Sincerely,

Bradley A. Roland, P.E.
Senior Project Engineer

PHA – CUMBERLAND AVENUE

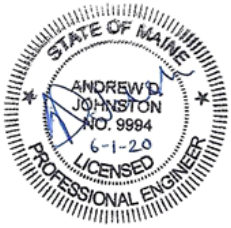
STORMWATER MANAGEMENT REPORT

Prepared for:
Portland Housing Authority
Portland, Maine

Prepared by:

Atlantic Resource Consultants
Engineering Strategies and Solutions

June 2020



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INTRODUCTION AND BACKGROUND

Atlantic Resource Consultants (ARC) has prepared the following abbreviated stormwater management report for re-development of a site located at 331-337 Cumberland Avenue in Portland, Maine. The property is located at the corner of Portland Street, Preble Street and Cumberland Avenue and is fully developed with a former chapel building that currently houses the Youth Outreach and Daycare Center and the associated artificial turf outdoor play area, a brick restaurant building and an adjacent paved surface parking lot. The project includes renovation of the chapel building, demolition of the existing restaurant building and construction of a new multi-storey building to include an expanded daycare program on the first floor and apartments on the upper floors. Surface level exterior spaces will be renovated to provide updated exterior play areas for the daycare facility.

The project site is described as Parcel ID Numbers 33-K-6, 33-K-7, 33-K-9 and 33-K-10 and is located on the northern side of Cumberland Avenue, the west side of Preble Street and the north side of Portland Street in Portland, Maine. Access to the site is provided via a driveway off Portland Street, with pedestrian access from Preble Street and Cumberland Avenue.

The property is currently fully developed and almost entirely impervious, the exceptions being the artificial turf surface around the south and east sides of the former chapel and a very small planted area on the north side of the same building. Runoff from the developed area drains directly to the City of Portland storm drain system in Portland Street and hence to Back Cove.

The project largely consists of demolition of the existing restaurant building and construction of a new multi-story building with expanded daycare facilities on the first floor and apartments on the floors above. The former chapel building will remain and will be renovated, with a new connector proposed between the two buildings. Parking will be provided beneath the new building, which will cover the current surface parking lot. The exterior play areas will be renovated to better serve the daycare function. Neither the developed area, nor the impervious area of the site will be increased. The project will disturb approximately 19,500sf of area.

EXISTING CONDITIONS

The majority of the project site is currently developed with a former chapel building, a restaurant building and the associated site access, parking, and exterior play areas.

Cover conditions include the existing building roofs, parking areas, patios, stoops and walkways, artificial turf outdoor play areas and small, unmaintained grass areas on Portland Street. The topography of the site slopes steeply from Cumberland Avenue, downwards along Preble Street to Portland Street. The grade differential between the Cumberland Avenue and Portland Street sides of the site is approximately twelve feet. All runoff from the site discharges to the City of Portland storm drain system in the abutting streets. This system discharges to Back Cove. There are currently no stormwater treatment or detention Best Management Practices (BMPs) at the site.

Predominant surface soil types on the project site are identified by the Natural Resource Conservation Service (NRCS) Web Soil Survey as Hinckley series loamy sands. The site-specific geotechnical investigations encountered urban granular fill overlying clay, silty sand and bedrock.

RECEIVING WATERS

The developed area of the site drains to the City of Portland storm drain system in the streets abutting the property. The system discharges to Back Cove.

HISTORICAL FLOODING

The site is not located with a within a Flood Zone as indicated on the FEMA Flood Insurance Rate Map for the City of Portland (Community Panel Number 230051 0013 B), dated July 17, 1986.

ALTERATIONS TO NATURAL DRAINAGEWAYS

The project will not result in alteration of any natural drainageways.

PROJECT DESCRIPTION

The project consists of renovations to the former chapel building and associated site amenities, demolition of the restaurant building and associated parking lot, and construction of a new multi-story building and a new connector between the new building and the former chapel at the project site. Parking will be provided under the new building, on the Portland Street side of the site.

Stormwater management will be provided through several new Low Impact Development (LID) Best Management Practices (BMPs) at the site. Play areas will be constructed of pervious materials including pervious pavers, artificial turf, sand and planters. The base materials are designed for storage and treatment of contributing surface drainage, before allowing discharge, both to the underlying soils and the street drainage system via perforated underdrain pipes. The pervious areas have been designed to provide treatment for rainfall landing directly on the surfaces and runoff entering from adjacent roofs, in accordance with State of Maine Chapter 500 Stormwater Law standards, as described below:

An outdoor play area will be constructed over the parking deck on the west side of the building, with access from the first-floor level. The play area will be construction of pervious surfaces to allow capture and treatment of rainfall landing on this portion of the site.

The exterior play areas to the south and east side of the former chapel building will be re-constructed of pervious materials that will provide capture and treatment of runoff from these surfaces and adjacent contributing roof areas.

A smaller play area will be constructed in the alcove between the buildings. This area will also be constructed of pervious materials. A small rain garden feature is included adjacent to Portland Street and this will serve to provide shade and accommodate a structure that combines the incoming underdrains and from the site and the new roof drain, before discharging to the city drainage system.

There is no increase in impervious area at the site and no increase in the developed area that will be graded and not re-vegetated. Runoff and routing calculations demonstrate that the project will not result in any increase in runoff from the site under any storm conditions.

METHODOLOGY AND MODELING ASSUMPTIONS

Runoff and routing calculations have been performed for the watershed areas affected by the proposed development under pre-development and post-development conditions scenarios. Time of concentration and runoff curve number calculations have been performed using the method described in Natural Resource Conservation Service (NRCS) Technical Release 55 (TR-55) – Urban Hydrology for Small Watersheds. The TR-20 based HydroCAD modeling software has been utilized to perform the more complex runoff and routing calculations, some of which are beyond the scope of the TR-55 method. Time of concentration calculations have been amended where the value given by the TR-55 method is less than six minutes (0.1hr). In these cases, a standard minimum value of six minutes has been used to keep this parameter within the acceptable working range of the model and prevent computational errors.

Design rainfall events have been modeled using the SCS Type III Hydrograph for 24-hour duration storms. The rainfall depth for each return period is taken from Maine Department of environmental Protection Chapter 500 Stormwater Management, Appendix H (Cumberland County). The rainfall depth values for standard design storm frequencies are shown in the table below.

TABLE 1 - 24-Hr Rainfall Depths for Cumberland County at Design Storm Frequencies				
Maine Chapter 500: Stormwater Management, Appendix H				
Frequency	2-Year	10-Year	25-Year	100-Year
Rainfall Depth	3.1 in	4.6 in	5.8 in	8.1 in

Soil types in the area of the site have been identified using the Natural Resource Conservation Service (NRCS) Web Soil Survey. The only mapped soil unit at the site in Hinckley, which is classified as Hydrologic Group A. The existing topography of the site was determined by field survey and the existing vegetative cover was identified by site inspection. The following table includes a list of the surficial soil types that were identified on the project site, along with their associated Hydrologic Soil Group (HSG).

TABLE 2 – SOIL TYPES	
Soil Type	**Hydrologic Soil Group**
Hinckley	A

Under the pre-development conditions scenario, the site is represented by a single subcatchment area. Subcatchment 101 drains to Design Point 1, located at the City drainage system in Portland Street. It should be noted that the existing artificial turf play areas on the site were constructed on a shallow bed of sand over existing soil. This material will act in a hydrologically similar manner to a grass surface on Type A soils and has been modeled in this way.

Under the post-development conditions scenario, the site is divided into several smaller areas to model the impact of localized storage within the system. The overall routing configuration remains unchanged with all drainage routed to

Design Point 1, at the Portland Street drainage system. In this way, a direct comparison can be made of pre-development and post-development runoff values at the Design Point.

NRCS Code 378, the Stormwater Management for Maine: Best Management Practices (MEDEP, 2016) and the Maine Erosion And Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (October 2016) have been used as guidelines in the design of the stormwater system.

PROPOSED BMPS

New LID Stormwater Best Management Practices (BMPs) have been designed to effectively capture, detain and treat runoff from the new impervious area associated with the new development at the site, before allowing it to discharge in a non-erosive manner to downstream areas.

The new BMPs proposed for this project are as follows:

- Pervious Pavement and Non-Paved Pervious Surfaces – Pervious pavement and unpaved pervious surfaces have been designed to capture and treat runoff by providing detention storage in an open-graded reservoir stone layer beneath the surface. Filtration occurs through a filter sand layer located beneath the reservoir stone. The system drains by infiltration to the underlying soils or through a perforated underdrain pipe located at the base of the section.

- Roof Drain Filtration Unit – The project is proposing to utilize a proprietary roof downspout filtration unit as manufactured by Cleanway Environmental Partners, Inc. The unit consist of a metal box which accepts downspouts from the building. Inside the box is a metal strainer and a filter unit which removes pollutants from roof runoff. The unit has the capacity to provide treatment from the new building roof area for a 1-inch storm. A bypass is incorporated into the unit to pass the larger storms without backing up the roof drain system.

- Rain Garden – A rain garden is incorporated into the play area between the buildings. The rain garden is a planted area with a filtering loamy sand soil layer, which will provides treatment of runoff by filtration and nutrient uptake in the root zone, before allowing it to infiltrate into the underlying soil, or drain through a perforated underdrain pipe located at the base of the soil section. In this application, the rain garden serves more as an aesthetic feature to provide shade and a location for the drainage structure that combines incoming pipes before discharging to the City drainage system. The Rain Garden is surrounded by pervious pavement and thus is not required for stormwater treatment or detention purposes. It has, therefore been omitted from the model.

Pre-development Conditions

The overall model for the site is represented by a single subcatchment. A summary of the subcatchment characteristics is given in the table below.

Additional details of the pre-development cover conditions are described in detail in the supporting HydroCAD documentation included in Attachment A of this report. A Predevelopment Conditions Watershed Plan is included in Attachment A of this report.

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT	AREA (sf)	CN	Tc (mins)
101	19,214	89	6

Post-Development Conditions

A full listing of the post-development areas in the model is shown in the following table. Full details of the post-development subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in Attachment C of this report. A Post-Development Conditions Watershed Plan is included in Attachment A of this report.

POST-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT	AREA (sf)	CN	Tc (mins)
201	9,651	94	6
202	2,237	98	6
203	5,148	98	6
204	2,178	98	6
TOTAL AREA	**19,214**		

Water Quantity Analysis Summary

The table below summarizes the peak runoff values for predevelopment and post-development conditions during each of the analyzed design storm events.

SUMMARY OF PEAK RUNOFF VALUES (CFS)		
	Design Point 1	
Storm Event	**Pre-Development**	**Post-Development**
2-Year	1.00	**0.80**
10-Year	1.67	**1.32**
25-Year	2.21	**1.76**

STORMWATER QUALITY ANALYSIS

Water Quality Treatment Measures

The project has been designed in accordance with the City of Portland Technical Manual Standards, which require water quality treatment for at least 50% of re-developed non-roof impervious areas. The project will actually provide treatment for runoff from the entire site, with the exception of the grass gardening area at the northeast corner of the property (590sf), the northeast corner of the chapel roof (500sf), and the small paved alleyway on the west side of the new building (827sf).

The project will utilize a selection of LID BMPs, designed in accordance with the latest version of the Maine Department of Environmental Protection BMPs Technical Design Manual, to capture, treat and detain stormwater runoff from the newly proposed developed areas.

SOIL EROSION AND SEDIMENT CONTROL

Soil Erosion and Sediment Control (SESC) Best Management Practices (BMPs) have been designed to avoid and minimize potential impacts associated with the proposed construction activities at the site. These are shown on the SESC Plan, Details and Notes sheets of the accompanying drawing set.

The SESC drawings outline required construction measures and techniques that will reduce potential degradation of the water quality at downstream locations. Temporary erosion control measures will be incorporated during construction, and long-term surface stabilization practices have been designed as part of the site development to minimizing the potential for soil erosion and sediment transport. The proposed SESC BMPs include perimeter erosion controls to protect downstream receiving waters and natural resource areas, stabilized stormwater outlets, erosion control blankets, temporary and permanent seeding and other vegetative stabilization measures. Detailed information on the specific erosion and sedimentation control practices that are to be used on the site are provided on the drawings that accompany this submission.

STORMWATER MAINTENANCE PLAN

The effectiveness of water quality management provisions and other components of the stormwater management system are dependent on their design, upkeep, and maintenance to assure they meet their intended function over an extended period of time.

Portland Housing Authority will own and maintain the entire stormwater system on the site and will maintain the constructed BMPs, in accordance with State and local ordinance requirements. A Stormwater Management Inspection and Maintenance Manual has been prepared specifically for the project.

CONCLUSIONS

The stormwater management system has been designed to capture, detain and treat runoff from the new development in accordance with standard engineering practices to meet current local, State and Federal regulations. As a result of the

proposed BMPs described in this report, the new development will have no significant detrimental impact on the municipal stormwater drainage system, or downstream receiving waters.

Limitations

This report has been produced using the information available from published sources, site surveys and observations.

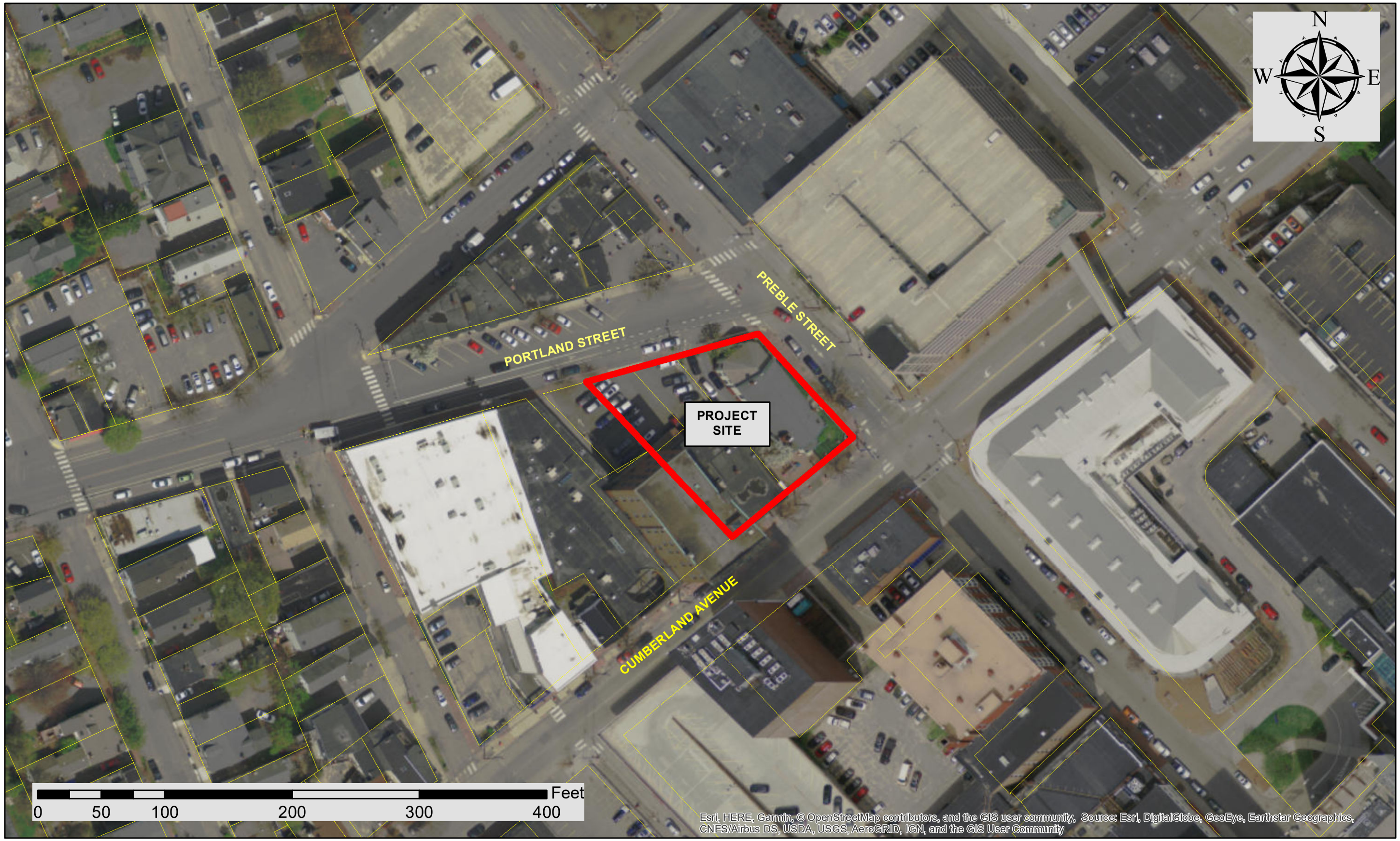
References

1. NRCS Web Soil Survey
2. Maine Stormwater Management Design Manual (May 2016)
3. Maine Erosion and Sedimentation Control Best Management Practices, Manual for Designers and Engineers (October 2016)

FIGURES AND ATTACHMENTS

Figure 1	USGS Location Map
Figure 2	Aerial Photograph
Figure 3	NRCS Web Soil Survey Soils Map
Attachment A	Water Quality Calculations
Attachment B	HydroCAD output
Attachment C	Pre and Post-Development Watershed Plans

FIGURES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PORTLAND STREET
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PROJECT SITE
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Feet
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Custom Soil Resource Report
Soil Map (PHA Cumberland Avenue)

Map Scale: 1:1,880 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

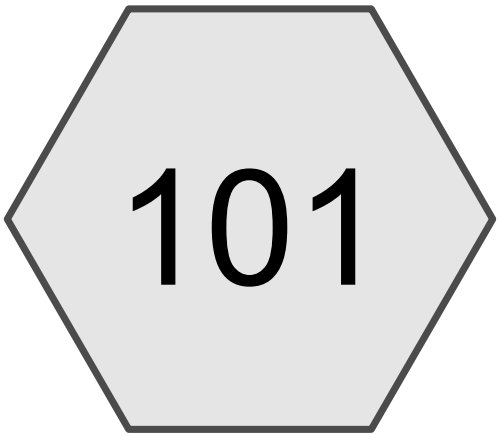
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

ATTACHMENT A

PHACumberland Avenue

Subcatchment Area	Impervious Area	Landscaped Area	Developed Area	BMP
TREATED AREAS				
201	7733	0	7733	Roof Filter
202	2237	0	2237	LID BMP
203	2293	2855	5148	LID BMP
204	0	2178	2178	LID BMP
TOTAL TREATED	**12263**	**5033**	**17296**	
UNTREATED AREAS				
201	1328	590	1918	None
			0	
TOTAL UNTREATED	**1328**	**590**	**1918**	
% TREATED	**90%**		**90%**	

ATTACHMENT B



EX-COND

Subcat Reach Pond Link

Routing Diagram for 20-010 PHA Cumberland Avenue-EX
Prepared by ARC (18-045), Printed 6/1/2020
HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment 101: EX-COND

Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.069 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	7,914	98	Roof Areas
*	8,366	98	Pavement
	1,583	39	>75% Grass cover, Good, HSG A
	739	39	>75% Grass cover, Good, HSG A
	612	39	>75% Grass cover, Good, HSG A
	19,214	89	Weighted Average
	2,934		15.27% Pervious Area
	16,280		84.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 101: EX-COND

Runoff = 1.67 cfs @ 12.09 hrs, Volume= 0.118 af, Depth> 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	7,914	98	Roof Areas
*	8,366	98	Pavement
	1,583	39	>75% Grass cover, Good, HSG A
	739	39	>75% Grass cover, Good, HSG A
	612	39	>75% Grass cover, Good, HSG A
	19,214	89	Weighted Average
	2,934		15.27% Pervious Area
	16,280		84.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

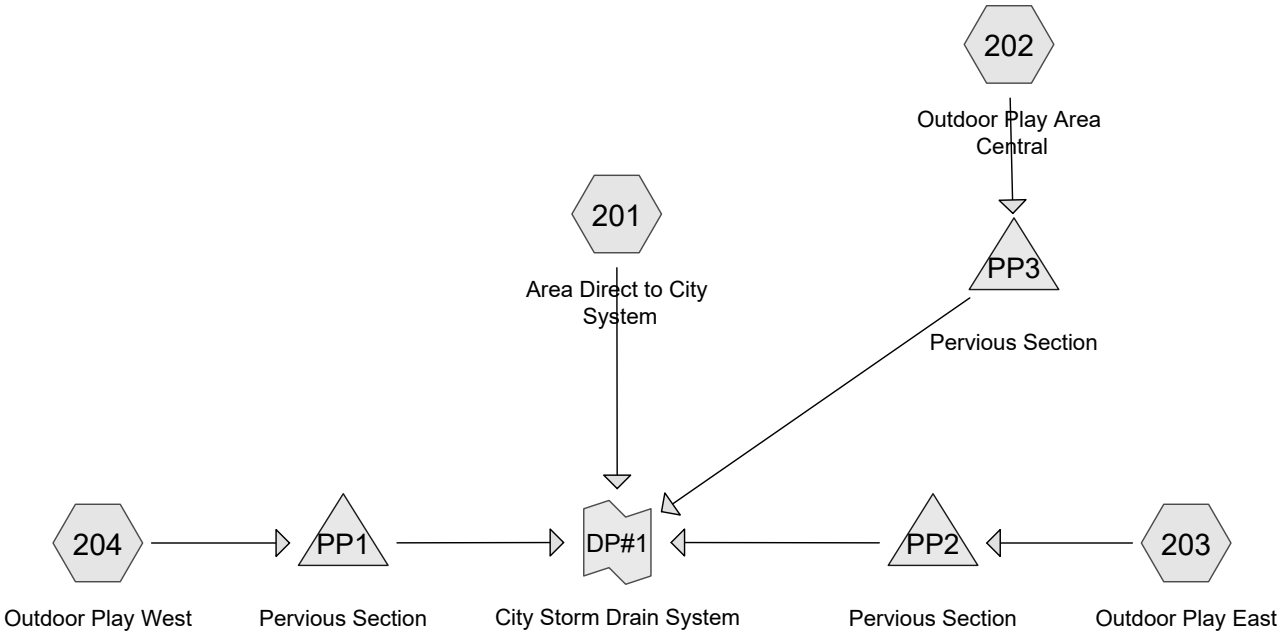
Summary for Subcatchment 101: EX-COND

Runoff = 2.21 cfs @ 12.09 hrs, Volume= 0.158 af, Depth> 4.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	7,914	98	Roof Areas
*	8,366	98	Pavement
	1,583	39	>75% Grass cover, Good, HSG A
	739	39	>75% Grass cover, Good, HSG A
	612	39	>75% Grass cover, Good, HSG A
	19,214	89	Weighted Average
	2,934		15.27% Pervious Area
	16,280		84.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**



Subcat Reach Pond Link

Routing Diagram for 20-010 PHA Cumberland Avenue
Prepared by ARC (18-045), Printed 6/1/2020
HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment 201: Area Direct to City System

Runoff = 0.61 cfs @ 12.08 hrs, Volume= 1,968 cf, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	8,233	98	Roof Areas
*	828	98	Paved Areas
	590	39	>75% Grass cover, Good, HSG A
	9,651	94	Weighted Average
	590		6.11% Pervious Area
	9,061		93.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 202: Outdoor Play Area Central

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 535 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	1,004	98	Roofs, HSG A
*	1,233	98	Paved sidewalks HSG A
	2,237	98	Weighted Average
	2,237		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 203: Outdoor Play East

Runoff = 0.35 cfs @ 12.08 hrs, Volume= 1,230 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	2,855	98	Pervious Surface, 0% imp, HSG A
	1,979	98	Roofs, HSG A
*	314	98	Concrete ramp
	5,148	98	Weighted Average
	2,855		55.46% Pervious Area
	2,293		44.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 204: Outdoor Play West

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 521 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	2,178	98	Play Surface, 0% imp, HSG A
	2,178		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Pond PP1: Pervious Section

Inflow Area = 2,178 sf, 0.00% Impervious, Inflow Depth = 2.87" for 2-Yr Storm event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 521 cf
Outflow = 0.15 cfs @ 12.09 hrs, Volume= 521 cf, Atten= 1%, Lag= 0.6 min
Primary = 0.15 cfs @ 12.09 hrs, Volume= 521 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 98.01' @ 12.09 hrs Surf.Area= 2,204 sf Storage= 5 cf

Plug-Flow detention time= 0.6 min calculated for 520 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (757.7 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	1,460 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	2,204	0.0	0	0
98.41	2,204	40.0	361	361
98.91	2,204	30.0	331	692
99.58	2,204	40.0	591	1,283
99.75	2,204	40.0	150	1,433
100.00	2,204	5.0	28	1,460

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.48 cfs @ 12.09 hrs HW=98.01' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.48 cfs @ 2.44 fps)

Summary for Pond PP2: Pervious Section

Inflow Area = 5,148 sf, 44.54% Impervious, Inflow Depth = 2.87" for 2-Yr Storm event
Inflow = 0.35 cfs @ 12.08 hrs, Volume= 1,230 cf
Outflow = 0.18 cfs @ 12.23 hrs, Volume= 1,230 cf, Atten= 50%, Lag= 8.6 min
Discarded = 0.12 cfs @ 11.92 hrs, Volume= 1,133 cf
Primary = 0.06 cfs @ 12.23 hrs, Volume= 98 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 97.64' @ 12.23 hrs Surf.Area= 2,588 sf Storage= 144 cf

Plug-Flow detention time= 6.0 min calculated for 1,230 cf (100% of inflow)
Center-of-Mass det. time= 6.0 min (763.1 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	97.50'	2,232 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.50	2,588	0.0	0	0
97.83	2,588	40.0	342	342
98.33	2,588	30.0	388	730
99.58	2,588	40.0	1,294	2,024
99.75	2,588	40.0	176	2,200
100.00	2,588	5.0	32	2,232

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	97.50'	**2.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.12 cfs @ 11.92 hrs HW=97.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.06 cfs @ 12.23 hrs HW=97.64' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 1.27 fps)

Summary for Pond PP3: Pervious Section

Inflow Area = 2,237 sf,100.00% Impervious, Inflow Depth = 2.87" for 2-Yr Storm event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 535 cf
Outflow = 0.09 cfs @ 12.19 hrs, Volume= 535 cf, Atten= 42%, Lag= 6.5 min
Discarded = 0.06 cfs @ 11.96 hrs, Volume= 484 cf
Primary = 0.03 cfs @ 12.19 hrs, Volume= 50 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 97.60' @ 12.19 hrs Surf.Area= 1,257 sf Storage= 52 cf

Plug-Flow detention time= 4.8 min calculated for 534 cf (100% of inflow)
Center-of-Mass det. time= 4.8 min (761.9 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	97.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.50	1,257	0.0	0	0
97.83	1,257	40.0	166	166
98.33	1,257	30.0	189	354
99.58	1,257	40.0	629	983
99.75	1,257	40.0	85	1,068
100.00	1,257	5.0	16	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	97.50'	**2.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 11.96 hrs HW=97.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.03 cfs @ 12.19 hrs HW=97.60' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.09 fps)

Summary for Link DP#1: City Storm Drain System

Inflow Area = 19,214 sf, 70.73% Impervious, Inflow Depth = 1.65" for 2-Yr Storm event
Inflow = 0.80 cfs @ 12.09 hrs, Volume= 2,636 cf
Primary = 0.80 cfs @ 12.09 hrs, Volume= 2,636 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs

Summary for Subcatchment 201: Area Direct to City System

Runoff = 0.95 cfs @ 12.08 hrs, Volume= 3,148 cf, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	8,233	98	Roof Areas
*	828	98	Paved Areas
	590	39	>75% Grass cover, Good, HSG A
	9,651	94	Weighted Average
	590		6.11% Pervious Area
	9,061		93.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 202: Outdoor Play Area Central

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 813 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	1,004	98	Roofs, HSG A
*	1,233	98	Paved sidewalks HSG A
	2,237	98	Weighted Average
	2,237		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 203: Outdoor Play East

Runoff = 0.53 cfs @ 12.08 hrs, Volume= 1,872 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	2,855	98	Pervious Surface, 0% imp, HSG A
	1,979	98	Roofs, HSG A
*	314	98	Concrete ramp
	5,148	98	Weighted Average
	2,855		55.46% Pervious Area
	2,293		44.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 204: Outdoor Play West

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 792 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	2,178	98	Play Surface, 0% imp, HSG A
	2,178		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Pond PP1: Pervious Section

Inflow Area = 2,178 sf, 0.00% Impervious, Inflow Depth = 4.36" for 10-Yr Storm event
Inflow = 0.22 cfs @ 12.08 hrs, Volume= 792 cf
Outflow = 0.22 cfs @ 12.09 hrs, Volume= 792 cf, Atten= 1%, Lag= 0.6 min
Primary = 0.22 cfs @ 12.09 hrs, Volume= 792 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 98.01' @ 12.09 hrs Surf.Area= 2,204 sf Storage= 8 cf

Plug-Flow detention time= 0.6 min calculated for 792 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (750.0 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	1,460 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	2,204	0.0	0	0
98.41	2,204	40.0	361	361
98.91	2,204	30.0	331	692
99.58	2,204	40.0	591	1,283
99.75	2,204	40.0	150	1,433
100.00	2,204	5.0	28	1,460

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.48 cfs @ 12.09 hrs HW=98.01' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.48 cfs @ 2.45 fps)

Summary for Pond PP2: Pervious Section

Inflow Area = 5,148 sf, 44.54% Impervious, Inflow Depth = 4.36" for 10-Yr Storm event
Inflow = 0.53 cfs @ 12.08 hrs, Volume= 1,872 cf
Outflow = 0.28 cfs @ 12.21 hrs, Volume= 1,872 cf, Atten= 48%, Lag= 7.8 min
Discarded = 0.12 cfs @ 11.78 hrs, Volume= 1,579 cf
Primary = 0.16 cfs @ 12.21 hrs, Volume= 293 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 97.74' @ 12.21 hrs Surf.Area= 2,588 sf Storage= 251 cf

Plug-Flow detention time= 7.3 min calculated for 1,871 cf (100% of inflow)
Center-of-Mass det. time= 7.3 min (756.7 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	97.50'	2,232 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.50	2,588	0.0	0	0
97.83	2,588	40.0	342	342
98.33	2,588	30.0	388	730
99.58	2,588	40.0	1,294	2,024
99.75	2,588	40.0	176	2,200
100.00	2,588	5.0	32	2,232

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	97.50'	**2.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.12 cfs @ 11.78 hrs HW=97.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.16 cfs @ 12.21 hrs HW=97.74' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.68 fps)

Summary for Pond PP3: Pervious Section

Inflow Area = 2,237 sf,100.00% Impervious, Inflow Depth = 4.36" for 10-Yr Storm event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 813 cf
Outflow = 0.15 cfs @ 12.18 hrs, Volume= 813 cf, Atten= 37%, Lag= 5.8 min
Discarded = 0.06 cfs @ 11.82 hrs, Volume= 676 cf
Primary = 0.09 cfs @ 12.18 hrs, Volume= 137 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 97.67' @ 12.18 hrs Surf.Area= 1,257 sf Storage= 88 cf

Plug-Flow detention time= 5.6 min calculated for 813 cf (100% of inflow)
Center-of-Mass det. time= 5.6 min (755.0 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	97.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.50	1,257	0.0	0	0
97.83	1,257	40.0	166	166
98.33	1,257	30.0	189	354
99.58	1,257	40.0	629	983
99.75	1,257	40.0	85	1,068
100.00	1,257	5.0	16	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	97.50'	**2.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 11.82 hrs HW=97.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.09 cfs @ 12.18 hrs HW=97.67' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.42 fps)

Summary for Link DP#1: City Storm Drain System

Inflow Area = 19,214 sf, 70.73% Impervious, Inflow Depth = 2.73" for 10-Yr Storm event
Inflow = 1.32 cfs @ 12.10 hrs, Volume= 4,370 cf
Primary = 1.32 cfs @ 12.10 hrs, Volume= 4,370 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs

Summary for Subcatchment 201: Area Direct to City System

Runoff = 1.22 cfs @ 12.08 hrs, Volume= 4,101 cf, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	8,233	98	Roof Areas
*	828	98	Paved Areas
	590	39	>75% Grass cover, Good, HSG A
	9,651	94	Weighted Average
	590		6.11% Pervious Area
	9,061		93.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 202: Outdoor Play Area Central

Runoff = 0.29 cfs @ 12.08 hrs, Volume= 1,037 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	1,004	98	Roofs, HSG A
*	1,233	98	Paved sidewalks HSG A
	2,237	98	Weighted Average
	2,237		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 203: Outdoor Play East

Runoff = 0.67 cfs @ 12.08 hrs, Volume= 2,386 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	2,855	98	Pervious Surface, 0% imp, HSG A
	1,979	98	Roofs, HSG A
*	314	98	Concrete ramp
	5,148	98	Weighted Average
	2,855		55.46% Pervious Area
	2,293		44.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Subcatchment 204: Outdoor Play West

Runoff = 0.28 cfs @ 12.08 hrs, Volume= 1,010 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	2,178	98	Play Surface, 0% imp, HSG A
	2,178		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum Tc**

Summary for Pond PP1: Pervious Section

Inflow Area = 2,178 sf, 0.00% Impervious, Inflow Depth = 5.56" for 25-Yr Storm event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 1,010 cf
Outflow = 0.28 cfs @ 12.09 hrs, Volume= 1,010 cf, Atten= 1%, Lag= 0.6 min
Primary = 0.28 cfs @ 12.09 hrs, Volume= 1,010 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 98.01' @ 12.09 hrs Surf.Area= 2,204 sf Storage= 10 cf

Plug-Flow detention time= 0.6 min calculated for 1,009 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (746.3 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	1,460 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	2,204	0.0	0	0
98.41	2,204	40.0	361	361
98.91	2,204	30.0	331	692
99.58	2,204	40.0	591	1,283
99.75	2,204	40.0	150	1,433
100.00	2,204	5.0	28	1,460

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.48 cfs @ 12.09 hrs HW=98.01' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.48 cfs @ 2.46 fps)

Summary for Pond PP2: Pervious Section

Inflow Area = 5,148 sf, 44.54% Impervious, Inflow Depth = 5.56" for 25-Yr Storm event
Inflow = 0.67 cfs @ 12.08 hrs, Volume= 2,386 cf
Outflow = 0.37 cfs @ 12.20 hrs, Volume= 2,386 cf, Atten= 44%, Lag= 7.1 min
Discarded = 0.12 cfs @ 11.72 hrs, Volume= 1,900 cf
Primary = 0.25 cfs @ 12.20 hrs, Volume= 486 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 97.82' @ 12.20 hrs Surf.Area= 2,588 sf Storage= 329 cf

Plug-Flow detention time= 7.8 min calculated for 2,385 cf (100% of inflow)
Center-of-Mass det. time= 7.8 min (753.4 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.50'	2,232 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.50	2,588	0.0	0	0
97.83	2,588	40.0	342	342
98.33	2,588	30.0	388	730
99.58	2,588	40.0	1,294	2,024
99.75	2,588	40.0	176	2,200
100.00	2,588	5.0	32	2,232

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	97.50'	**2.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.12 cfs @ 11.72 hrs HW=97.53' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.25 cfs @ 12.20 hrs HW=97.82' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.25 cfs @ 1.92 fps)

Summary for Pond PP3: Pervious Section

Inflow Area = 2,237 sf,100.00% Impervious, Inflow Depth = 5.56" for 25-Yr Storm event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 1,037 cf
Outflow = 0.20 cfs @ 12.17 hrs, Volume= 1,037 cf, Atten= 32%, Lag= 5.1 min
Discarded = 0.06 cfs @ 11.74 hrs, Volume= 816 cf
Primary = 0.14 cfs @ 12.17 hrs, Volume= 221 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs
Peak Elev= 97.73' @ 12.17 hrs Surf.Area= 1,257 sf Storage= 113 cf

Plug-Flow detention time= 5.8 min calculated for 1,036 cf (100% of inflow)
Center-of-Mass det. time= 5.8 min (751.4 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.50	1,257	0.0	0	0
97.83	1,257	40.0	166	166
98.33	1,257	30.0	189	354
99.58	1,257	40.0	629	983
99.75	1,257	40.0	85	1,068
100.00	1,257	5.0	16	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	97.50'	**2.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 11.74 hrs HW=97.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.06 cfs)

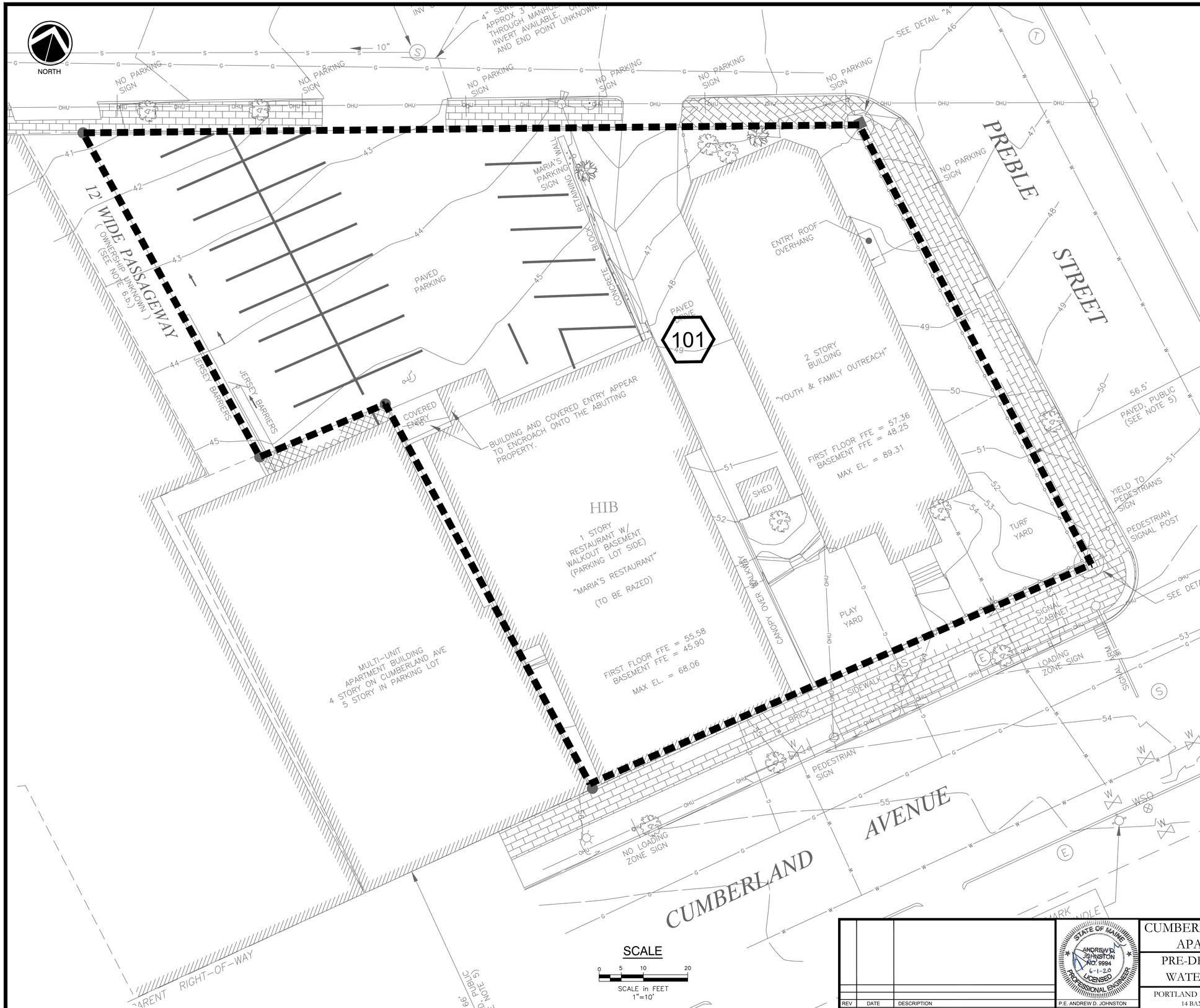
Primary OutFlow Max=0.14 cfs @ 12.17 hrs HW=97.72' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.14 cfs @ 1.61 fps)

Summary for Link DP#1: City Storm Drain System

Inflow Area = 19,214 sf, 70.73% Impervious, Inflow Depth = 3.63" for 25-Yr Storm event
Inflow = 1.76 cfs @ 12.10 hrs, Volume= 5,817 cf
Primary = 1.76 cfs @ 12.10 hrs, Volume= 5,817 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-40.00 hrs, dt= 0.02 hrs

ATTACHMENT C



SOILS LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME	HSG
HIB	Hinckley Loamy Sand 3-8 percent slopes	A

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT	AREA (sf)	CN	Tc (mins)
101	19,214	89	6

SUMMARY OF PEAK RUNOFF VALUES (CFS)

	Design Point 1	
Storm Event	Pre-Development	Post-Development
2-Year	1.00	**0.80**
10-Year	1.67	**1.32**
25-Year	2.21	**1.76**

WATERSHED LEGEND

- SOIL BOUNDRY
- WATERSHED BOUNDARY
- WATERSHED FLOW PATH (TC)
- 999 SUBCATCHMENT
- 999 REACH
- SF SHEET FLOW
- SCF SHALLOW CONCENTRATED FLOW
- CF CHANNEL FLOW
- CC CIRCULAR CHANNEL
- DP DESIGN POINT
- 1P POND

REV	DATE	DESCRIPTION

REVISIONS

STATE OF MAINE
ANDREW D. JOHNSTON
NO. 9994
6-1-20
LICENSED
PROFESSIONAL ENGINEER

P.E. ANDREW D. JOHNSTON
LIC. #9994

CUMBERLAND AVENUE APARTMENTS

PRE-DEVELOPMENT WATERSHED PLAN

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN:	DATE: APRIL 2020
DESIGNED: AJ	SCALE: 1"=10'
CHECKED:	JOB NO.
FILE NAME:	
SHEET: D-100	

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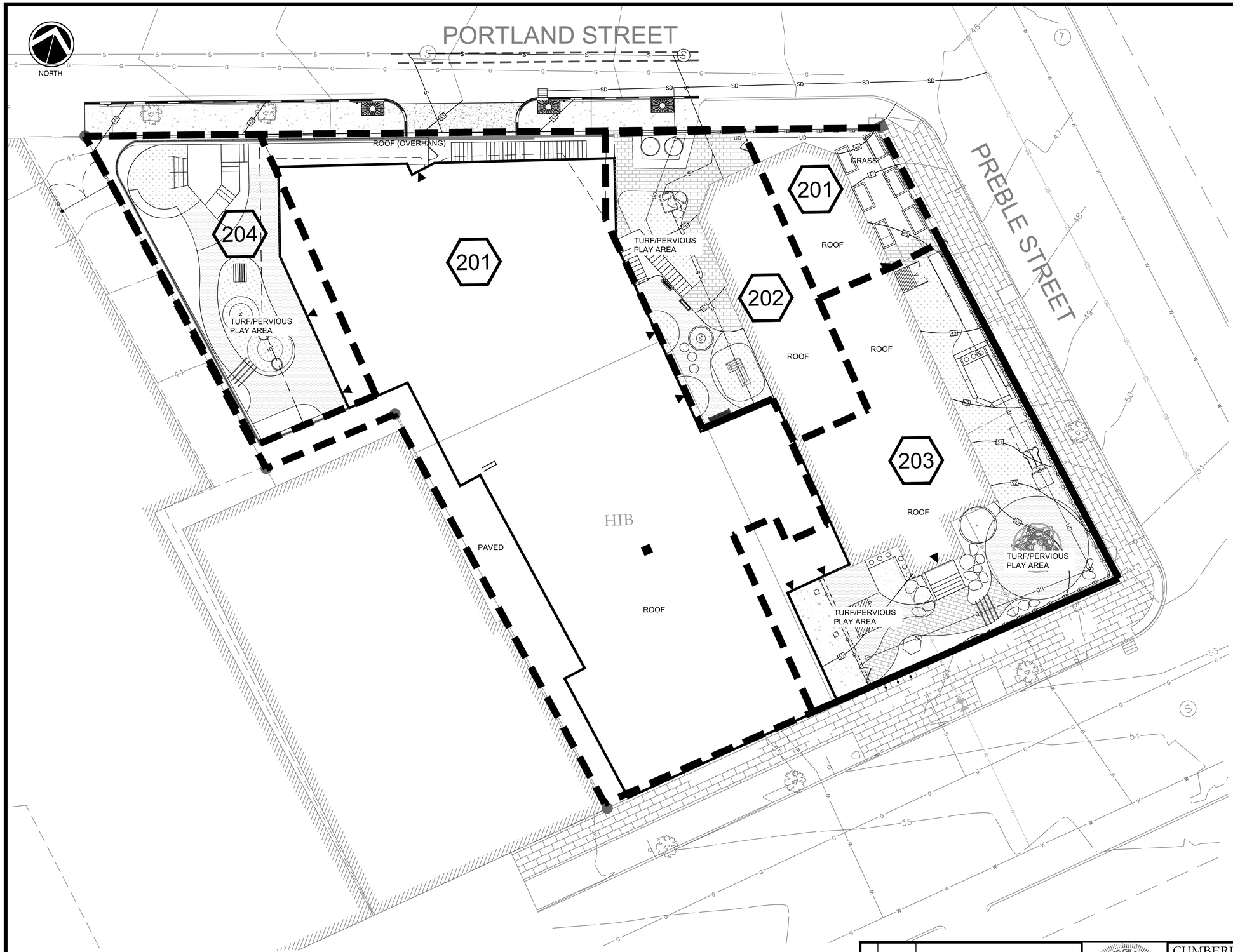

SOILS LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME	HSG
HIB	Hinckley Loamy Sand 3-8 percent slopes	A

POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT	AREA (sf)	CN	Tc (mins)
201	9,651	94	6
202	2,237	98	6
203	5,148	98	6
204	2,178	98	6
TOTAL AREA	**19,214**		

SUMMARY OF PEAK RUNOFF VALUES (CFS)

	Design Point 1	
Storm Event	**Pre-Development**	**Post-Development**
2-Year	1.00	**0.80**
10-Year	1.67	**1.32**
25-Year	2.21	**1.76**

WATERSHED LEGEND

- SOIL BOUNDRY
- WATERSHED BOUNDARY
- WATERSHED FLOW PATH (TC)
- 999 — SUBCATCHMENT
- 999 — REACH
- SF — SHEET FLOW
- SCF — SHALLOW CONCENTRATED FLOW
- CF — CHANNEL FLOW
- CC — CIRCULAR CHANNEL
- DP — DESIGN POINT
- 1P — POND

SCALE

0 5 10 20

SCALE in FEET
1"=10'

REV	DATE	DESCRIPTION
A	6/1/2020	SITE PLAN REVIEW

REVISIONS

STATE OF MAINE — ANDREW D. JOHNSTON NO. 9994 — LICENSED PROFESSIONAL ENGINEER — 6-1-20

P.E. ANDREW D. JOHNSTON
LIC. #9994

CUMBERLAND AVENUE APARTMENTS

POST-DEVELOPMENT WATERSHED PLAN

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN:	DATE: APRIL 2020
DESIGNED: AJ	SCALE: 1"=10'
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FILE NAME:	
SHEET: D-101	

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PORTLAND HOUSING AUTHORITY

331-337 CUMBERLAND AVENUE

STORMWATER MAINTENANCE PLAN

Prepared for: Portland Housing Authority
14 Baxter Boulevard
Portland, Maine 04101
Prepared by:

Atlantic Resource Consultants
Engineering Strategies and Solutions

541 US Route One, Suite 21
Freeport, Maine 04032

June 2020

PORTLAND HOUSING AUTHORITY
331-337 CUMBERLAND AVENUE
STORMWATER MAINTENANCE PLAN

Maintenance Responsibilities

During construction activities, the maintenance of all stormwater measures will be the direct responsibility of the Contractor. After acceptance by the Owner, the inspection and maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book will be the responsibility of Portland Housing Authority. The current contact for facilities operation matters at Portland Housing Authority is:

Richard Biggs
Director of Maintenance
117 Anderson Street
Portland, ME 04101
Office: 207.221.8098
Email: rbiggs@porthouse.org

Notwithstanding any other schedule noted below, general inspections should be conducted quarterly. All post-construction inspections shall be undertaken by a person with. Post construction inspection and maintenance documents shall be retained and made available for review by City of Portland upon request.

Drainage Pipes and Culverts

Culverts and piped drainage systems shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the pipe inlet and outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments into the downstream receiving system.

Driveways, Walkways and Parking Lots

Accumulations of winter sand along paved surfaces shall be cleared at least once a year, preferably in the spring, to minimize transportation of sediment during rainfall events. Accumulations on pavement may be removed by pavement sweeping.

Catch Basins

Catch basins shall be inspected on an annual basis to check the level of accumulated sediments in the sumps. Sediment should be removed when its level exceeds 50% of the sump depth, or twelve inches deep, whichever is the lesser. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments downstream, as this could impede the function of downstream treatment BMPs. Catch basins should also be checked for structural integrity, with particular attention to the frame and grate and riser brick or grade ring courses.

Pervious Pavement and Turf Surfaces

During construction, vehicles with muddy wheels should be prevented from accessing onto areas intended for pervious pavement or other pervious surfaces. Frequent inspections should be undertaken during the first few

months following construction of the pervious pavers and pervious turf surfaces to ensure that they are functioning correctly. Inspections shall be made after significant storm events to check for surface ponding that could indicate failure due to clogging. After the initial period, the system shall be inspected routinely on an annual basis. Measure should be taken to prevent sedimentation of the surface due to the erosion of areas upgradient the pervious pavement structures. The pervious paver area should be swept, vacuumed and/or pressure washed twice annually at a minimum. Limit salt use for deicing, and do not use sand. Leaves and organic debris shall be removed from the surface in the spring and fall. Measures should be taken to ensure that an area designed to be porous does not receive a future overlay of conventional non-porous paving. Non-routine maintenance may require reconstruction of the surface treatment, and possibly the filter and reservoir layers, to relieve major clogging.

Rain Garden

Inspections of the rain garden shall be conducted on a semi-annual basis and following significant rainfall events. Delayed or poor maintenance practices can result in loss of treatment capacity. Records should be kept of all maintenance operations to help plan future work and identify problem areas.

The basin embankments should be maintained to preserve their integrity including, but not limited to, vegetation maintenance (mowing, control of woody vegetation), rodent control, erosion control and repair, and outlet control structure maintenance and repair.

Basin plantings, and vegetation should be maintained on a quarterly basis. Regular maintenance activities should include cutting back shrub plantings where necessary to prevent excessive woody growth, removal of dead vegetation and re-planting to maintain good cover and root spread. Shrub or grass clippings should be removed to minimize the amount of organic material accumulation in the basin.

Sediment and debris should be removed from the sediment forebay at least annually, where applicable.

Rain gardens should not be used for snow storage area. Snow storage should be sited so that snow melt flows to a pretreatment BMP before reaching the infiltration area.

Vehicular equipment should not be used to maintain or rehabilitate the rain garden, as this would compact the soil surface and reduce infiltration. The proposed garden is small enough for maintenance activities to be undertaken by hand.

The surface of the basins may clog with fine sediments over time. Maintenance of good plant or grass cover should minimize this; however, if ponded runoff does not infiltrate within 48 hours, rototilling the top of the soil bed may be required to reestablish the soils infiltration capacity.

102 Exchange Street Portland, ME 04101 | (207) 842-2888 | kaplanthompson.com

June 01, 2020

Att. H

NEW MIXED USE BUILDING
337 CUMBERLAND AVENUE, PORTLAND ME

The following outlines how the proposed project has been designed to meet the applicable standards of the City of Portland associated with Level III: Site Plan review.

ZONE RELATED DESIGN STANDARDS

1.0 Neighborhood Context.

The project is located at the edge of the Downtown district, in the center of a remarkably varied group of buildings around the intersections of Cumberland Avenue, Preble Street, and Portland Street. Notable structures nearby include the former Preble Chapel (1850, now occupied by YFO), an 8-storey brick and concrete former warehouse storage building (pre-1915, at 340 Cumberland Avenue, now a data center), the former Pythian Temple Association Lodge Hall (pre-1917, at 341 Cumberland Avenue, now apartments), the Preble Street Resource Center (1981), a 7-storey parking building ("Public Market Parking"), and the former Public Market building (2006, now occupied by Power Pay), to name a few.

Beyond this the immediate area but still within a 2-block radius are single family houses, terraced row housing, offices, restaurants, bars, community and social service facilities, plus a number of surface parking lots.

The proposed building will join an eclectic group of existing structures with a wide variety of heights, age, footprint size, floor area size, function, architectural style and materials.

2.0 Historic Preservation.
The site is outside the downtown Historic District but within 100 feet of it. Although the existing chapel is not subject to Historic Preservation Design review, the project team recognizes it is widely considered to be a much-loved structure. Further more it is prominently visible from vehicles traveling up Preble Street towards the Downtown Historic Zone.

As noted in the General Description the visual appearance of the exterior of the existing chapel is expected to remain largely unaltered, including the exterior stucco cladding, windows, roof, and brick chimneys. Exterior long-term maintenance and repair work is anticipated as part of this project as needed to maintain these elements in their proper state.

3.0 Applicable Design Standards (Code of Ordinances, Chapter 14, Division 12).

- **Street Wall Build-To Line To Be Within 5' Of The Street Lot Line.**
  The new building holds both the Cumberland Avenue and Portland Street lot lines with zero set back. The existing chapel occupies the side towards Preble Street.

- **New Construction Building Height To Be ≥ 35' Within 50' Of Any Street Frontage.**
  The new "connector" link between the existing chapel and the new 7-storey building is within 50' of Cumberland Avenue and is ±24' high above average grade (and ±15' above the Cumberland sidewalk level). The ordinances include an exception that applies to this portion of the new building, as the area of the connector further than 50' from the Cumberland street lot line is <10% of the footprint of the existing chapel to which it is added.

- **Length Of Undifferentiated Blank Wall Along A Public Street To Be 30' Maximum.**
  The Portland Street elevation includes a length of wall enclosing the parking garage. The overall length of the wall is ±95', but it is broken into sections by a vehicle entry and pedestrian entry door. The longest undifferentiated length of wall is ±55', which is mitigated by the inclusion of a ±10'rounded corner transition at the western end. In addition the area immediately above the wall comprises the outdoor play area for "Toddler" children and is expected to be a highly animated space at times, especially during mornings and early afternoon.

  A tree is proposed for the corner of the site, above the rounded corner, that will provide a play space amenity, reflect the signature logo for YFO, and be a focal point of the Portland Street side of the building (see rendered view from Portland Street).

4.0 Off Street Parking.

- The current site includes a surface car parking lot, with space for 23 cars. The proposed project replaces this with enclosed and covered parking of a similar size, but within a secure garage. The new covered garage will have parking space for seventeen (17) cars, including one (1) accessible van space. The parking will be for the use of YFO staff and building residents. Visitor parking is not being provided.

  Bike storage and parking will also be included in the garage.

5.0 Downtown Urban Design Guidelines.

- **Distinguish The Lower 35' of The Building.**
  Standard: *"The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment . . ."*

- **Building Facades.**
  The ground floor of the proposed building is distinguished from the floors above with a change in material to signal the change in use between the floors. Brick masonry will be the primary exterior material used at street level. This will provide durability and will reflect the dominant material in the immediate Cumberland Avenue context, including the base of the existing chapel building.

  The ground floor on Cumberland Avenue includes active occupied spaces (a lobby seating area and small office for the PHDC portion, and a Pre-K classroom for the YFO portion. Windows sizes and arrangements are chosen to reflect the function of their respective spaces while offering "eyes on the street" visibility.

  Signage for YFO is planned to be placed on the side-wall of the YFO entry, easily visible when seen from the Preble street corner with the exterior play space in the foreground, but more discrete when seen traveling east along Cumberland Avenue.

  The upper residential floors are identified with fiber-cement cladding, with rhythm and scale provided through the use of vertical cladding boards and horizontal trim banding at each floor level.

- **Building Entrances.**
  Two entrances are provided off Cumberland Avenue, one for each of the primary uses of the building: PHDC and YFO. This allows for greater animation of the street elevation and encourages increased street-level pedestrian activity while providing needed security and isolation for each building tenant.

  The entrance to the new apartments is marked with a change of exterior material and a slight recess to form a clear "portal" to the residential portion of the building. These architectural features signal the presence of the entrance when viewed from either an oblique angle from the sidewalk or directly from the street in a manner traditional to the patterns of Portland's history.

  The entrance to the YFO daycare facility is located further off the sidewalk, allowing the residential apartment entrance to be "read" as the primary entrance to the building and the YFO entrance as secondary. The YFO entrance also provides a sheltered space for families with strollers and young children to gather and organize themselves on arrival and departure off of the sidewalk and public way.

  A canopy roof provides covered sidewalk shelter at both entrances and offers opportunity for suitable but discrete full cut off lighting of the building exterior at street level.

  Barrier free access is provided at both entrances.

- **Integrate With, Respect And Enhance.**
  Standard: *"Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the Downtown, surrounding building environment and streetscape."*

- **Street Walls.**
  The proposed new building meets the street lot line on both Cumberland Avenue and Portland Street. This helps reinforce the spatial definition of the street by extending the existing street wall.

- **Open Space.**
  The Downtown Zone is characterized with continuous street walls, punctuated by well-defined open spaces. The proposed project continues this pattern by more clearly defining the open space around the existing chapel building, while not overwhelming the space as the chapel sits between the exterior space and the new larger building.

- **Building Form, Scale, Massing.**
  The form, scale, and massing of the new building are similar to the immediate surroundings.

  Compared to the proposed new building the existing 8-floor building on the opposite side of the street (at 340 Cumberland Avenue) is 2-floors higher, and the existing 5-floor apartment building to the immediate west (at 341 Cumberland Avenue) is 1-floor lower. There is also an existing 3-floor building that contains Preble Street's offices and Teen Shelter at the corner of Cumberland Avenue and Preble Street, which sits directly opposite the chapel building. Across the street from the chapel is the 7-story Public Market Parking Garage. The project sits within the dense, urban, downtown heart of Portland.

- **Structure of the City.**
  The prevailing pattern of multiple, relatively narrow and discreet building facades is continued on Cumberland Avenue, the part of the site closest to the Downtown Historic Zone. The new building façade on Cumberland Avenue is ±60' long, almost identical to the existing building immediately adjacent, at 341 Cumberland Avenue.

  On Portland Street the new building façade for the upper residential floors is ±80' long, compared to the existing Bayside Learning Community building, at 28 Portland Street, which is ±110'long at the street edge.

- **Skyline.**
  The skyline of the building maintains a similar rhythm to the existing theme of essentially flat-topped building of varying heights. The new building height of 76'-7" above average site grade is significantly taller than the existing chapel building it is well below the allowable B3 zone maximum height of 85' above grade.

- **Massing.**
  The overall massing of the proposed building is articulated so as to lessen the appearance of excessive bulk.

  The building presents a narrow profile for the primary façade on Cumberland Avenue, and uses varied exterior wall planes, recess, and changes in direction on the longer east and north sides of the building. A number of gently curved corner transitions soften the overall outline of the building.

  The eastern side is noticeably prominent when seen from the corner of Cumberland and Preble Street (see rendered view). The varied wall planes offer a stepped and faceted backdrop to the foreground chapel building, like that of the chapel itself, rather than a large undifferentiated mass.

  The taller Portland Street façade includes a distinct base with the upper floors articulated to read as being divided into distinct massing elements. The base level at Child Care area is recessed from the face of the apartments above and differentiated with natural wood siding creating a magical "children's wonderland" safely raised above the sidewalk level of Portland Street.

  A glazed lobby connects the existing chapel to the new building is expressed as a secondary volume between the 2 primary buildings, with a relatively low height and setback walls. This connector also allows the mass of the much taller new building to be pulled back from the existing chapel, allowing the iconic gabled form of the chapel to remain visible and on display.

- **Building Façade Proportion and Composition.**
  The proportion of each building façade relates to the immediate context. On Cumberland Avenue the façade is tall and narrow, very much like the adjacent buildings. Parallel to Preble Street the façade is much longer, reflecting the long low proportion of the adjacent chapel. The building presents a wider face towards Portland Street, where the context includes the broad side façades of the buildings on Preble Street.

  The proposed building façades are arranged with a "base, middle, top" composition. The base uses brick as a signature element; the middle includes a "field" of vertical cladding boards; the top is a subtle cornice band about 5' high above the top row of windows defined by horizontal trim bands (see renderings).

  The middle portion of the façade has horizontally composed regular window openings with distinctive bay spacing that repeat from floor to floor. A horizontal metal trim "string course" will be aligned with the window heads on each floor to give a human scale to the building and help define the middle part of the composition.

- **Materials, Finishes, and Color.**
  The brick base is expected to be of a type and color similar to the existing brickwork in the immediate neighborhood.

  Upper floors will have vertical fiber-cement boards of varying widths, arranged in horizontal bands with a warm mid-tone grey color.

  Windows and doors will have dark frames.

  The fascia of the projecting canopy on Cumberland Avenue will be a dark grey. Color accents are envisioned for the narrow horizontal metal trim strips that are aligned with the window heads on each floor and at a limited number of window mullions.

  A natural wood finish is proposed for the canopy soffit, and for accent panels at the YFO street entry and next to some of the YFO windows on the 1st floor.

  Elevated exterior play areas on the Portland Street side of the building will have a perimeter screen where protection from falling and containment of outdoor play equipment (balls etc.) is needed. Panels of metal matrix within a metal frame are proposed with strips of material woven though the matrix to provide controlled visual screening to and from the play areas (see elevations and rendering). A dark paint color is expected for the metal frames and matrix, while the woven strips may be a mixture of natural and/or colored material.

  YFO are interested in combining the desire for visual screening of the play areas with an opportunity to make sections of the metal matrix available for a curated art and community engagement program. The notion of woven panels with patterns designed by members of the YFO "family", or selected to reflect their broad cultural backgrounds and of the wider community in general has rich possibilities.

- **Parking Garages.**
  The height of the garage along Portland Street is sufficient to allow for future conversion to more active pedestrian uses. The street wall of the garage is articulated with a brick base that will screen direct view of the cars within, although vision openings are also anticipated to allow for suitable visual security for people using the garage.

- **Roof-Top Appurtenances.**
  Standard: *"All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other roof top elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building."*

  Roof-top mechanical equipment is set back from the principal facades. Enclosing screens and a perimeter parapet conceal direct view of the equipment. Especially from street level.

- **Shadow Impact.**
  Standard: "The location, massing and orientation of portions of buildings in excess of sixty-five (65) feet in height shall be such that substantial shadow impacts on public plazas, parks, and other publicly accessible open space are avoided."

  The proposed building is above 65' high above average site grade, but there are no public plazas, parks, or other publically accessible open spaces nearby. The existing exterior play spaces are not expected to be significantly more shaded due to the new building than they are currently by existing buildings.

- **Wind Impacts.**
  ***Standard**: "The location, massing, orientation and architectural design of a new building or a building addition shall be such that no significant adverse wind impacts are created."*

  The new building is not significantly different in height than existing building in the immediate neighborhood, nor will it be the tallest structure. The perimeter outline of the building is greatly varied, with recesses, setbacks and changes in wall alignment. A protective canopy is proposed for the Cumberland Avenue side of the building, the street expected to have the most pedestrian activity. Together these features avoid a monolithic building form and mitigate the likely wind impact at street level.

- **Downtown Gateway Entrances.**
  Preble Street and Portland Street are considered "Gateway" entrance to the Downtown area. The proposed building will help to define both entry corridors, and will replace the surface car parking and anonymous blank undifferentiated facades of the existing former "Marias" building. From Portland Street the new building will offer the animated activity and noise of a children's playground.

- **Signage Awnings and Canopies.**
  A projecting canopy is proposed for the 2 entrances off Cumberland Avenue. The slight curved profile reflects the subtle curves that are a feature of the building façades.

  Signage identifying the YFO daycare facility and signaling the front entrance will be wall mounted within the exterior covered main entrance, just off Cumberland Avenue sidewalk, as shown on the exterior building elevations. Signage lighting will be located on the underside of the canopy.

- **Snow and Ice Loading.**
  The building design minimizes the likelihood of snow and ice falling onto adjacent properties or public ways. The roof of the new building has a perimeter parapet at all edges, within which the roof slopes to internal roof drains (see roof plan).

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) B3

All Projects:

	Required	Proposed
Lot Size	No minimum	19,592 sf
Area Per Dwelling Unit		326.5 sf
Minimum Street Frontage	15 feet	400.9 feet
Front Yard Minimum	No min. required	Nil
Front Yard Maximum	5' max.	Nil
Rear Yard	No min. required	N/A
Yard Right	No min. required	N/A
Yard Left	No min. required	N/A
Side Street Setback	None	N/A
Step Back		N/A
Maximum Lot Coverage	100% allowed	72.37%
Minimum Lot Coverage		
Maximum Height	35' min. /85' max.	76'-7"
Open Space	Nil	Nil
Maximum Impervious Area		76.0%
Pavement Setback		Nil
Floor Area Ratio		N/A
Off Street Parking Spaces		17
Loading Bays		N/A
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

Att. J

Traffic Solutions
William J. Bray, P.E.
17 Mountview Drive
Gorham, ME 04038
(207) 400-6890
trafficsolutions@maine.rr.com

June 24, 2020

Traffic Assessment

Proposed

337 Cumberland Avenue Development

Portland, Maine

INTRODUCTION

Youth and Family Outreach, in partnership with Portland Housing Development Corporation, are proposing construction of a seven-story building on the former Maria's Restaurant site at 337 Cumberland Avenue. The development plan also includes the existing Chapel site on the adjoining property at 331 Cumberland Avenue. The proposed program includes light renovations to the existing Chapel building and construction of a new seven-story building with at least one level of parking. The first floor of the new building will primarily be used for expanded childcare with an estimated total of 60 apartment units on the upper floors of the new building. The building design also incorporates a covered connector ramp between the new building and the existing Chapel.

The present development plan provides the following site uses:

60 affordable apartment units with
- 20 efficiency units
- 15 one-bedroom units
- 15 two-bedroom units
- 10 three-bedroom units

106 student daycare with 28 projected staff members.

Access to the proposed new building is offered through a secured entry from Portland Street.

The existing properties located at 331 and 337 Cumberland Avenue include the existing Chapel building and the former Maria's restaurant building. The Chapel building presently provides daycare services to a total of 58 students, who are included in the 106 proposed student daycare total presented above. The former Maria's restaurant, which relocated to outer Congress Street during the last 12 to 18-months, had a seating capacity of 40 persons.

This document provides peak hour site trip generation estimates for the proposed development program and examines current roadway safety trends in the general vicinity of the proposed project site.

SITE TRAFFIC

Site Trip Generation: Peak hour trip generation was determined for the proposed project based upon trip tables presented in the tenth 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 rates were used to calculate trip generation for the proposed project:

Land-Use #221 – Multi-Family Housing (60 Proposed Apartment Units)

AM Peak Hour (Street)	= 0.20 trips per unit
PM Peak Hour (Street)	= 0.18 trips per unit
AM Peak Hour (Generator)	= 0.15 trips per unit
PM Peak Hour (Generator)	= 0.18 trips per unit

Accordingly, the proposed 60 apartment units can be expected to generate a total of 12 trips in the weekday morning peak hour of the street; 11 trips in the weekday evening peak hour of the street; and 9 and 11 trips, respectively, in the morning and afternoon peak hours of the site.

Land-Use #565 – Day Care Center (106 student capacity)

AM Peak Hour (Street)	= 0.78 trips per student
PM Peak Hour (Street)	= 0.79 trips per student
AM Peak Hour (Generator)	= 0.79 trips per student
PM Peak Hour (Generator)	= 0.81 trips per student

The proposed 106 student daycare facility, which includes 58 existing daycare students in the Chapel building, generate a total 83 trips in the morning peak hour of the street, 84 trips in the afternoon peak hour of the street and 84 trips and 86 trips, respectively, during the AM and PM peak hours of the site.

Combined, the proposed project is expected to generate the following peak hour trip totals:

AM Peak Hour of Adjacent Street	= 95 trips
PM Peak Hour of Adjacent Street	= 95 trips
AM Peak Hour of Generator	= 93 trips
PM Peak Hour of Generator	= 97 trips

The existing 58 student daycare located in the Chapel building accounts for a significant portion of the projected volume of site trips generated by the proposed development site. Applying the same peak hour trip rates highlighted above for a daycare center, the existing 58 student daycare center located in the Chapel building generates the following peak hour trip totals:

AM Peak Hour of Adjacent Street	= 45 trips
PM Peak Hour of Adjacent Street	= 46 trips
AM Peak Hour of Generator	= 46 trips
PM Peak Hour of Generator	= 47 trips

The "net" increases in peak hour traffic circulating on the adjacent roadway system is estimated at 50 or fewer "new" vehicle trips during each of the identified peak hour time periods.

EXISTING SAFETY CONDITIONS

The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the latest three-year (2017 through 2019) crash data for the sections of Cumberland Avenue between Preble Street and Brown Street, Portland Street, Alder Street to Preble Street, Preble Street, Kennebec Street to Cumberland Avenue and Alder Street, Cumberland Avenue to Kennebec Street, a combined distance of approximately 0.51 miles. Their report is presented as follows:

2017 -2019 Traffic Accident Summary

Location	Total Crashes	Critical Rate Factor
1. Cumberland Avenue @ Alder Street	2	0.59
2. Cumberland Avenue @ Brown Street	1	0.27
3. Cumberland Avenue @ Preble Street	10	0.47
4. Portland Street, Alder Street, Oxford Street	1	0.49
5. Preble Street @ Kennebec Street	6	2.32
6. Preble Street @ Lancaster Street	4	1.45
7. Preble Street @ Oxford Street	3	0.85
8. Preble Street @ Portland Street	6	1.55
9. Preble Street btw. Kennebec Street and Lancaster Street	1	0.44
10. Preble Street btw. Lancaster Street and Oxford Street	3	1.03
11. Preble Street btw. Oxford Street and Portland Street	1	0.59
12. Preble Street btw. Portland Street and Cumberland Avenue	1	0.50
13. Cumberland Avenue btw. Brown Street and Preble Street	10	3.57
14. Alder Street btw. Lancaster Street and Portland Street	5	4.61

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 section of Cumberland Avenue between Brown Street and Preble Street meets MaineDOT's criterion as a high crash location. A total of 10 crashes and a Critical Rate Factor (CRF) of 3.57 were reported by MaineDOT for the noted street section.

MaineDOT's Crash Records Section provided a vehicle collision diagram for the identified section of Cumberland Avenue, which details each of the reported 10 vehicle crashes. A copy of the crash diagram is attached for reference.

Location #13 Cumberland Avenue Between Brown Street and Preble Street: The crash summary diagram for the section of Cumberland Avenue only identifies one common crash pattern. Four (4) of the reported crashes involve a moving vehicle striking a parked vehicle located on the north side of Cumberland Avenue. The remaining six vehicle crashes were singular random events occurring in varying locations throughout the section of Cumberland Avenue.

SUMMARY

- The proposed redevelopment project, includes construction of a new seven-story building on the former Maria's Restaurant site and minor renovations to the adjoining Chapel building site located at 331 Cumberland Avenue. The project program creates 60 affordable apartment units in the proposed multi-story building and an expanded area for the existing childcare center, increasing the day care capacity to 106 students. The proposed project is expected to generate approximately 50 "*new*" vehicle trips during each of the primary weekday peak hour time periods.

- MaineDOT's most recent three-year road safety report (2017 through 2019) for the sections of Preble Street between Kennebec Street and Cumberland Avenue, Cumberland Avenue between Preble Street and Alder Street, Portland Street between Preble Street and Alder Street and, finally, Alder Street, between Cumberland Avenue and Kennebec Street. MaineDOT's road safety data identifies the section of Cumberland Avenue between Brown Street and Preble Street as a high crash location with a total of 10 crashes and a corresponding critical rate factor of 3.57. A detailed vehicle collision diagram prepared by the MaineDOT's safety office shows a single crash pattern occurring within the short (0.7-mile) segment of Cumberland Avenue. Four (4) of the reported 10 vehicle crashes involved a moving vehicle either traveling west on Cumberland Avenue or attempting to parallel park, striking a second unattended parked vehicle. This report does not suggest any possible mitigation measures; except, to continue monitoring updated crash data and if the crash pattern continues to degrade, evaluate whether it is prudent to eliminate on-street parking in this section.

Search...
SOMERSET ST
KENNEBEC ST
LANCASTER ST
HALL CT
CEDAR ST
OXFORD ST
ELM ST
CUMBERLAND AVE
PREBLE ST
ARBEN ST
HANOVER ST
PARRIS ST
BRATTLE ST
LANCASTER ST W
PORTLAND ST
MECHANIC ST
MECHANIC PL
BROWN ST
PORTLAND
69141
19010
19004
19008
19015
19007
19024
19016
19017
19018
19023
19019
19020
19022
19038
19043
6560
19021
19037
19045
19046
19047
19048
19036
19035
19034
Scale: 1:2250

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

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

Portland: Cumberland Ave from Alder St (node 19035) to Preble St (node 19037)

REPORT PARAMETERS

Year 2017, Start Month 1 through Year 2019 End Month: 12

Route: **0561238**	Start Node: **19035**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19037**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
19035	0561238 - 0.32	Int of ALDER ST CUMBERLAND AV	2	2	0	0	1	1	0	100.0	2.576	0.26	0.44	0.00
												Statewide Crash Rate:	0.15	
19036	0561238 - 0.34	Int of BROWN ST CUMBERLAND AV	2	1	0	0	0	0	1	0.0	2.715	0.12	0.44	0.00
												Statewide Crash Rate:	0.15	
19037	0561238 - 0.41	Int of CUMBERLAND AV PREBLE ST	9	10	0	0	1	5	4	60.0	5.662	0.59	1.26	0.00
												Statewide Crash Rate:	0.75	
Study Years:	3.00	**NODE TOTALS:**		13	0	0	2	6	5	61.5	10.953	0.40	0.75	0.53

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
19035	19036	3122300	0 - 0.02	0561238 - 0.32	0.02	2	0	0	0	0	0	0	0.0	0.00050	0.00	728.95	0.00
Int of ALDER ST CUMBERLAND AV				RD INV 05 61238											Statewide Crash Rate: 176.83		
19036	19037	3106839	0 - 0.07	0561238 - 0.34	0.07	2	10	0	0	0	1	9	10.0	0.00166	2007.13	561.77	3.57
Int of BROWN ST CUMBERLAND AV				RD INV 05 61238											Statewide Crash Rate: 176.83		
Study Years: 3.00				**Section Totals:**	0.09		10	0	0	0	1	9	10.0	0.00216	1545.93	525.44	2.94
				Grand Totals:	0.09		23	0	0	2	7	14	39.1	0.00216	3555.64	766.97	4.64

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

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

Portland: Alder St from Kennebec St (node 69141) to Cumberland Ave (node 19035)

REPORT PARAMETERS

Year 2017, Start Month 1 through Year 2019 End Month: 12

Route: **0560008**	Start Node: **69141**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19035**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
69141	0560008 - 0	Int of ALDER ST KENNEBEC ST	2	0	0	0	0	0	0	0.0	0.412	0.00	0.68	0.00
												Statewide Crash Rate:	0.16	
19017	0560008 - 0.06	Int of ALDER ST LANCASTER ST	2	0	0	0	0	0	0	0.0	0.384	0.00	0.69	0.00
												Statewide Crash Rate:	0.16	
19021	0560008 - 0.16	Int of ALDER ST, OXFORD ST, PORTLAND ST	2	1	0	0	0	1	0	100.0	1.266	0.26	0.53	0.00
												Statewide Crash Rate:	0.15	
19035	0560008 - 0.22	Int of ALDER ST CUMBERLAND AV	2	2	0	0	1	1	0	100.0	2.576	0.26	0.44	0.00
												Statewide Crash Rate:	0.15	
Study Years:	3.00	**NODE TOTALS:**		3	0	0	1	2	0	100.0	4.638	0.22	0.38	0.56

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
69141	19017	3525695	0 - 0.06	0560008 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00013	0.00	1822.40	0.00
Int of ALDER ST KENNEBEC ST				RD INV 05 60008											Statewide Crash Rate: 422.60		
19017	19021	194719	0 - 0.10	0560008 - 0.06	0.10	2	5	0	0	0	0	5	0.0	0.00021	8039.10	1742.08	4.61
Int of ALDER ST LANCASTER ST				RD INV 05 60008											Statewide Crash Rate: 422.60		
19021	19035	194725	0 - 0.06	0560008 - 0.16	0.06	2	0	0	0	0	0	0	0.0	0.00005	0.00	1416.58	0.00
Int of ALDER ST, OXFORD ST, PORTLAND ST				RD INV 05 60008											Statewide Crash Rate: 422.60		
Study Years: 3.00				**Section Totals:**	0.22		5	0	0	0	0	5	0.0	0.00039	4310.19	1546.29	2.79
				Grand Totals:	0.22		8	0	0	1	2	5	37.5	0.00039	6896.30	1858.11	3.71

Maine Department Of Transportation - Traffic Engineering, Crash Records Section

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

Portland: Preble St from intersection with Kennebec St/Alder St (node 19010) to intersection with Cumberland Ave (node 19037)

REPORT PARAMETERS

Year 2017, Start Month 1 through Year 2019 End Month: 12

Route: **0560597**	Start Node: **19010**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19037**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
19010	0560597 - 0.13	Int of KENNEBEC ST PREBLE ST	2	6	0	0	0	3	3	50.0	1.647	1.21 Statewide Crash Rate: 0.16	0.52	2.32
19016	0560597 - 0.19	Int of LANCASTER ST PREBLE ST	2	4	0	0	0	2	2	50.0	1.797	0.74 Statewide Crash Rate: 0.16	0.51	1.45
19022	0560597 - 0.26	Int of OXFORD ST PREBLE ST	2	3	0	0	0	0	3	0.0	2.498	0.40 Statewide Crash Rate: 0.16	0.47	0.00
19043	0560597 - 0.30	Int of PORTLAND ST PREBLE ST	2	6	0	0	1	1	4	33.3	2.851	0.70 Statewide Crash Rate: 0.16	0.45	1.55
19037	0560597 - 0.33	Int of CUMBERLAND AV PREBLE ST	9	10	0	0	1	5	4	60.0	5.662	0.59 Statewide Crash Rate: 0.75	1.26	0.00
Study Years: 3.00		**NODE TOTALS:**		29	0	0	2	11	16	44.8	14.455	0.67	0.62	1.07

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
19010	19016	3106835	0 - 0.06	0560597 - 0.13	0.06	2	1	0	0	0	0	0	0.0	0.00101	328.46	749.65	0.00
Int of KENNEBEC ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 220.55		
19016	19022	3106836	0 - 0.07	0560597 - 0.19	0.07	2	3	0	0	0	1	1	50.0	0.00140	714.08	691.76	1.03
Int of LANCASTER ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 220.55		
19022	19043	3117969	0 - 0.04	0560597 - 0.26	0.04	2	1	0	0	0	0	1	0.0	0.00069	481.67	819.32	0.00
Int of OXFORD ST PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 220.55		
19037	19043	3124005	0 - 0.03	0560597 - 0.30	0.03	2	1	0	0	0	0	1	0.0	0.00086	389.77	780.94	0.00
Int of CUMBERLAND AV PREBLE ST				RD INV 05 60597											Statewide Crash Rate: 220.55		
Study Years: 3.00				**Section Totals:**	0.20		6	0	0	0	1	3	16.7	0.00396	504.73	529.36	0.95
				Grand Totals:	0.20		35	0	0	2	12	19	40.0	0.00396	2944.29	714.68	4.12

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

LOW NODE: **19036** HIGH NODE: **19037** REGION: **1** U/R: **URBAN**

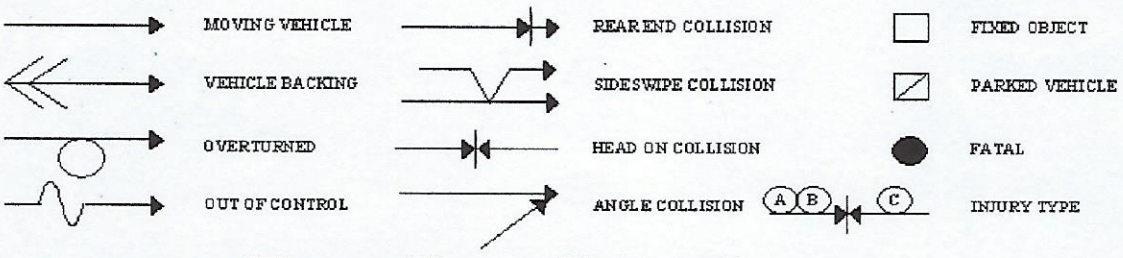
DESCRIPTION: **Cumberland Ave from Brown St to Preble St**

RTE # / RD #: **0561238** DATE DRAWN: **4/23/2020** DRAWN BY: **Michelle**

STUDY FROM: **1/1/2017** STUDY TO: **12/31/2019**

CRASH RATE: **2007.13** CRF: **3.57** % INJURY: **10** TOTAL CRASHES: **10**

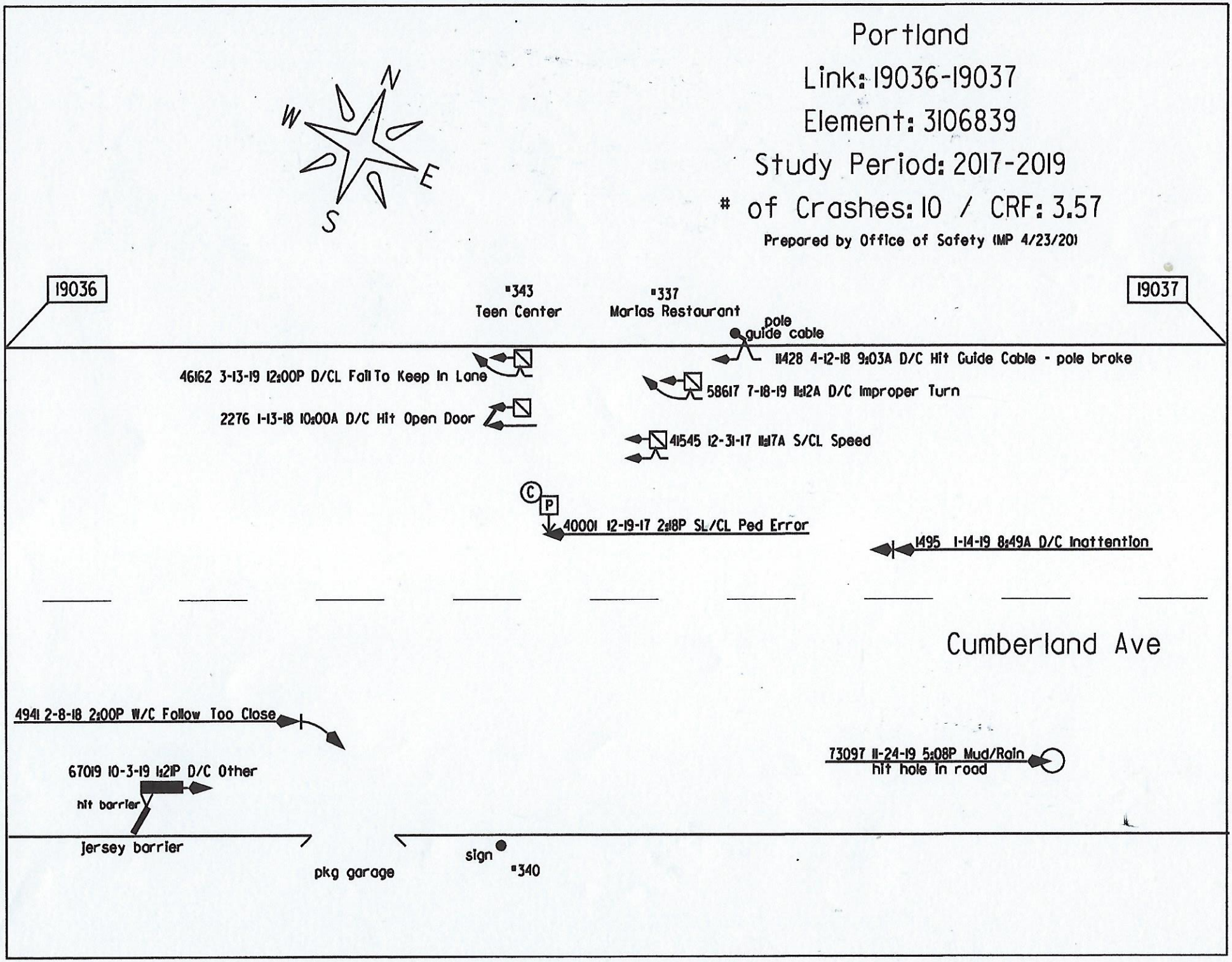
LEGEND



PAVEMENT: D - DRY, I - ICY, W - WET, S - SNOW

WEATHER: C - CLEAR, F - FOG, R - RAIN, SL - SLEET, S - SNOW, CL - CLOUDY

TIME: A - AM, P - PM


Portland
Link: 19036-19037
Element: 3106839
Study Period: 2017-2019
# of Crashes: 10 / CRF: 3.57
Prepared by Office of Safety (MP 4/23/20)
N
W
E
S
19036
19037
#343
Teen Center
#337
Marias Restaurant
pole
guide cable
11428 4-12-18 9:03A D/C Hit Guide Cable - pole broke
46162 3-13-19 12:00P D/CL Fail To Keep In Lane
58617 7-18-19 11:12A D/C Improper Turn
2276 1-13-18 10:00A D/C Hit Open Door
41545 12-31-17 11:17A S/CL Speed
C
P
40001 12-19-17 2:18P SL/CL Ped Error
1495 1-14-19 8:49A D/C Inattention
Cumberland Ave
4941 2-8-18 2:00P W/C Follow Too Close
67019 10-3-19 1:21P D/C Other
hit barrier
Jersey barrier
pkg garage
sign
#340
73097 11-24-19 5:08P Mud/Rain
hit hole in road

337 Cumberland Ave

Parking Use and Management

The new construction building at 337 Cumberland Ave will contain a total of 16 spaces. The parking spaces will be allocated to Youth and Family Outreach (YFO). The tandem spaces will be managed by YFO to match up users and timing to ensure smooth operation and utilization of these spaces. YFO's current parking for staff uses several tandem spaces, so they are familiar with the operational management requirements for these types of spaces. At YFO's discretion, they will decide if and how the spaces are used outside of their normal business hours.

337 Cumberland Avenue

Transportation Demand Management (TDM) Plan

June 2, 2020

Summary

Portland Housing Development Corporation (PHDC) provides this Transportation Demand Management (TDM) Plan for 337 Cumberland Avenue, located at the corner of Cumberland Avenue and Preble Street in the B3 zone of Portland's downtown. The proposal is for a 6-story mixed-use building with 60 mixed-income residential apartments, expansion of the adjacent Youth & Family Outreach (YFO) program on the first floor, and a ground floor interior parking lot accessed from Portland Street. The site is pursuing Core Green Building Certification.

This is a key opportunity for urban infill redevelopment, new housing for local workers and families, and alternate transportation and reverse commuting for residents. The 337 Cumberland Avenue TDM Plan intends to reduce parking demand and drive-alone vehicle trips to and from the site and benefit the local transportation system through marketing the housing to downtown employees and student families, charging for parking for market-rate tenants, providing on-site amenities, and offering strong support of transportation alternatives such as walking, bicycling and public transportation.

The plan sets the following TDM targets for 3 years after 337 Cumberland Avenue is fully occupied. These targets should be reassessed after the first full year of occupancy of all tenant spaces:

- *5% reduction in peak hour resident, employee and family vehicle trips and an anticipated 5% reduction in parking demand for the site*
- *65% resident and employee multimodal rate*

COVID-19 NOTE: Site occupancy is forecast for Winter of 2022-2023 and with an anticipated vaccine for the COVID-19 virus available within approximately the next 18 months, transportation alternatives that are currently less viable - such as transit and carpooling – are anticipated to make significant recoveries by that time. TDM efforts will also likely be supported by a long-term increase in telework and walkable access to the largest number of jobs in the state.

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337 Cumberland Avenue Site

- 1.27 acre 6-story mixed-use urban infill site in downtown Portland's Downtown Portland
- Residential: 60 mixed-income dwelling units; ~50,000 sq.; an estimated 132 residents; includes:
  - 20% market-rate units
  - 80% at 50-60% Area Median Income, including 15 units for Section 8
  - common areas with work space
- Youth & Family Outreach early childhood education tenant, 1st Floor: ~8,000 sq.; 107 students and 28 staff members
- Ground level covered parking with access from Portland Street: 17 spaces, including an accessible van space

TDM Targets

- ***Trip & parking reduction targets:*** a 5% reduction in resident vehicle trips and parking demand within 3 years after full occupancy - resulting from TDM program; i.e., a reduction of 5 weekday morning peak trips, 5 weekday evening peak trips; and 2 parking spaces
- ***Multi-modal target:*** 65% of resident and employee trips will be via transit, carpooling, by bicycle, on foot or telecommuting within 3 years after full occupancy
- Will reassess targets at end of year one of full occupancy at 337 Cumberland

TDM Coordinator

Initial Coordinator: Jay Waterman, PHDC, jwaterman@porthouse.org, (207) 221-8009

Eventual Coordinator: Property Manager (to be determined)

Cushman Transportation Consulting, LLC, 94 Beckett Street, 2nd Floor, Portland, ME 04101
Tel: (207) 200-1910 E-mail: sarah@sarahcushman.com www.sarahcushman.com

A. Property Description & Transportation Context

Site Characteristics & Occupant Demographics

337 Cumberland Avenue is an .45-acre parcel located at the corner of Cumberland Avenue and Preble Street in downtown Portland's B3 zone, Downtown Entertainment Overlay Zone, and Bayside Neighborhood. The property is also directly across the street from the adjacent Portland Downtown District, Pedestrian Encouragement Zone and Congress Street Historic District. These are all land uses that benefit from and support this important infill redevelopment of what was, since the mid-1970s, a one-story family-owned restaurant. (Maria's Ristorante has relocated to the former Espo's building on Outer Congress Street.) Infill development of any kind contributes to drive alone vehicle trip reduction.

Youth and Family Outreach (1st Floor Use)

The first floor of 337 Cumberland will house the approximately 8,000 square foot expansion space of Youth and Family Outreach (YFO). This is the non-profit neighborhood organization that currently provides early childhood care and education to a total of 58 students, ages 6 weeks to five years, at the adjacent historical 1852 Chapel building at 331 Cumberland Avenue. The program is the outgrowth of a 175-year mission to welcome and serve the needs of low-income members of the community. The organization is the site owner of 337 Cumberland and will lease it for 90 years to 337 Cumberland Avenue, LP, who will be the development owner. The first-floor space in the new building will allow YFO to support 49 additional children, for a total of 107 students.

Youth and Family Outreach employs 18 staff, which will grow to 28 with the expansion. At present, 66% of staff use alternate transportation to get to work; five staff members walk, four take the bus, and one bicycles. Only eight staff members currently drive alone to the site and generally because they have been priced out of housing in the city of Portland. The program is hopeful that some of their employees may be able to live at 337 Cumberland in order to live and work nearby.

Youth and Family Outreach prioritizes 60% of its student slots for low-income families and 95% of adult family members are working or in school. A parent or guardian of each student enrolled in the program's Public Pre-K class receives a monthly bus pass to be able to bring the child to and from school. Currently, 9% of student families reach the site by bus, 9% walk, 3.5% ride bikes and 78.5% arrive by passenger car or truck. YFO plans to give preference to residents of 337 Cumberland for admittance to Youth and Family Outreach, which would reduce vehicle drop-off and pick-up trips.

Residential Housing at 337 Cumberland (2nd-6th Floor Uses)

In-town mixed-income housing, which is the primary use proposed for 337 Cumberland, will contribute significantly to reducing drive alone trips to and from the site. When people move from one residence to another it provides a key opportunity and critical juncture at which to educate them about their transportation choices and the benefits of alternate transportation. Individuals are more receptive to this information as their daily living and commute patterns have changed with relocation.

...One of the more interesting studies found in reviewing the literature was a 2003 German social science experiment conducted by three researchers (Bamberg, Rolle and Weber) where an individualized marketing intervention was used at a time of what they called a "changed decision" context, meaning immediately after relocation. The research found that if, when in a new situation, people received personally relevant and persuasive information, they were more likely to use it for making new behavioral decisions.

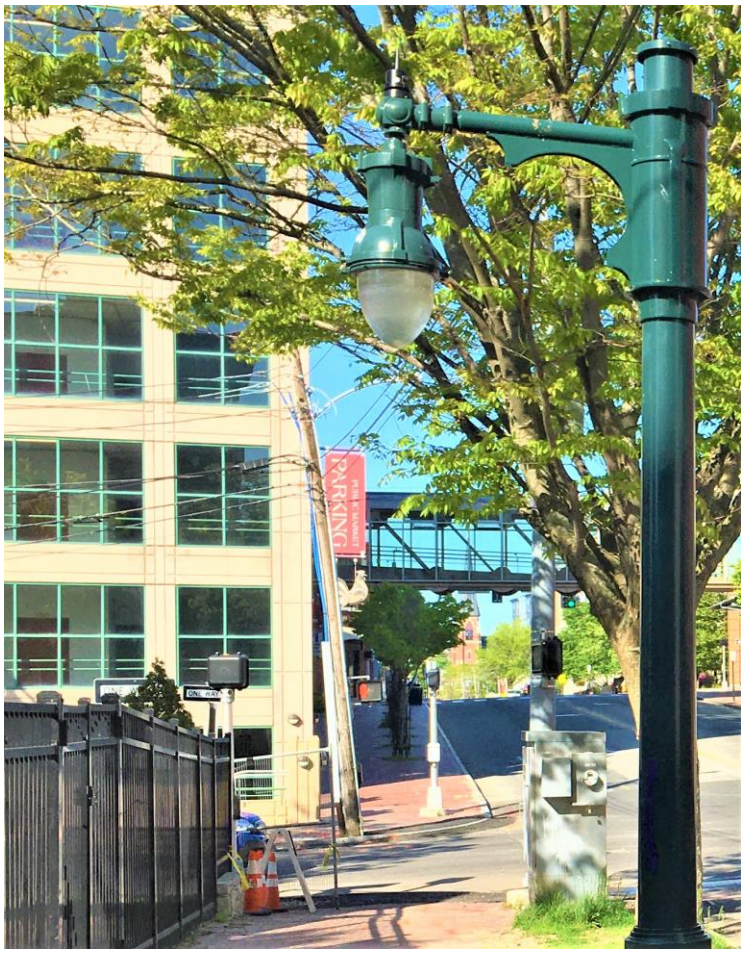
Portland Oregon SmartTrips Welcome Program, Tools of Change Landmark Case Study, 2012

Single-occupancy vehicle trips are also influenced by income and car ownership rates. The Portland Housing Development Corporation (PHDC) will develop the second through sixth floors of 337 Cumberland, approximately 50,000 square feet, for 60 residential units. These will consist of 20 studios, 15 one-bedroom, 15 two-bedroom and 10 three-bedroom rental apartments.

Twenty percent of the units will be market-rate rentals and 80% will be for tenants making 50-60% of Area Median Income. Fifteen units will have project-based Section 8 vouchers, with six apartments set aside for families experiencing homelessness and residing in a Portland shelter. There will be no differentiation in apartment size or interior finishes between the market-rate and affordable housing units. Portland Housing Development Corporation will retain a long-term lease of the building from Youth and Family Outreach and the Portland Housing Authority will manage the property.

People in residential settings often perceive they are dependent upon driving alone because of the number of errands and activities they must carry out in different locations. 337 Cumberland will reduce this dependence through building facilities and proximity to services close to the site. Site features that encourage alternate transportation and discourage drive alone vehicle trips include: an indoor bicycle/stroller/carseat/handcart storage area, package delivery and storage location, free wireless internet throughout the building, and communal space that can be used to do telework. New curbside drop-off and pick-up areas will be developed and designated on the street frontages of Cumberland and Preble Streets, providing ADA access and opportunities for residents, families, employees and visitors to more easily share rides.

Per the site development agreement, 337 Cumberland will build and maintain 17 covered parking spaces on the Portland Street ground level of the building, including an accessible van space. In strong support of site TDM efforts, market-rate residential leasing will be exclusive of parking. In addition, Youth and Family Outreach will have a parking agreement for 16 parking spaces for daytime use, unbundled and in a separate agreement from the organization's 1st Floor use of the building. These spaces will be shared-use, with residential tenants accessing them for overnight use – therefore, doubling the efficiency of the spaces.



Under the affordable housing financing regulations, low-income tenants are not permitted to be charged for on-site parking. Regardless, all tenants will be connected with nearby parking resources off-site for other remote parking options. For example, the Public Market, Monument Square and the Arts District Garages are all across the street from the site. Initial outreach to these garages has been limited by the lack of personnel access on-site (due to COVID-19); however one garage was able to share it can accommodate a number of additional monthly customers. Parking that is unsubsidized for market-rate tenants and off-site for other parking needs, is of tremendous benefit and a linchpin strategy to discourage drive alone trips and encourage the use of alternate transportation.

Tables 9 and 10 on the next page, from the 2017 *City of Portland Parking Study for the Eastern Waterfront & Downtown* census data analysis, show that workers who live in the Downtown and Eastern Waterfront study area (which is directly adjacent to 337 Cumberland) and commute to all jobs – including anywhere in the region:

- Own far fewer vehicles: .7 per household - vs. 1.34 in the city and 1.79 in the region;
- Drive alone considerably less: 40.6% in the study area - vs. 67.4% in the city and 78.3% in the region;
- Use alternate modes of transportation and/or telecommute significantly more: 59.4% in the study area vs. 32.8% in the city and 21.9% in the region.

…The data shows significantly lower shares of drive alone commuting for workers who live in the study area or on the Peninsula as compared to the City and MSA [Portland-South Portland-Biddeford Metropolitan Statistical Area].

The share of workers who walk to work is very high in the study area at 43 percent in 2015, implying that those who live in the study area tend to work within a walkable distance from home…

… Carpooling decreased everywhere [between 2000 and 2015] except with residents of the study area where the carpool mode to work rose by nearly 7 percent…

2017 *City of Portland Parking Study for the Eastern Waterfront & Downtown*

Table 9: Commute Mode Share Trends by Home Origin

	Commuter Home Origin	Drive Alone	Carpool	Transit	Bicycle	Walked	Work from Home & Other
2015	Portland-South Portland-Biddeford MSA	78.3%	9.3%	1.1%	0.6%	3.9%	7.0%
	City of Portland	67.4%	8.6%	3.1%	1.6%	12.2%	7.3%
	On the Peninsula	49.2%	6.9%	4.7%	2.8%	28.6%	7.9%
	Within the Study Area	40.6%	10.2%	3.5%	0%	42.5%	3.2%

Table 10: Auto Ownership 2000-2015

	Home Location	Vehicles	Occupied Households	Veh/HH
2015	Total U.S.	205,767,452	116,926,305	1.76
	Portland-South Portland-Biddeford MSA	383,798	214,667	1.79
	City of Portland	40,495	30,119	1.34
	On the Peninsula	11,611	11,917	0.97
	Within the Study Area	1,206	1,729	0.70

For residents who are attending school, local high school and college opportunities such as Portland Adult Education, Southern Maine Community College and the University of Southern Maine are readily accessible from the site via public transportation. Further reducing the need for tenants to make drive alone trips, downtown Portland is the largest employment center in the state and 337 Cumberland has a Job Access Score of 9.4 out of 10. This scoring is based on employment location and a variety of employment types, provided through the Housing + Transportation Affordability Index using U.S. Census data. According to the Downtown parking study, 12% of people live and also work in the study area. In *Portland's Plan 2030* (2017), analysis showed the number of people both living and working in the city decreased between 2002 and 2014. Residential sites like 337 Cumberland provide real opportunity for local population growth.

The developer anticipates 337 Cumberland will most likely attract households interested in a highly-walkable, low-car use lifestyle, which will further lower their housing and transportation cost burden. This will include people working downtown or in nearby neighborhoods, older individuals on pensions or social security who do not own a car, and families were at least one family member works downtown so as to avoid the increased highway traffic coming into the City. In general, and as shown in the Downtown parking study, vehicle ownership rates are lower for people who live in urban centers and also for those with lower incomes.

Various residents are likely to be Millenials; Youth and Family Outreach also employs a number of Millenial-age staff and the majority of families fall in this age bracket. Per U.S. Census data, Millennials have been shown to prefer urban environments; they also tend to be more comfortable using modes other than the single-occupancy automobile for transportation. These multimodal habits were heavily influenced by the Great Recession and driving by Millennials has increased slowly as the economy has improved. However, from a behavior change perspective, this familiarity with different ways of getting around will greatly facilitate these tenants, employees and families' participation in the 337 Cumberland Street TDM program.

Regarding vehicle travel and senior resident demographics, the percentage of the population that drives plateaus for the general public through the ages of 30-55 - and then starts declining after the age of 55 for women and after age 60 for men. Similarly, vehicle miles and person miles traveled per capita both fall precipitously starting at the age of 55. Car ownership has had a slight rebound since the Great Recession. However, between 2015 and 2016, the one increase in car-free living (above the margin of error) was among householders age 65 or older who rent. (Source: American Community Survey of the U.S. Census).

Larger Transportation Setting

The 337 Cumberland Street project brings to fruition a number of the mixed-use, downtown neighborhood, housing, urban form, and transportation demand management goals of several recent and historically important Portland studies and plans. Included among them are:

- the original *Downtown Vision* plan (1991)
- *A Time of Change: Portland Transportation Plan* (1993)
- *Housing, Sustaining Portland's Future* (2002)
- *Peninsula Transit Study* (2008)
- *Sustainable Portland* (2009)
- *City of Portland Parking Study for the Eastern Waterfront & Downtown* (2017)
- the Comprehensive Plan, *Portland's Plan 2030* (2017)

For example, redevelopment of this site in the center of Portland addresses the land use diversity, housing, and downtown-strengthening outlined in *Portland's Plan* (Comprehensive Plan, 2017) – described further as Complete Neighborhoods and Reinforce the Center.

LOCAL GOALS

WE WILL:

Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.

Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.

Pursue policies to enable people who work in Portland to have the option to live in Portland.

Collaborate with surrounding communities on regional housing solutions.

Encourage quality, sustainable design in new housing development.

Portland's Plan 2030 (2017 Comprehensive Plan)

In addition, 337 Cumberland Street and its TDM initiatives align well with other observations from the 2017 Parking Study. For example, "If future residential development in the study area were to attract a higher percentage of residents who also work in the study area, and do not use their vehicle to commute to work, this would raise the internal capture rate for office parking demand. An internally captured office trip does not need an additional office parking space because the resident employee leaves their vehicle at home. In this way, a single parking space would serve either a residential purpose or an office purpose depending on the time of day. It would help lower parking demand to promote or incentivize the occupancy of new residential development with employees (of any kind) who also work in the study area."

For downtown residents working off the Peninsula, who may commute by single occupancy vehicle, there is also a reverse commute phenomenon. This change in the directionality of trips creates a more balanced inbound-outbound flow of vehicular traffic during the morning and evening peak travel hours.

Bicycle & Pedestrian Access

From a pedestrian and bicycling perspective, 337 Cumberland is very friendly, located within the strong sidewalk network and lower-speed street grid of the Portland peninsula. From the perspective of residents with any mobility concerns, sidewalks in most of the area are well-maintained year-round by the Portland Downtown district, including the removal of snow and ice during the winter months.

The building is located on the Portland Street bike lane and just a 2-minute bike ride from the Bayside Trail, the Forest Avenue bike lane network and the Park Avenue protected bicycle lane - all pivotal links in Portland's alternate transportation system. In addition, the site is only 5 blocks from the Marginal Way bicycle lane and a 4-minute bike ride to the Back Cove Trail.

Residential tenants working anywhere on the Peninsula will be within comfortable walking distance of their home; similarly, for Youth and Family Outreach employees and families who live on the East End, West End or downtown. Those residents whose employers are located within a five-mile commute distance can also easily bike to work, especially as bicycle networks in Portland, South Portland and Falmouth continue to improve. For example, 337 Cumberland tenants will be in close proximity to planned pedestrian and bicycle network improvements on Preble and Elm Streets and the Bayside Trail extension.

Significant near-site amenities also provide people with a full-service living and working environment. Amenities within easy walking distance of 337 Cumberland Avenue abound for residential tenants, YFO employees and families, and other site visitors. These include food and entertainment venues, grocery stores such as Trader Joe's, and home product suppliers such as Reny's. These and other downtown offerings also provide an attractive dual-purpose trip for YFO employees and site visitors who do end up driving downtown. For example, walking to run errands at neighboring businesses or meeting up with family and friends for after-hours events downtown. In addition, these internally captured trips represent no net new trip generation or parking demand beyond the original trip to the site.

Public Transportation Access

In terms of transit service, 337 Cumberland Avenue is ideally located just off the Congress Street bus corridor and only one block from the hub of all of Greater Portland's public transportation options at the Elm Street Pulse and Monument Square. 337 Cumberland Avenue itself is served by METRO Route #8 stops at the Preble Street Resource Center and across from the former Public Market House on Preble (the route is now under review as part of METRO's Peninsula Loop Reboot task force).

At the METRO Pulse, services include ticket sales, a staffed indoor waiting room, outdoor seating and the:

- METRO Breez with service to Yarmouth, Freeport and Brunswick
- METRO Husky Line with service to Westbrook and Gorham
- METRO local Routes 2, 4, 5, 7, 8, 9A, 9B serving the significant transportation corridors of Outer Congress Street and Forest, Brighton, Washington, Stevens and Allen Avenues
- RTP Lakes Region Explorer with Route 302 service to Westbrook, Windham, Raymond, Casco, Naples and Bridgton

At Monument Square, most of the above local METRO routes are accessible, along with all South Portland Bus routes, and the ZOOM Turnpike Express with service to Saco and Biddeford. Three blocks away at City Hall, one can catch METRO Routes 1, 7, 8, 9A and 9B and the intercity Shuttlebus, with service to Scarborough, Old Orchard Beach, Saco and Biddeford.

There is shelter from the elements for riders at the Pulse and at the Monument Square stop at Center Street. METRO, South Portland Bus and Casco Bay Ferry Lines all provide real-time arrival information for riders, through the Southern Maine Transit Tracker website and smartphone apps such as Google Maps, Transit and Moovit. All local and express buses are also equipped with bicycle racks with space for 2-3 bikes. In addition, most METRO buses offer Wi-Fi access and some provide in-seat USB ports.

Shared Mobility Access

With the end of UhaulCarshare service in Portland in February 2020, Portland Housing Development Corporation will explore other carshare possibilities for 337 Cumberland and if an option is found feasible, will offer a discount for resident carshare vehicle use for the first year of residency.

Over the past several years, the City has been working on an agreement with JUMP Bikes (by Uber) to set up a dockless electric bikeshare system in Portland. If and when the system is launched, the developer will provide monthly bikeshare memberships for tenants.

B. 337 Cumberland's TDM Coordination

The Portland Housing Development Corporation has a long history of in-fill development projects and encouraging and supporting residents' mobility, for example with bus pass subsidies and multi-use parking and TDM implementation at sites like the Bayside Anchor project.

PHDC sees this TDM program as part of its larger sustainability and neighborhood development mission and is pursuing Core Green Building Certification for this site. The organization's Strategic Vision Plan sets an intention to "Establish better connections to neighborhoods and breaking down physical and social isolation." It also recognized its Bayside neighborhood properties and the Bayside area specifically as "an area of focus for the city in general due to its prime location near two major arterial roads and close to downtown and the waterfront. Currently, the area features a significant amount of public and private planning and development efforts. Given these efforts as well as its proximity to shopping and open space amenities, the Bayside area is a key opportunity area for expanded development."

Highly successful TDM programs share three vital characteristics – they are:

1. Dynamic - piloting strategies, assessing impacts, and modifying tactics as needed;
2. Rigorously supported and monitored by local governing bodies, in this case, the City of Portland
3. Managed by committed and enthusiastic staff who are responsible for overseeing, promoting and sustaining the program

PHDC is committed to a building TDM program to reduce drive alone resident and Youth and Family Outreach automobile trips, improve multimodal safety, and ease traffic congestion and area parking demand near 337 Cumberland Avenue. Jay Waterman, PHDC Director of Real Estate Development, will serve as the interim TDM Coordinator until the development determines the site's property manager. His contact information is:

Jay Waterman
Director of Real Estate Development
Portland Housing Development Corporation
14 Baxter Boulevard
Portland, ME 04101
Email: jwaterman@porthouse.org
Phone: (207) 221-8009

Jay Waterman and the future property manager are charged with coordinating the 337 Cumberland TDM plan implementation and monitoring and making any needed changes.

PHDC will provide the TDM Coordinator with remuneration to support the work of leading the site's ongoing TDM efforts. Acknowledging that roles and responsibilities change over time in any position, PHDC and the site property manager will use the

The 337 Cumberland TDM Coordinator is responsible for:

- Coordinating tenant TDM policies and incentives
- Connecting tenants with nearby transportation & parking resources
- Encouraging greater use of preferred modes – walking, bicycling, carpooling, taking bus or rail transit - through transportation kiosk and site-wide promotion
- Overseeing/conducting surveying of tenants
- Filing annual reports and updating the plan with the City
- Exploration of additional TDM strategies, as needed

first few months of TDM implementation to enumerate the TDM Coordinator's responsibilities in detail for any other staff to uphold the responsibility of the position.

Day-to-day operations and monitoring of the TDM plan will be conducted in-house by the property manager long-term and PHDC will retain the services of a TDM consultant to review initiatives, problem-solve and develop new strategies if and when necessary.

C. Trip Generation & Parking Demand Projections & Targets

Portland Housing Development Corporation has hired Cushman Transportation Consulting, LLC (CTC) to assist with its transportation demand management process. CTC specializes in TDM efforts locally and connects with TDM research and programs across North America – including aspects of setting and managing TDM targets. This all informs the following trip reduction, parking reduction and multimodal goals.

A complication for setting ambitious targets for this particular site is the existing high multimodal rate of individuals who live downtown. That is, when a multimodal rate is already extraordinary, mode change is much more incremental and moderate than if the rate has significant room for growth.

In addition, as referenced in City's Land Use Code, "The planning board may establish a parking requirement that is less than the normally required number of spaces upon a finding of unique conditions that result in a lesser parking demand, such as housing for persons who cannot drive, housing that participates in a travel demand management program, [and] availability of transit…" as well as "[t]he planning board may establish a parking requirement for affordable housing units for rent or sale within an eligible project that is less than one (1) parking space per affordable housing unit, regardless of the size of the structure."

Projections & Targets

The TDM Plan sets the following targets:

- ***Trip & parking reduction target:*** a 5% reduction in resident, employee and family vehicle trips and resident and employee parking demand within 3 years after full occupancy - resulting from TDM program; i.e., 5 weekday morning peak trips, 5 weekday evening peak trips, 2 spaces
- ***Multi-modal target:*** 65% of resident and employee trips will be via transit, carpooling, by bicycle, on foot or telecommuting within 3 years after full occupancy
- Will reassess targets after the first full year of 337 Cumberland occupancy

Projected Trip Generation & Parking Demand

PHDC hired Traffic Solutions to produce Institute for Transportation Engineers (ITE) trip generation and parking demand projections to assess the potential impact of 337 Cumberland Avenue's redevelopment. This has included utilizing the most recent data in the 10th edition ITE *Trip Generation Manual* and the 5th edition ITE *Parking Generation Manual*, with distinctions for the multimodal context of the site.

According to the traffic analysis, the net increase in peak hour trips for the combined 337 Cumberland and Youth and Family Outreach Chapel site is estimated at 51 or fewer "new" vehicle trips. This is because the existing Youth and Family Outreach program located in the Chapel building already generates 47 peak hour trips. Accordingly, the new joint development can be expected to generate approximately 94 total trips in the AM peak hour and 98 total trips during the PM peak hour. Per the parking demand projection analysis, the average peak hour demand for parking at the site is expected to be 42 spaces.

Trip Reduction Target

Given the multimodal accessibility of the site, the high existing rate of alternate transportation use by those living downtown, and the transportation demographics of existing YFO employees, the building's TDM efforts should enable a further 5% reduction in resident drive alone vehicle trips by the end of 3-5 years. That is, 7 weekday morning peak trips and 9 weekday evening peak trips. The TDM team plans to revisit this reduction target after the first year of full occupancy at 337 Cumberland.

Parking Reduction Target

With the lower vehicle ownership rate of low-income households, the strong strategy of unsubsidized parking for market rate tenants, and the implementation of TDM incentives, it is anticipated that a further achievable parking demand reduction is 5% by the end of 3 years; i.e., 2 spaces. The parking demand target will also be revisited after 337 Cumberland is occupied for the first year.

Multimodal Target

337 Cumberland is setting an initial target of 65% of residents and YFO employees making multimodal trips to and from the site, by 3 years after full occupancy. This includes transit, carpooling or vanpooling, bicycle, pedestrian and telecommute trips or some combination of these modes. The target is different from the trip and parking reduction targets above because, with the diversity of residents and YFO employees at 337 Cumberland and the timing of work schedules or retiree tenant activities, a number of these trips are likely to be outside of the morning and evening peak periods.

This is a complex target to set because of both the above mentioned current high multimodal rate and also the range of potential tenants and tenant occupations. For example, according to census data, when retired from day-to-day work, an individual's vehicle miles traveled decreases overall. 337 Cumberland plans to closely monitor existing trends to attain a reasonable mode-shift goal over time.

It is most useful for 337 Cumberland's TDM efforts to address the specific needs of transit users, carpoolers, bicyclists, walkers and telecommuters and set an overarching multimodal trip target for the site – versus targets for each mode. From other TDM experiments across the globe, it is clear that individuals' use of various alternate modes shift over time as different residents come and go and/or their needs change. For example, a tenant who uses transit might move to another location or a different tenant who walks might switch primarily to bicycling. In another instance, a tenant who was able to drive may lose the ability to do so and switch to using transit or carpooling for errands.

D. Trip and Parking Reduction Strategies

In the table beginning on the following page, Portland Housing Development Corporation proposes a number of best-practice and sensible parking and trip reduction strategies for 337 Cumberland's TDM Plan. These are based on the development team's understanding of the site's transportation context, likely residents and the usefulness of various TDM efforts. For example, unsubsidized off-site parking will produce the strongest results for decreasing single-occupancy vehicle trips to and from the site. In addition, the team acknowledges the various needs of different multimodal commuters. For instance, tenants who use transit, walk or bicycle are more able to do so if they have on-site, secure storage for larger commuting gear like strollers, bicycle trailers and shopping handcarts.

Another critical component for the success of 337 Cumberland's TDM Plan is a carefully thought-out marketing plan that engages tenants from when they first move in regarding preferred modes of transportation and provides easily accessible information and subsidies. As shared by Portland Oregon's SmartTrips Welcome program, a residential move is a unique and powerful opportunity for mode

…When a person changes residence, everything changes: the way to the store, the way to work, even the steps to the fridge.

This time of change offers a unique opportunity to create new neural pathways or reinforce old ones that haven't been used for a while and make these stronger than habitual pathways.

Andrew Pelsma, SmartTrips Program Specialist, Portland, Oregon

…To us, this represents a significant number of people with an immediate gap in knowledge about their local travel options.

Linda Ginenthal, SmartTrips Program Manager

experimentation and change. This marketing also builds the site's TDM culture and the sense of multimodal travel as the social norm. As 337 Cumberland is developed and under construction, the team will design a promotion strategy that complements other area Portland TDM work to encourage walking, bicycling, telework and teleservices, carpooling and the use of public transit.

Finally, the City of Portland has been reexamining the need for an area Transportation Management Association (TMA) to benefit downtown sites like 337 Cumberland. TMAs are generally public-private entities that assist sites with TDM implementation, outreach and monitoring; advocate for improved transit and act as brokers for services such as shuttles. PHDC plans to support the development of a TMA, if found to be feasible, and have 337 Cumberland Avenue participate as a member.

Infrastructure	
Remote Parking/Reduced Parking/Shared Parking/Fee in Lieu of Parking	*Reduced parking:* 337 Cumberland is limiting parking supply by providing fewer spaces than required by the City's zoning ordinance. Parking for residents and employees will be limited to 21 spots on-site.
	Remote, shared-use parking: Additional parking for site residents and employees will be available for rent through shared-use parking at the Portland Public Market, Arts District, and Monument Square Garages, within 1500 feet of the site. Residential overnight parking works well with high day-use commuter parking locations such as these. In addition, parking offsite makes car ownership less convenient for residents and further encourages the use of alternate modes.
Affordable Housing	Far beyond the current City standard for workforce housing, 80% of 337 Cumberland's dwelling units will be considered affordable housing, with total household income not exceeding 60% percent of Area Median Income (AMI). Affordable housing units at a lower rate of AMI generate fewer vehicle trips and less parking demand than higher AMI or market-rate housing units.
Transit & Other TDM Access	Real Time Transit & TDM monitor display in main lobby with looping slides regarding: live-time transit service information for routes near the site (available through Southern Maine Transit Tracker); multimodal map with nearby transit routes, bicycle routes and trails, and walk and bike distances/times; listing of bicycle facilities on site; carshare locations and membership information; information on GO MAINE ride-matching, rewards and Emergency Ride Home benefit for all alternate modes of transportation; all TDM benefits available for residents; contact information for TDM Coordinator.
Pedestrian, Bicycle and Carpool Access	*Sidewalks:* Reconstruction of any/all street sidewalk segments abutting development?
	ADA-accessible pedestrian amenities: barrier-free ramp improvements
	Crosswalks: Striping improvements, as required, for existing or proposed crosswalks
	Lighting: Street and building lighting improvements to improve sidewalk illumination
	Other pedestrian amenities: weather awning protection on Cumberland Avenue street frontage
	On-street bicycle parking: 12 on-street bicycle parking spaces

	Indoor, secure bicycle/stroller/handcart parking: in the on-site covered parking area there will be 15 hanging bike spaces, plus 600 SF of open storage for other items such as electric bikes, cargo bikes or trailers, handcarts and strollers. In the Youth and Family Outreach space there will be 200 SF of stroller storage for use by commuting families.
	Electric bicycle charging: Provide charging station/outlets for resident electric bikes in storage room
	Possible bicycle corral or other parking: depending on demand, explore with City whether to install seasonal on-street bike corral for summer and shoulder seasons; Alternately, committed to meeting a higher demand for on-street bike parking if needed.
Shared Mobility	*Site drop-off/pick-up curb area* for resident, employee and family carpoolers
	Car seat storage space: To facilitate child carseat storage, for those commuting by carpool, in the on-site covered parking area there will be 600 SF of open storage for car seats, in addition to bicycle and pedestrian gear. In the Youth and Family Outreach space there will be 200 SF of storage for commuting families' car seats, also in addition to any family pedestrian or bicycle gear.
	Carshare possibilities: With the end of UhaulCarshare service in Portland in February 2020, site owner will explore other carshare possibilities for 337 Cumberland. If an option is found feasible, the TDM Coordinator will offer a discount for resident carshare vehicle use for the first year of residency. Possibilities to explore include: • Existing service: Uhaul Truck Share, available 24/7 (8' pick-up is smallest vehicle; $19.95 per day, plus $0.69/mile); located a 22 minute walk from site at two alternate locations: U-Haul Moving & Storage, 411 Marginal Way and Blaises Euro Pro Shop, 211 Valley St (or 16 mins via transit on METRO Routes 1, 9A or 5) • Existing service: TURO peer-to-peer rental vehicle - e.g., one is currently available within 7 minute walk • Explore possible carshare or institution rate with Enterprise, located within a 9 minute walk, which offers carshare services in other cities • Explore on-site Portland Housing-owned carshare vehicle offered through Turo for daily rentals
Electric Vehicle Charging Station	Provide 1 electric car charging station
On-Site Amenities	*Co-working/community space:* work area and meeting space for tenants' use to encourage community-building and telecommuting
	On-site childcare: Preference will be given to residents of 337 Cumberland for admittance to Youth and Family Outreach. The non-profit organization serves Greater Portland families with children 6 weeks to five years of age and prioritizes 60% of slots for low-income families. YFO is accredited by the National Association for the Education of Young Children, a level 4 on Maine's Quality Rating System, and state licensed. This on-site childcare facility removes the need for commuting to and from childcare in addition to places of employment.
	Broadband access: hardwired infrastructure for broadband and WiFi
Delivery Supportive Amenities	Facilitate delivery services by providing an area for temporary storage for packages and other deliveries
Incentives	

Parking Pricing/Incentives	*Unbundled parking:* Market rate tenants will be charged for parking via a separate lease from the unit rental. Parking provided to YFO will be unbundled from the property lease and rented via a separate agreement.
Transit Subsidies	*Transit passes:* Partial transit subsidy for residents and YFO employees to use transit. Site will also explore whether reduced cost is possible through METRO for affordable housing tenants.
	Transit pass reduced payments and processing: Explore new DiriGo TouchPass system to simplify management of transit subsidy for individual resident and employee trips (expected in 2020 from METRO, City of South Portland Bus Service and Biddeford Saco Old Orchard Beach Transit - but delayed with the COVID-19 crisis)
Pedestrian/Bicycling Subsidies	*Bicycle safety courses*: Reimburse residents, YFO employees and property management staff for bicycle safety courses
	Bicycle Benefits: Explore Bicycle Benefits memberships ($5) for residents, YFO employees, and property management staff who bicycle
	Bicycle maintenance: explore offering subsidy for one bicycle maintenance class at the Portland Gear Hub - for residents and YFO employees who bicycle
TDM Coordinator	Designation of TDM Coordinator for 337 Cumberland is required - for plan implementation, monitoring and reporting to City. Should provide stipend/remuneration to support the work of this position.
Information	
Education for Travel Choice	*TDM orientation packets:* new residents and YFO employees will be provided with orientation packets regarding the site's TDM program and access to site by various travel modes. Includes: (1) Map of the area, showing the destination, major streets, nearby landmarks and time to walk/bike to them, the closest bus stops and walking times, recommended cycling and walking routes, carshare locations, etc. (2) Information about transit service frequency, fares, first and last runs, and schedules if possible; plus phone numbers and web addresses for transit service providers and taxi companies. (3) How to reach the site from major transportation terminals (bus and train stations, airport, ferry terminal, etc.) (4) Access arrangements for people with disabilities; (5) Availability of bicycle facilities, including secure bike parking and bikeshare, if available; (6) Bicycle Benefits membership and bicycle safety courses; (7) Encouraging residents to become members of GO MAINE and access rewards system, carpool matching and Emergency Ride Home Benefit; (8) carshare information and automobile parking availability and price; (9) Information regarding building TDM program and contacting the TDM Coordinator.
	New Resident & Employee TDM Engagement & Acknowledgement: TDM Coordinator will engage with each new resident to share about the TDM program as part of the building's sustainability initiatives. All new rental tenants and YFO employees will be provided with the site's TDM program overview goals. They will be asked to sign an acknowledgement of the goals of the project and a commitment to participate in the annual resident and employee commute surveys.
	Commute coaching: One-on-one transportation consultations will be available for residents upon lease of dwelling units and for YFO employees, to explore individual transportation options. Thereafter, offered at least once annually.
	Ongoing TDM program education: 1 or more times per year, TDM Coordinator will email all residents (new and existing, including subletters) and YFO employees the same information as is in the TDM orientation packets.

	Transportation fairs/tabling: Explore hosting morning or late afternoon tabling event in lobby 2-4 times per year, to engage residents and YFO employees in conversation about their transportation choices as they head out or come home. Consider offering light refreshments.
	Experiment with walking tour of multi-modal options: offer a hands-on walking tour of all the transportation options near the property. For example, a visit to the METRO Pulse on Elm Street, including how to ride the bus and practice putting a bicycle on the bus.
	Experiment with offering on-site bicycle safety class: as residents and YFO employees show interest, host a bicycle safety/information class or bicycle repair event for residents and YFO employees.
	Explore Turo peer-to-peer car rental service and consider encouraging residents with private vehicles to experiment with rental hosting of their vehicles to expand local vehicle rental offerings and reduce the vehicle ownership needs of others.
	TDM surveying: Required resident, employee and visitor transportation surveys and reporting to City will also serve as education tool
Promotion of Alternate Modes	*Co-promotion with City and downtown agencies:* Work with Portland Downtown and City of Portland's Drive Less, Do More marketing campaign to promote alternatives with residents
	Social media and social proof: Explore the efficacy of using property management and YFO social media to build social proof of others doing the desired TDM actions (with posts from residents, YFO employees, YFO families and property employees taking action – e.g., posting a photo of taking the bus to work or the morning carpool) - vs. just likes or retweets of the idea of using preferred alternate modes
	Resident and YFO employee recognition: 1-2 times per year, explore the efficacy of recognizing individual residents and YFO employees (and possibly YFO families) who reduce the traffic impact of the site through property management and YFO social media, door posters, newsletter, email or other announcements.

E. Plan for Monitoring, Data Collection and Reporting

Recognizing that the implementation of a TDM Plan is a dynamic process, the 337 Cumberland Avenue TDM Coordinator will work with the City to monitor the effectiveness of the site's TDM Plan components - and to assess whether the site is achieving the trip and parking reduction and multimodal targets listed above. 337 Cumberland will work with tenants to evaluate on and off-site parking use and incentives for preferred modes and make improvements. Another important piece will be to determine the flexibility of tenants, employees and student families to utilize various travel modes.

Tenant Surveys

The TDM Coordinator will conduct annual tenant surveys that provide quantitative data (e.g., trip, parking and mode split) and qualitative data (e.g., perception of alternate transportation, area parking and the site's TDM programming). The site will carry out these surveys once annually for the first three years of full occupancy and then every two years thereafter, with at least 50% tenant participation.
The survey will be developed in consultation with the city's TDM manager and conform to overall city TDM modeling and planning. Survey questions will include:

- Number of people in household
- Resident mode of travel to and from work and/or for other trips away from the site – plus frequency of use of those modes
- Employee or student family mode of travel to YFO
- If parking personal vehicle(s), where parked
- Whether the resident, employee or student family drives during morning or afternoon peak periods
- Use of/participation in:
    - On-site bicycle parking, stroller, hand cart storage
    - And use of off-site carshare and future Portland bikeshare
    - Any site TDM incentives or other benefits or programming
    - GO MAINE membership and program participation

- TDM marketing effectiveness
- Preferences, barriers or concerns with modes of travel and likelihood of changing travel behavior given specific incentives or disincentives
- Rating knowledge of walking, bicycling and using the bus in the community
- Space to add suggestions and comments

Note: the use of these survey tools will also assist 337 Cumberland with its TDM education efforts. That is, the questions themselves help people think differently about their transportation behavior. The surveys will also provide a reminder of the TDM lobby monitor and the TDM Coordinator as resources for more information about options.

Annual Report

The TDM Coordinator will then produce an annual TDM Report to meet the City's monitoring requirements. The report will include:

a. the above survey data and percent of units occupied;
b. how the data directly relates to the plan's reduction targets;
c. details of that year's TDM operations – including management, strategies, marketing, number of contact points with residents, and any new infrastructure development;
d. lessons learned and any changes in the TDM plan during the year;
e. plans for the following year.

Construction Management Plan
337 Cumberland Avenue

The following is the Construction Management Plan for the 337 Cumberland Avenue building located at 337 Cumberland Avenue, Portland, ME 04101. This building will be a new 60 unit low income housing building with a childcare facility on the first floor. This building will have all of its utilities (gas, electric, water, sewer, stormwater) underground. Construction of this building is scheduled to start in July-September 2021 with a duration of roughly 16 months.

A. Construction Management Principles

The proposed Construction Management Plan is configured to lessen the impact of construction activities on Cumberland Avenue, Preble Street, Portland Street, abutters, and the surrounding neighborhood. Below is a list of control measures being taken:

- A temporary construction site fence will be used to control pedestrian access to the site for the safety of pedestrians and workers alike. The temporary fence will remain during all phases of construction management. Signage will be utilized to inform pedestrians to cross the street as the sidewalk will be closed during the construction of this building.
    - The contractor will secure parallel parking spaces on Portland Street for the duration of construction.
- This project requires many hookups to utilities in the street. Traffic control during these activities will be as follows:
    - During working hours, all open excavations will be marked off with signage and traffic barrels.
    - Flaggers will be present to direct traffic around the site and control any one-way vehicle movement around the open excavation.
    - If any excavation is to be left open overnight, the excavation will be covered with steel plates, and traffic barrels will be moved to the side of the road to allow for traffic to flow normally.

B. Development Review of Construction Management Plan

The Construction Manager will submit this construction management plan which outlines the logistics and safety measures being taken to protect the city and its residents as well as the workers during construction of this building.

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

1. **Street Opening Permit:** Street opening permits will be needed for tying in new utilities to existing city utilities in Cumberland Avenue and Portland Street. We will need permits for the hook up of gas, water, sewer, and stormwater.
2. **Street Occupancy Permit:** A street occupancy permit will be needed during a portion of this project to allow for hookups of utilities in Cumberland Avenue and Portland Street. These occupancies will mostly be a 1-lane occupancy.
3. **Blasting:** Blasting will not be required for this project.

D. Construction Administration and Communication

The Construction Manager will work diligently to ensure communication with all parties impacted by the work. We intend to assist the developer in conversations with abutters before and during construction to inform them of the work that is happening and make sure that they

are being affected as little as possible during the construction of this building. We will also provide construction signage with the contact information of our company so we can be contacted should any issues arise. For city use, the Project Manager and Project Superintendent will be the primary points of contact.

E. Construction Schedule

1. The preliminary timeline for this project is as follows:
   a. Proposed Construction Start: July 15, 2021
   b. Proposed Final Completion: November 15, 2022
2. Hours of construction are currently foreseen as being limited to 7:00am to 5:00pm, Monday-Friday.
3. Extended hours or night work are not foreseen at this time, but the city will be notified if these are required at any point during construction.
4. Material will be delivered to the site through the site entrance on Portland Street.

F. Security & Public Safety

1. The construction management plan drawings show where temporary construction fences will be located during all phases of construction. These fences will both secure the site as well as protect pedestrians from the construction equipment and work.
2. This construction project will be operated in accordance with all OSHA regulations.
3. A Fire Safety Program will be developed and adhered to during construction of this building.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in public streets will have traffic control in place during working hours. This includes for any open excavations or construction equipment/vehicles temporarily parked on the side of the road. If open excavations will be left overnight, these excavations will be covered with steel plates and signage will alert drivers and pedestrians of the work.

2. Sewer: Sewer will need to be hooked up to city services for this project. Applicable street opening and work permits will be pulled prior to the start of this work.

3. Traffic Control Plans: Traffic control will be limited to times when there is construction work happening in or directly adjacent to the right-of-way. This will include signage to alert vehicles and pedestrians to the work and flaggers during working hours when needed.

H. Site Management and Controls

This construction site will have dumpsters stored behind the proposed building and will be picked up and replaced on a regular basis.

Noise will be confined to normal work hours. This noise will consist of normal vehicle traffic, pile driving operations, a crane for erecting the building, and normal construction noises such as banging and the sounds of power tools. This should not disturb the surrounding neighborhood.

The Construction Manager will expect that the City of Portland will maintain all areas outside of the construction fence during construction of the building. If there is a need to shut down a lane of Cumberland Avenue or Portland Street to install utilities, snow will be cleared during this period only. The site will be maintained by the Construction Manager.

I. Erosion Control and Preservation of Trees

1. Sediment control measures to prevent dirt and dust from the site from flowing into storm drains during inclement weather or melting.

J. Construction Staging Area

There will be space for the staging of vehicles if needed. This will be in the "Access and Delivery Area" shown on the plans.

K. Parking During Construction

1. Construction Parking: Parking will be available for construction vehicles off site.
2. Truck Routes and Volumes: The expected truck route will be up Portland Street. The volume of trucks will vary greatly during construction based on the work being performed at that time. The truck volume at any time should not interfere with normal traffic flow on any of the adjacent streets.

Att. M

PORTLAND HOUSING DEVELOPMENT CORPORATION

BOARD OF DIRECTORS
Cheryl A. Sessions, President
Robyn Tucker, Vice-President
Mariar Balow, Director
Kristin Blum, Director
Christian MilNeil, Director
Monique Mutumwinka, Director
Shirley Peterson, Director
Thomas Valleau, Director

14 Baxter Boulevard
Portland, ME 04101

Office: 207-773-4753
Fax: 207-761-5886

August 11, 2020

Neighborhood Meeting Certification

I, Jay Waterman, hereby certify that a neighborhood meeting was held on July 29, 2020 remotely by Zoom at 6:00pm for the proposed project located at 337 Cumberland Avenue. I also certify that on July 17, 2020 invitations were mailed to the following:

1) All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development or within 1000 feet of a subdivision within an industrial zone or industrial zone change.
2) Residents on the “interested parties” list.

Signed,

Attached to this certification are:
1) Copy of the invitation sent
2) Sign-in sheet
3) Meeting minutes

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14 Baxter Boulevard
Portland, ME 04101

Office: 207-773-4753
Fax: 207-761-5886

July 16, 2020

Dear Neighbor:
Please join us for a neighborhood meeting to discuss our plans for a new building containing a early childhood education facility along with 60 apartments located at 337 Cumberland Avenue.
Meeting Location: By Zoom
https://us02web.zoom.us/j/81939459720
Meeting ID: 819 3945 9720
Or dial in at: (646) 876-9923

Meeting Date: July 29, 2020
Meeting Time: 6 – 730 pm

The City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list", be invited to participate in a neighborhood meeting. Attendance will be noted and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.
If you have any questions, please call (207) 773-4753.

Signed,

Jay Waterman
Director of Real Estate Development

Note:
Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plan was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division, 4thFloor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

Neighborhood Meeting Sign-In Sheet

July 29, 2020

By Zoom

337 Cumberland Ave

Members of the Public in Attendance:

Name	Email
1.	
2.	
3.	
4.	

Developer and Consultant Team in Attendance

Name	Email
1. Camelia Babson Haley	camelia.haleyyfo@gmail.com
2. Andy Johnson	andyj@arc-maine.com
3. Jesse Thompson	jesse@kaplanthompson.com
4. Matthew Peters	matt@elysiancommunities.com
5. Richard Lo	richard@kaplanthompson.com
6. Amy Grommes Pulaski	amygrommes@gmail.com

Interested parties (Youth and Family Outreach Board Members in attendance)

1. Elizabeth Pope	lizziepope@gmail.com
2. Emily Liebling	eliebling@gmail.com
3. Lindsay Chard	lachard07@gmail.com

YFO- PHA Neighborhood Meeting July 29, 2020, 6:00pm by zoom

Attendees: Camelia Babson Haley, Andy Johnson, Jesse Thompson, Matthew Peters, Richard Lo, Elizabeth Pope, Emily Liebling, Lindsay Chard, Amy Grommes Pulaski

Matt opened the meeting. He shared that notices were sent and there was confirmation that they had been received. Unfortunately, no members of the neighborhood attended and the meeting ended early.

Traffic Solutions
William J. Bray, P.E.
17 Mountview Drive
Gorham, ME 04038
(207) 400-6890
trafficsolutions@maine.rr.com

June 23, 2020

Parking Assessment

Proposed

337 Cumberland Avenue

INTRODUCTION

Youth and Family Outreach, in partnership with Portland Housing Development Corporation, are proposing a mixed-use project on combined land parcels located at 331 and 337 Cumberland Avenue. The existing properties include the Chapel building and the former Maria's restaurant building. The former Maria's restaurant building, found on the 337 Cumberland Avenue site, will be razed and replaced with a new seven story building. The proposed new multi-story building will include 60 residential apartment units, covered parking, and an expanded area for childcare services. The Chapel building, presently located on the 331 parcel, will be lightly renovated and connected directly to the new building with a covered connection increasing the childcare capacity from 58 existing students to a total of 106 students.

Students of the existing day care center start arriving at 6:30 a.m. and their pick-up starts at 3:00 p.m. and ends by 5:30 p.m. The expanded day care center will likely maintain the same hours of operation.

The proposed development program includes:

Proposed Development Plan
- 48 affordable apartment units
- 12 market rate apartment units
- 106 student day care center

The proposed covered parking area provides sufficient space for a total of 17 parking spaces. Access to the secured parking spaces is provided through a gate-controlled entrance located on the Portland Street frontage of the proposed new building. The current development plan will dedicate one accessible van space and one car-share space, with the remaining 15 parking spaces available for tenant use overnight. Through a separate

agreement the operator of the day care center, Youth and Family Outreach, will have 16 spaces that includes the accessible van space for daytime use. The Applicant expects to retain a private vendor to provide "*car share*" services to the site and/or will operate an acceptable service through their property management company.

The City's Zoning Ordinance establishes the following minimum off-street parking requirements and special conditions for a day care center and residential development on the peninsula, as follows:

> Section 14.332 Uses requiring off-street parking.
> *(t) Day care facilities: Off-street parking shall be provided on the site for all staff of the facility. Parking for the facility shall not interfere with access to or use of play areas. In residential zones parking spaces may be stacked or placed side by side in order to lessen their impact on the residential character of the lots and the neighborhood, and shall not be closer than five (5) feet from the property line of any abutting residential use or residentially zoned site.*
>
> Section 14.332.1 Zone specific off-street parking exceptions and modifications.
> *(k) Residential development on the peninsula and in the R-6 and R-6A zones, including new construction, alterations that increase the number of units and changes of use:*
>
> *1. Except as provided below, there shall be one (1) space per unit.*
>
> *2. The required parking for multi-unit residential buildings may be partially met through provisions of shared-use vehicles, which are vehicles owned and maintained by the owner/manager of the building and available for use on a fee basis to the residents of the building. One shared use vehicle shall be deemed to satisfy eight (8) required car spaces, but in no case shall more than 50% of the parking requirement be satisfied by shared vehicle use.*

This document provides a determination of the "*average*" peak parking demand requirements of the proposed mixed-use project based upon national parking trends presented in the most current 5th edition of the Institute of Transportation Engineers "**PARKING GENERATION**" publication.

PARKING DEMAND

National parking demand data presented in the Institute of Transportation Engineers (ITE) **"PARKING GENERATION"** publication is typically the instrument used in estimating peak period parking demand of a development site. The 5th edition, which was published in January 2019, represents the most current copy of the noted ITE document. The ITE manual provides "*average*" peak parking demand rates for more than 100 land-use categories including: residential, lodging, recreational, institutional, medical, retail, office, services, etc.

Parking demand requirements were established for the proposed development project based upon the following project details:

- 48 affordable residential apartment units: (14) efficiency units, (10) one-bedroom unit, (14) two-bedroom units and (3) three-bedroom units.
- 12 market rate residential apartment units: (6) efficiency units, (5) one-bedroom units and (1) two-bedroom unit.
- 106 student day care center, with 28 staff.

Average peak parking demand rates presented in the ITE parking publication were applied in projecting the combined peak parking demand of the proposed project. The calculation procedures used in estimating average peak parking demand for the proposed development project are defined as follows:

Land-use #221: Multi-family Housing (Mid-Rise): The noted land-use provides an average peak parking demand rate per bedroom in a dense multi-use urban setting of 0.50 spaces. The ITE publication defines a dense multi-use urban setting as: "*a fully developed area (or nearly so), with diverse and interacting complementary land uses, good pedestrian connectivity, and convenient and frequent transit (either rail or bus) service.*" Accordingly, the average peak parking demand requirements of the proposed 12 market rate apartment units, with a combined bedroom count of 13, is 7 parking spaces.

Land-use #223: Affordable Housing – Income Limits: This land-use category is defined in the ITE publication as follows: "*Affordable housing includes all multi-family housing that is rented at below market rate to households that include at least one employed member.*" This land-use category provides an average peak parking demand rate per bedroom in a dense multi-use urban setting of 0.30 spaces. Approximately one-third of the households in the proposed affordable units do not have employment.

The ITE Parking Generation publication does not provide separate parking rates for affordable units that do not have one employed member. As a result, the application of the parking rates presented for Land-Use #223 likely over-state, by an undefined insignificant margin, the actual parking generation of these units.

Conservatively, the proposed 48 affordable apartments can be expected to generate an average peak parking demand requirement of **25** spaces.

Land-use #565: Day Care Center: The 106-student day care center, which includes the existing 58 student day care located in the Chapel building, will be operated with a total of 28 staff persons. The ITE publication provides an average peak parking demand rate of 0.60 spaces per employee. Based upon this rate, the proposed day care center generates an average peak parking demand of **17** spaces.

Overall, the proposed 337 Cumberland Avenue mixed-use development creates an average peak parking demand of **49** parking spaces [Market rate apartments - 7 spaces + Affordable housing units - 25 spaces and student day care center - 17 spaces = 49 spaces].

PARKING SUPPLY

The project design includes a total of 17 covered parking spaces under the proposed seven-story building with one of the parking spaces earmarked for the proposed car share program. Accordingly, a total of 16 on-site parking spaces, which includes the accessible van space, remain to partially satisfy the average peak parking demand requirements of the proposed mixed-use project. The remaining 16 spaces, coupled with the eight space reduction granted for the proposed car share program (The City Code in Section 14.332.1.k.2 states, "the *required parking for multi-unit residential buildings may be partially met through provision of shared use vehicles...One shared use vehicle shall be deemed to satisfy eight (8) required car spaces...*"), leaves a balance of **25** (49-16-8 = 25 spaces) parking spaces that must be provided to meet the average peak parking demand requirements of the overall development.

The Applicant proposes to provide the **25** additional parking spaces through the City's in-lieu fee program and/or off-site parking leases with nearby parking garages or surface parking lots.

SUMMARY

- Youth and Family Outreach and the Portland Housing Development Corporation are proposing a mixed-use development on the former Maria's Restaurant site and the existing adjoining Chapel building property. The proposed project constructs a new seven story building on the former Maria's property and completes minor renovations to the existing Chapel building. The proposed new seven story building will provide a combined mix of 60 affordable and market rate apartments and additional floor space for expansion of the existing childcare center located in the existing Chapel building. A total of 17 covered parking spaces will be provided under the proposed new building with direct access onto Portland Street.

- Average peak parking demand requirements for the proposed mixed-use project were established based upon national parking demand rates presented in the most current and updated copy of the Institute of Transportation Engineers "**PARKING GENERATION**" publication. The referenced parking publication provides average peak parking rates for multiple land-use categories including both affordable and market rate residential apartment units and day care centers. The average peak parking demand rate for an affordable residential apartment located in a dense multi-use urban setting is 0.30 spaces per bedroom, whereas, the peak parking rate for a market rate apartment unit is 0.50 spaces per unit. The development project provides a total of 48 affordable apartment units and 12 market rate apartments. The proposed 48 affordable apartments include multiple unit sizes; combined, there are a total of 82 bedrooms. The 12 market rate apartments offer a total of 13 combined bedrooms. Accordingly, the proposed affordable apartment units generate an average peak parking demand of **25** spaces and the market rate apartment units generate a parking demand of **7** spaces.

- The national parking data suggests a day care center located in a dense multi-use urban setting can be expected to create an average peak parking demand of 0.60 spaces per employee. The proposed 106 student childcare facility, which includes the existing 58 student day care located in the Chapel building, is expected to employ a total 28 staff to operate the proposed expanded childcare facility. The expanded day care center will generate a peak parking demand of **17** spaces during a typical weekday. Youth and Family Outreach, who operate the existing childcare program in the Chapel building, will continue operating the expanded childcare center. A special site development agreement grants Youth and Family Outreach a total of 16 covered spaces in the ground floor of the proposed new building for daytime use, effectively meeting the projected parking demand requirements of the expanded day care center.

- Overall, the proposed 337 Cumberland Avenue project creates an average peak parking demand of **49** spaces for a typical weekday condition.

- The proposed site design includes 17 covered parking spaces under the proposed new seven-story building; one of the proposed parking spaces will be reserved for a car share program leaving a balance of 16 on-site parking spaces to partially meet the full parking demand requirements of the proposed site.

- The City Code in Section 14.332.1.k.2 states, "The *required parking for multi-unit residential buildings may be partially met through provision of shared use vehicles...One shared use vehicle shall be deemed to satisfy eight (8) required car spaces...".* The Applicant is proposing to develop and operate an on-site car share program meeting the requirements of the City as defined in Section 14 of the City Code. The City Code, as defined above, allows an eight-space reduction for implementation of a car share program.

Accordingly, the unmet average peak parking demand of the proposed project is estimated at **25** spaces [49 spaces, less 16 on-site spaces and less 8 spaces for car share program = 25 parking space difference].

- The Applicant proposes to provide the **25** additional parking spaces through the City's in-lieu fee program and/or off-site parking leases with nearby parking garages or surface parking lots.

- The City Ordinance in Section 14-332.2.(b) states: "*The planning board may establish a parking requirement that is less than the normally required number of spaces upon a finding of unique conditions that result in a lesser parking demand, such as housing for persons who cannot drive, housing that participates in a travel demand management program, availability of transit...etc.*" The Applicant respectfully requests the Planning Board consider the following added information in determining the parking demand requirements for the proposed mixed-use site:

    1. The body of the parking assessment report, as summarized above, conclusively demonstrates the appropriateness of a much lower parking space requirement for the proposed mixed-use project. The parking study suggests a peak parking demand value of 49 spaces is appropriate to accommodate the peak parking demand requirements of the site.
    2. The project application includes a very robust Transportation Demand Management plan that will be coordinated and operated by the Portland Housing Development Corporation who has a long history of encouraging and supporting resident mobility and will contribute that extensive experience to building a TDM program that reduces drive alone automobile trips and parking demand of the proposed project. The TDM plan provides a myriad of solutions for achieving these goals; we mention a few that are directly related to reducing parking demand: reduced on-site parking, remote shared-use parking for residents and employees, unbundled parking for market rate tenants, transit passes, etc. The TDM plan promotes an achievable 5% reduction in parking demand after a period of three years.
    3. The location of the proposed 337 Cumberland Avenue site provides easy, direct, and convenient access to reliable and continually operating public transportation. The 337 Cumberland Avenue site is located only one block from the hub of all Greater Portland's public transportation options at the Elm Street Pulse and Monument Square. The 337 Cumberland Avenue site is served directly by METRO Route #8 with stops at the Preble Street Resource Center and across from the former Public Market.
    4. Provisions for a shared car service is proposed for the project with one of the 17 parking spaces dedicated for the car shared vehicle.
    5. The proposed project provides ample, secure, and covered bicycle storage on the property exclusively for resident use.

LIGHTOLIER
by signify

Downlighting

EasyLyte

Z4RDL 4" Round Aperture

Att. O

Adaptable, and flexible for your changing project needs. It is your best choice without sacrificing ease of installation or product quality.

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Frame

(frame + trim = complete product)

example: 4RN

Series	Aperture	Installation	Options
4 4-inch Non-IC	**R** Round	**N** New construction (Non-IC) **R** Remodeler (Non-IC) **A** AirSeal (IC)[1]	— Universal 120/277V (specify for Power Over Ethernet) **LC** Chicago Plenum[2] **EM** Emergency[4] **3** 347V (not compatible with ELV dimming) **3IP** 347V with Interact Pro (for use with 0-10V engines only)[2,3] **IP** Interact Pro (for use with 0-10V engines only)[2,3]

Trim

example: Z4RDL20835WOCDZ10U

Series	Lumen	CRI/CCT	Beam	Style	Reflector
Z4RDL EasyLyte 4-inch Round	**05** 500lm **10** 1000lm **15** 1500lm **20** 2000lm **25** 2500lm	**827** 80CRI / 2700K **830** 80CRI / 3000K **835** 80CRI / 3500K **840** 80CRI / 4000K	**W** Wide	**O** Open **S** Step baffle	**CD** Clear diffuse (applied finish) **BK** Black (matte) **WH** White (matte) **DB** Dark Bronze

Dimming	Voltage
Z10 0-10V 1% **L** Lutron LDE1 EcoSystem (fade-to-black)	**U** Universal 120/277/347V
ELV ELV[5]	**1** 120V
P Power over Ethernet (PoE) Only compatible with 1000 (10) to 2500 (25) lumen options	**E** Ethernet 48V DC

1. There is a 2000lm (20) limit with 4" (4RA) IC housings.
2. Interact Pro (IP), Emergency (EM) and Chicago Plenum (LC) are only available with New construction (N) installs.
3. Integral Interact Pro RF sensor enables network lighting control; to be specified with 0-10V light engines only.
4. Emergency (EM) frame comes with emergency battery pack and ceiling mountable test switch.
5. ELV (E) dimming is only compatible with 1000lm (10), 1500lm (15), 2000lm (20) configurations.

Note: Consult factory for additional dimming options.
Reflector mounted test switch requires above ceiling access and 1.25" max ceiling thickness for downlight only. See LED-EM spec sheet for more details.

IC INSULATION CONTACT · cULus LISTED · WET LOCATION · RoHS COMPLIANT · ENERGY STAR · interact ready.

Z4RDL EasyLyte 4"

Round Downlight

Features

Optics
- Provides a 70° cutoff (physical and reflected)
- Wide beam distribution for general illumination
- Spun and anodized reflectors available in specular (clear), semi-specular (comfort clear and diffuse finishes. Also available in white and black painted finishes
- Injection molded plastic trim inserts in splay and baffle options
- Reflectors available in painted clear diffuse, white, black and dark bronze

Quality of light
- Lumen Maintenance: L70 at 60,000 hours
- Color consistency: 3 SDCM
- 80 CRI minimum

Construction (New Construction)

- Galvanized stamped steal for dry / plaster ceilings.
- Pre-installed telescoping mounting bars (13" - 24")
- Frame accommodates C- channel, black iron, and 3/4" EMT for mounting distances greater than 24" between joists.
- Manufactured from 20 gage galvanized steel construction with rolled edge aperture to guide cutting tools for perfect hole cutting.

Max ceiling thickness is 1.5" (38 mm). Including PoE frame 4.88" (124 mm).

Patented install Mounting frame

- Pre-installed mounting bars allow for fast and tool-less install into T-grid and hat channel ceilings
- Close-cut aperture design eliminates an undesired gap between ceiling material and reflector.
- Simple plug-and-play connection between frame and light engine from below the ceiling allows for:
  - Easy upgrades
  - Technology changes
  - Repairs and troubleshooting

Dimming

- Advance 0-10V 1% dimming
- Lutron Hi-lume EcoSystem H Series 1% dimming

Interact Pro (IAP)

- Interact Pro brings the power of connected lighting to small and medium businesses without the complexity usually associated with connected lighting.
- Interact Pro includes an app, a portal and a broad portfolio of wireless Luminaires, lamps and retrofit kits all working on the same system.
- Commissioning via Interact Pro App (Android or iPhone)
- Prepare commissioning remotely via Interact Pro portal
- Requires compatible Interact Pro Gateway and internet connectivity for commissioning
- Compatible with UID8451/10 ZigBee Greenpower wireless dimmer switch
- Compatible with wireless Occ sensor (OCC SENSOR IA CM IP42 WH 10/1) or wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1)
- For more information on Interact Pro visit: www.interact-lighting.com/pro
- For more information on Interact Ready visit: www.philips.com/interactready

Power over Ethernet

Powered via Philips PoE lighting controller: complies with FCC rules per Title 47 part 15 (Class A) for EMI / RFI (conducted & radiated). PoE lighting controller accessible from below ceiling.

Rated life: 60,0000 hrs at 70% lumen maintenance based on IES LM-80-08 and TM-21-11.

ENERGY STAR® exceptions

- 500lm configurations
- Black & Dark bronze finishes
- Power Over Ethernet drivers

Labels and Listings

- cULus listed for wet location
- ENERGY STAR® certified
- RoHS certified

Warranty

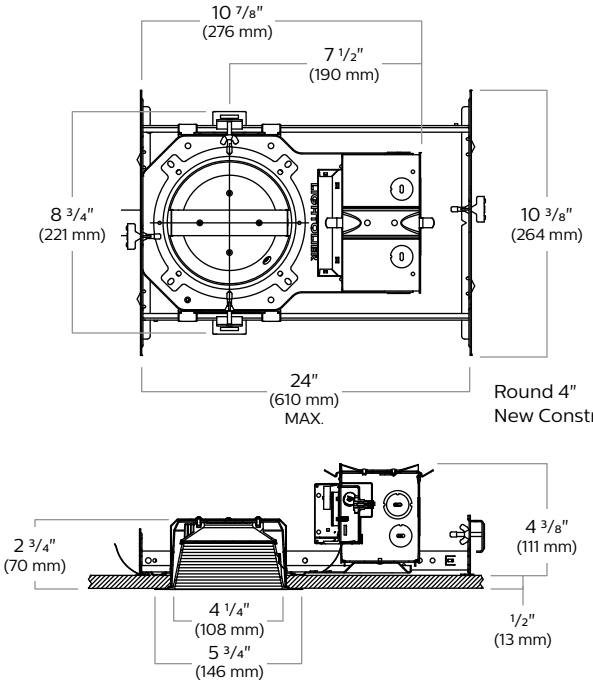
5 year limited warranty

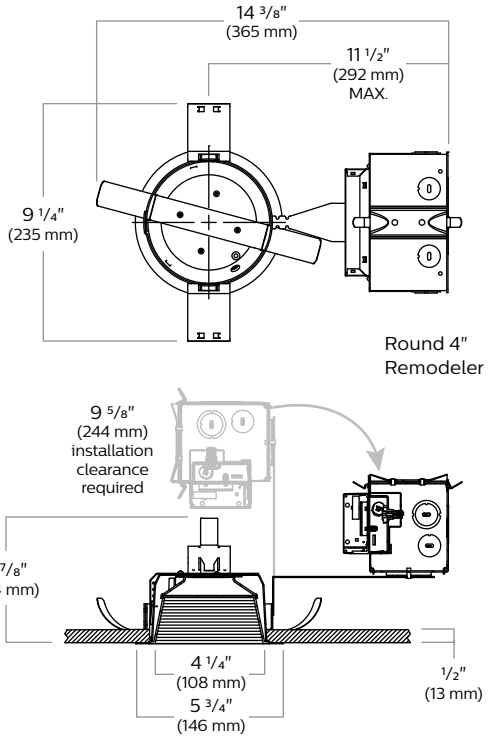
Visit Signify.com/warranties for more information on Signify's standard 5-year limited warranty on complete luminaire systems.

Z4RDL EasyLyte 4"

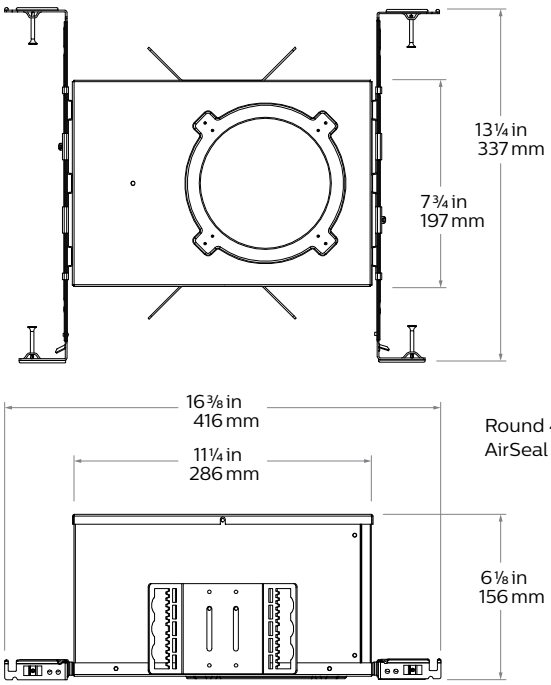
Round Downlight

Dimensions





AirSeal (A)

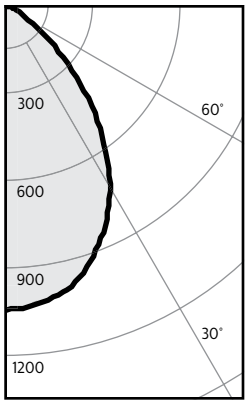


Z4RDL EasyLyte 4"

Round Downlight

Z4RDL20835WOBKZ10U • 20W LED, 80 CRI, 3500 K

Candela Curves



Angle	Mean CP	Lumens
0	1042	
5	1032	98
10	1008	
15	965	270
20	892	
25	809	370
30	705	
35	584	362
40	450	
45	317	244
50	192	
55	92	87
60	32	
65	5	9
70	2	
75	1	1
80	1	
85	0	0
90	0	

Report[1]: 1592GFR

Output lumens:	1443 lms	Efficacy:	72.1 lm/w
Spacing Criterion:	1.1	CCT[3]:	3500 K
Beam Angle:	75°	CRI:	80 min
Input Watts[2]:	20.0 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5′	42	5.5′
6′	29	6.6′
7′	21	7.7′
8′	16	8.8′
9′	13	9.9′

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5′		0.89
6′		0.58
7′		0.42
8′		0.35
9′		0.28

38′x38′x10′ Room, Workplane 2.5′ above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	113	109	107	104	107	102	103	99	99	96	92
2	106	100	96	92	98	91	95	89	92	87	83
3	99	92	86	81	90	81	88	79	85	78	75
4	93	84	78	73	83	72	81	72	79	71	68
5	87	78	71	66	77	65	75	65	73	64	62
6	82	72	65	60	71	59	69	59	68	58	56
7	77	66	59	54	65	54	64	54	63	54	52
8	72	61	55	50	61	50	60	49	59	49	47
9	68	57	50	46	57	46	56	46	55	45	44
10	65	53	47	42	53	42	52	42	51	42	40

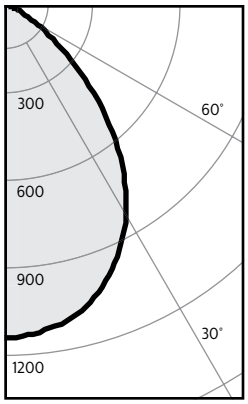
Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	738	51.2%
0-40	1100	76.3%
0-60	1431	99.2%
0-90	1443	100.0%

Z4RDL20835WOCDZ10U • 20W LED, 80 CRI, 3500 K

Candela Curves



Angle	Mean CP	Lumens
0	1136	
5	1127	107
10	1106	
15	1067	300
20	1002	
25	926	424
30	827	
35	707	439
40	570	
45	429	330
50	294	
55	181	166
60	106	
65	64	67
70	43	
75	27	29
80	15	
85	6	7
90	0	

Report[1]: 1590GFR

Output lumens:	1868 lms	Efficacy:	93.4 lm/w
Spacing Criterion:	1.1	CCT[3]:	3500 K
Beam Angle:	80°	CRI:	80 min
Input Watts[2]:	20.0 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5′	45	5.5′
6′	32	6.6′
7′	23	7.7′
8′	18	8.8′
9′	14	9.9′

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5′		0.89
6′		0.58
7′		0.42
8′		0.35
9′		0.28

38′x38′x10′ Room, Workplane 2.5′ above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	112	108	105	102	106	101	102	97	98	94	90
2	104	98	93	88	96	87	93	85	90	83	80
3	97	89	82	77	87	77	84	75	82	74	71
4	90	81	74	68	79	68	77	67	75	66	63
5	84	74	66	61	73	61	71	60	69	59	57
6	79	68	60	55	67	55	65	54	64	54	52
7	74	62	55	50	61	49	60	49	59	49	47
8	69	58	50	45	57	45	56	45	55	45	43
9	65	53	46	41	53	41	52	41	51	41	39
10	61	50	43	38	49	38	48	38	47	38	36

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	831	44.5%
0-40	1269	67.9%
0-60	1766	94.5%
0-90	1868	100.0%

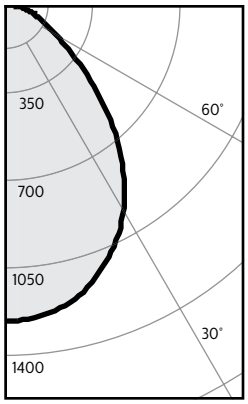
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

Z4RDL EasyLyte 4"

Round Downlight

Z4RDL20835WOWHZ10U • 20W LED, 80 CRI, 3500 K

Candela Curves



Angle	Mean CP	Lumens
0	1259	
5	1249	118
10	1225	
15	1183	332
20	1114	
25	1034	474
30	932	
35	810	503
40	672	
45	533	410
50	399	
55	287	261
60	210	
65	159	160
70	122	
75	87	92
80	54	
85	25	28
90	0	

Report[1]: 1588GFR

Output lumens:	2379 lms	Efficacy:	118.9 lm/w
Spacing Criterion:	1.1	CCT[3]:	3500 K
Beam Angle:	83°	CRI:	80 min
Input Watts[2]:	20.0 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5′	50	5.5′
6′	35	6.6′
7′	26	7.7′
8′	20	8.8′
9′	16	9.9′

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5′		0.89
6′		0.58
7′		0.42
8′		0.35
9′		0.28

38′x38′x10′ Room, Workplane 2.5′ above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	110	106	103	100	104	98	100	95	96	92	87
2	102	95	89	84	93	83	90	81	87	80	76
3	94	85	78	73	84	72	81	71	78	70	66
4	87	77	69	63	76	63	73	62	71	61	59
5	81	70	62	56	69	56	67	55	65	55	52
6	76	64	56	50	63	50	61	49	59	49	47
7	71	58	50	45	58	45	56	44	55	44	42
8	66	54	46	41	53	41	52	40	51	40	38
9	62	50	42	37	49	37	48	37	47	37	35
10	58	46	39	34	46	34	45	34	44	34	32

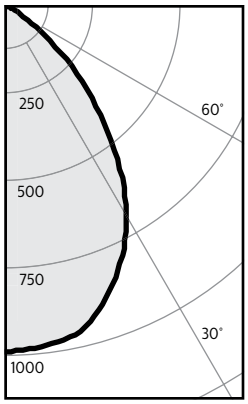
Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	925	38.9%
0-40	1428	60.0%
0-60	2099	88.2%
0-90	2379	100.0%

Z4RDL20835WSBKZ10U • 20W LED, 80 CRI, 3500 K

Candela Curves



Angle	Mean CP	Lumens
0	984	
5	978	93
10	965	
15	931	261
20	865	
25	787	360
30	688	
35	570	353
40	439	
45	309	238
50	188	
55	91	87
60	33	
65	8	11
70	3	
75	1	1
80	0	
85	0	0
90	0	

Report[1]: 1593GFR

Output lumens:	1404 lms	Efficacy:	70.2 lm/w
Spacing Criterion:	1.1	CCT[3]:	3500 K
Beam Angle:	76°	CRI:	80 min
Input Watts[2]:	20.0 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5′	39	5.5′
6′	27	6.6′
7′	20	7.7′
8′	15	8.8′
9′	12	9.9′

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5′		0.89
6′		0.58
7′		0.42
8′		0.35
9′		0.28

38′x38′x10′ Room, Workplane 2.5′ above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	113	109	107	104	107	102	103	99	99	96	92
2	106	100	95	92	98	91	95	89	92	87	83
3	99	92	86	81	90	81	88	79	85	78	75
4	93	84	78	73	83	72	81	71	79	71	68
5	87	77	71	66	76	65	74	65	73	64	62
6	82	71	64	59	71	59	69	59	67	58	56
7	77	66	59	54	65	54	64	54	63	53	51
8	72	61	54	50	61	49	59	49	58	49	47
9	68	57	50	46	56	46	55	45	54	45	43
10	64	53	47	42	53	42	52	42	51	42	40

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	714	50.8%
0-40	1067	76.0%
0-60	1391	99.1%
0-90	1404	100.0%

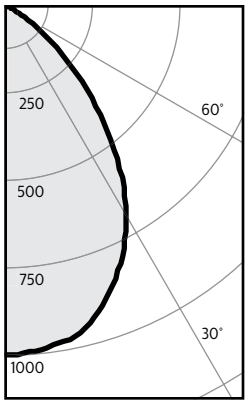
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

Z4RDL EasyLyte 4"

Round Downlight

Z4RDL20835WSDBZ10U • 20W LED, 80 CRI, 3500 K

Candela Curves



Angle	Mean CP	Lumens
0	995	
5	986	100
10		
15	939	266
20		
25	790	366
30		
35	570	358
40		
45	312	242
50		
55	97	87
60		
65	13	13
70		
75	5	6
80		
85	1	1
90	0	

Report[1]: 1591GFR

Output lumens:	1422 lms	Efficacy:	71.1 lm/w
Spacing Criterion:	1.1	CCT[3]:	3500 K
Beam Angle:	76°	CRI:	80 min
Input Watts[2]:	20.0 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5′	50	5.5′
6′	35	6.6′
7′	26	7.7′
8′	20	8.8′
9′	16	9.9′

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5′		0.89
6′		0.58
7′		0.42
8′		0.35
9′		0.28

38′x38′x10′ Room, Workplane 2.5′ above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	112	109	106	104	107	102	103	99	99	96	91
2	106	100	95	91	98	90	95	88	92	86	83
3	99	91	86	81	90	80	87	79	85	78	75
4	93	84	77	72	83	72	80	71	78	70	67
5	87	77	70	65	76	65	74	64	72	64	61
6	81	71	64	59	70	59	69	58	67	58	56
7	77	66	59	54	65	54	64	53	62	53	51
8	72	61	54	49	60	49	59	49	58	49	47
9	68	57	50	45	56	45	55	45	54	45	43
10	64	53	46	42	52	42	52	42	51	41	40

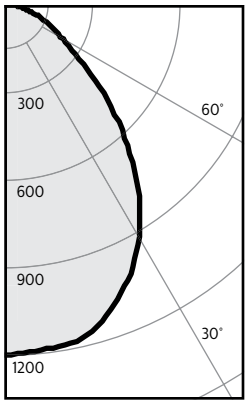
Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	717	50.4%
0-40	1070	75.3%
0-60	1399	98.4%
0-90	1422	100.0%

Z4RDL20835WSWHZ10U • 20W LED, 80 CRI, 3500 K

Candela Curves



Angle	Mean CP	Lumens
0	1192	
5	1186	113
10	1177	
15	1150	323
20	1087	
25	1011	164
30	913	
35	795	495
40	664	
45	531	409
50	402	
55	294	268
60	220	
65	168	168
70	127	
75	88	94
80	54	
85	25	28
90	0	

Report[1]: 1589GFR

Output lumens:	2361 lms	Efficacy:	118.0 lm/w
Spacing Criterion:	1.2	CCT[3]:	3500 K
Beam Angle:	85°	CRI:	80 min
Input Watts[2]:	20.0 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5′	48	6.0′
6′	33	7.2′
7′	24	8.4′
8′	19	9.6′
9′	15	10.8′

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5′		0.89
6′		0.58
7′		0.42
8′		0.35
9′		0.28

38′x38′x10′ Room, Workplane 2.5′ above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	110	106	103	99	104	98	100	95	96	92	87
2	102	95	89	84	93	83	89	81	86	79	76
3	94	85	78	72	83	71	81	70	78	69	66
4	87	77	69	63	75	62	73	62	71	61	58
5	81	69	61	55	68	55	66	55	64	54	51
6	75	63	55	49	62	49	61	49	59	48	46
7	70	58	50	44	57	44	56	44	54	44	41
8	66	53	45	40	53	40	51	40	50	40	38
9	62	49	42	37	49	36	48	36	47	36	34
10	58	46	38	34	45	33	44	33	43	33	31

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	899	38.1%
0-40	1394	59.1%
0-60	2071	87.7%
0-90	2361	100.0%

1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

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CALI CALIFORNIA ACCENT LIGHTING INC

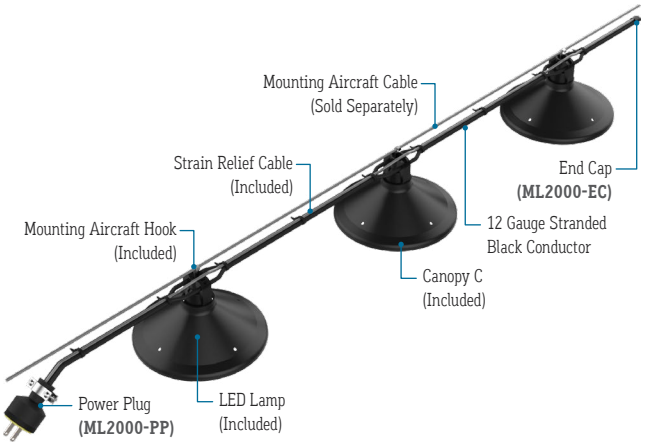
ML2000-CC | INDIRECT & DIRECT

PROJECT

TYPE

10-DAY QUICK SHIP | DRY/WET | FIELD CUTTABLE | DIMMING | MADE IN U.S.A.

± 0.15" Tolerance



END VIEW

Canopy C
(ML2000-CC)

ACCESSORIES (Sold Separately)

Power Plug
(ML2000-PP)

End Cap
(ML2000-EC)

FEATURES

APPLICATIONS	Indoor and Outdoor
LAMP	LED Lamp (Included)
LED LAMP LIFE	20,000 Hours
LENGTH	Built to Order
FINISH	Black
FEED	Standard 6' Power Lead
STRAIN RELIEF	Cable (Included, Not for Mounting)
MOUNTING	Mounting Aircraft Cable (Sold Separately)
LISTING	Dry or Wet Location ANSI/UL1598 CSA 22.2 No. 250.0-04, 2nd Edition
OPTIONS	Mesh, Canopies, or Cages
UV RATING	Sun Light Resistance
BUG RATING	B0-U0-G0 Dark Sky Compliant*[1]
INSTALLATION	Link to Installation Instructions
ELECTRICAL	
DIMMING	Forward Phase
MAXIMUM RUN	100'
VOLTAGE	120V
SYSTEM	20 Amps (12 Gauge Wire)
WATTS	1W or 3W Lamps

LAMP SPECIFICATIONS

LAMP NUMBER	CORRELATED COLOR TEMPERATURE	DARK SKY COMPLIANT	COMPATIBLE SHAPES
2.4K	2400K Incandescent White	Yes	GSFL
2.7K	2700K Warm White	Yes	GSF, GSFL, SSF, SSC
3.0K	3000K Warm White	Yes	GSFL
5.0K	5000K Cool White	No	GSF, GSFL, SSF, SSC
A	Amber	No	SSC, GSF
R	Red	No	SSC, GSF
G	Green	No	SSC, GSF
B	Blue	No	SSC, GSF

SERIES	SPACING	LAMP		DIMMING	LISTING	CANOPY FINISH INSIDE*[2]	CANOPY FINISH OUTSIDE*[2]	FIXTURE LENGTH
ML2000-CC	-	-		-	-	-	-	-
ML2000-CC	12" O/C **(12")**	2.7K-GSF	5.0K-GSFL	Forward Phase **(DM)**	Indoor **(DRY)**	Natural **(NA)**	Natural **(NA)**	Specify Length in Feet **Example:** 100'
	18" O/C **(18")**	5.0K-GSF	2.7K-SSF	Leave Blank for Non-Dimming	Outdoor **(WET)**	Polished **(PA)**	Polished **(PA)**	
	24" O/C **(24")**	A-GSF	5.0K-SSF			White **(WH)**	White **(WH)**	
	36" O/C **(36")**	R-GSF	2.7K-SSC			Black **(BK)**	Black **(BK)**	
	48" O/C **(48")**	G-BSF	5.0K-SSC			Green **(GN)**	Green **(GN)**	
	60" O/C **(60")**	B-GSF	A-SSC			Bronze **(BR)**	Bronze **(BR)**	
		2.4K-GSFL	R-SSC			Silver **(SR)**	Silver **(SR)**	
		2.7K-GSFL	G-SSC			Red **(RD)**	Red **(RD)**	
		3.0K-GSFL	B-SSC					

*[1] For Dark Sky Compliant fixtures, use only 2.4K, 2.7K, or 3.0K LEDs
*[2] Standard Canopy Finish: Black (BK) if unspecified

CALIFORNIA ACCENT LIGHTING, INC.
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marketLITE™ Manufactured in the U.S.A.

INTERTEK ETL LISTED C US

CALI CALIFORNIA ACCENT LIGHTING INC

ML2000-CC | INDIRECT & DIRECT

LAMP OPTIONS

Material: Polymer Plastic
Appearance: Frosted
Lamp Watts: 1W
Lamp Life: 20,000 hrs.
Lamp Type: Standard LED
Lumens: 42
Beam Angle: 360°
Temperatures: 2.7K, 5.0K

G Shape
(GSF)

Material: Glass
Appearance: Clear
Lamp Watts: 3W
Lamp Life: 25,000 hrs.
Lamp Type: Filament LED
Lumens: 256
Beam Angle: 360°
Temperatures: 2.4K, 2.7K, 3.0K, 5.0K

Filament G Shape
(GSFL)

Material: Polymer Plastic
Appearance: Frosted
Lamp Watts: 1W
Lamp Life: 20,000 hrs.
Lamp Type: Standard LED
Lumens: 42
Beam Angle: 360°
Temperatures: 2.7K, 5.0K

S Shape
(SSF)

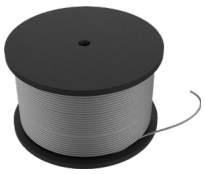
Material: Polymer Plastic
Appearance: Frosted
Lamp Watts: 1W
Lamp Life: 20,000 hrs.
Lamp Type: Standard LED
Lumens: 42
Beam Angle: 360°
Temperatures: 2.7K, 5.0K, A, R, G, B

S Shape
(SSC)

MOUNTING ACCESSORIES (Sold Separately)

Mounting Plate
(ML2000-MP)

Cable Lock
(ML2000-CL-1/8")



Mounting Aircraft Cable
(ML2000-AC-1/8"-X)
(X = Specify Length)

PART NUMBER	MATERIAL	SPECIFY LENGTH	SPECIFY QUANTITY	UNIT
ML2000-EC	Vinyl Plastic (75A Durometer)	N/A		Each
ML2000-PP	Rubber	N/A		Each
ML2000-MP	Stainless Steel	N/A		Each
ML2000-CL-1/8"	Zinc	N/A		Each
ML2000-AC-1/8"-X	302/304 Stainless Steel			Each

INSTALLATION RECOMMENDATIONS

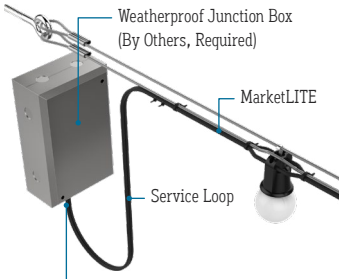
- Determine weight of marketLITE that will be used.
- Determine length of marketLITE and multiply by weight.
- An engineer must choose the proper aircraft cable to handle the tension, based on length and weight to prevent product from sagging.
- An engineer must determine the strength of the structure where the cable will attach, based on tension calculation from previous step.
- If installing on a pole, check with pole manufacturer to confirm the pole can handle the tension.
- marketLITE is hung to the above aircraft cable using the hooks. Secure hooks to aircraft cable by crimping or using stainless steel tie wraps.
- The supplied aircraft cable is designed to prevent strain on the wire. An additional aircraft cable is required to hang marketLITE.

DESIGN GUIDELINES

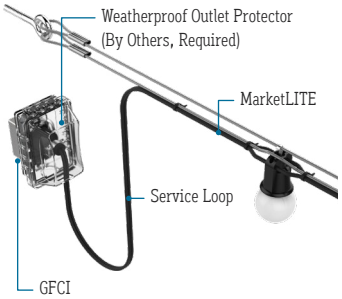
Straight Run

Swayed Run

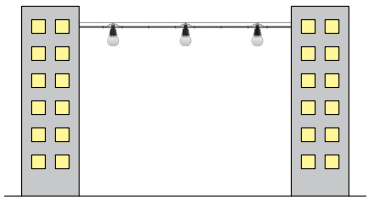
HARDWIRE INSTALLATION
(Wet Location)



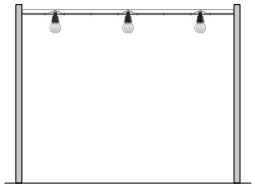
POWER PLUG
(Wet Location)



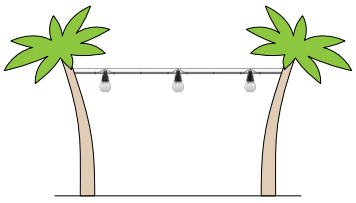
INSTALLATION OPTIONS



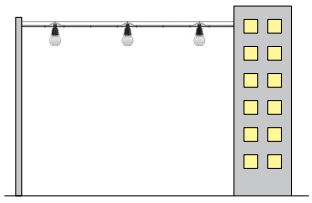
Building to Building



Pole to Pole



Tree to Tree



Building to Pole

WEIGHT PER FOOT

SERIES	SPACING	WEIGHT
ML2000-CC	12" O/C	0.5 lbs per foot
	18" O/C	0.37 lbs per foot
	24" O/C	0.31 lbs per foot
	36" O/C	0.24 lbs per foot
	48" O/C	0.21 lbs per foot
	60" O/C	0.19 lbs per foot

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marketLITE™ Manufactured in the U.S.A.

GARDCO by signify

Floodlights

ClearScape

Small, CSFS

The Gardco ClearScape LED luminaires feature an architecturally stylish design that will complement your application's visual landscape. ClearScape offers unparalled photometric performance, significant savings over HID, and is available with the latest in energy saving control options.

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Ordering guide

Example: CSFS-16L-1A-NW-G1-SF-SP-UNV-BK

Prefix	# of LEDs	Drive Current	LED Selection	Generation	Mounting	Distribution	Voltage	Options		Finish
CSFS ClearScape Flood Small	**16L** 16 LEDs **32L** 32 LEDs	**350** 350 mA **530** 530 mA **700** 700 mA **1A** 1 A **530** 530 mA **700** 700 mA **1A** 1 A	**NW** Neutral White *4,000K, 70 min. CRI* **CW** Cool White *5,700K, 70 min. CRI* **WW** Warm White *3,000K, 70 min CRI*	**G1** Gen-1	**SF** Slip Fitter Mount (fits to 2-3/8" O.D. tenon) **YK** Yoke Mount	**SP** Spot **RSP** Rectangular Spot **A33** Asymmetric 33° Flood **RN** Rectangular Narrow Flood **RM** Rectangular Medium Flood	**120** **208** **240** **277** **347** **480**[6] **UNV**[5] (120-277V) **HVU**[5,6] (347-480V)	**DD**[1] 0-10V Dimming Driver DynaDimmer Safety Profile **DS25**[2] **DS50**[2] **DS75**[2] DynaDimmer Median Profile **DM25**[2] **DM50**[2] **DM75**[2] DynaDimmer Economy Profile **DE25**[2] **DE50**[2] **DE75**[2] DynaDimmer and Motion Response Override *Pole Mounted sensor* **MRO**[3,4,13] Motion Response (50% Low) *Pole Mounted sensor* **MR50**[4,13] Network System (SiteWise) **SW** Integral module[10,11]	**PCB**[5,6] Photocontrol Button **TLR**[9] Twist Lock Receptacle **TLRPC**[5,7,9] Twist Lock Receptacle w/ Photocell **F1**[5] Single Fusing (120, 277, 347V) **F2**[5] Double Fusing (208, 240, 480V) **F3**[5] Double Fusing Canadian Double Pull (208, 240, 480V) **ICL**[8] Internal Concentric Glare Louver	**BK** Textured Black **WH** Textured White **BZ** Textured Dark Bronze **DGY** Textured Dark Gray **MGY** Textured Medium Gray **OC** Optional Color *Specify optional color or RAL ex: OC-LGP or OC-RAL7024* **SC** Special Color Specify *Must supply color chip Requires factory quote.*

1. 0-10V leads exiting the luminaire are supplied for secondary controls (by others).
2. DynaDimmer available with **120** through **277V** only.
3. DynaDimmer Profile must be specified with **MRO** option. *Example: DE75-MRO*
4. Requires **MS-A-120** or **MS-A-277** accessory (ordered separately). **120** or **277V** only.
5. Specify input voltage. Fusing and Photocontrols are not available with **UNV** or **HVU** options.
6. **PCB** option is not available in **480V**.
7. Not available with **347** or **480V**.
8. Not available with Spot Optics (**SP**).
9. Not available with Yoke Mount (**YK**).
10. **SW** option is not available with any other control options with the exception of **MRO** motion response options
11. Available only on **120** and **277V**

CSFS ClearScape LED floodlight, small

Site & Area – 16 or 32 LED

Accessories – Ordering guide (Must be ordered separately)

Shielding and Lenses

ICL-CSFS(16/32)[10]	Internal Concentric Glare Louvers
BD-CSFS[11]	Barn Doors (Black finish standard)
WG-CSFS	Wire Guard
SG-CSFS	Stone Guard
RDF-CSFS[11]	Red Color Filter
PKF-CSFS[11]	Pink Color Filter
BLF-CSFS[11]	Blue Color Filter
GNF-CSFS[11]	Green Color Filter

Mounting – Slipfitter mount

WMB-16.5-(F)[12]	Wall Mounting Bracket
SMT-2-(F)[12]	Surface Mount Tenon
JB-VMT-(F)[12]	Junction Box w/ SMT-2
SM-18-(F)[12]	18" Stanchion Mount
PTA-2180-16.5-(F)[12]	Pole Top Adaptor 2@180
PTA-2090-16.5-(F)[12]	Pole Top Adaptor 2@90
PTA-3090-16.5-(F)[12]	Pole Top Adaptor 3@90
PTA-4090-16.5-(F)[12]	Pole Top Adaptor 4@90

Mounting – Yoke mount

MF4-(F)[12]	Standalone Slip Fitter
BP-(F)[12]	Surface Mount Base Plate
JB-BP-(F)[12]	Junction Box w/ Base Plate

Motion Response

MS-A-120V[5,13]	120V input – Motion Sensor for MR50 or MRO (pole mount only)
MS-A-277V[5,13]	277V input – Motion Sensor for MR50 or MRO (pole mount only)

Central Remote Motion Response
(used connected to SiteWise main panel)

MS2-A-FVR-3

MS2-A-FVR-7

10. **16**/**32** = Specify LED count Example: CSFS48

11. Color filters and Barn Doors available Q2, 2015.

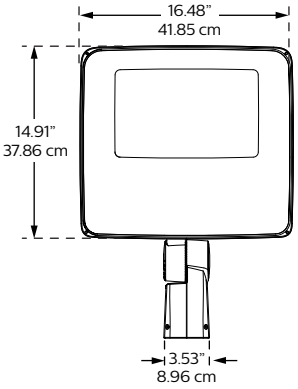
12. **F** = Specify Finish

13. Requires **MR50** option or DynaDimmer **MRO** option to be specified with the luminaire.

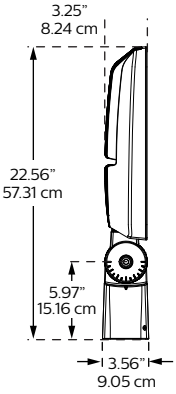
Dimensions – ClearScape Small (CSFS)

Slipfitter Mount

Front view



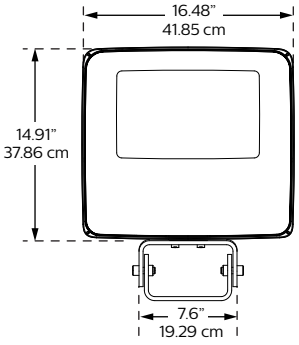
Side view



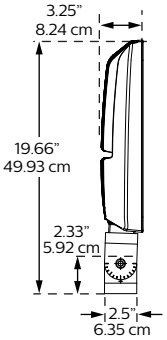
Weight: 31 Lbs
EPA: 2.20 ft²

Yoke Mount

Front view

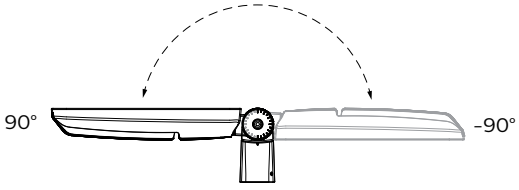


Side view

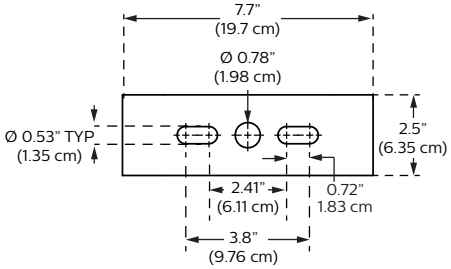


Weight: 29 Lbs
EPA: 2.12 ft²

Slipfitter Aiming Diagram



Drill Template – Yoke Mount



Recommended Bolt Size: 1/2"

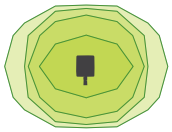
CSFS ClearScape LED floodlight, small

Site & Area – 16 or 32 LED

Distribution Patterns

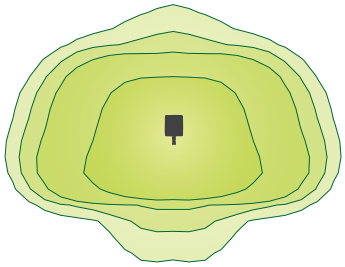
Spot 'SP'

50% Main Beam: 15°H x 15°V
10% Field Beam: 24°H x 24°V
20' Setback, 0° Tilt



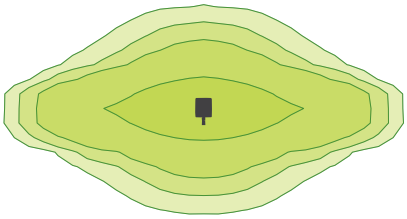
Rectangular Spot 'RSP'

50% Main Beam: 22°H x 13°V
10% Field Beam: 40°H x 30°V
20' Setback, 0° Tilt



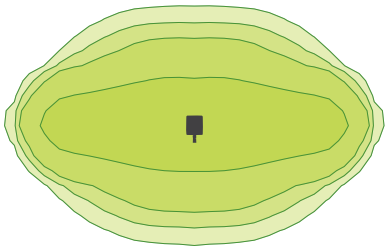
Asymmetric 33° Flood 'A33'

50% Main Beam: 81°H x 38°V
10% Field Beam: 119°H x 77°V
20' Setback, 0° Tilt



Rectangular Narrow 'RN'

50% Main Beam: 138°H x 41°V
10% Field Beam: 148°H x 75°V
20' Setback, 0° Tilt



Rectangular Medium 'RM'

50% Main Beam: 81°H x 39°V
10% Field Beam: 119°H x 77°V
20' Setback, 0° Tilt

Technical Data

Order Code	# of LEDs	LED Current (mA)	Color Temperature (CCT)	Average System Wattage (W)	Initial Nominal Delivered Lumens					Average Efficacy (Lm/W)
					SP	RSP	A33	RN	RM	
CSFS-16L-350-NW	16	350	4000K, NW	20	2,087	2,057	2,174	2,127	2,099	109
CSFS-16L-530-NW	16	530	4000K, NW	29	3,025	2,982	3,135	3,085	3,044	106
CSFS-16L-700-NW	16	700	4000K, NW	38	3,859	3,805	3,984	3,935	3,884	103
CSFS-16L-1A-NW	16	1A	4000K, NW	57	5,424	5,347	5,533	5,531	5,459	95
CSFS-32L-530-NW	32	530	4000K, NW	52	5,737	5,656	5,944	5,850	5,775	111
CSFS-32L-700-NW	32	700	4000K, NW	72	7,510	7,403	7,724	7,658	7,560	106
CSFS-32L-1A-NW	32	1A	4000K, NW	109	10,431	10,283	10,727	10,636	10,499	97

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown. Actual performance may vary due to installation and environmental variables, LED and driver tolerances, and field measurement considerations. It is highly recommended to confirm performance with a photometric layout.

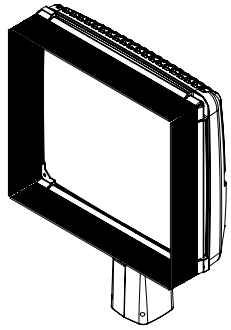
NOTE: Some data may be scaled based on tests of similar (but not identical) luminaires. Contact factory for configurations not shown.

CSFS ClearScape LED floodlight, small

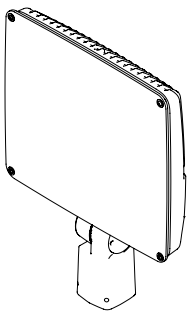
Site & Area – 16 or 32 LED

Luminaire Option and Accessory details

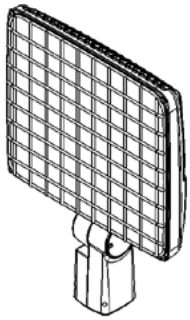
Barn Doors (**BD)**



Stone Guard (**SG)**



Wire Guard (**WG)**

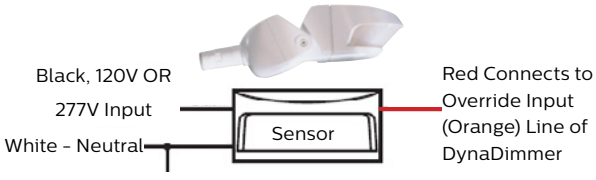


Control option details

MR50
Motion Response

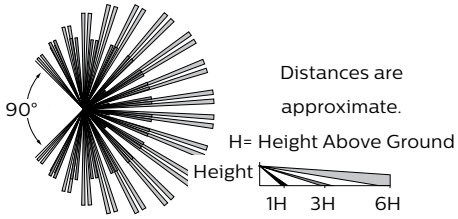
Gardco ClearScape LED luminaire with motion response, providing a 50% power reduction on low and a commensurate reduction in light output. The power and light output reduction is accomplished utilizing the DynaDimmer module, programmed for a constant 50% power. Power supplied by the motion sensor connected to the override line on the DynaDimmer takes the luminaire to high setting, 100% power and light output, when motion is detected. The luminaire remains on high until no motion is detected for the motion sensor duration period, after which the luminaire returns to low. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes.
MR50 is available in 120V through 277V input only to the luminaire.
Motion sensors require single voltage 120V or 277V input.

The Area PIR motion sensor is the WattStopper EW-200-120-W (120V Input - MSA-120V) or the WattStopper EW-200-277-W (277V Input - MSA-277V.) One motion sensor per pole is required and is ordered separately. Area sensors require single voltage 120V or 277V input.

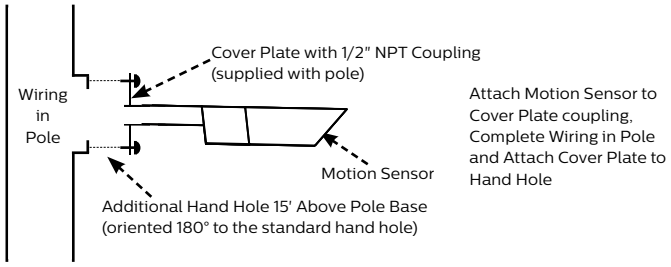


The area motion detector provides coverage equal to up to 6 times the sensor height above ground, 270° from the front-center of the sensor.

Area PIR Motion Sensor Coverage Pattern:



Motion response requires that the pole include an additional hand hole 15 feet above the pole base, normally oriented 180° to the standard hand hole. For Gardco poles, order the pole with the Motion Sensor Mounting (MSM) option which includes the hand hole and a special hand hole cover plate for the sensor with a 1/2" NPT receptacle centered on the hand hole cover plate into which the motion sensor mounts. Once the motion sensor is connected to the hand hole cover plate, then wiring connections are completed in the pole. The plate (complete with motion sensor attached and wired) is then mounted to the hand hole. If poles are supplied by others, the customer is responsible for providing suitable mounting accommodations for the motion sensor in the pole.



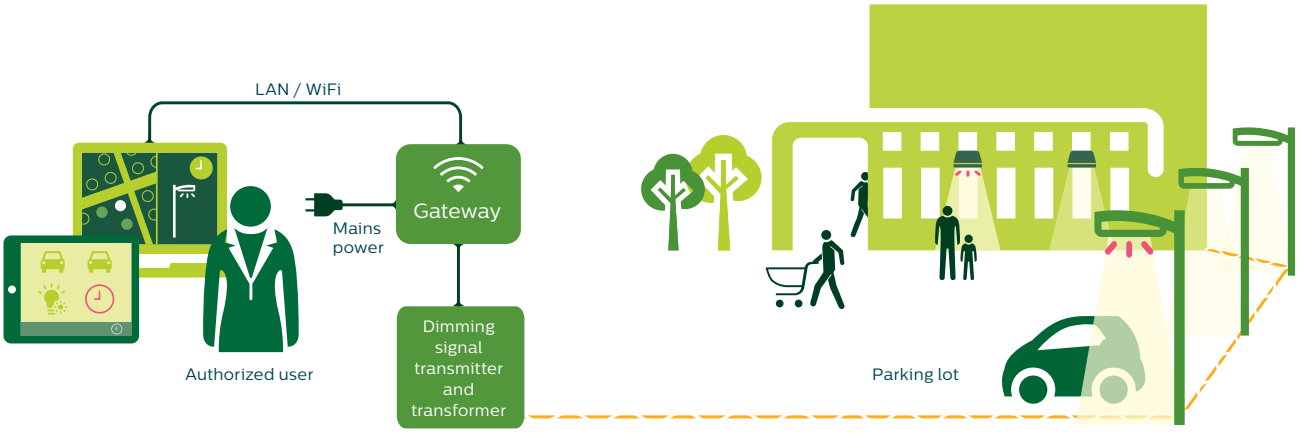
CSFS ClearScape LED floodlight, small

Site & Area – 16 or 32 LED

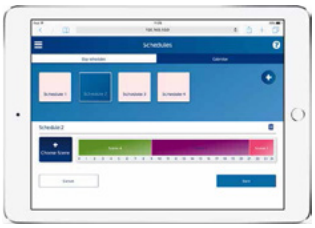
SiteWise system

SiteWise is a complete area lighting management system including a luminaire integrated controller, dimming signal transmitter cabinet, and locally accessible user interface. Installation and commissioning are simple. The cabinet communicates with the luminaires using a patented central dimming technology. The control signal is embedded on the existing electrical line – no new cabling is required. An intuitive, locally accessible interface makes it easy for authorized users to set schedules in order to meet site specific lighting needs, local regulations, and energy codes.

SiteWise system diagram



SiteWise system interface



SiteWise has an intuitive user interface that makes it easy to plan, edit, and implement lighting schedules for your site. Authorized users can access the interface via a local app.

To ensure that only authorized users can access your lighting, SiteWise offers two user types, each with different permissions. An advanced user, or administrator, can set and edit schedules using the ten pre-set scenes, assign those schedules to calendar days, and check system status.

For everyday use, a basic user can manually override a schedule that is currently running but cannot create or edit schedules.

SiteWise system specifications

The SiteWise system includes both luminaires and controls. The controls used for SiteWise are circuit load dependent. Required for a complete installation are the following SiteWise components: user interface, control kit, dimming signal transmitter cabinet, and dimming signal receiver located in the luminaire (**SW** option). Optional luminaire-integrated or external motion sensors may also be specified as required. Within the electrical closet, the control kit and dimming signal transmitter cabinet are installed into the electrical system between the existing breaker panel and the site luminaires. New LED luminaires containing the dimming signal receiver are installed on the site. Once completed, use of the interface allows for scheduling and override capabilities. Wireless access point and tablet should be supplied by others. Complete information on the control system can be found on the SiteWise website at **signify.com/sitewise**

Site & Area – 16 or 32 LED

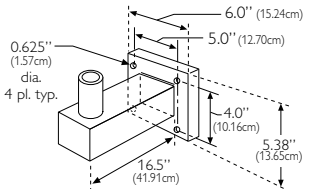
Mounting accessory details - Slipfitter

WMB-16.5-(F)
Wall Mounting Bracket

2-3/8" O.D. vertical tenon welded to extruded aluminum arm with removable end cap for wiring. Arm is bolted to a cast aluminum plate that has four 5/8" diameter mounting holes.

Suitable for mounting single luminaire only.

Mounting hardware by others.

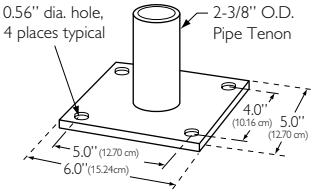


SMT-2-(F)
Surface Mounted Tenon

2-3/8" O.D. aluminum tenon welded to a flat aluminum plate with four 1/2" diameter mounting holes.

Single floodlight may be pad mounted or wall mounted.

Mounting hardware by others.



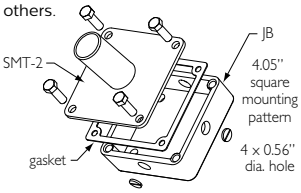
JB-VMT-(F)
Junction Box with SMT-2

For mounting to flat surfaces when using surface mount conduit.

Box has four 1/2" pipe entrances.

1/2" NPS.

Mounting hardware by others.

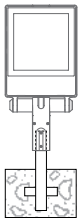


SM-18-(F)
18" Stanchion Mount

Stanchion mounting allows stable positioning of vertical tenon member in aggregate or substrate.

2-3/8" O.D. aluminum tenon welded to a 2-7/8" stanchion.

Standard length: 18"



PTA-2180-16.5-(F)
Pole Top Adapter, 2@180

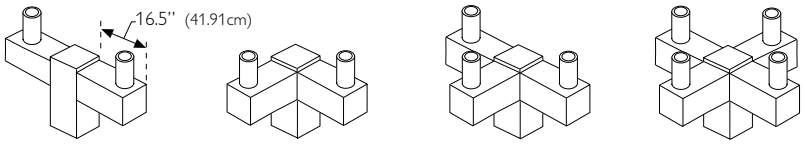
PTA-2090-16.5-(F)
Pole Top Adapter, 2@90

PTA-3090-16.5-(F)
Pole Top Adapter, 3@90

PTA-4090-16.5-(F)
Pole Top Adapter, 4@90

Vertically mounted 2-3/8" O.D. tenons welded to extruded aluminum arms with removable end cap for wiring. Arms bolted to cast aluminum pole top bracket. Fits poles having a 2-3/8" O.D. x 4" vertical tenon.

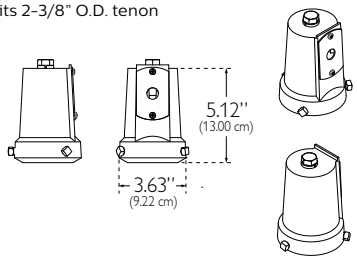
Components shipped separately. Field assembly required.



Mounting accessory details - Yoke Mount

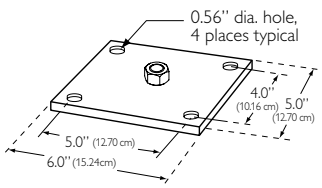
MF4-(F) Slip Fitter

Fits 2-3/8" O.D. tenon



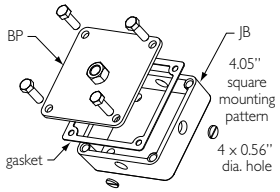
BP-(F) Surface Mount Base Plate

Flat aluminum plate with four 1/2" diameter mounting holes. Single floodlight may be pad mounted or wall mounted. Mounting hardware by others.



JB-BP-(F) Junction Box with BP

For mounting to flat surfaces when using surface mount conduit. Box has four 1/2" pipe entrances. Mounting hardware by others. 1/2" NPS.



CSFS ClearScape LED floodlight, small

Site & Area - 16 or 32 LED

Specifications

Construction

Die-cast aluminum housing with corrosion resistant hardware. ClearScape housing constructed to IP66. Die-cast aluminum heatsink allows for long life of LEDs up to 40°C ambient.

Thermal Management

The luminaire design incorporates vertical fins that allow the housing to provide excellent thermal management critical to long LED system life.

LED Board and Array

16 or 32 high power LEDs. Warm, Neutral, and Cool Color temperatures available. Metal core printed circuit board. RoHS compliant.

IP Rating

Luminaire optic and electrical housing constructed to IP66.

Driver

High efficiency multi-volt driver (50 or 60 Hz), maintains constant current flow to LEDs to accommodate LED variations. High power factor (0.9 standard). Constant current: 350, 530, 700, or 1000 mA. Voltage: 120-277, 347, 480. Ambient temperature range: -40°C (-40°F) to 40°C (104°F). Open / short circuit protection. RoHS compliant. Surge protector standard. The surge protector is in accordance with IEEE / ANSI C62.41.2 guidelines, with a surge current rating of 10 KV / 5 KA.

SiteWise Network System

SiteWise system includes a controller fully integrated in the luminaire that enables the luminaires to communicate with a dimming signal transmitter cabinet located on site using patented central dimming technology. A locally accessible mobile app allows users to access the system and set functionalities such as ON/OFF, dimming levels and scheduling. SiteWise is available with motion response options in order to bring the light back to 100% when motion is detected. Additional functionalities are available such as communication with indoor lighting and connection to BMS systems

LED Optical System

SP - Spot, RSP - Rectangular Spot, A33 - Asymmetric 33° Flood , RN - Rectangular Narrow Flood, RM - Rectangular Medium Flood distributions. See optical data for details. Fully gasketed IP66-rated construction.

Optical Options

Internal Concentric Glare Louver (ICL) options reduce glare and increase visual comfort. Shields are mounted internally, and do not disrupt the overall aesthetic of the luminaire. Shields can be ordered as an option and installed in the factory, or as an accessory for field installation.

Barn doors are also available.

Mounting

Slipfitter (SF) is vertically adjustable, suitable for mounting to a 2-3/8" O.D. tenon. Slipfitter features an integral splice compartment with gasketed access cover to eliminate the need for a secondary junction box.
Yoke mount also available

Vibration Resistance

ClearScape with yoke mount and slipfitter carries a 3G vibration rating that conforms to the standards set forth by ANSI C136.31. Testing includes vibration to 3G acceleration in three axes, all performed on the same luminaire.

Energy saving benefits and controls

The CSFS has a system efficacy of up to 118 LPW at a system wattage of up to 109W. Optional DynaDimmer and motion response controls provide additional energy savings by dimming to 25%.

Finish

Standard textured finishes available.
BZ - Textured Dark Bronze, DGY - Textured Dark Gray, MGY - Textured Medium Gray, WH - Textured White, BK - Textured Black.

Accessories

See ordering guide on page 2, 4 and 5 for details.

Listings

All luminaires bear UL or cUL (where applicable) Wet Location labels. Suitable for use in ambients from -40° to 40°C (-40° to 104°F). ClearScape small configurations are DesignLights Consortium® qualified, consult DLC QPL Qualified Products List for more details.

Limited Warranty

5 year limited warranty. See signify.com/warranties for complete details and exclusions.

LED Performance:

Predicted lumen depreciation data[14]				
Ambient Temperature °C	Driver mA	Calculated L_{70} Hours[13,14]	L_{70} Per TM-21[14,15]	Lumen Maintenance % @ 60,000 hours
25°C	up to 1050 mA	>100,000	>60,000	96%

13. Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.
14. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output.
15. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours.

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Stonco

by signify

Wall mount

LytePro

LPW7 small wall sconce

Stonco LytePro LED small wall sconce LPW7 features outstanding value in a compact, architectural design, and combines energy savings with good photometric performance. LPW7 is ideal for entryways, corridors, facade and other wall/surface lighting applications.

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Ordering guide

Example: LPW7-10-NW-G3-2-120-PCB-BZ

					Options	
Prefix	**Wattage**	**LED Color/Gen**	**Distribution**	**Voltage**	**Photocontrol**	**Finish**
LPW7	10		2			
LPW7 LytePro 7 LED small wall sconce	**10** 10W	**NW-G3** Neutral White 4000K 70 CRI Generation 3 **WW-G3** Warm White 3000K 70 CRI Generation 3	**2** Type 2	**120** 120V **208** 208V **240** 240V **277** 277V **UNV** 120-277V (50/60Hz)	**---** None **PCB** Photocontrol Button[1]	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: OC-LGP or OC-RAL7024) **CC** Custom color (Must supply color chip for required factory quote)

Stocked luminaires – Ordering guide

Catalog Number	Description	Master Pack, Qty	UPC Code
LPW7-G3-8-BZ	LPW7, 250mA, 4000K, 120-277V, Bronze textured paint	6	622252813858
LPW7-G3-8-DGY	LPW7, 250mA, 4000K, 120-277V, Dark gray textured paint	6	622252813841

Stocked accessories – Ordering guide (Must be ordered separately)

Catalog Number	Description	Master Pack, Qty	UPC Code
LPWCVRPLT-BZ[2]	LPW Universal wall cover mounting plate, Bronze textured paint	(none)	190096144860

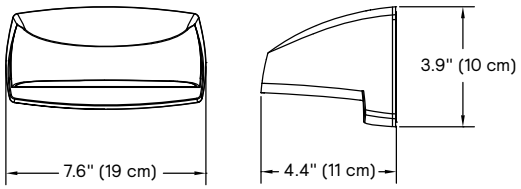
[1] Must specify voltage.

[2] Other colors available upon request as made-to-order

LPW7 LytePro

LED small wall sconce

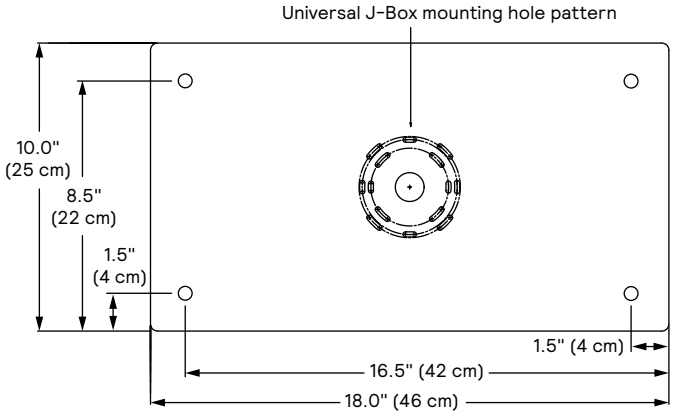
Dimensions



Luminaire weight: 4 lbs (1.8 kg)

Accessory dimensions (ordered separately)

LPWCVRPLT LPW Universal wall cover mounting plate, 0.08" aluminum, bronze textured paint (used to cover larger pre-existing opening or surfaces, field installed). Offers same J-Box pattern as luminaire or may lagged to wall using (4) knockouts.



LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 2		
					Lumen Output	BUG Rating	Efficacy (LPW)
LPW-7-10-NW-G3-2	18	250	4000	9.7	1050	B1-U0-G0	108
LPW-7-10-WW-G3-2	18	250	3000	9.7	1051	B1-U0-G0	108

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown.

Actual performance may vary due to installation and environmental variables, LED and driver tolerances, and field measurement considerations. It is highly recommended to confirm performance with a photometric layout.

NOTE: Some data may be scaled based on tests of similar (but not identical) luminaires. Contact factory for configurations not shown.

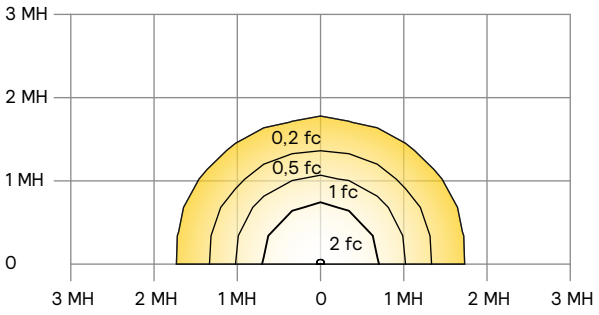
Predicted lumen depreciation data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
up to 40°C	>200,000 hours	>60,000 hours	>92%

Optical distribution

Based on LPW7-10-NW-G3-2 at 10' mounting height



LPW7 10' mounting height			
Mounting height	6 ft	8 ft	10 ft
Multiplier	1.23	1.14	1.00

LPW7 LytePro

LED small wall sconce

General Description

LytePro LED small wall sconce LPW7 combines excellent performance, design and value to meet the needs of the energy and budget conscious. The LPW7 is available for use in downward facing, surface wall mount applications, over recessed j-boxes or where power can be directly fed through back surface, whereby connections splices can be made inside the luminaire housing. Two SKU's are available as in-stock configurations (2-day quick ship).

Housing

Die-cast housing houses both the LED and driver assemblies. Design incorporates an integrated heat sink to maximize thermal performance and reliability. Backplate is corrosion free, composite polycarbonate, with built-in level bubble, offers integral interlocking hook and mount design for easy installation.

Mounting

Easy interlocking hook and mount housing/ backplate design for easy installation. Mounts over 3.5", 4" octagonal j-boxes and single gang switch boxes (mounted horizontally) or can be directly lagged to surface. Ensure proper steps for gasket/sealing luminaire to surface.

IP Rating

Optical compartment is IP65 rated.

LED Board and Array

Provides up to 108 lm/W at the system level. Standard color temp is 4000K or 3000K +/- 130K, minimum 70 CRI.

Electrical

Driver efficiency (>89% standard). 120-277V. Temp range: -40°C (-40°F) to 40°C (104°F). Open/short circuit protection. RoHS compliant.

Listings

Product is cETLus listed suitable for Wet Locations. Suitable for use in ambients from -40°C to 40°C (-40°F to 104°F). DesignLights Consortium® qualified.

Finish

Each luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish.

Warranty

LPW7 luminaires, the LED arrays, and the drivers are all covered by a 5-year limited warranty. See www.signify.com/warranties for details.

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PERFORMANCE iN LIGHTING

PRODUCT CODE 079630

PROJECT

TYPE

NIKKO+45 LED

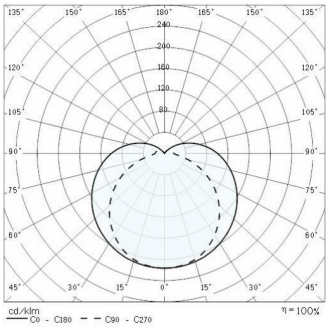
IP 65 | PRONTO | WET | cULus LISTED | 79

Part number	079630
Lampholder:	LED
Wattage:	24.2 W
Finish:	GR-94 / Aluminum metallic / Textured
Degree of protection:	IP65
CRI:	80
Kelvin:	3000
Optic:	Symmetric extra wide reflector
Luminaire lumen output:	702 lm
Lifetime:	60000 h
cULus:	✔
Voltage:	120-277 V

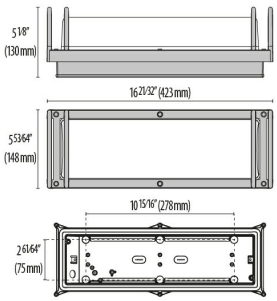
Description

Surface-mount doorway and hallway lights and post mount series. Fixtures consist of:
- Multi-step powder-coat painting process, optimized against UV rays and corrosion.
- Copper-free die-cast aluminum housing, ring, and faceplates.
- Copper-free aluminum extruded post.
- High transmittance, internally coated, soda-lime pressed glass diffuser, thermally and chemically quenched to strengthen the impact resistance and reduce the effect of rapid temperature changes.
- Custom molded, anti-aging gasket(s).
- Stainless steel external hardware.
- Custom MCPCB utilized to maximize heat dissipation and promote a long LED life.
- 100% uniform diffused light emission.
- Input voltage: 120-277 V (50 / 60 Hz), integral driver.
- Wall bracket and post accessories available (ordered separately).
- Consult factory for dimming options, custom finishes (please specify RAL color), and non-cataloged CCT (Kelvin) options including static colors.
- 5-year warranty.
- Product meets Buy American Act requirements within ARRA.

Photometric data



Technical drawings



OPTIONAL ACCESSORIES

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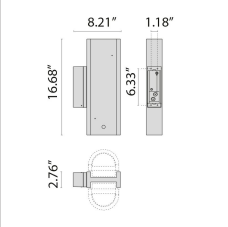

441
Bracket

Aluminum metallic

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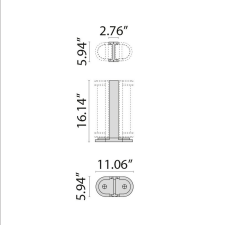
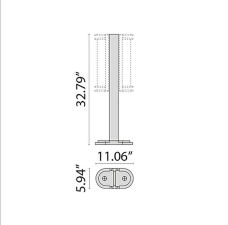


445
Post h 16.14"

Aluminum metallic

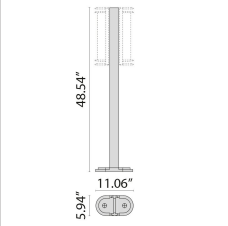
NIKKO+45 - Post h 32.79"



449
Post h 32.79"

Aluminum metallic

NIKKO+45 - Post h 48.54"



453
Post h 48.54"

Aluminum metallic

PORTLAND STREET

PREBLE STREET

CUMBERLAND AVENUE

NORTH

SAWCUT PAVEMENT AND REPLACE ALONG NEW CURB LINE

LIMIT OF RECENT CITY STREET IMPROVEMENTS

RE-STRIPE BIKE LANE MARKINGS ON NEW PAVEMENT

END NEW CURB AND SIDEWALK AT EAST END OF EXISTING DRIVEWAY TIPDOWN

NEW REINFORCED CONCRETE SIDEWALK AND V.G.C.

NEW REINFORCED CONCRETE DRIVEWAY APRON

END NEW CURB AND SIDEWALK WITH 7FT TIPDOWN TO ALLEYWAY APRON

NEW TREE GRATE (TYPICAL OF THREE) SEE NOTE 10

SAWCUT PAVEMENT AND REPLACE ALONG NEW CURB LINE

NEW REINFORCED CONCRETE SIDEWALK AND V.G.C

NEW BITUMINOUS PAVEMENT (TYPICAL)

NEW 6FT HIGH DOUBLE 6FT SWING GATE WITH LATCH AND LOCK

PLANTING BED (PB) TYP.

FIRST FLOOR RAILING

EXTENT OF OVERHANG ABOVE

DOORWAY OPENS TO DECK EL. 57.33'

APPROX. 10FT OF NEW FENCE REQUIRED THIS SECTION - MATCH EXISTING

EXTENT OF DECK

DOORWAY OPENS TO DECK EL. 57.33'

NEW DAYCARE/APARTMENT BUILDING
BASEMENT FFE = 46.0'
1ST FLOOR FFE = 57.33'

EXISTING BUILDING TO REMAIN
BASEMENT FFE =48.33'
1ST FLOOR FFE = 57.33'

RAIN GARDEN

BOULDERS

GARDENING AREA

ARTIFICIAL TURF

POURED RUBBER TRIKE TRACK

BENCH

OUTLAST PROJECT TABLE

PLAY HILL

VINE TUNNEL

STORAGE

INFANT BEAD BOX

POURED RUBBER

PERVIOUS PAVERS

PLAY MOUND

BUTTERFLY HILL

OUTLAST SHED & BLOCKS

RE-INSTALL SITE FENCING AND GATE TYP.

SAND COUNTER

SAND AREA

RE-INSTALL EXISTING PERIMETER FENCE

EMBANKMENT SLIDE

PRESCHOOL CLIMBER

PEDESTRIAN SIGNAL POST

SIGNAL CABINET

EXTENT OF OVERHANG ABOVE

CONCRETE RAMP

"DOCK"

FENCE & GATE

REPAIR BRICK SIDEWALK AND REPLACE CURBING AT NEW TRENCH LINE

REPLACE EXISTING LOADING ZONE SIGN WITH SIGN C ON EXISTING POST - RE-LOCATE SIX FEET WEST

REPLACE EXISTING LOADING ZONE SIGN WITH SIGN D ON EXISTING POST

REPLACE EXISTING LOADING ZONE SIGN WITH SIGN E ON EXISTING POST

SAWCUT PAVEMENT AND REPLACE ALONG NEW TRENCH LINE - SEE UTILITY NOTE 8

NO PARKING TO CORNER - TO REMAIN

CURRENT PASSENGER LOADING ZONE - DAYCARE- 60FT+/-

CURRENT VEHICLE LOADING ZONE -FRONTAGE OF MARIAS - 48FT+/- TO BECOME PASSENGER LOADING ZONE

EXTENSION OF PASSENEGER LOADING ZONE TO PROPERTY LINE - 6FT+/-

TE EXTENTS OF MORATORIUM STREET QUIRED, AS MAY BE APPLICABLE - SEE E 8

SCALE in FEET
1"=10'

NO PARKING ANY TIME | ONE HOUR PARKING 9AM-5PM
SIGN A

NO PARKING ANY TIME | ONE HOUR PARKING 9AM-5PM
SIGN B

15 MIN | PASSENGER LOADING | 7:00 AM TO 5:30 PM
SIGN C

15 MIN | PASSENGER LOADING | 7:00 AM TO 5:30 PM
SIGN D

15 MIN | PASSENGER LOADING | 7:00 AM TO 5:30 PM
SIGN E

PLAN REFERENCE:
1. EXISTING CONDITIONS TAKEN FROM SURVEY PLAN ENTITLED BOUNDARY AND TOPOGRAPHIC SURVEY 33 1& 337 CUMBERLAND AVENUE, PORTLAND, MAINE, BY NORTHEAST CIVIL SOLUTIONS INCORPORATED.

GENERAL NOTES
1. ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD PLANS. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UTILITIES ARE IN THE EXACT LOCATIONS SHOWN, ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE AVAILABLE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND TAKE SUCH MEASURES CONSIDERED PRUDENT TO PROTECT SUCH UTILITIES DURING AND AFTER CONSTRUCTION OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, OR RESTORING AND EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CALL 1-888-DIGSAFE.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNTIL ALL REQUIRED LOCAL, STATE AND FEDERAL APPROVALS HAVE BEEN OBTAINED.
3. THE CONTRACTOR SHALL KEEP A COPY OF ALL PERMIT DOCUMENTS ON SITE FOR THE DURATION OF THE WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME FAMILIAR WITH ANY AND ALL PERMIT CONDITIONS ASSOCIATED WITH THE PROJECT APPROVALS AND TO ENSURE THAT THE SITE REMAINS IN COMPLIANCE WITH ALL PERMITS ISSUED BY LOCAL, STATE AND FEDERAL AUTHORITIES.
4. USE OF SITE - THE CONTRACTOR SHALL LIMIT USE OF THE SITE TO THOSE AREAS WITHIN THE LIMIT OF WORK. NO WORK SHALL BE UNDERTAKEN OUTSIDE THE LIMITS OF DISTURBANCE WITHOUT PRIOR APPROVAL OF THE ENGINEER AND OWNER. THE CONTRACTOR SHALL ENSURE THAT ACCESS IS MAINTAINED TO DRIVEWAYS, AND ENTRANCES SERVING PREMISES ADJACENT TO THE PROJECT SITE.
5. THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR UNDERTAKING THE WORK IN A SAFE AND EFFICIENT MANNER, IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. ALL WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED APPROPRIATELY TO PREVENT UNAUTHORIZED ACCESS. OPERATION OF CONSTRUCTION EQUIPMENT OUTSIDE FENCED AREAS SHALL BE MINIMIZED TO THE EXTENT PRACTICAL. ALL EQUIPMENT OPERATION OUTSIDE OF CONSTRUCTION AREAS SHALL BE ACCOMPANIED BY APPROPRIATE PEDESTRIAN AND VEHICULAR TRAFFIC CONTROL. THE SITE SHALL BE LEFT SECURE AND IN A SAFE AND ORDERLY MANNER AT THE END OF EACH WORK DAY.
6. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND PERFORM ALL WORK NECESSARY TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN ACCESS TO AND FROM THE SITE DURING CONSTRUCTION.
7. TRAFFIC CONTROL MEASURES, WHERE NECESSARY SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION), PUBLISHED BY THE FEDERAL HIGHWAYS ADMINISTRATION.
8. MATERIALS NOTED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT A LICENSED FACILITY, AT THE CONTRACTOR'S EXPENSE.
9. MATERIALS NOTED FOR SALVAGE SHALL BE REMOVED AND STOCKPILED FOR THE OWNERS USE AT AN ON-SITE LOCATION TO BE PROVIDED BY THE OWNER. SALVAGED MATERIALS SHALL REMAIN PROPERTY OF THE OWNER.
10. STREET TREES SHALL BE PRUNUS SUBHIRTELLA "ACCOLADE"/ ACCOLADE FLOWERING CHERRY, SIZE 2.5" CAL/B&B

UTILITY NOTES
1. BUILDING UTILITY SERVICE CONNECTIONS ARE PRELIMINARY AND WILL NEED TO BE COORDINATED WITH INERNAL DESIGN PLANS. THE SIZES AND LOCATIONS OF NEW SERVICES HAVE BEEN ASSUMED BASED ONT HE AVAILABLE INFORMATION AND ARE SUBJETC TO REVIEW AND APPROVAL BY GOVERNING AUTHORITIES.T
2. ALL UTILITY COVERS, VALVE BOXES AND CLEANOUTS TO REMAIN SHALL BE ADJUSTED TO CONFORM TO PROPOSED FINISHED GRADES. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT PRICE.
3. ALL UTILITY MAINS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING UTILITY.
4. ALL WORK ON WATER SUPPLY MAINS AND SERVICES SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE PORTLAND WATER DISTRICT. CONNECTIONS TO EXISTING MAINS AND/OR OPERATION OF VALVES ON THE WATER SYSTEM IN OR AROUND THE SITE SHALL BE PRE-ARRANGED WITH PORTLAND WATER DISTRICT AND UNDERTAKEN UNDER THEIR DIRECT SUPERVISION.
5. ALL WORK ON SEWERS ON OR AROUND THE PROJECT SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT. ALL WORK ON SEWER MAINS SHALL BE PRE-ARRANGED WITH CITY OF PORTLAND ENGINEERING.
6. PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE UNDERTAKEN IN A MANNER THAT MAINTAINS THE INTEGRITY OF THE EXISTING STRUCTURE AND PROVIDES A WATERTIGHT SEAL BETWEEN THE NEW PIPE AND THE STRUCTURE.
5. ALL ELECTRICAL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF CENTRAL MAINE POWER COMPANY.CONNECTIONS SHALL BE COORDINATED WITH CMP BY THE CONTRACTOR.
6. ALL WORK ON STORM DRAIN MAINS AND ROADSIDE DRAINAGEWAYS ADJACENT TO THE SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
7. ALL WORK ON GAS SERVICES AND AROUND GAS MAINS SURROUNDING THE PROPERTY SHALL BE COORDINATED WITH UNITIL.
8. INSTALLATION OF UTILITIES ON CUMBERLAND AVENUE WILL BE SUBJECT TO MAINE DOT MORATORIUM REPAIR REQUIREMENTS IF INSTALLATION OCCURS WITHIN FIVE YEARS OF NEW SURFACE PAVING - SEE MAINE DOT SEPCIFICATIONS FOR DETAILS.

PRELIMINARY
ISSUED FOR PERMITTING

Kaplan Thompson Architects

PROJECT
337 Cumberland
CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
14 Baxter Boulevard
Portland, ME 04101
p: (207) 221-8009

CIVIL & LANDSCAPING
ATLANTIC RESOURCE CONSULTANTS
541 US-1, Suite 21
Freeport, ME 04032
p: (207) 865-9050

EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
p: (617) 606-1551

STATE OF MAINE
ANDREW A. JOHNSTON
No. 9994
08-31-20
LICENSED PROFESSIONAL ENGINEER

DATE	CHANGE NAME	CH #	DESCRIPTION	ISSUE NO.

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

SITE PLAN

C-101

REPORT

20-0063 S

March 20, 2020

Explorations and Geotechnical Engineering Services

Proposed Apartment Building and Parking Garage
331 & 337 Cumberland Avenue
Portland, Maine

Prepared For:
Portland Housing Development Corp
Attention: Cheryll Sessions
14 Baxter Boulevard
Portland, ME 04101

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

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20-0063 S

March 20, 2020

Portland Housing Development Corporation
Attention: Cheryl Sessions
14 Baxter Boulevard
Portland, Maine 04101

Subject: Explorations and Geotechnical Engineering Services
Proposed Apartment Building & Parking Garage
331 & 337 Cumberland Avenue
Portland, Maine

Dear Cheryl:

In accordance with our Agreement, dated January 17, 2020, 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 and earthwork associated with the proposed construction. Our scope of services included five test boring explorations, soils classification, a geotechnical analysis of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The 337 Cumberland Avenue site is an existing single story commercial building accessed from Cumberland Avenue with a walk-out basement level accessed from Portland Street. We understand development plans call for construction of a ground level parking garage with commercial/office space on the Cumberland Avenue ground floor and 5 to 6 levels of apartments above. We understand existing grades across the

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site vary from about elevation 42 feet (project datum) along Portland Street to elevation 55 feet along Cumberland Avenue. We understand the ground level of parking would be access off Portland Street.

Additionally, we understand a single story wing with full basement will connect the new apartment building to the adjacent single story, former church building at 331 Cumberland Avenue. We anticipate the basement and first floor elevations of the connecting wing will be level with the former church building floor elevations.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Five test borings (B-101 through B-105) were made at the site on March 4 and 10, 2020 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 measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.2 Testing

The test borings were drilled using a combination of solid stem auger and cased wash-boring techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. SPT blow counts and PPT results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further classification.

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3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

The test borings encountered 3.5 to 5 feet of uncontrolled fill with brick, coal cinders and organics overlying native deposits of very stiff to soft clay and medium dense to very loose silty sand overlying refusal surfaces (probable bedrock) encountered at depths ranging from 13.5 to 28.3 feet below the ground surface. Each of the borings was advanced into the bedrock surface about 3 feet with a roller-cone bit. Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Water was introduced into the borings at a depth of about 7 feet; therefore, groundwater levels could not be observed below 7 feet at the time of drilling.

Groundwater likely becomes perched on the relatively impervious silty clay encountered in the test borings. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- We recommend the parking garage and multi-level apartment building foundations be supported on steel H-piles driven to end-bearing on bedrock. The single-story connector wing, between the apartment building and former church building, may be supported on spread footings founded on properly prepared subgrades. The basement level floor slabs may be soil-supported.

- Foundations should be underlain with at least 3-inches of compacted Crushed Stone. Basement floor slabs should bear on at least 12-inches of properly compacted Crushed Stone overlying properly prepared subgrades.

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- The parking garage floor should be underlain with insulation to help reduce potentially adverse frost action that can reduce overhead clearance.

- We anticipate excavation support along Cumberland Avenue will require steel soldier piles and timber lagging to preclude undermining existing utility and roadway infrastructure.

- Uncontrolled fills should be proof-rolled and soft areas repaired prior to installing pavement gravels or floor slab base material.

- Subgrades across the site will consist of frost and moisture sensitive soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Excavation of bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.

4.2 Site and Subgrade Preparation

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil should be completely removed from areas of proposed fill and construction. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Demolition should be completed to remove existing foundation remnants and buried utilities to be abandoned. Uncontrolled fills and soils with organics must be completely removed beneath the connector wing footings to expose stiff native clays; the limits of overexcavation should extend 1 foot horizontally outward from the edges of footings for each foot of excavation depth below the footing (1H:1V bearing splay). Elsewhere, uncontrolled fills should be proof-rolled and densified with at least 3 passes of a 5-ton vibratory roller compactor. Areas that become soft or continue to yield after densification should be removed and replaced with compacted Structural Fill.

In all cases, we recommend foundations be underlain with at least 3-inches of compacted Crushed Stone overlying properly prepared subgrades.

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Beneath pipes and utility structures with soft trench bottoms, we recommend overexcavating with a smooth edged bucket and installing at least 1 foot of Underdrain Sand below customary bedding materials wrapped in geotextile fabric. The depth of customary bedding materials for soft trench bottoms should be at least 12 inches of pipes and 24 inches of structures.

4.3 Excavation and Dewatering

Excavation work will generally encounter uncontrolled fills, silty sand, silt, and clay soils. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clays, when wet. Final cuts to subgrade should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, utilities and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity. Pre-construction surveys should be completed on surrounding structures, utilities and infrastructure prior to commencing construction activities.

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. We anticipate soldier pile and lagging will be needed along Cumberland Avenue as shoring to protect existing infrastructure. Care must be taken to preclude undermining adjacent structures, utilities and roadways.

The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor. A solider pile and lagging excavation support submittal, prepared and sealed by a licensed Professional Engineer, should be provided for review by the project team.

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4.4 Foundations

As discussed, we recommend the parking garage and multi-level apartment building foundations be supported on steel H-piles driven to end-bearing on bedrock. The single-story connector wing, between the apartment building and former church building, may be supported on spread footings founded on properly prepared subgrades. In all cases, we recommend foundations be underlain with at least 3-inches of compacted Crushed Stone overlying properly prepared subgrades.

4.4.1 Spread Footings

As presented herein, the single story connector wing between the former church and new multi-level apartment building may be supported on spread footings founded on properly prepared subgrades. For spread footings bearing on properly prepared subgrades, we offer the following geotechnical parameters for design consideration:

Geotechnical Parameters for Spread Footings for Connector Wing	
Net Allowable Soil Bearing Pressure	2.0 ksf
Base Friction Factor	0.35
Total Unit Weight of Backfill	125 pcf
Estimated Total and Differential Settlement	½-inch

4.4.2 Driven Piles

Considering the subsurface findings and our understanding of the proposed construction, we recommend the parking garage and multi-level apartment building be supported on steel H-piles driven to end-bearing on bedrock. We offer the following H-pile sizes and allowable axial compressive capacities for design consideration:

RECOMMENDED H-PILE CAPACITIES	
50 ksi Steel H-pile Section	Allowable Axial Compressive Capacity (kips)
HP 10 x 42	135
HP 10 x 57	210
HP 12 x 63	225
HP 12 x 74	280
Notes: Piles driven to practical refusal on hard sound bedrock with cast driving tips and 0.0625-inch (1/16”) corrosion allowance.	

A driven pile submittal, prepared and sealed by a licensed Professional Engineer and endorsed by the Pile Installer, should be provided for review by the project team

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We recommend that pile caps for columns be supported by at least two piles if laterally tied together by grade beams or tie beams and three piles if laterally isolated. Grade beams supporting walls may be supported by a single line of alternating piles below the grade beam, as deemed appropriate by the structural engineer. Piles should be spaced a minimum center-to-center distance of at least 3 pile diameters, but no less than 30 inches.

Lateral Resistance: Lateral loads may be resisted from earth pressures acting on the sides of grade beams and pile caps backfilled with compacted Structural Fill consider a total unit weight of granular backfill (γt) of 125 pcf, an angle of internal friction of 32 degrees with an at-rest lateral earth pressure coefficient (Ko) of 0.5. Depending upon the amount of deflection, lateral earth resistance may mobilize an ultimate passive lateral earth pressure coefficient (Kp) of 3.0. Additional resistance to lateral loads can be mobilized along the pile shafts, if needed. S.W.COLE can assist with lateral capacities, as deemed necessary by the structural engineer.

Uplift Resistance: We anticipate that uplift resistance will be derived from the dead weight of foundations, pile caps and grade beams. Pipe piles may be installed at discrete locations to allow for installation of drilled rock anchors for additional uplift resistance, as deemed necessary by the structural engineer.

Pile Load Test: For piles with a capacity over 40 tons (80 kips), we recommend the contractor coordinate a test pile program including monitoring of several piles with a Pile Driving Analyzer (PDA) to determine pile and driving equipment compatibility as well as to define the “set” criteria and pile capacity. The test pile program should include PDA monitoring of the test piles during re-strikes in order to assess pile capacity. The pile driving contractor should submit a WEAP analysis and information relative to pile driving equipment prior to beginning driving. S.W.COLE should be engaged to observe pile driving and pile load testing activities.

4.4.3 Foundation and Basement Walls

For foundation and basement walls restrained from rotation, we offer the following geotechnical parameters for design:

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Geotechnical Parameters for Foundation and Basement Walls	
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	32°

As recommended herein, basement walls must be provided with foundation drains to prevent the build-up of hydrostatic pressure. Additionally, we recommend basement walls be insulated to reduce thermal conductivity.

4.4.4 Frost and Seismic

Foundations exposed to freezing should be provided with at least 4.5 feet of soil cover or insulated for frost protection. Considering the subsurface findings, we interpret the site soils profile to correspond to Seismic Site Class D, according to 2015 IBC.

4.5 Foundation Drainage

We recommend an underdrain system be installed along the edge of perimeter foundations. The underdrain pipe should consist of 4-inch diameter, perforated SDR-35 foundation drain pipe bedded in Crushed Stone and wrapped in non-woven geotextile fabric. The underdrain pipe must have a positive gravity outlet protected from freezing, clogging and backflow. Surface grades should be sloped away from the building for positive surface water drainage. General underdrain details are illustrated on the "Foundation Detail Sketch" attached in Appendix B.

4.6 Slab-On-Grade

Basement floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted Crushed Stone overlying geotextile filter fabric 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 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

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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, Garage Floor 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. Additionally, we recommend the parking garage floor be underlain with high-load insulation to help reduce potentially adverse frost action that can reduce overhead clearance. General details of these frost transition zones 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.

Structural Fill: Fill to raise grades in building and paved areas, backfill for repair of overexcavated areas, backfill for foundations, slab base material and material below exterior entrances slabs should be clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

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Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

Crushed Stone: Crushed Stone, used beneath foundations 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 existing granular fills may be suitable for reuse to backfill soft areas that have been overexcavated, provided they are free of organics and at a compactable moisture content at the time of reuse. The native site soils are unsuitable for reuse for building and pavement construction.

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 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.

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4.10 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our foundation and earthwork 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 installation of driven piles, 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.

4.11 Recommendations for Additional Study

We recommend test pit explorations be performed at the site to explore the depth, configuration and bearing conditions of adjacent foundations, particularly for the former church building at 331 Cumberland Avenue.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Timothy J. Boyce, P.E.
Senior Geotechnical Engineer

TJB:emw

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APPENDIX A

Limitations

This report has been prepared for the exclusive use of Portland Housing Development Corporation for specific application to the proposed Apartment Building and Parking Garage at 331 and 337 Cumberland 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.

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APPENDIX B

Figures

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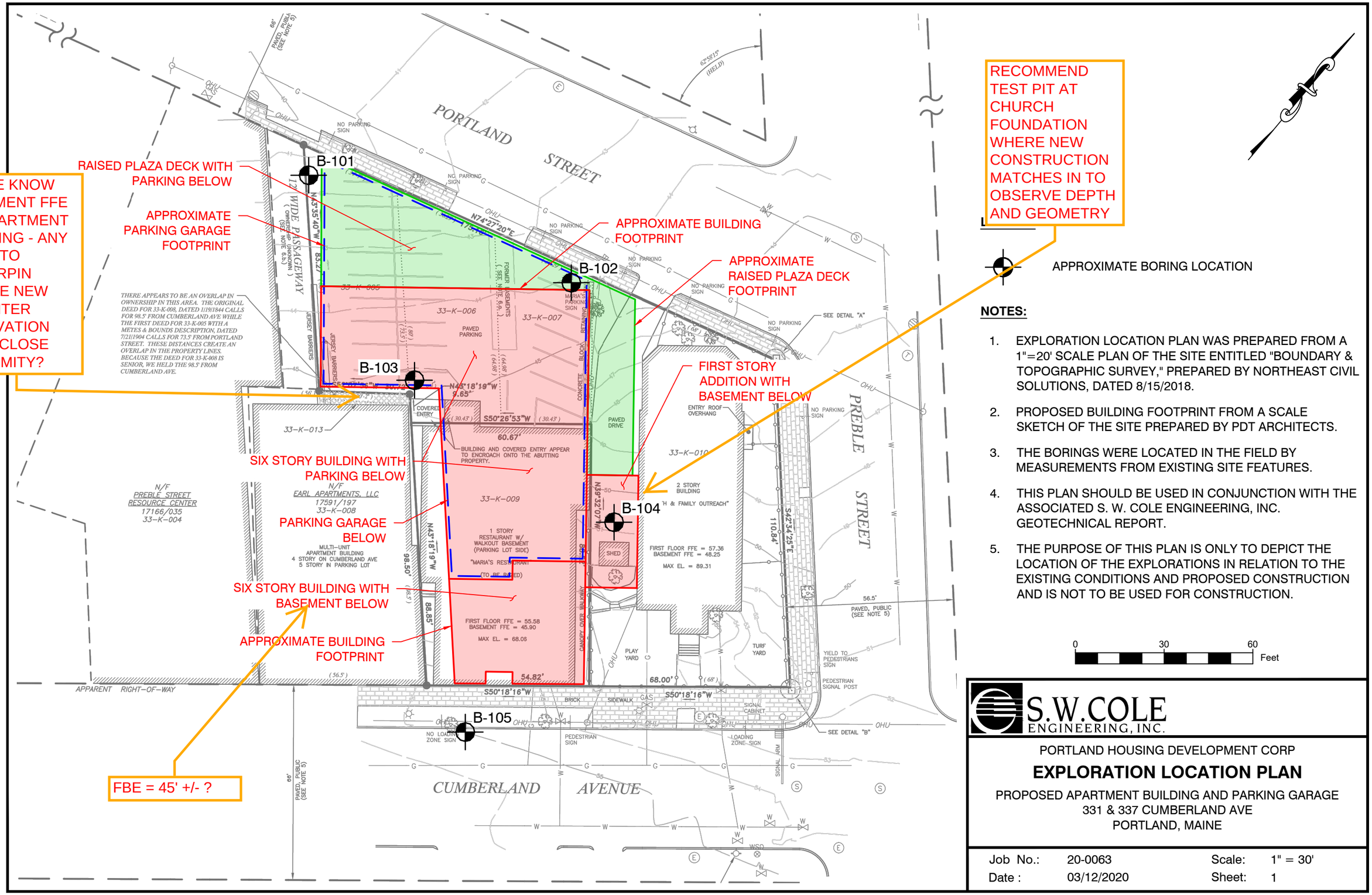

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE PLAN OF THE SITE ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY," PREPARED BY NORTHEAST CIVIL SOLUTIONS, DATED 8/15/2018.
2. PROPOSED BUILDING FOOTPRINT FROM A SCALE SKETCH OF THE SITE PREPARED BY PDT ARCHITECTS.
3. THE BORINGS WERE LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.
4. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
5. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

S.W.COLE ENGINEERING, INC.

PORTLAND HOUSING DEVELOPMENT CORP

EXPLORATION LOCATION PLAN

PROPOSED APARTMENT BUILDING AND PARKING GARAGE
331 & 337 CUMBERLAND AVE
PORTLAND, MAINE

Job No.:	20-0063	Scale:	1" = 30'
Date :	03/12/2020	Sheet:	1

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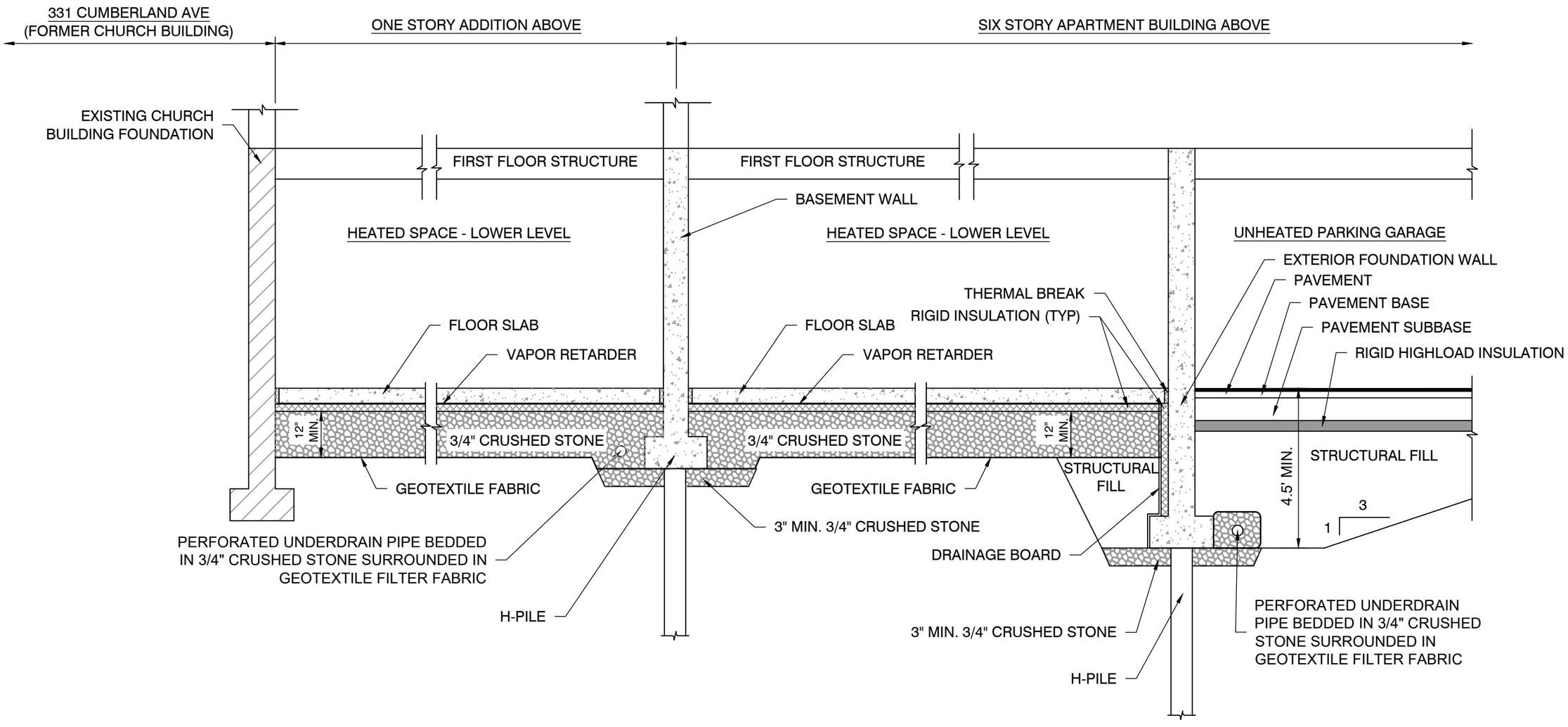

NOTE:

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.

PORTLAND HOUSING DEVELOPMENT CORP

FOUNDATION DETAIL SKETCH

PROPOSED APARTMENT BUILDING AND PARKING GARAGE
331 & 337 CUMBERLAND AVE
PORTLAND, MAINE

Job No.:	20-0063	Scale:	Not to Scale
Date :	03/12/2020	Sheet:	2

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APPENDIX C

Exploration Logs and Key

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BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Portland Housing Development Corp
PROJECT: Proposed Apartment Building & Parking Garage
LOCATION: 331 Cumberland Avenue, Portland, Maine

BORING NO.: B-101
SHEET: 1 of 1
PROJECT NO. 20-0063
DATE START: 3/4/2020
DATE FINISH: 3/4/2020

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 41.5' +/-
TOTAL DEPTH (FT): 26.9
LOGGED BY: Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Kevin Hanscom
DRILLING METHOD: Cased Boring
RIG TYPE: Track Mounted Diedrich D-50
AUGER ID/OD: N/A / N/A
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic
HAMMER WEIGHT (lbs): 140 / 140
CASING ID/OD: 4 in / 4 1/2 in
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.98
HAMMER DROP (inch): 30 / 16
WATER LEVEL DEPTHS (ft): 3/4/2020 No free water observed to 7'. Water introduced during drilling at 7'.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
40			1D		1-3	24/6	3-2-3-3			1.3 6" Asphalt / loose, brown gravelly SAND, some silt (FILL)		
			2D		3-5	24/20	3-3-4-3			3.0 Loose, dark brown-black-gray gravelly silty SAND with brick and coal cinders (FILL)		
	5		3D		5-7	24/16	3-4-3-4	q_P=6 to 8 ksf		4.0 Loose, brown-rust brown sandy SILT with organics (FILL/REWORKED)		
35										5.0 Loose, gray clayey sandy SILT (FILL/REWORKED)		
										Very stiff, gray-brown silty CLAY with frequent sand seams/partings		
	10		4D		10-12	24/12	2-2-1 FOR 12"			8.5 Very loose to loose, gray silty SAND, some gravel, some clay		
30												
	15		5D		15-17	24/3	2-2-3-4					
25												
	20		6D		20-22	24/12	5-3-5-3					
20												
	25									23.9 Probable BEDROCK - advanced by roller cone		
15												

Bottom of Exploration at 26.9 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0063.GPJ SWCE TEMPLATE.GDT 3/12/20

BORING LOG

CLIENT: Portland Housing Development Corp
PROJECT: Proposed Apartment Building & Parking Garage
LOCATION: 331 Cumberland Avenue, Portland, Maine

BORING NO.: B-102
SHEET: 1 of 1
PROJECT NO. 20-0063
DATE START: 3/4/2020
DATE FINISH: 3/4/2020

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 44' +/- | **TOTAL DEPTH (FT):** 16.5 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.98 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 3/4/2020 No free water observed to 7'. Water introduced during drilling at 7'.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		1-1.8	10/7	5-50/4"			4" Asphalt / loose, brown gravelly SAND, some silt (FILL)		
										1.7 Concrete (FILL) - advanced by solid stem auger		
40	5		2D		5-7	24/22	4-4-6-6	q_P=7 to 9 ksf		3.9 Very stiff to hard, gray-brown silty CLAY with frequent sand seams/partings		
35	10		3D		10-12	24/6	1-2-1-1			8.5 Soft, gray silty CLAY		
			4D		12-13.5	18/10	2-1 FOR 12" / 10 FOR 0"			12.0 Very loose, gray silty clayey SAND		
30	15									13.5 Probable BEDROCK - advanced by roller cone		

Bottom of Exploration at 16.5 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0063.GPJ SWCE TEMPLATE.GDT 3/12/20

BORING LOG

CLIENT: Portland Housing Development Corp
PROJECT: Proposed Apartment Building & Parking Garage
LOCATION: 331 Cumberland Avenue, Portland, Maine

BORING NO.: B-103
SHEET: 1 of 1
PROJECT NO. 20-0063
DATE START: 3/4/2020
DATE FINISH: 3/4/2020

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 45' +/- | **TOTAL DEPTH (FT):** 18.6 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.98 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 3/4/2020 No free water observed to 7'. Water introduced during drilling at 7'.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
			1D		1-3	24/18	6-5-4-2			4" Asphalt / brown silty gravelly SAND with glass (FILL)		
			2D		3-5	24/18	2-3-4-6	q_P=7 to 8 ksf		3.5 Very stiff, gray-brown sandy silty CLAY		
40	5		3D		5-7	24/20	3-4-7-8	q_P=6.5 to 8 ksf		5.0 Very stiff, brown silty CLAY with occasional sand seams		
										8.5 Very loose, varved gray silty CLAY and gray fine sand		
35	10		4D		10-12	24/15	3-2-1-2					
										13.6 Very loose, gray silty SAND, some gravel		
30	15		5D		15-15.7	8/4	2-50/2"			15.6 Probable BEDROCK - advanced by roller cone		

Bottom of Exploration at 18.6 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0063.GPJ SWCE TEMPLATE.GDT 3/12/20

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Portland Housing Development Corp
PROJECT: Proposed Apartment Building & Parking Garage
LOCATION: 331 Cumberland Avenue, Portland, Maine

BORING NO.: B-104
SHEET: 1 of 1
PROJECT NO. 20-0063
DATE START: 3/4/2020
DATE FINISH: 3/4/2020

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 51' +/- | **TOTAL DEPTH (FT):** 31.3 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.98 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 3/4/2020 No free water observed to 7'. Water introduced during drilling at 7'.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
50			1D		1-3	24/12	4-4-3-3			3" Asphalt / loose, brown gravelly silty SAND (FILL)		
			2D		3-5	24/15	4-4-4-5			2.8 Loose, gray-brown SAND and SILT (FILL)		
	5		3D		5-7	24/23	3-5-6-8	q_P=7 to 9 ksf		5.0 Hard to stiff, brown silty CLAY, some sand with occasional sand seams		
45			4D		8-10	24/23	3-3-5-5	q_P=7 to 3 ksf				
	10		5D		10-12	24/24	2-1-2-2	q_P=3 to 0 ksf				
40										10.7 Soft, gray silty CLAY		
										12.7 Medium dense, gray gravelly silty SAND		
	15		6D		15-17	24/12	7-8-13-18					
35												
	20		7D		20-22	24/12	8-8-10-11					
30												
	25		8D		25-27	24/17	4-11-14-16					
25												
										28.3 Probable BEDROCK - advanced by roller cone		
	30											
20												

Bottom of Exploration at 31.3 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0063.GPJ SWCE TEMPLATE.GDT 3/12/20

BORING LOG

CLIENT: Portland Housing Development Corp
PROJECT: Proposed Apartment Building & Parking Garage
LOCATION: 331 Cumberland Avenue, Portland, Maine

BORING NO.: B-105
SHEET: 1 of 1
PROJECT NO. 20-0063
DATE START: 3/10/2020
DATE FINISH: 3/10/2020

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 55' +/- | **TOTAL DEPTH (FT):** 27.9 | **LOGGED BY:** Patrick Otto
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Kevin Hanscom | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.98 | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): 3/10/2020 No free water observed to 7'. Water introduced during drilling at 7'.
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		1.2-3.2	24/15	4-4-6-5			6" Asphalt / loose, gray-brown gravelly silty SAND (FILL)		
										2.5 Loose, gray silty SAND with coal and brick (FILL)		
50	5		2D		5-7	24/18	2-3-5-7	q_P=4 ksf		4.5 Stiff, gray-brown silty CLAY with occasional sand seams below 6.5'		
										8.5 Medium, gray sandy silty CLAY		
45	10		3D		10-12	24/23	2-2-2-2	q_P=2.5 to 1 ksf				
										14.0 Very loose, varved gray silty CLAY and gray fine sand		
40	15		4D		15-17	24/18	1-1-1-2					
										19.0 Loose, gray silty SAND, some gravel		
35	20		5D		20-22	24/12	2-4-4-6					
										24.9 Probable BEDROCK - advanced by roller cone		
30	25											

Bottom of Exploration at 27.9 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES & SYMBOLS
Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

DRAFT

Google Groups

Public Comment 337 Cumberland Avenue: Impacts on Existing Housing Stock

George Rheault <george.rheault@gmail.com> Sep 11, 2020 11:08 AM
Posted in group: **Planning Board**

It is astonishing how little work the Planning Board is expending on analyzing the 337 Cumberland Avenue project.

If this was in a more affluent area, this project would probably never have even been proposed due to the significant light and air impacts on residents of neighboring buildings.

Indeed, it was Belinda Ray who recently cried out in anguish about the need to avoid "claustrophobia" as part of Portland's planning efforts. This was back in 2018 when she was hot to coddle selfish NIMBYs during the successful R-6 downzoning of Munjoy Hill. As Councilor for District 1 in which this project is located, she now seems notably silent regarding any "claustrophobia" impacts from the 337 Cumberland project.

I, a close-by neighbor of this proposed project, do have serious concerns about claustrophobia and to that end, I think it is imperative that the Planning Board address the following questions before giving any approvals to this project:

1) How many units in the next-door 341 Cumberland Avenue apartment building will have existing views blocked by the construction of 337 Cumberland Avenue? Will the loss of these existing views reduce rents in the 341 Cumberland Avenue building and to what extent will this alter the tenant mix as a result? In addition to the loss of existing views, how will the existing windows in 341 Cumberland Avenue line up with the NEW units in the 337 Cumberland Avenue building and how will quality-of-life for both sets of tenants be secured in the event of intrusions from either building (noise, privacy, nuisance complaints)?

2) How many units in the 30 Preble Street apartment building (a/k/a "The Wadsworth") will have existing views blocked by the construction of 337 Cumberland Avenue? Will the loss of these existing views reduce rents in the 30 Preble Street building and to what extent will this alter the tenant mix as a result?

3) How many of the new units proposed in the 337 Cumberland Avenue project will have effectively either "blank wall" views right up against a neighboring building or will have views of less-than-ideal parking garages or mechanical equipment (often noisy)?

4) How many of the new units proposed in the 337 Cumberland Avenue project will have actual, unobstructed/uncluttered views of the surrounding area (toward Back Bay, toward Deering Oaks, Cumberland Avenue corridor etc.)? As part of this analysis, in what ways will the ACTUAL view corridors from the units of 337 Cumberland Avenue be blocked by existing structures like the AAA Building, INTERMED, Back Bay Village, Schlotterbeck & Foss, and future proposed projects like the Brown Street apartment building and 52 Hanover Street? [One may even assume the Federated/Midtown project someday gets built though right now that project is completely stuck in the mud of further litigation.]

I have attached some photos taken from nearby parking structures to aid in the analysis of the overall neighborhood context.

Preble Street Teen Center

Preble Street

BANK OF AMERICA
BANK OF AMERICA

Google Groups

Public Comment 337 Cumberland Avenue: Security and Building Operations

George Rheault <george.rheault@gmail.com> Sep 11, 2020 11:40 AM

Posted in group: **Planning Board**

The unique co-development arrangement for 337 Cumberland Avenue requires that the Planning Board look deeper on how residents and users of the project (especially families) will experience it once completed and occupied.

The following questions should receive complete answers and be reviewed carefully by the Board as part of its deliberations:

1) How will entrances and exits (including garage) be routinely monitored and secured from trespassers and non-inhabitants especially during night-time and weekend/holiday hours?

2) What is the proposed budget and layout for security systems (cameras and door alarms and contracts to monitor them 24/7 including actual security guards as necessary) sufficient for a project of this nature? What is the possibility that such systems could be value-engineered or removed entirely prior to completion and what impact would that have on the safety, security and well-being of those families residing inside the building?

3) What would the ACTUAL experience of residents be like for removal of trash/recycling, move-in/move-outs and storage of belongings and the delivery and retrieval of packages/meal services (USPS, Amazon, Door-Dash, etc.)?

4) Who do building residents turn to for complaints and concerns immediately after occupancy and going forward as the building ages and receives normal or extraordinary "wear-and-tear" over time?

I am attaching a recent Community Development Block Grant application from the Portland Housing Authority to illustrate just how difficult it is for affordable housing providers to fund even basic building amenities over time due to the many underfunded byzantine affordable housing programs and the typical limited ability of affordable housing projects to cross-subsidize their maintenance and operations across a portfolio. If the PHA is struggling to provide minimum security upgrades in a 50+ year old high-rise, this does not bode well for its future project developments like 337 Cumberland Avenue.

Community Development Block Grant
Construction Application

FRANKLIN TOWERS SECURITY UPGRADES

July 1, 2020 – June 30, 2021

For any questions in regards to the application, please contact Trevor Nugent, Director of Property Management, at 207-221-8002 or tnugent@porthouse.org

II. CONSTRUCTION APPLICATION

COMPLETE APPLICATION CHECKLIST

Please submit each section of the application, including this checklist:

- ☒ **A. Construction Cover Page** *limit 1 page*
- ☒ **B. Construction Worksheet** *limit 2 pages*
- ☒ **C. Construction Narrative** *limit 4 pages*
- ☒ **D. Budget: Revenues and Expenditures**, attached separately, *limit 1 page*
- ☒ **E. Construction Summary** *limit 1 page*

  [Complete this section in whole; this is the only form forwarded to the City Council]

Required documents for ALL Construction Projects, *applies to non-profit or City applicants:*

- ☒ **Scope of work** provided by city or building professional: engineer, architect, project manager or contractor.
- ☒ **Estimate** provided by city or building professional: engineer, architect, project manager or contractor. *Please note: if the project is over $2,000 and is not being built with City employees, federal wage rates apply.*
- ☒ **Plans or Pictures** if applicable, black and white, *limit 3 pages <u>total</u>*

  For Slum/Blight projects: Blight or decay must be documented and submitted as part of the application (required for SB)
- ☒ **Project Map** of the neighborhood served by this project (LMA only)
- ☒ **Project Timeline** attached separately
- ☒ **Verification of contact with City Historic Preservation Staff**

Supporting documents (subject to scoring)

- ☐ **Memorandum of Agreement,** if applicable, that describes the relationship between partner entities for this application. *Limit 2 pages: can be one MOA that's two pages long or two MOA's that are one page each.*
- ☒ **Letter of Support,** if there is no MOA; a letter of support may be submitted. *Limit 2 pages: can be one letter that's two pages long or two letters that are one page each.*

Additional required documents for non-profit organizations:

- ☐ **Verification of 501(c)3 Status,** *limit 1 page*
- ☐ **Most Recent Independent Auditors Report and identified findings** or *if an Audit is not available* the most recent 990 Financial Statement
- ☐ **Complete list of Board Members**

Signature of the President, CEO or Executive Director **Date** 11/21/19

A. CONSTRUCTION COVER PAGE, limit 1 page

COMMUNITY DEVELOPMENT BLOCK GRANT
PROGRAM YEAR 2019-2021

Application Type	☒ Construction		
Operating Agency/ Business	PORTLAND HOUSING AUTHORITY		
Project Name	FRANKLIN TOWERS SECURITY UPGRADES		
Mailing Address	14 BAXTER BLVD, PORTLAND, ME 04101		
Project Address	211 CUMBERLAND AVE, PORTLAND, ME 04101		
Executive Director	CHERYL SESSIONS	Phone 207-773-4753	Email csessions@porthouse.org
Project Director	TREVOR NUGENT	Phone 207-773-4753	Email tnugent@porthouse.org
Financial Contact	LARRY GIDDINGE	Phone 207-773-4753	Email lgiddinge@porthouse.org
Person who completed the Application	TREVOR NUGENT	Phone 207-773-4753	Email tnugent@porthouse.org
Amount of CDBG Funds Requested	$142,000	Total Project Budget $284,202	
DUNS Number	093626885	Tax ID 01-6001034	

B. CONSTRUCTION WORKSHEET, *limit 2 pages*

1. **HUD National Objective**. Indicate which National Objective this program activity will address, choose one. Refer to National Objective description p. 3 for additional information.

   ☐ **Prevention and Elimination of Slum or Blight** to address conditions that is detrimental to public health, safety, or welfare (SB*) Slum or blight must be documented & submitted with the application.*

   ☒ **Low and Moderate Income Area Benefit** (LMA): an activity *which is available to benefit all the residents of an eligible area/census tract*, plus housing authority properties.

   If you choose LMA, please provide a map and outline on the map the area that your program serves.

   ☐ **Low and Moderate Income Clientele** (LMC): an activity which provides benefits to a specific group of persons of which at least 51% qualify as LMI Portlanders.

   Does this activity benefit a population that HUD presumes to be low to moderate income, including *abused children, elderly persons, battered spouses, homeless persons, illiterate adults, severely disabled adults, persons living with AIDS, and migrant farm workers*? ☐ No ☐Yes (please circle appropriate population)

   ☐ **Low and Moderate Income Housing** (LMH)

2. **HUD Program Objectives**. Indicate which HUD program objective this program will address; choose one:

   ☒ **Creating a Suitable Living Environment**

   ☐ **Providing Decent Housing**

   ☐ **Creating Economic Opportunity**

3. **Primary Goal.** Indicate the primary goal your program or project addresses; choose one. *Refer to the instructions on p. 7-8 for additional information*.

   ☒ **Neighborhood Investment and Infrastructure:** *Create strong, safe accessible and vibrant neighborhoods*

   ☐ **Housing Availability:** *Increase housing availability and affordability*

   ☐ **Economic Opportunity:** *Create economic opportunities to transition people out of poverty*

   ☐ **Address the Needs of the Growing Homeless Population:** *Prevent and reduce homelessness*

4. **Location.**

A. What census tract is the project located?	A. ME005000600
B. Is the project located in a historic district?	B. NO
C. Service Area: What neighborhoods will be served by this project *(LMA only)*	C. Portland Housing Authority's Franklin Towers Public Housing Property

5. **Beneficiaries.** Describe the beneficiaries or clients served by the program. *(LMA answer A only)*

A. Describe the beneficiaries or clients served by the program.	A. Portland Housing Authority 's Public Housing residents of Franklin Towers will be the beneficiaries of the security upgrades.
B. How many will be served by the proposed program?	B. 211
C. How many are *residents of Portland*?	C. ALL
D. How many are *low to moderate income residents of Portland*? See income data in the instructions	D. ALL
E. What percentage of total clients are low to moderate income residents of Portland? *(To calculate = D/B * 100; Must be > 51%)*	E. 100%

6. **Program Objectives and Outcomes**. Please list below:

Program Objectives	**Outcomes/ Community Impact**
Improve the safety and security for the residents of the building	The morale of the residents and the building will improve. There will be fewer resident complaints as there should be fewer unauthorized people getting into the building.
Reduce and deter criminal activity in the area	The security upgrades will deter some from committing criminal acts. It will also limit the access of unauthorized people getting into the building.
Empower the residents to take action against those committing crimes in and around the building	Residents will be more likely to step forward and talk about these acts. The strength the residents will feel for stepping forward and reporting illegal activity will help make the community safer.

7. **Documentation** *(not applicable for LMA)*

A. How will the beneficiaries 'information be collected and documented?	A.
B. How will the units of service be tracked and documented?	B.
C. How will the outcomes be measured, collected, and documented?	C.

Please limit the Construction Worksheet to 2 (two) Pages.

C. CONSTRUCTION NARRATIVE

1. Project Description/Scope of Work

Portland Housing Authority (PHA) seeks security upgrades to its Franklin Towers Public Housing Property. Franklin Towers is a 200-unit, 16 story high-rise. It houses seniors as well as younger persons with disabilities, including veterans. PHA has made efforts already to increase safety and security in the building. But further efforts are necessary. Despite installing a surveillance camera system and having a Patrol Person at the rear door of the building at night, unwanted guests still sneak into the building and causes disturbances. With limited funding, PHA can only afford one Patrol Person from 5 p.m. to 3 a.m. who services one entrance. Video footage has shown some of these unwanted guests going to door to door hoping to find one unlocked. The assumption is they are going into these units to commit burglary. Also, the doors that are locked can sometimes be compromised. Because the building was originally built for seniors, the unit doors have the old pull cord door system which tend to make the door latches easy to open with a plastic card or matchbook. The doors are not self-closing which the Fire Department has raised concerns about. PHA plans to install 8 more surveillance cameras to cover more areas of the property. PHA would like to add a Security Booth at the front entrance of the building. It would then install a video intercom camera device which could unlock/lock the rear door with a push of the button. This would allow the Patrol Person to control both entrances. It would put a fence up in the parking lot area to control the flow of walking traffic. It would install 200-unit doors which would be fire-rated and self-closing. During installation, the old pull cord system would be removed. PHA has met with contractors on each of these projects. All agree that this would enhance the security of the property.

2. Readiness to Proceed and Complete

If PHA is notified it is being awarded CDBG funding, the competitive sealed bid process would begin for the installation of the 200-unit entry doors and the construction of the Security Booth in August 2020. A contract would be awarded in September 2020, and the work could begin in October 2020.

If PHA is notified it is being awarded CDBG funding, the installation of fencing would begin July 2020. The installation of 8 additional cameras to its already existing system would also begin July 2020.

3. Budget Narrative

The breakdown of the $284,202 total project costs consist of:

1) Installation and equipment for 8 additional cameras and video intercom device - $16,000
2) Installation of fencing near parking lot - $8,000
3) Add Security Booth at front entrance - $103,000
4) Replace 200 unit entry doors with fire-rated, self-closing doors and the removal of the old pull cord system - $157,202

4. Leveraged Funds, Financial Need

PHA is setting aside $142,202 of its 2021 Capital Fund grant for this project. It is hoping to leverage the remaining $142,000 of the project with CDBG funds.

5. Community Need Description

Franklin Towers houses seniors as well as younger persons with disabilities, including veterans. The area within and surrounding the property has seen a spike in criminal and drug-related activity. The residents are wary of this and expressed the need for security upgrades at the property. Safety and security are one of the major priorities PHA wants to provide for its residents. Adding more cameras to its existing surveillance system will help monitor the few remaining areas of the property that are not adequately covered currently. Putting in a Security Booth at the front entrance and installing a video intercom with lock system at the rear will allow the Patrol Person to control both entrances of the buildings. Adding a fence to the parking lot area will restrict how unwanted guests can approach the building. PHA has spoken to Franklin Towers residents about these security upgrades. The residents are excited at the potential opportunity for security upgrades. A letter of support from the Franklin Towers Resident Council illustrates this.

6. Measurable Community Impact

Security upgrades will have a major impact for the residents of Franklin Towers. Safety and security are paramount needs for Franklin Towers 'residents. The security upgrades should limit unauthorized people from getting into the building. The new unit entry doors would lessen some residents 'anxiety who may fear somebody illegally entering their unit. PHA feels there would be fewer resident complaints and illegal activity in the building if it were able to complete the security upgrades. The general happiness of the residents and the building would increase as well. It would also make the Patrol Person much more effective in enforcing the security measures of the building at night.

7. Guiding Principles

For Infrastructure Projects

a. PHA has already installed a 52-unit surveillance camera system at Franklin Towers using its Capital Grant funds. Supplementing it with 8 more cameras will only increase the camera coverage. There are some blind spots in the surveillance system that these additional cameras would help cover.

PHA 's Operating Funds have paid for a Patrol Person 's services for 70 hours a week at the rear entrance. The security upgrades proposed would help the Patrol Person perform his/her duties more successfully. The Security Booth at the front entrance and the installation of a video intercom system for the rear entrance would allow the Patrol Person to control both entrances and help keep illegal entrants out of the building. With the current setup, it is difficult to control who is in and out of the front entrance. The Patrol Person is currently stationed at the rear entrance.

b. One of the City 's Goals is to create strong, safe, accessible and vibrant neighborhoods and support programs that increase safety in neighborhoods for residents and visitors. PHA 's CDBG application for security upgrades at Franklin Towers would certainly fall right in line with these goals. Franklin Towers houses some of the most vulnerable people in the city which include elderly, disabled, veteran, and formerly homeless people. It is paramount that these folks feel safe in their homes and around the building.

8. Experience Providing Service

PHA provides long-term affordable rental housing and rental assistance to more than 1,000 low-income families, seniors and disabled individuals through its Public Housing Program for over 50 years. If you include its Housing Choice Voucher (HCV) program, it houses over 6,500 residents, close to 10% of the

City's population. PHA believes that providing safe, quality, affordable housing gives its residents the stability they need and the opportunity for success they deserve.

PHA is extremely experienced in infrastructure projects and handles over a million dollars in capital fund projects each year. It also has surveillance systems installed at two other properties that were procured through a competitive bidding process. It is very comfortable working with the vendors and residents to get the proposed security upgrades installed in a timely manner.

9. Partnership/Collaboration

The Franklin Towers Security Upgrades will be a collaboration between PHA, the residents of Franklin Towers, and the Portland Police Department (PPD). The goal of the project is to create a safer building by monitoring, deterring, and reducing criminal activity. At the monthly resident council meetings, PHA will notify the residents of their opportunity to have a greater influence in creating a safer building by notifying PHA and PPD when they observe illegal activity. The resident council meetings will give PHA and PPD the opportunity to reaffirm the power of the surveillance system, the improved Security Booth and how it's important for residents to report illegal or suspicious activity. PHA and PPD can speak of the influence the surveillance system has had in leading to evictions or arrests. The residents can give their feedback as to how successful they feel the security upgrades are in deterring and reducing criminal activity and ways it can continue to improve.

D. BUDGET FORM , *limit 1 page*

Complete one program budget spreadsheet for each program application.
Feel free to edit categories under Revenues or Expenditures as relevant to your program or project.

PROGRAM OR PROJECT NAME: FRANKLIN TOWERS SECURITY UPGRADES
OPERATING AGENCY: PORTLAND HOUSING AUTHORITY

CDBG Program Year (PY): July 1, 2020- June 30, 2021 *

REVENUES	Please indicate: Secured or Projected	Revenues TOTAL
CDBG Request 2020-21	Projected	$ 142,000
Other HUD Funds (please list)		
a. Portland Housing Authority's Capital Fund Grant	Secured	$ 142,202
Other Federal Funds (please list)		
a.		
b.		
State/ County Funds (please list)		
a.		
b.		
City Funds		
Private Funds (Grants, Fundraising, etc, please list)		
a.		
b.		
In Kind Services		
TOTAL PROGRAM or PROJECT REVENUE		$ 284,202

EXPENDITURES	Expenditures CDBG	Expenditures All Other Sources	Expenditures TOTAL
Administration			
Employee Salaries			
Employee Fringe Benefits			
Professional Services/ Consultant			
Equipment	$ 7,000	$ 7,000	
Materials/Supplies	61,500	61,702	
Office Space (Program only)			
Construction costs	73500	73500	
Insurance			
Advertising & Public Information			
Other, please specify			
a.			
b.			
c.			
d.			
e.			
TOTAL PROGRAM or PROJECT EXPENSES	**142000**	**142202**	**$ 284,202**

* A second Budget form will need to be submitted for multi-year social service requests.

E. CONSTRUCTION SUMMARY, *limit 1 page,* ***(This is the only page that goes to Council)***

Application Type	☒Construction Project	
Applicant	Portland Housing Authority	
Project Name	Franklin Towers Security Upgrades	
Project Address/Location	211 Cumberland Ave, Portland, ME 04101	
Funds Requested	$142,000	
Project Summary		
PHA seeks security upgrades at its Franklin Towers Public Housing Property, a 200-unit, 16 story high-rise that houses seniors as well as younger persons with disabilities, including veterans. Despite installing a surveillance camera system and having a Patrol Person at the rear door of the building at night, unwanted guests still sneak into the building and causes disturbances. Because the building was originally built for seniors, the unit doors have the old pull cord door system which tend to make the door latches easy to open. The doors are not self-closing which the Fire Department has raised concerns about. PHA plans to install 8 more surveillance cameras to cover more areas of the property. PHA would like to add a Security Booth at the front entrance of the building. It would then install a video intercom camera device which could unlock/lock the rear door with a push of the button to allow the Patrol Person to control both entrances. It would put a fence up in the parking lot area to control the flow of walking traffic. It would install 200-unit entry doors, which will be fire-rated and self-closing, and remove the old pull cord system.		
HUD National Objective *Refer to Section III.B.1*	☐Prevention of Slum/ Blight ☒Low/Moderate Income Area	☐Low/ Moderate Income Clientele ☐ Low/ Moderate Income Housing

Location - For LMA projects *Refer to Section II.B.4*	
Census Tracts	ME005000600
Service Area Neighborhoods (For LMA Projects)	PHA's Franklin Towers Public Housing Property
Beneficiaries/ Clients Served - *Refer to Section II.B.5*	
Client Description	Portland Housing Authority's Public Housing residents of Franklin Towers will be the beneficiaries of the security upgrades.
Number of Clients Served	211
Number of LMI Portlanders	211
LMI Portland Percentage	100%

Outcomes - *Refer to Section II.B.6*
The morale of the residents and the building will improve, and the safety and security of the building will improve. There will be fewer resident complaints as there should be fewer unauthorized people getting into the building which will decrease criminal activity. Residents will feel empowered to step forward and report criminal activity.

Budget - *Refer to Section II.D*	
$142,000	CDBG Request (Must match CDBG Request on Cover Page and Budget Worksheet)
$284,202	Total Program Budget (Must match Total Budget on Cover Page and Budget Worksheet)
49.96%	Percentage of CDBG Request of Total Budget [50% or less indicates at least a 1 to 1 match]

Leveraged Funds - *Refer to Section II.D*			
$142,000	Federal	$	Other grants
$	State	$	Endowment
$	County	$	Private Funds
$	City *(not CDBG)*	$	Gifts in kind

F. Scope of Work, Estimates, and Plans or Pictures

Norris Inc.
Advancing security, life safety, and communications.

Norris Inc
2257 West Broadway
South Portland, ME 04106

phone. 1-800-370-3473
fax. 1-207-879-0540
http://www.norrisinc.com

Customer

14 BAXTER BLVD
PORTLAND HOUSING AUTHORITY

Tel. 207-773-4753 Fax. 207-774-6471

Proposal Details

Project Number 329847SP
PHA Franklin Tower Upgrades 042718
Proposal Date 4/27/2018
Purchase Order #
Proposal Total $ 16,000.00

Qty	Part Description
	FRANKLIN TOWERS CAMERA UPGRADES
	-add (2) cameras rear of remote building for trail
	-move existing cameras 3/4 to remote building for parking
	-add wireless link to remote building w/ industrial switch
	-relace cam 3 with 1080 low light camera
	-add (cam 4) camera for bike area
	-add camera for dumpster area
	-add camera from front (Cumberland/Franklin) exterior
	-add intercom for rear entry
	-add interior camera for stairwell
	-add interior camera floor 1 for bathroom hall
	REAR REMOTE BUILDING
2	IP DOME CAMERA, EXTERIOR
2	RADIOS, HARDWARE
1	INDUSTRIAL POE SWITCH
1	CABLING, HARDWARE, ETC.
	LABOR
	EXTERIOR CAMERAS
3	IP DOME, LOW LIGHT
2	IP DOME PENDANT HARDWARE
1	IP DOME, 180, LOW LIGHT, PENDANT HARDWARE
1	CABLING, HARDWARE, ETC.
1	LIFT
	LABOR
	INTERIOR CAMERAS
2	IP DOME CAMERA
1	CABLING, HARDWARE, ETC.
	LABOR
	INTERCOM
1	INTERCOM SYSTEM
1	CABLING, HARDWARE, ETC.
	LABOR
	OTHER

Qty	Part Description	
1	LICENSES AND PERMITS PROGRAMMING, UPDATES, ETC.	
	TOTAL (LESS TAX)	$16,000.00
1	THIS IS A QUOTE FOR A TURN-KEY INSTALLATION THIS QUOTE INCLUDES FROM NORRIS, INC.: - Only the items and quantities of devices listed on this quotation. The design is pending approval of authorities having jurisdiction where approval is required. - Pre-installation rough-in followed by one site visit for final connection of head-end w/ training if needed and all required testing to be performed during the same visit. - Acceptance and testing documentation (when applicable) - For alarm systems with a key lock box, if shown on plans the least expensive lock box will be provided unless specified otherwise - Norris, Inc. work is to be performed during the hours of 8:00 AM and 5:00 PM - Norris, Inc. may choose to make a network connection in the building to facilitate commissioning and service remotely. THIS QUOTE DOES NOT INCLUDE: - Multiple site visits for phased projects unless Norris, Inc. was specifically advised of the phasing schedule prior to providing this quote - Permits, licenses, sales tax or shipping costs to the customer unless each is specifically listed - Third party approvals or third party testing or inspections unless specifically listed - Return visits if other trades could not be coordinated to be present during our original site visit - Labeling of devices, controls or any required signs unless specifically listed on the quote - Unforseen existing conditions that were not brought to the attention of Norris, Inc. prior to the quote IT IS THE CUSTOMER'S RESPONSIBILITY TO: - Provide a revised equipment count if the quantities shown are incorrect - Provide a minimum of FIVE business days to schedule Norris, Inc. - Provide a clean and safe working environment that complies with all OSHA rules and standards - Provide a safe and secure, climate controlled storage area for tools and the equipment being installed - Provide labeling and any required signs - Provide trash receptacles and pay for all trash removal unless trash removal is specifically listed - Cutting, patching and painting of any areas affected by the installation unless each of these functions are specifically listed on the quote - If there is a custom annunciator/map or custom control panel, etc. then AutoCAD files must be provided to Norris Inc. at no cost - To pay additional travel and labor costs for any additional unplanned site-visits TERMS: - Net 30 days with approved credit - LATE FEE @ 2% PER MONTH - 24% ANNUALLY - FOB: S. Portland, ME; Invoices are dated when shipped or when customer is informed materials are ready for pick-up - Maximum Credit Card purchase value allowed is $2,500.00 - Customer cannot hold retainage unless specifically agreed to before the PO is issued and accepted - Acceptance by the customer of any materials indicates that the customer agrees to all Norris, Inc. terms and conditions	

Signature: _____ Date: _____

Customer Signature

Project Total: $ 16,000.00

LORANGER
DOOR AND WINDOW

Loranger Door & Window Co. Inc
2325 Broadway
Suite 1
S. Portland, ME 04106
207-772-2223
Fax: 207-773-3261

QUOTE

1804-220174 R8

SOLD TO
PORTLAND HOUSING AUTHORITY 14 BAXTER BLVD PORTLAND ME 04101

JOB ADDRESS
PORTLAND HOUSE-FRANLIN TOWERS C/O RICHARD BIGGS 838-3294 RBIGGS@PORTHOUSE.ORG 211 CUMBERLAND AVE PORTLAND ME 04101 7734753

ACCOUNT	JOB
734753	0
CREATED ON	04/30/2018
EXPIRES ON	06/29/2018
BRANCH	1000
CUSTOMER PO#	
STATION	ALOR
CASHIER	RJL
SALESPERSON	CAS
ORDER ENTRY	AML
MODIFIED BY	RJL

QUOTE BASED ON 200
ALLOW 5-7 WEEKS LEAD TIME
REVISED PROPOSAL BASED ON STRIKE
FILLERS AND SMOKE SEAL ON STAIRWAY EXIT DOORS. - E-MAILED TO RICHARD BIGGS BY RJL ON MONDAY 05/21/2018.

Item	*Description*	*D*	*Quantity*	*U/M*	*Price*	*Per*	*Amount*
C	UNIT ENTRY DOOR REPLACEMENT OF ENTIRE BUILDING, REUSE EXISTING HOLLOW METAL FRAME AND PEEP SIGHT, NEW DOOR, NEW HINGES, STANLEY INTERCONNECT LOCKSET WITH DEADBOLT AND INTERCHANGEABLE CORE PATENTED KEYWAY, NEW DOOR CLOSER, SMOKE SEAL AROUND DOOR, BOTTOM SWEEP.						
NSMH	2868 X 1 3/4" PRIMED FLUSH 90 MIN.FIRE RATED HOLLOW METAL DOOR INSULATED, 18 GAGE - PREPPED FOR EXISTING OPENING, 3- HINGES, 2 BORE, PEEPSITE, JR METAL DOOR		200	EACH	271.0000	EACH	54200.00
NSMH	PAINTING OF DOORS, TWO COATS OF FINISH, SHERWIN WILLIAMS DTM PRO INDUSTRIAL ACRYLIC COATING, OFF SITE		200	EACH	80.0000	EACH	16000.00
6300045	FBB179 4.5X4.5 US26D HINGES		600	EA	4.0000	EA	2400.00
6030570	2701-FC-689 DOOR CLOSER		200	EACH	70.0000	EACH	14000.00
NSSTANLEYHDWE	STANLEY BRAND INTERCONNECTED LOCK QCI231 A x S4 x 478S x 626		200	EACH	75.0000	EACH	15000.00
NSSTANLEYHDWE	BEST CORMAX PATENTED CORE 1CM-6-2(X)-2-626- 4 KEYS PER UNIT.		200	EACH	40.0000	EACH	8000.00

PLEASE VERIFY SIZE, QUANTITY, AND SPECS BEFORE ORDERING.
SPECIAL ORDER MATERIALS ARE NOT RETURNABLE.

Subtotal	
Sales Tax	
Total	

Buyer:

Signature

Loranger Door & Window Co. Inc
2325 Broadway
Suite 1
S. Portland, ME 04106
207-772-2223
Fax: 207-773-3261

QUOTE

1804-220174 R8

SOLD TO
PORTLAND HOUSING AUTHORITY 14 BAXTER BLVD PORTLAND ME 04101

JOB ADDRESS
PORTLAND HOUSE-FRANLIN TOWERS C/O RICHARD BIGGS 838-3294 RBIGGS@PORTHOUSE.ORG 211 CUMBERLAND AVE PORTLAND ME 04101 7734753

ACCOUNT	JOB
734753	0
CREATED ON	04/30/2018
EXPIRES ON	06/29/2018
BRANCH	1000
CUSTOMER PO#	
STATION	ALOR
CASHIER	RJL
SALESPERSON	CAS
ORDER ENTRY	AML
MODIFIED BY	RJL

QUOTE BASED ON 200
ALLOW 5-7 WEEKS LEAD TIME
REVISED PROPOSAL BASED ON STRIKE
FILLERS AND SMOKE SEAL ON STAIRWAY EXIT DOORS. - E-MAILED TO RICHARD BIGGS BY RJL ON MONDAY 05/21/2018.

Item	Description	D	Quantity	U/M	Price	Per	Amount
	VISUAL KEY & INTERCHANGABLE CORE CONTROL STAMPED.						
NSMH	DONJO CUSTOM FRAME FILLERS AF-261 MODIFIED ELECTRIC STRIKE FRAME FILLER - SILVER COATED W/ STRIKE HOLE- EDWARDS MODEL # 177-G5		200	EACH	25.0000	EACH	5000.00
6200925	TS-100-CP THIMBLE STRIKE CHROME PLATED - DONJO		200	EACH	4.0000	EACH	800.00
6800002	S88 20' ADHESIVE BLACK W/STRP 200 - ENTRY'S 32- STAIRWAY EXIT DOORS		232	EACH	12.0000	EACH	2784.00
6800033	307AV36BL 36" Door Bottom Sweep 1/4 x 7/8 x 36 w/ 1 Exposed Black Vinyl Seal Mill Finish 200- UNIT ENTRY DOORS 32- STAIRWAY ENTRY DOORS		232	EACH	4.0000	EACH	928.00
NSIC	INSTALL DOOR INTO EXISTING FRAME - BASED ON ACCESS TO A FLOOR A TIME		200	EACH	175.0000	EACH	35000.00
NSIC	SMOKE SEAL AND DOOR BOTTOM WEATHERSTRIP - 32 STAIRWAY EXIT DOORS		32	EACH	20.0000	EACH	640.00
NSLABORDISPOSAL	OFFSITE DISPOSAL BY LORANGER OF EXISTING DOORS AND HARDWARE	N	1	EACH	2000.0000	EACH	2000.00
FR	FREIGHT CHARGE		1	EA	450.0000	EA	450.00
C	EXCLUSIONS: BONDING IF NEEDED						
C	DEDUCT FOR SELF CLOSING HINGES						

PLEASE VERIFY SIZE, QUANTITY, AND SPECS BEFORE ORDERING. SPECIAL ORDER MATERIALS ARE NOT RETURNABLE.		Subtotal Sales Tax Total	

Buyer:

Signature

Trevor Nugent

From: Richard Biggs
Sent: Friday, November 15, 2019 11:19 AM
To: Trevor Nugent
Subject: FW: Burns Fencing

From: Jason Levecque <jason@burnsfencing.com>
Sent: Thursday, May 10, 2018 8:22 AM
To: Richard Biggs <rbiggs@porthouse.org>
Subject: Burns Fencing

Morning Richard,

For 145LF of Jerith, Color black $8000 would be a good budget number. You did not tell me what height you wanted or if there were any gates. But that should cover most heights

Jason Levecque
Vice President
ph. 207-854-2463

BURNS' FENCING

Commissioners
Mariar Balow, Chair
Robyn Tucker, Vice Chair
Kristin Blum, Commissioner
Christian MilNeil, Commissioner
Monique Mutumwinka, Commissioner
Shirley Peterson, Commissioner
Thomas Valleau, Commissioner

PORTLAND HOUSING AUTHORITY

Cheryl Sessions
Executive Director

14 Baxter Blvd.
Portland, Maine 04101
Office: 207-773-4753
Fax: 207-761-5886
www.porthouse.org

November 20, 2019

Dear Trevor,

Here is my Independent Cost Estimate for the new security booth at Franklin Towers. This estimate is created based the criteria required in 24 CFR 85.36(f).

To replace and reconfigure the entry vestibule to incorporate a security booth for a security officer at Franklin Towers.

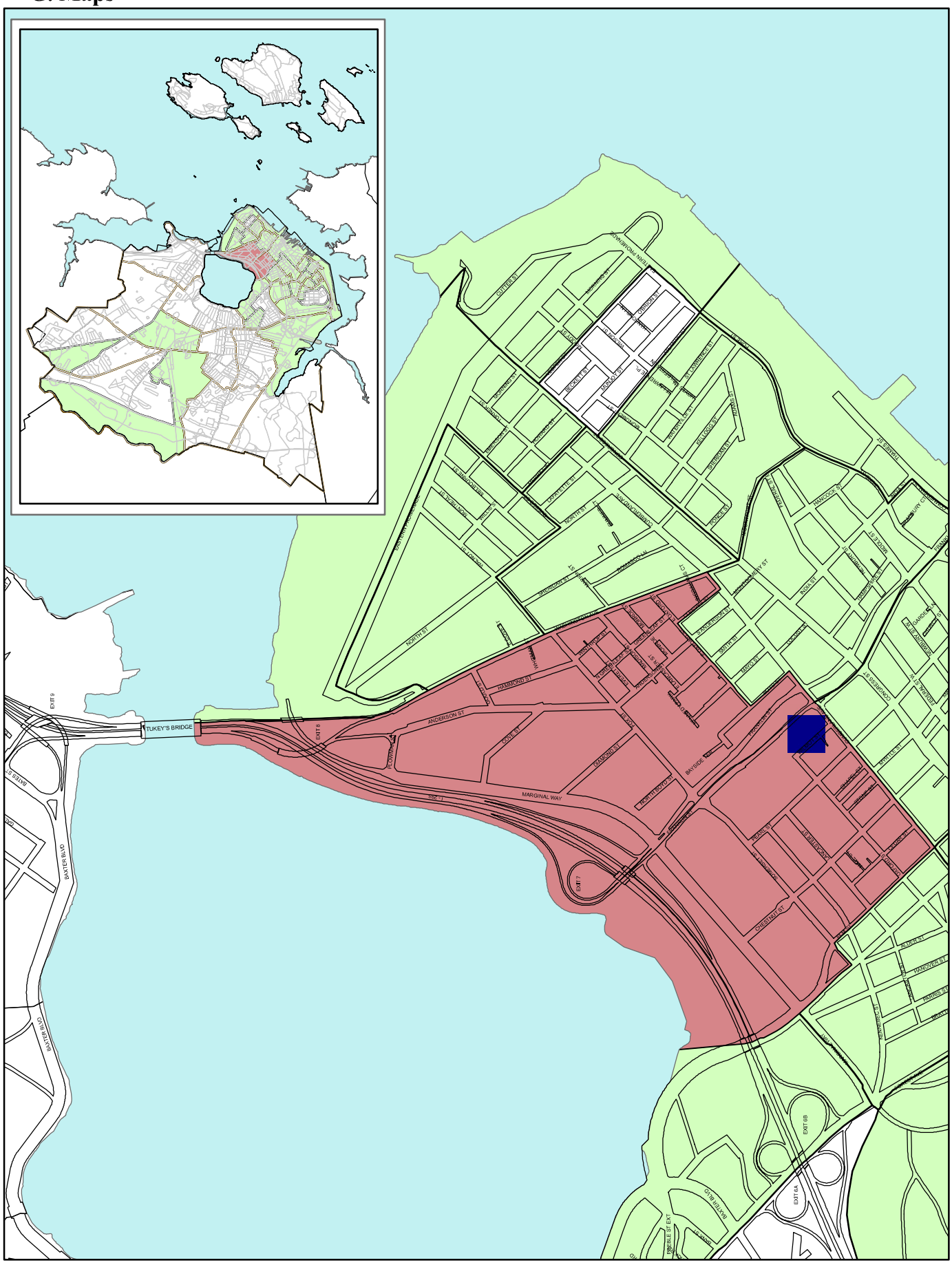
Material	$ 52,000.00
Labor	$ 51,000.00
Total	$ 103,000.00

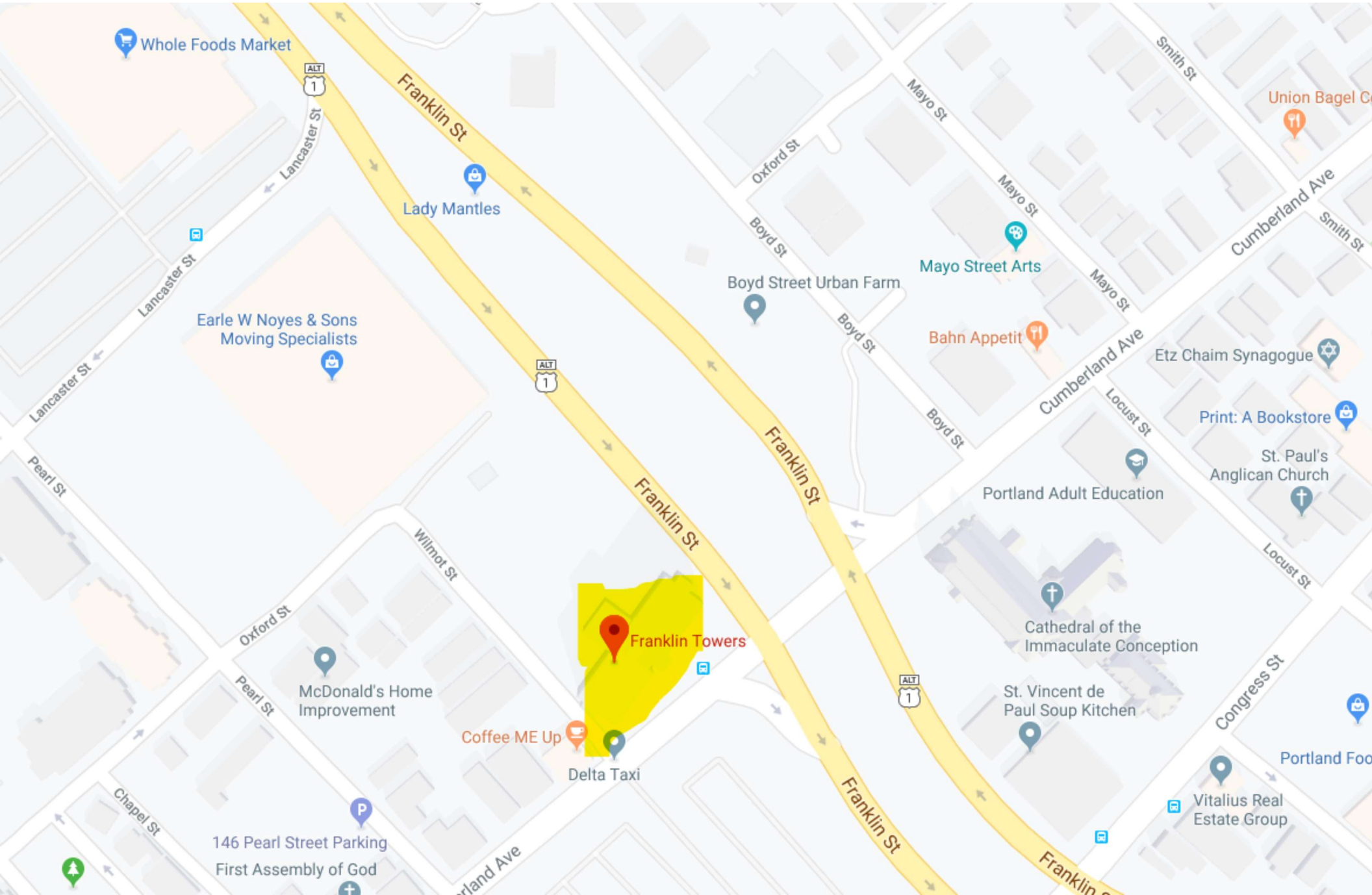
Please feel free to contact me with any questions.

Sincerely,

Richard Biggs
Director of Maintenance

G. Maps


TUKEY'S BRIDGE
MARGINAL WAY
ANDERSON ST
HAMMOND ST
NORTH ST
BAYSIDE
CHESTNUT ST
BAXTER BLVD
EXIT 9
EXIT 8
EXIT 7
EXIT 6B
EXIT 6A


Whole Foods Market
Lady Mantles
Earle W Noyes & Sons
Moving Specialists
Boyd Street Urban Farm
Mayo Street Arts
Bahn Appetit
Union Bagel C
Etz Chaim Synagogue
Print: A Bookstore
St. Paul's
Anglican Church
Portland Adult Education
Cathedral of the
Immaculate Conception
St. Vincent de
Paul Soup Kitchen
Vitalius Real
Estate Group
Portland Foo
Franklin Towers
Coffee ME Up
Delta Taxi
McDonald's Home
Improvement
146 Pearl Street Parking
First Assembly of God
Franklin St
Lancaster St
Mayo St
Boyd St
Oxford St
Cumberland Ave
Smith St
Locust St
Pearl St
Wilmot St
Congress St
Chapel St
ALT
1

H. PROJECT TIMELINE

July 2020 – Installation of fencing and eight additional surveillance cameras.

August 2020 – Sealed, competitive bid process begins for installation of 200-unit entry doors and construction of the Guard Station.

September 2020 – Contracts are awarded.

October 2020 - Installation of the unit entry doors begins. Construction of Guard Station also begins.

December 31, 2020 – Installation and construction deadline.

I. Verification of Contact with City's Historic Preservation Staff

Memorandum
Department of Planning and Development
Historic Preservation Office

To:	**Kelley Walsh, HCD Program Manager**
From:	**Deborah Andrews, Historic Preservation Program Manager**
Cc:	**Trevor Nugent, Portland Housing Authority**
Date:	**November 12, 2019**
Re:	**Portland Housing Authority CDBG Funding Request; Status of Historic Preservation Review**

This is to confirm that Trevor Nugent of the Portland Housing Authority has been in contact with this office regarding a proposal for interior renovations at Franklin Tower. It is our understanding that federal FY '2020 CDBG funds are being sought for the project.

As the project does not affect any designated historic landmark, historic district or historic landscape district, it does not require review under Portland 's historic preservation ordinance.

J. Letter(s) of Support

November 5, 2019

Trevor Nugent, Director of Property Management
Portland Housing Authority
14 Baxter Blvd.
Portland, ME 04101

Dear Mr. Nugent:

The Franklin Towers Resident Council enthusiastically supports the Portland Housing Authority's application for a City of Portland Community Development Block Grant (CDBG) to help fund further security upgrades here at Franklin Towers.

Several security upgrades have already been installed at Franklin Towers, and these improvements (which include 75 new security cameras, the nightly stationing of a security guard at the rear entrance – with the front entrance locked during the evening and night-time hours) have significantly improved security in and around this 200-unit building. But security issues are still at top of mind for the majority of residents and staff here, as this building has had, and to some degree continues to have, a history of security and entrance violations by unauthorized persons from the community at-large, often seeking a "safe haven" in order to conduct illegal drug and other activity.

The proposed 5 additional security cameras, plus an upgrade and a relocation of two of the existing cameras, will help monitor the few remaining areas of the building and surrounding property that experience has shown are not adequately covered at present. The intercom video camera with lock at the rear entrance, together with the construction and outfitting of a new guard station and associated equipment at the front or main lobby entrance, will facilitate shifting the current security guard station from the rear to the front entrance; this will improve building entrance control further, and provide for more safety and convenience for residents entering the building during the evening and night-time hours. The additional perimeter fencing and hedge tree trimming around the building will further improve security by physically restricting how unwanted persons can approach the building, and by increasing the associated outside visibility for the security guard and the exterior cameras.

Finally, the proposed 200 new apartment unit entrance doors and locks will replace all of the original apartment entrance doors with new higher-security, fire-rated steel doors and associated locks, latches, hinges and automatic door-closer hardware. The 50 year-old original doors and hardware are now reaching the end of their service life, and some of the hardware (particularly the locks and latches) is becoming troublesome and/or unreliable, according to some residents.

The Franklin Towers Resident Council and its executive committee appreciates the Portland Housing Authority's continuing efforts to upgrade the security and other electrical and mechanical systems in this 50 year-old building, and we wish you the best of luck with this CDBG funding application. Please keep us informed of the progress in securing this current funding grant.

Sincerely,

Jon R. Graback
Vice President
Franklin Towers Resident Council

Google Groups

Public Comment 337 Cumberland Avenue: Outstanding Co-developer Arrangement Questions

George Rheault <george.rheault@gmail.com> Sep 11, 2020 12:03 PM
Posted in group: **Planning Board**

It is very disturbing that the Planning Board, during its previous workshop for this project, appeared to be completely incurious regarding the actual terms of the development/revenue-sharing agreements between the Portland Housing Authority's development affiliate and Youth & Family Outreach.

I have attached an excerpt from the Genesis Fund 2019 Annual Report that shows what the YFO project was initially supposed to look like without the housing component. The full report can be found here: https://genesisfund.org/images/GCLF_AR2019.pdf

Clearly it was financially advantageous for YFO to proceed with the PHA co-developer model in order to achieve its expansion goals. The problem remains however whether the overall project will subsidize the YFO programs (both construction, site acquisition and any ongoing cross-subsidies) while providing minimal (or worse) revenue to the actual upstairs housing component - requiring the public to have to bail it out at some point.

While one could argue that it is very much in the YFO's interest to have a successful residential housing program above its child care operations, thus the public is protected by this self-interest, it is also easily foreseeable that in a project with very thin margins of error that two non-profit operations with limited sources of additional annual funding (either for operations or capital spending) will underestimate construction and operational costs causing the project to very quickly be unable to adequately serve its many masters and constituencies.

It may feel unfair to ask deeper questions of an affordable housing project that has laudable ambitions, but it is also unfair to unquestionably accept assumptions that are not even in the public record at this time and which may create a sub-optimal or even failed housing environment if the Planning Board refuses to do its job properly when it can still make a difference to those who will make 337 Cumberland their homes as well as the wider neighborhood of which it will be a part.

Please do not rubber stamp this project. PLEASE treat it with the SAME exacting scrutiny you have given other projects like 24 Saint Lawrence and 126R/128 North Street.

Genesis
COMMUNITY LOAN FUND

2019
ANNUAL REPORT

Technical Assistance: creating the kind of community we'd love to call home!

In the kind of community we'd all love to call home, we'd enjoy welcoming neighborhoods, affordable and safe housing, easy access to health care and food, and ample opportunity for all children to get the best start possible. We have over 27 years of experience helping our neighbors create, build and preserve vital elements of a thriving community: affordable housing, food pantries, and child and health care centers. From fledgling organizations to established nonprofits, technical assistance from the Genesis Fund can help with project planning, capacity building, identifying sources of capital and more.

CLIENTS

Aroostook Band of Micmacs
Calais Methodist Home
Cooperative Development Institute
Four Directions Development Corporation
Home Start
Houlton Band of Maliseets
Island Commons
Kennebec Valley Community Action
Knox County Homeless Coalition
Waterville Housing Authority
Midcoast Habitat for Humanity
Penacook Landing
Old Town Housing Authority
Penobscot Nation
Shalom House
Southern Harbor Eldercare Services
Tedford Housing
USDA RD – *preserving affordable housing in rural communities*:
- Thomaston –Avesta
- Norway and Bethel – Avesta
- Blue Hill – Mount Desert Island & Ellsworth Housing Authorities
- Vinalhaven – Penquis Community Action Program
- Mapleton – Presque Isle Housing Authority

Volunteers of America Northern New England
Youth and Family Outreach

TECHNICAL ASSISTANCE

FY19
1,590.25 hours
25 Projects
20,901.50 hours to 306 projects since 1992

Creating vibrant communities!

Youth and Family Outreach (YFO) is a critical partner in Portland's Bayside neighborhood, providing early care and education to the city's most vulnerable families.

When a site next door came up for sale, our technical assistance team helped YFO plan a much-needed expansion. A Genesis Fund loan then helped YFO purchase the building and begin a renovation which will enable YFO to serve 45 additional families – with new and expanded services including Pre-K, young parent and foster grandparent programs, language and nutrition classes, occupational therapy, and mental health support.

Thank You Open House Sponsors!

Where others see challenges, we see opportunity!

Genesis Fund staff, from left to right: Erica Quin-Easter, Nina Andersen, Liza Fleming-Ives, Jane Irish, Eileen Harkins, Mary Anne Schneider, Bill Floyd, and Jenny Rottmann.

Photography: Whitney J. Fox Photography, Erin Little Photography, Soggy Dog Designs, Portland Builders, Area Interfaith Outreach, Children's Odyssey, Youth and Family Outreach. Design by Mahan Design.

Genesis
COMMUNITY LOAN FUND
22 Lincoln Street
Brunswick, ME
207.844.2035
genesisfund.org
facebook.com/genesisfund

Non-Profit Org.
Presort Standard
U.S. Postage
PAID
Farmington, ME
Permit No. 30

Board of Directors

Fiscal Year 2019

Bill Shanahan, *President*
Northern New England Housing Investment Fund

Kyra Walker, *Vice President*
Community Housing of Maine

Brenda Peluso, *Treasurer*
Dietel & Partners

Karen MacDonald, *Secretary*
Port Resources, Inc.

Diane Donaldson
Bangor Savings Bank

Beth Hayward
Machias Savings Bank

Greg Dalton
Bar Harbor Bank & Trust

Deb Keller
Bath Housing

Tim McMachen
People's United Bank

Laurie Miller
Old Town Housing Authority

Greg Payne
Avesta Housing

Randy Phelps
Investor/Community Member

Welcome Incoming Board Members
Fiscal Year 2020

Rebecca Emmons
Mobius, Inc.

Rebecca Hatfield
Avesta Housing

Tom Whelan
Bath Savings Trust

3D VIEW

EXISTING AERIAL

DRAWING INDEX

GENERAL		
		COVER SHEET
CIVIL		
	C-100	EXISTING CONDITIONS + DEMOLITION PLAN
	C-101	SITE PLAN
	C-102	BASEMENT PARKING PLAN
	C-300	EROSION CONTROL NOTES & DETAILS
	C-301	CIVIL DETAILS I
	C-302	CIVIL DETAILS II
	C-303	CIVIL DETAILS III
	C-304	CIVIL DETAILS IV
ARCHITECTURAL		
	A-0.0	CONTEXT IMAGES
	A-1.1	BASEMENT PLAN
	A-1.2	1ST FLOOR PLAN
	A-1.3	TYPICAL FLOOR PLAN: FLOORS 2-6
	A-1.4	ROOF PLAN
	A-2.1	ENLARGED ELEVATION CUMBERLAND AVENUE
	A-2.2	CUMBERLAND AVENUE (SE) & PORTLAND STREET (NW) ELEVATIONS
	A-2.3	PREBLE STREET (NE) ELEVATION
	A-2.4	SOUTH-WEST ELEVATION
	A-9.1	PERSPECTIVE
	A-9.2	PERSPECTIVE

337 CUMBERLAND

Project Information

CLIENTS	Portland Housing Development Corporation
ARCHITECT	Kaplan Thompson Architects
CONTRACTOR	TBD
PROJECT ADDRESS	337 Cumberland Avenue Portland, ME

Proposed Structure

PROPOSED OCCUPANCY:	Childcare, Multi-family Housing & Community Services
PROPOSED BUILDING HEIGHT:	7-Story 76'-7" Above Average Site Grade See Elevations
GROSS ENCLOSED PROPOSED NEW FLOOR AREA:	58,705 SF
GROSS ENCLOSED EXISTING CHAPEL FLOOR AREA:	6,380 SF
GROSS ENCLOSED GARAGE FLOOR AREA:	6,865 SF
TOTAL GROSS ENCLOSED FLOOR AREA:	71,950 SF
STRUCTURAL FOOTPRINT (INCLUDES BUILDINGS, ELEVATED DECKS, STAIRS & CANOPIES):	15,443 SF

Kaplan Thompson Architects
102 Exchange Street
Portland, ME 04101
(207) 842-2888
kaplanthompson.com

PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
14 Baxter Boulevard
Portland, ME 04101
p: (207) 221-8009

CIVIL & LANDSCAPING
ATLANTIC RESOURCE CONSULTANTS
541 US-1, Suite 21
Freeport, ME 04032
p: (207) 869-9050

EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
p: (617) 608-1551

LICENSED ARCHITECT
JAMES JESSE THOMPSON
No. 3275
STATE OF MAINE

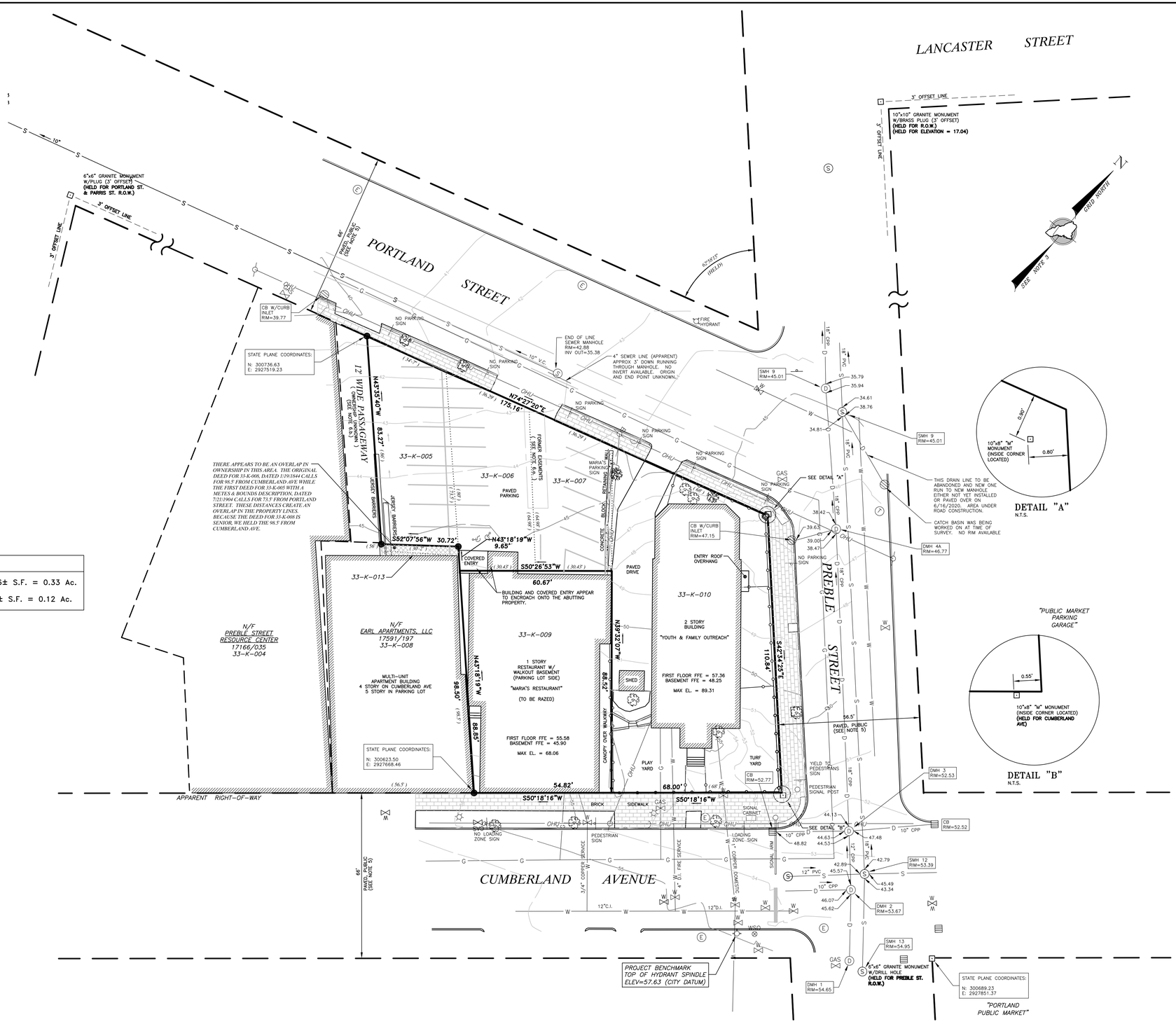
NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

COVER SHEET

VICINITY MAP
N.T.S.

LOT AREA CHART	
PARCEL 33-K-009	14,476± S.F. = 0.33 Ac.
PARCELS 33-K-5, 6, 7, 10, 13	5,116± S.F. = 0.12 Ac.



DETAIL "A"
N.T.S.

DETAIL "B"
N.T.S.

LEGEND

●	#5 REBAR WITH PLASTIC CAP (PROPOSED)
⊡	FOUND MONUMENT (SIZE & TYPE AS NOTED)
	UTILITY POLE (NUMBER AS NOTED)
	GUY WIRE ANCHOR
	FOUND DECIDUOUS TREE (SIZE & TYPE AS NOTED)
	FOUND CONIFEROUS TREE (SIZE & TYPE AS NOTED)
	BOUNDARY LINE
	EASEMENT LINE
	EDGE OF PAVEMENT
	RIGHT-OF-WAY LINE
	ABUTTER LINE
	BUILDING SETBACK
OHU	OVERHEAD UTILITY
W	WATER LINE
G	GAS LINE
	FORMER DEED LINES
N/F	NOW OR FORMERLY OWNED BY
1234/567	DEED BOOK AND PAGE
12-34	TAX MAP-LOT
(123.45')	PARENTHESIS DENOTE RECORD DATA

NOTES

1. RECORD OWNER OF PARCEL 33-K-10 IS YOUTH & FAMILY OUTREACH (f/k/a PORTLAND MINISTRY AT LARGE) AS DESCRIBED IN A DEED FROM MARY PREBLE, DATED SEPTEMBER 17, 1850 AND RECORDED IN BOOK 225, PAGE 350 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

   RECORD OWNER OF PARCELS 33-K-5, 6, 7 & 9 IS YOUTH AND FAMILY OUTREACH AS DESCRIBED IN A DEED FROM ANTHONY M. NAPOLITANO, GREGORY J. NAPOLITANO AND FRANCIS W. NAPOLITANO, DATED MARCH 4, 2019 AND RECORDED IN BOOK 35530, PAGE 234 IN SAID REGISTRY.

2. THE PARCEL SURVEYED IS IDENTIFIED ON THE CITY OF PORTLAND TAX ASSESSOR'S MAP 33, BLOCK K, PARCELS 5, 6, 7, 9 & 10.

3. THE BEARINGS SHOWN ON THIS PLAN ARE BASED ON MAINE COORDINATE SYSTEM OF 1983, WEST ZONE, GRID NORTH.

4. REFERENCE IS MADE TO THE FOLLOWING PLANS:
   a. CITY OF PORTLAND VALUATION MAP VOLUME #33, DATED 1882, PROVIDED BY CITY OF PORTLAND PUBLIC WORKS.

5. THE WIDTH OF CUMBERLAND AVENUE IS 66' BASED ON CITY RECORDS. THE WIDTH OF PREBLE STREET IS 56.5' BASED ON CITY RECORDS. THE WIDTH OF PORTLAND STREET IS 66' BASED ON CITY RECORDS. THE LAYOUT OF THE RIGHT-OF-WAY LIMITS ARE BASED ON CITY STREET LINE SHEETS PROVIDED BY PUBLIC WORKS AND MONUMENTATION FOUND.

6. REFERENCE IS MADE TO THE FOLLOWING EASEMENTS OF RECORD:
   a. CROSS EASEMENTS BETWEEN 33-K-006 AND 33-K-007 APPEAR TO HAVE BEEN EXTINGUISHED BY MERGER OF TITLE AS THE EASEMENTS DO NOT BENEFIT ANY OTHER PARCELS AND BOTH PARCELS ARE IN THE SAME OWNERSHIP.

   b. PARCELS 33-K-004, 33-K-005 AND 33-K-008 ALL APPEAR TO HAVE RIGHTS IN THIS 12' WIDE PASSAGEWAY. THE FEE OWNERSHIP APPEARS TO LIE WITH A PARTY OTHER THAN THE ABOVE MENTIONED PARCELS.

7. AS OF THE ORIGINAL DATE OF THIS PLAN, THE PARCEL SURVEYED IS LOCATED IN THE B-3 ZONE. PORTIONS OF BULK & SPACE REQUIREMENTS ARE AS FOLLOWS:
   MINIMUM LOT AREA = NONE
   MINIMUM FRONTAGE = 15'
   SETBACKS:
   FRONT = 5' MAXIMUM
   SIDE = NONE
   REAR = NONE

   OTHER MUNICIPAL AND STATE OVERLAY ZONES MAY EXIST AND APPLY. BEFORE PROCEEDING ON ANY PROJECT WE RECOMMEND VERIFYING CURRENT ZONE AND ALL APPLICABLE SETBACKS AND RESTRICTIONS WITH THE APPROPRIATE AGENCIES.

8. ELEVATIONS AND CONTOURS ARE BASED ON CITY OF PORTLAND DATUM USING THE 3' OFFSET MONUMENT AT PREBLE & LANCASTER STREETS (ELEV 17.04) PROVIDED BY PUBLIC WORKS. SEE PLAN FOR TBM DESCRIPTION.

9. THE UTILITIES SHOWN ON THIS PLAN WERE MARKED BY DIG SMART OF MAINE ON 8/07/2018 AND THEIR LOCATIONS ARE TO BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UTILITIES EXISTING THAT ARE NOT SHOWN. CONTRACTOR TO CONTACT DIG-SAFE (888)DIG-SAFE PRIOR TO ANY EXCAVATION WORK.

Revision:	By:	Date:	Change:
1	JAP	6/22/2020	ADD INVERTS AND STATE PLANE COORDINATES
1	JAP	5/13/2020	REVISE OWNER OF RECORD FOR 33-K-5, 6, 7 & 9

PROJECT: 41694	DRAWING NAME: 41694.dwg		
ISSUED: AUGUST 15, 2018	SCALE: 1"= 20'	FB # 449B	DRAWN BY: JAP
FIELDED BY: DPH / ASF	FIELD DATE: 8/08/2018		CHECKED BY: DMM / TFM

Drawing Name and Location:
BOUNDARY & TOPOGRAPHIC SURVEY
331 & 337 CUMBERLAND AVENUE, PORTLAND, MAINE

Owner:
YOUTH & FAMILY OUTREACH
331 CUMBERLAND AVENUE, PORTLAND, MAINE 04101

Prepared For:
YOUTH & FAMILY OUTREACH

SURVEYING ● ENGINEERING ● LAND PLANNING
Northeast Civil Solutions
INCORPORATED
381 PAYNE ROAD, SCARBOROUGH, MAINE 04074
tel 207.883.1000 fax 207.883.1001 e-mail / website info@northeastcivilsolutions.com www.northeastcivilsolutions.com

0 20' 40' 80'

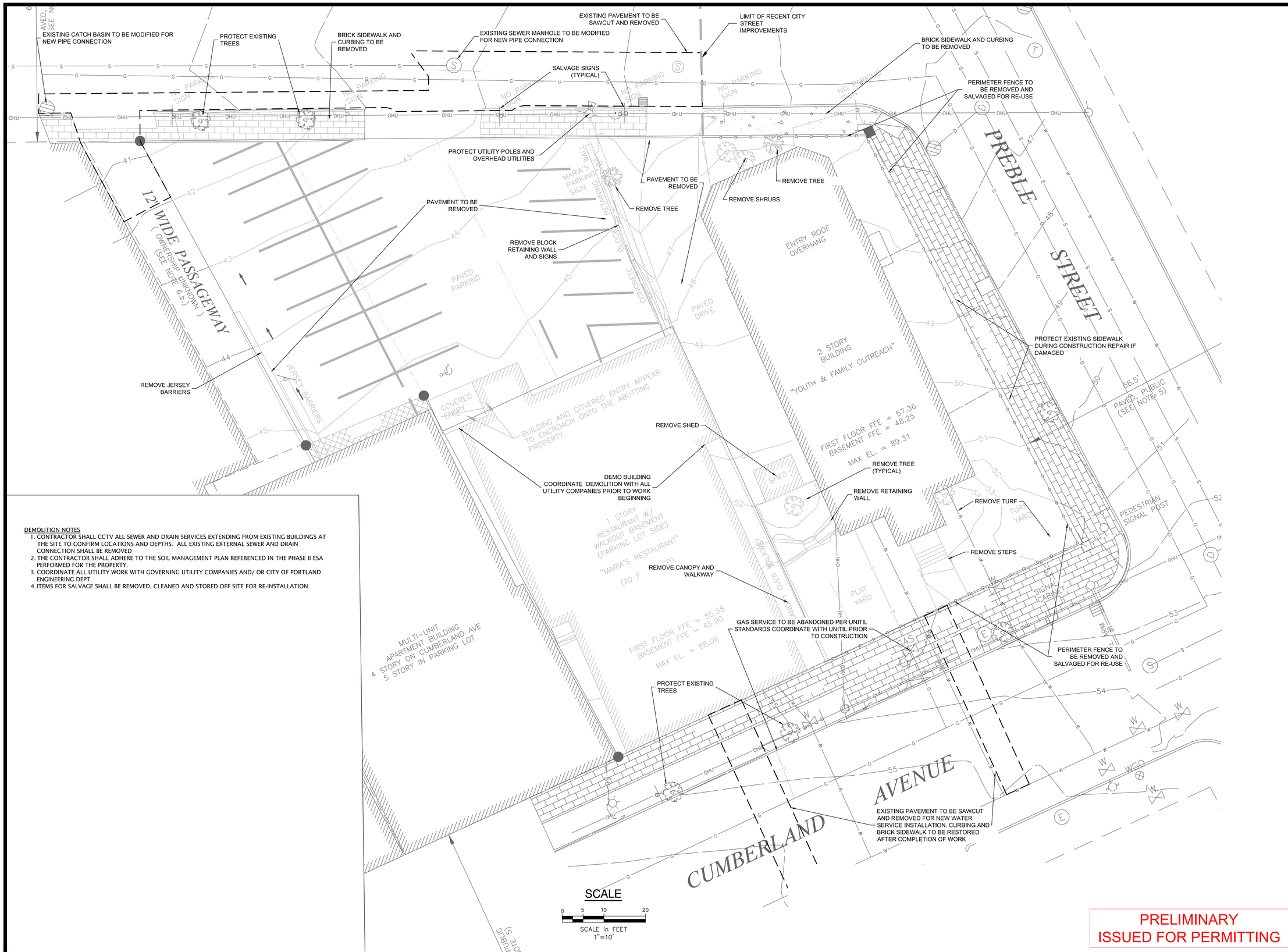
STAMP AND SIGNATURE

TROY F. McDONALD
MAINE PROFESSIONAL LAND SURVEYOR No. 2080

7/03/2020
DATE

STATE OF MAINE TROY F. McDONALD #2080 PROFESSIONAL LAND SURVEYOR

E:\Land Projects\41000\41694-Youth & Family - Portland\dwg\41694.dwg



DEMOLITION NOTES

1. CONTRACTOR SHALL CCTV ALL SEWER AND DRAIN SERVICES EXTENDING FROM EXISTING BUILDINGS AT THE SITE TO CONFIRM LOCATIONS AND DEPTHS. ALL EXISTING EXTERNAL SEWER AND DRAIN CONNECTION SHALL BE REMOVED
2. THE CONTRACTOR SHALL ADHERE TO THE SOIL MANAGEMENT PLAN REFERENCED IN THE PHASE II ESA PERFORMED FOR THE PROPERTY.
3. COORDINATE ALL UTILITY WORK WITH GOVERNING UTILITY COMPANIES AND/ OR CITY OF PORTLAND ENGINEERING DEPT.
4. ITEMS FOR SALVAGE SHALL BE REMOVED, CLEANED AND STORED OFF SITE FOR RE-INSTALLATION.

PRELIMINARY
ISSUED FOR PERMITTING

Kaplan Thompson Architects

PROJECT
337 Cumberland

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
14 Baxter Boulevard
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CIVIL & LANDSCAPING
ATLANTIC RESOURCE CONSULTANTS
541 US-1, Suite 21
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p: (207) 869-9050

EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
p: (617) 608-1551

STATE OF MAINE
ANDREW S. JOHNSTON
NO. 9994
8-24-20
LICENSED
PROFESSIONAL ENGINEER

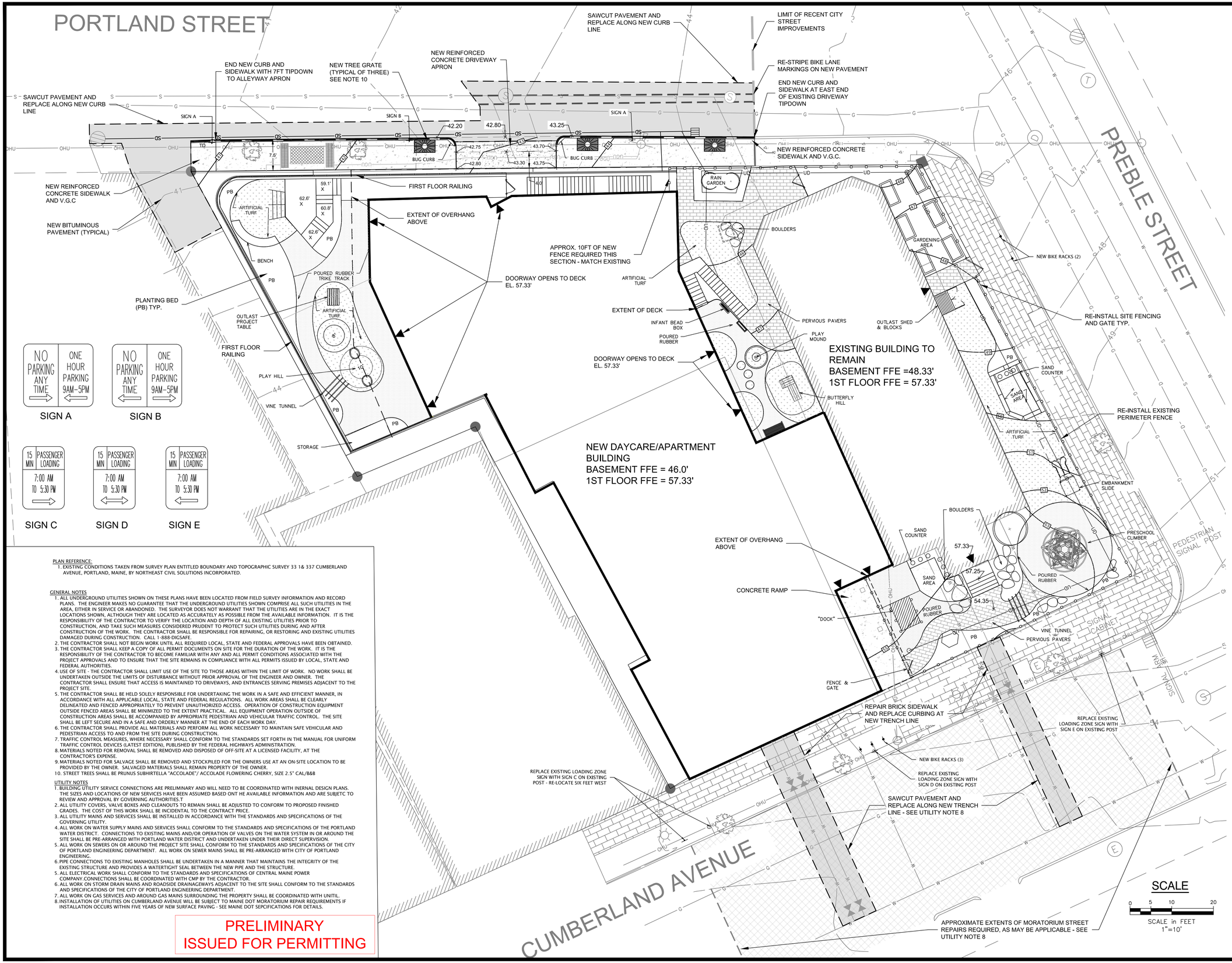
ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

EXISTING CONDITIONS & DEMOLITION PLAN

C-100



PLAN REFERENCE:

1. EXISTING CONDITIONS TAKEN FROM SURVEY PLAN ENTITLED BOUNDARY AND TOPOGRAPHIC SURVEY 33 1& 337 CUMBERLAND AVENUE, PORTLAND, MAINE, BY NORTHEAST CIVIL SOLUTIONS INCORPORATED.

GENERAL NOTES

1. ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD PLANS. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UTILITIES ARE IN THE EXACT LOCATIONS SHOWN, ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE AVAILABLE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND TAKE SUCH MEASURES CONSIDERED PRUDENT TO PROTECT SUCH UTILITIES DURING AND AFTER CONSTRUCTION OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, OR RESTORING AND EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CALL 1-888-DIGSAFE.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNTIL ALL REQUIRED LOCAL, STATE AND FEDERAL APPROVALS HAVE BEEN OBTAINED.
3. THE CONTRACTOR SHALL KEEP A COPY OF ALL PERMIT DOCUMENTS ON SITE FOR THE DURATION OF THE WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME FAMILIAR WITH ANY AND ALL PERMIT CONDITIONS ASSOCIATED WITH THE PROJECT APPROVALS AND TO ENSURE THAT THE SITE REMAINS IN COMPLIANCE WITH ALL PERMITS ISSUED BY LOCAL, STATE AND FEDERAL AUTHORITIES.
4. USE OF SITE - THE CONTRACTOR SHALL LIMIT USE OF THE SITE TO THOSE AREAS WITHIN THE LIMIT OF WORK. NO WORK SHALL BE UNDERTAKEN OUTSIDE THE LIMITS OF DISTURBANCE WITHOUT PRIOR APPROVAL OF THE ENGINEER AND OWNER. THE CONTRACTOR SHALL ENSURE THAT ACCESS IS MAINTAINED TO DRIVEWAYS, AND ENTRANCES SERVING PREMISES ADJACENT TO THE PROJECT SITE.
5. THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR UNDERTAKING THE WORK IN A SAFE AND EFFICIENT MANNER, IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. ALL WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED APPROPRIATELY TO PREVENT UNAUTHORIZED ACCESS. OPERATION OF CONSTRUCTION EQUIPMENT OUTSIDE FENCED AREAS SHALL BE MINIMIZED TO THE EXTENT PRACTICAL. ALL EQUIPMENT OPERATION OUTSIDE OF CONSTRUCTION AREAS SHALL BE ACCOMPANIED BY APPROPRIATE PEDESTRIAN AND VEHICULAR TRAFFIC CONTROL. THE SITE SHALL BE LEFT SECURE AND IN A SAFE AND ORDERLY MANNER AT THE END OF EACH WORK DAY.
6. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND PERFORM ALL WORK NECESSARY TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN ACCESS TO AND FROM THE SITE DURING CONSTRUCTION.
7. TRAFFIC CONTROL MEASURES, WHERE NECESSARY SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION), PUBLISHED BY THE FEDERAL HIGHWAYS ADMINISTRATION.
8. MATERIALS NOTED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT A LICENSED FACILITY, AT THE CONTRACTOR'S EXPENSE.
9. MATERIALS NOTED FOR SALVAGE SHALL BE REMOVED AND STOCKPILED FOR THE OWNERS USE AT AN ON-SITE LOCATION TO BE PROVIDED BY THE OWNER. SALVAGED MATERIALS SHALL REMAIN PROPERTY OF THE OWNER.
10. STREET TREES SHALL BE PRUNUS SUBHIRTELLA "ACCOLADE'/ ACCOLADE FLOWERING CHERRY, SIZE 2.5" CAL/B&B

UTILITY NOTES

1. BUILDING UTILITY SERVICE CONNECTIONS ARE PRELIMINARY AND WILL NEED TO BE COORDINATED WITH INERNAL DESIGN PLANS. THE SIZES AND LOCATIONS OF NEW SERVICES HAVE BEEN ASSUMED BASED ONT HE AVAILABLE INFORMATION AND ARE SUBJETC TO REVIEW AND APPROVAL BY GOVERNING AUTHORITIES.T
2. ALL UTILITY COVERS, VALVE BOXES AND CLEANOUTS TO REMAIN SHALL BE ADJUSTED TO CONFORM TO PROPOSED FINISHED GRADES. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT PRICE.
3. ALL UTILITY MAINS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING UTILITY.
4. ALL WORK ON WATER SUPPLY MAINS AND SERVICES SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE PORTLAND WATER DISTRICT. CONNECTIONS TO EXISTING MAINS AND/OR OPERATION OF VALVES ON THE WATER SYSTEM IN OR AROUND THE SITE SHALL BE PRE-ARRANGED WITH PORTLAND WATER DISTRICT AND UNDERTAKEN UNDER THEIR DIRECT SUPERVISION.
5. ALL WORK ON SEWERS ON OR AROUND THE PROJECT SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT. ALL WORK ON SEWER MAINS SHALL BE PRE-ARRANGED WITH CITY OF PORTLAND ENGINEERING.
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5. ALL ELECTRICAL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF CENTRAL MAINE POWER COMPANY CONNECTIONS SHALL BE COORDINATED WITH CMP BY THE CONTRACTOR.
6. ALL WORK ON STORM DRAIN MAINS AND ROADSIDE DRAINAGEWAYS ADJACENT TO THE SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
7. ALL WORK ON GAS SERVICES AND AROUND GAS MAINS SURROUNDING THE PROPERTY SHALL BE COORDINATED WITH UNITIL.
8. INSTALLATION OF UTILITIES ON CUMBERLAND AVENUE WILL BE SUBJECT TO MAINE DOT MORATORIUM REPAIR REQUIREMENTS IF INSTALLATION OCCURS WITHIN FIVE YEARS OF NEW SURFACE PAVING - SEE MAINE DOT SEPCIFICATIONS FOR DETAILS.

PRELIMINARY
ISSUED FOR PERMITTING

Kaplan Thompson Architects

PROJECT
337 Cumberland

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

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STATE OF MAINE
ANDREW D. JOHNSTON
NO. 9984
09-02-20
LICENSED PROFESSIONAL ENGINEER

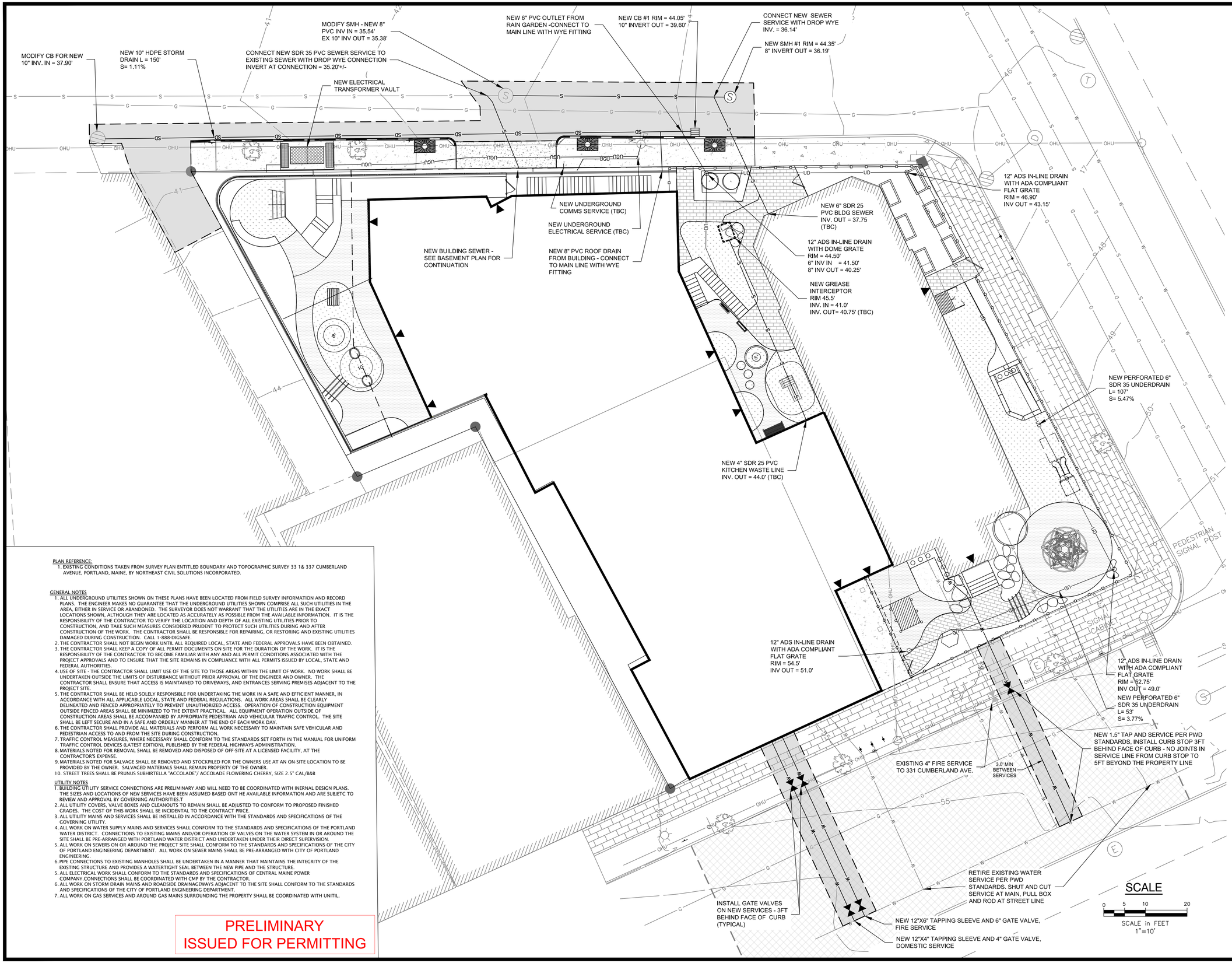
ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

SITE PLAN

C-101



PLAN REFERENCE:

1. EXISTING CONDITIONS TAKEN FROM SURVEY PLAN ENTITLED BOUNDARY AND TOPOGRAPHIC SURVEY 33 1& 337 CUMBERLAND AVENUE, PORTLAND, MAINE, BY NORTHEAST CIVIL SOLUTIONS INCORPORATED.

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EARLY CHILDCARE EDUCATION
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STATE OF MAINE
ANDREW S. JOHNSTON
LIC. NO. 9994
09-02-20
LICENSED PROFESSIONAL ENGINEER

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UTILITY PLAN

C-101A

NEW 6" CAST IRON TRENCH DRAIN - NEENAH FOUNDRY MODEL R-4996-A6 TYPE Q GRATE, 4" BOTTOM OUTLET - CONNECT OUTLET TO OIL/WATER SEPARATOR

NEW OIL/WATER SEPARATOR - CONNECT 4" PVC OUTLET TO BUILDING SEWER

24

42.80

43.75

43.75

44.5

(14) BIKE RACKS

44.5

NEW 8" PVC (TBC) ROOF DRAIN CONNECTION L=132' S=2.0%

ELECTRICAL ROOM

45.5

NEW 6" PVC BUILDING SEWER (TBC) SERVICE L=125' S=2.0%

45.7

45.5

DOWNSPOUT FILTRATION UNIT SEE DETAIL

46.0

NEW UTILITY SERVICE CONNECTIONS TO BE COORDINATED WITH ARCHITECTURAL PLANS

NORTH

SCALE

0 5 10 20

SCALE in FEET
1"=10'

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STATE OF MAINE
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8-24-20
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ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE

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BASEMENT PARKING PLAN

C-102

A. SOIL EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, SILTATION FENCE, CATCH BASIN SEDIMENT COLLECTION BAGS, AND TEMPORARY SEEDING AND MULCHING AS REQUIRED.

A. GENERAL

1. IT IS ANTICIPATED THAT CONSTRUCTION MAY BEGIN AS SOON AS POSSIBLE FOLLOWING RECEIPT OF NECESSARY PERMITS.

2. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION & SEDIMENT CONTROL BMPS - MANUAL FOR DESIGNERS AND ENGINEERS (2016), OR AS CURRENTLY REVISED OR U.S. ENVIRONMENTAL PROTECTION AGENCY PUBLICATION 832/R-92-005 (SEPTEMBER, 1992) STORM WATER MANAGEMENT FOR CONSTRUCTION, CHAPTER 3, WHICHEVER IS MORE STRINGENT.

3. ANY ADDITIONAL EROSION AND SEDIMENTATION CONTROL DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERSONNEL AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.

4. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION, REPAIR/ REPLACEMENT/ MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF ACCEPTABLE PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:
   a.a. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
   a.b. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

B. EROSION AND SEDIMENTATION CONTROL MEASURES

1. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE TEMPORARY SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE, OR ENGINEER. SILT FENCE SHALL BE INSTALLED ALONG THE DOWNGRADIENT SIDE OF CONSTRUCTION WORK AREAS, WITH LOCATIONS BEING ADJUSTED ALONG WITH THE CONSTRUCTION PHASING AREAS. THE CONTRACTOR MAY USE EROSION MIX IN PLACE OF SINGLE SILT FENCE BARRIER.

2. THE SILT FENCE SHALL BE INSTALLED PER THE DETAIL PROVIDED IN THE PLAN SET AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST WEEKLY IN THE ABSENCE OF SIGNIFICANT RAINFALL. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE SILT BARRIERS. THE CONTRACTOR SHALL MAKE REPAIRS IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE. IF SUCH EROSION IS OBSERVED, THE CONTRACTOR SHALL TAKE PROACTIVE ACTION TO IDENTIFY THE CAUSE OF THE EROSION AND TAKE ACTION TO AVOID ITS REOCCURRENCE. PROPER PLACEMENT OF STAKES AND KEYING THE BOTTOM OF THE FABRIC INTO THE GROUND IS CRITICAL TO THE FENCE'S EFFECTIVENESS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM AND MEASURES TAKEN TO AVOID THE CONCENTRATION OF FLOWS NOT INTENDED TO BE DIRECTED TO THE SILT FENCE. SILT FENCE SHALL BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION.

3. A CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED AT ALL ACCESS POINTS ONTO THE SITE TO PREVENT TRACKING OF SOIL ONTO ADJACENT LOCAL ROADS AND STREETS.

4. SILTSACKS ™ WILL BE UTILIZED IN CATCH BASINS IN OR NEAR WORK AREAS AT RISK FROM RECEIVING TRANSPORTED SEDIMENT.

5. ALL CATCH BASINS AND FIELD INLETS, NEW OR EXISTING, THAT MAY RECEIVE RUNOFF FROM DISTURBED AREAS MUST BE PROTECTED DURING CONSTRUCTION.

6. PERMANENT SEEDING SPECIFICATION. IF A LANDSCAPE PLAN HAS BEEN PREPARED FOR THE PROJECT, SOIL PREPARATION AND SEED SPECIFICATIONS OF THAT PLAN SHALL SUPERSEDE THESE GENERAL PERMANENT SEEDING REQUIREMENTS. IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND JUNE 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1SHALL BE SEEDED WITH AROOSTOOK RYE OR MULCHED AT RATES PREVIOUSLY SPECIFIED. SEE WINTER CONDITIONS NOTES FOR SEEDING STABILIZATION AFTER NOVEMBER 1.
   a. APPLY TOPSOIL TO A MINIMUM DEPTH OF 4 INCHES. MIX TOPSOIL WITH THE SUBSOIL TO A MINIMUM DEPTH OF 6 INCHES.
   b. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND GRANULAR, COMMERCIAL-GRADE, 10-10-10 (N-P2O5-K2O) FERTILIZER AT A RATE OF 800 LBS PER ACRE (18.4 LBS PER1,000 SQUARE FEET).
   c. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY.
   d. THE SEED MIXTURE FOR LAWN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
      30% CREEPING RED FESCUE
      50% KENTUCKY BLUEGRASS
      20% ITALIAN/PERENNIAL RYE GRASS
   NOTE: SEED MIXTURE SHALL CONSIST OF AT LEAST TWO VARIETIES OF EACH TYPE OF GRASS. WHEN USED IN A FILTER BASIN, STORMWATER SHALL NOT BE DIRECTED TO THE BASIN UNTIL THE GRASS IS ESTABLISHED.

7. MULCH ALL AREAS SEEDED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE.

8. TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

C. SPECIAL MEASURES FOR SUMMER CONSTRUCTION

DURING DRY SUMMER CONDITIONS, THE CONTRACTOR SHALL:
9. IMPLEMENT A PROGRAM TO APPLY DUST CONTROL MEASURES ON A DAILY BASIS EXCEPT THOSE DAYS WHERE PRECIPITATION IS SUFFICIENT TO SUPPRESS DUST FORMATION. THIS PROGRAM SHALL EXTEND TO AND INCLUDE SWEEPING OF ADJACENT STREETS.
10. TAKE ADDITIONAL STEPS NEEDED, INCLUDING WATERING, OR COVERING EXCAVATED MATERIALS TO CONTROL FUGITIVE DUST EMISSIONS TO MINIMIZE REDUCTIONS IN VISIBILITY AND THE AIRBORNE DISBURSEMENT OF FINE-GRAINED SOILS. THIS IS PARTICULARLY IMPORTANT GIVEN THE POTENTIAL PRESENCE OF SOIL CONTAMINANTS, AND THEIR PROXIMITY ALONG THE ADJACENT STREETS AND PROPERTIES.
11. THESE MEASURES MAY ALSO BE REQUIRED IN THE SPRING AND FALL DURING THE DRIER PERIODS OF THESE SEASONS.

D. WINTER CONDITIONS

1. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1ST THROUGH APRIL 15TH. IF AREAS WITHIN THE CONSTRUCTION ACTIVITY ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15TH, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.
2. SILT FENCE: IN LIEU OF PROVIDING THE 6" X 6" TRENCH, FOR FROZEN GROUND, STONY SOIL, THE PRESENCE OF LARGE ROOTS, OR OTHER PROHIBITIVE CONDITIONS, THE BOTTOM 8" TO 12" OF THE FABRIC MAY BE LAID ON EXISTING GRADE AND BACK FILLED WITH STONE ANCHORING MATERIAL, AS SHOWN ON THE DRAWINGS.

E. HOUSEKEEPING
1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON-SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORM WATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS, ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

3. 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:
- DISCHARGES FROM FIREFIGHTING ACTIVITY;
- FIRE HYDRANT FLUSHINGS;
- VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
- DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
- ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
- 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;
- UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
- UNCONTAMINATED GROUNDWATER OR SPRING WATER;
- FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED; UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
- POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND LANDSCAPE IRRIGATION.

4. 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:
- WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
- FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
- SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

5. 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.

6. DEBRIS AND OTHER MATERIAL. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER, MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

7. COMPLY WITH THE REQUIREMENTS OF SPECIFICATION SECTION 024116, STRUCTURE DEMOLITION MANAGEMENT, FOR REMOVAL AND DISPOSAL OF CONSTRUCTION DEBRIS AND WASTE.

8. TRENCH OR FOUNDATION DE-WATERING. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED AREAS THAT ARE SPECIFICALLY DESIGNATED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFER DAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.

F. INSPECTION AND MAINTENANCE

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORM WATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AND BEFORE AND AFTER A STORM EVENT, PRIOR TO COMPLETION OF PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORM WATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT AND ANY DEP OR MUNICIPAL COMPANION DOCUMENTS, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE MODIFIED OF IF ADDITIONAL BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (0.5IN OR GREATER IN 24-HOUR PERIOD). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

2. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME AND QUALIFICATIONS OF THE PERSON PERFORMING THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES.

3. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:
a. IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET.
b. DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS PROPERLY OPERATING. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.
c. IDENTIFY AREAS WHICH APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES WHICH SHOULD BE USED TO IMPROVE CONDITIONS.

4. IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, TO EITHER IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.

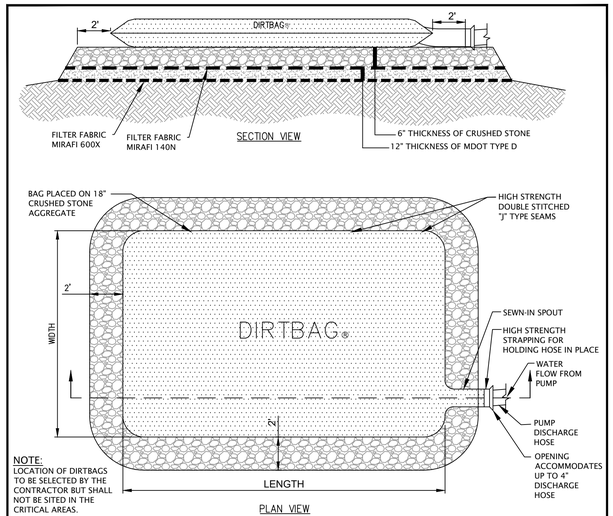
5. ALL CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS PREPARED BY THE INSPECTOR(S) SHALL BE FILED WITH THE OWNER, AND THE PERMIT FILE CONTAINED ON THE PROJECT SITE. ALL WRITTEN CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS MUST BE FILED WITHIN ONE (1) WEEK OF THE INSPECTION DATE AND RECORDS MUST BE RETAINED FOR THREE YEARS FROM THE TIME PERMANENT STABILIZATION IS ACHIEVED.

6. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION/SEDIMENT CONTROL REPORT, INCLUDING CONTROL OF FUGITIVE DUST, AND SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

G. CONSTRUCTION SCHEDULE & SEQUENCE (TIMELINES ARE APPROXIMATE AND WILL BE DEPENDENT ON WEATHER AND SITE CONDITIONS).

1. PRE-CONSTRUCTION CONFERENCE: PRIOR TO ANY CONSTRUCTION AT THE SITE, REPRESENTATIVES OF THE CONTRACTOR, THE ARCHITECT, THE OWNER, AND THE SITE DESIGN ENGINEER SHALL MEET TO DISCUSS THE SCHEDULING OF THE SITE CONSTRUCTION AND THE DESIGNATION OF THE RESPONSIBLE PARTIES FOR IMPLEMENTING THE PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE MEETING. PRIOR TO THE MEETING, THE CONTRACTOR WILL PREPARE A DETAILED SCHEDULE AND A MARKED-UP SITE PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL CONDUCT A MEETING WITH EMPLOYEES AND SUB-CONTRACTORS TO REVIEW THE EROSION CONTROL PLAN, THE CONSTRUCTION TECHNIQUES WHICH WILL BE EMPLOYED TO IMPLEMENT THE PLAN, AND PROVIDE A LIST OF ATTENDEES AND ITEMS DISCUSSED AT THE MEETING TO THE OWNER. THREE COPIES OF THE SCHEDULE, THE CONTRACTOR'S MEETING MINUTES, AND MARKED-UP SITE PLAN SHALL BE PROVIDED TO THE OWNER.

2. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES IS OPTIMIZED.
a. INSTALL SAFETY AND CONSTRUCTION FENCE TO SECURE THE SITE FOR CONSTRUCTION.
b. INSTALL ALL PERIMETER SILTATION FENCE AND EROSION CONTROL BARRIERS.
c. INSTALL CONSTRUCTION ENTRANCES.
d. INSTALL UTILITIES AND CONSTRUCT STABILIZED PAD FOR FOUNDATION AND BUILDING CONSTRUCTION.
e. FINE GRADE THE SITE .
f. INSTALL AND COMPACT NEW PAVEMENT BASE GRAVEL MATERIALS AND INSTALL BINDER PAVEMENT.
g. LANDSCAPE (LOAM AND SEED).
h. INSTALL STRIPING, SIGNAGE, AND MISCELLANEOUS SITE IMPROVEMENTS.
i. REVIEW SITEWORK WITH ENGINEER AND OWNER AND COMPLETE ANY PUNCH LIST ITEMS.
j. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES.



(A) DIRTBAG / SPECIFICATIONS FOR DEWATERING DETAIL
N.T.S.

PRELIMINARY - ISSUED FOR PERMITTING

Kaplan Thompson Architects

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337 Cumberland

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STATE OF MAINE
ANDREW JOHNSTON
LIC. NO. 9994
8-24-20
LICENSED PROFESSIONAL ENGINEER

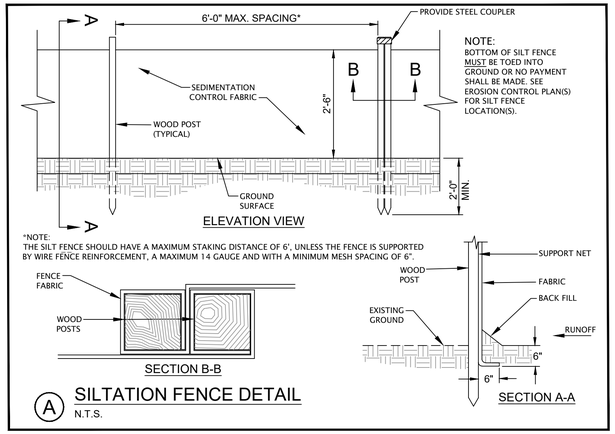
ISSUE NO.	DESCRIPTION	DATE

NOT FOR CONSTRUCTION

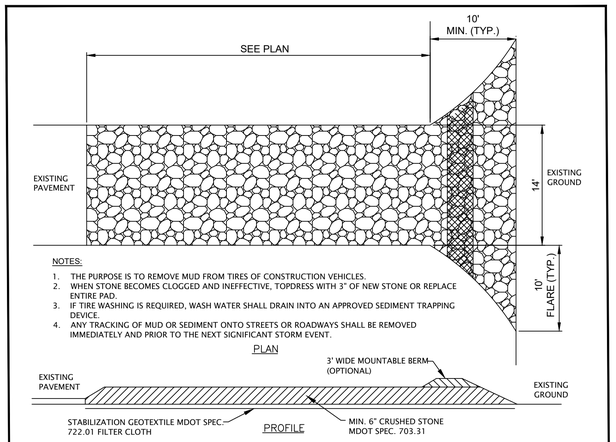
PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

EROSION CONTROL NOTES & DETAILS

C-300



A SILTATION FENCE DETAIL
N.T.S.

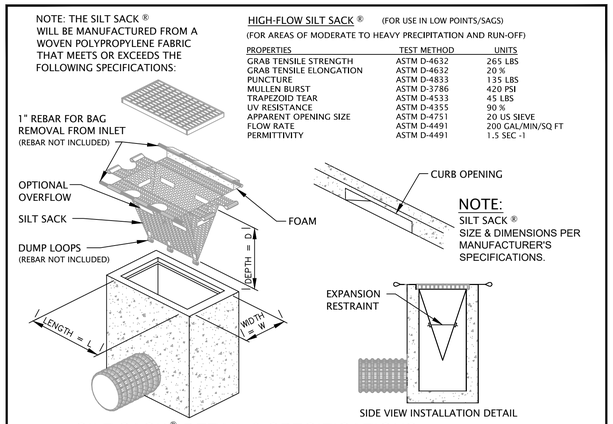


B STABILIZED CONSTRUCTION ENTRANCE DETAIL
N.T.S.

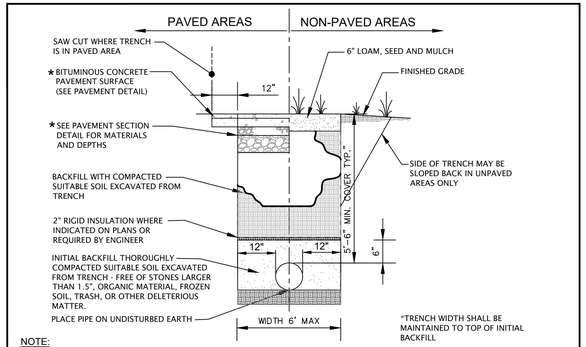
NOTE: THE SILT SACK ® WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HIGH-FLOW SILT SACK ® (FOR USE IN LOW POINTS/SAGS)
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1



C SILT SACK® DETAIL & SPECIFICATIONS
N.T.S.



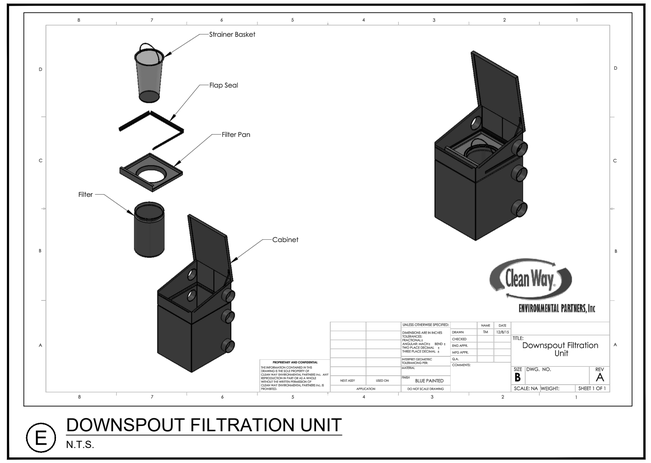
NOTE:

1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. ALL WATER MAINS, SERVICES & APPURTENANCES SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE PORTLAND WATER DISTRICT

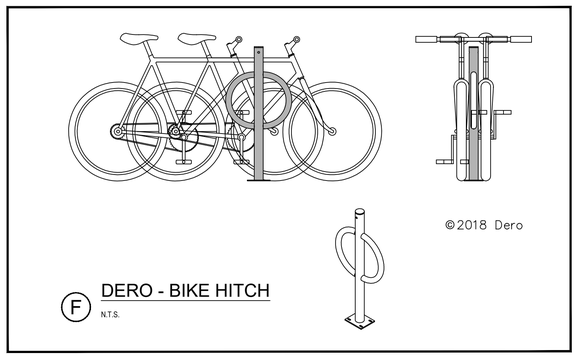
D WATER PIPE TRENCH DETAIL
N.T.S.

WATER DISTRIBUTION NOTES

1. ALL WATER SYSTEM COMPONENTS WITHIN THE PUBLIC R.O.W. SHALL MEET PORTLAND WATER DISTRICT STANDARDS AND SPECIFICATIONS.
2. ALL PVC WATER MAIN PIPING SHALL MEET AWWA C900, DR-18, DETECTABLE WARNING TAPE SHALL BE INSTALLED ALONG TOP ALL PLASTIC PIPING.
3. ALL FITTINGS SHALL BE CLASS 52 DUCTILE IRON "COMPACT" MECHANICAL JOINT FITTINGS TO ANSI/AWWA C153/A21.53.06.
4. VALVES SHALL BE AMERICAN FLOW CONTROL MODEL 2500 RESILIENT WEDGE GATE VALVES UNLESS OTHERWISE APPROVED BY PWD.
5. HYDRANT BRANCHES SHALL BE CONSTRUCTED USING CLASS 52 DUCTILE IRON TO AWWA C-151/A21.51.96, JOINTS TO AWWA C-111.
6. RETAINER GLANDS FOR USE ON PVC PIPE SHALL BE UNI-FLANGE SERIES 1500. RETAINER GLANDS FOR USE ON DUCTILE IRON PIPE SHALL BE UNI-FLANGE SERIES 1400.
7. ALL PIPING SHALL BE INSTALLED WITH A MINIMUM SEPARATION OF TWO FEET (2.0').



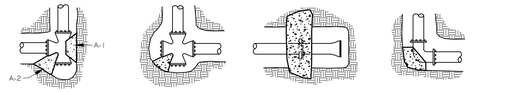
E DOWNSPOUT FILTRATION UNIT
N.T.S.

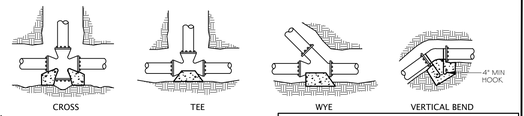


F DERO - BIKE HITCH
N.T.S.

(HORIZONTAL) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET									(VERTICAL) VOLUME OF THRUST BLOCK IN CUBIC YARDS			
FITTING SIZE	TEE, WYE, DEAD END AND HYDRANT	STRADDLE BLOCK	90D BEND PLUGGED CROSS	TEE PLUGGED ON RUN A-1	TEE PLUGGED ON RUN A-2	45D BEND	22-1/2D BEND	11-1/4D BEND	90D BEND	45D BEND	22-1/2D BEND	11-1/4D BEND
4	1.0	1.6	1.4	1.9	1.4	1.0	---	---	---	---	---	---
6	2.1	3.7	3.0	4.3	3.0	1.6	1.0	---	1.3	---	---	---
8	3.8	6.5	5.3	7.6	5.4	2.9	1.5	1.0	2.3	1.1	---	---

NOTES:
1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)

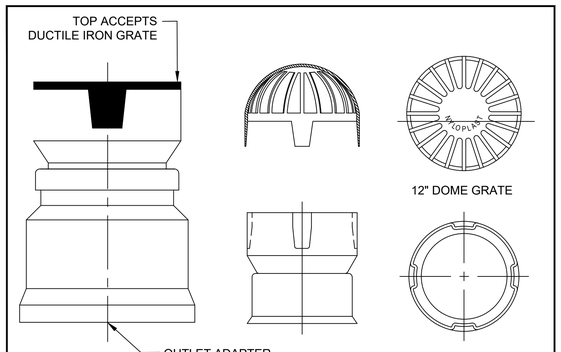




NOTES:
1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE DEFORMED GALVANIZED COLD ROLLED STEEL, 40000 PSI TENSILE STRENGTH.

RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14"-16"	#8	36"

G THRUST BLOCKING DETAIL
N.T.S.



H IN-LINE DRAIN DETAIL
N.T.S.

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Brookline, MA 02445
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STATE OF MAINE — ANDREW S. JOHNSTON — No. 9954 — 8-24-20 — LICENSED PROFESSIONAL ENGINEER

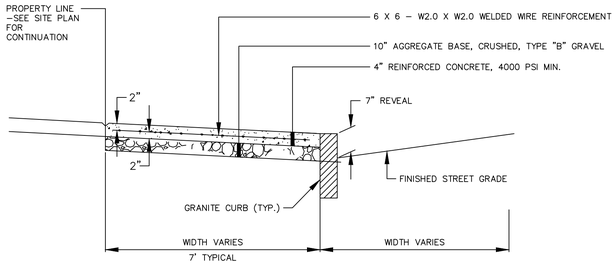
ISSUE NO.	DESCRIPTION	QTY	CHANGE NAME	DATE

NOT FOR CONSTRUCTION

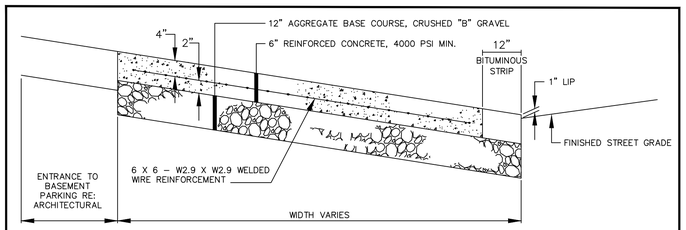
PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

CIVIL DETAILS I

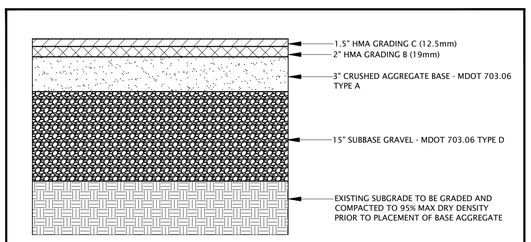
C-301



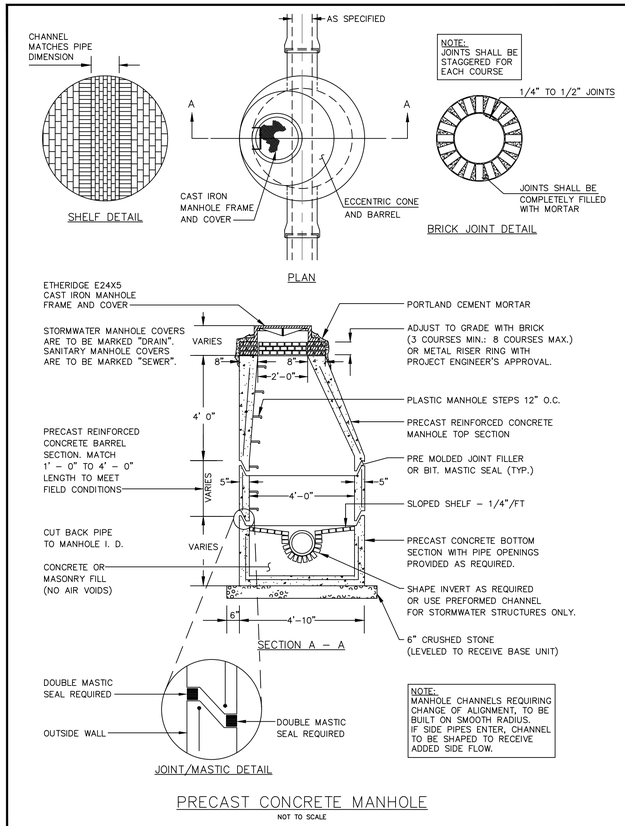
A REINFORCED CONCRETE SIDEWALK
N.T.S.



B REINFORCED CONCRETE DRIVEWAY APRON
N.T.S.

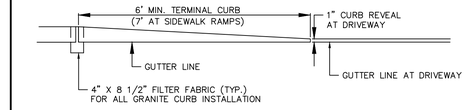


C BITUMINOUS PAVEMENT DETAIL
APPLIES TO STREET REPAIR SECTIONS

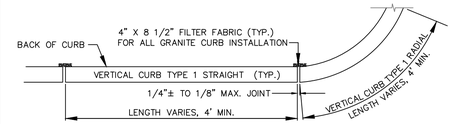


PRECAST CONCRETE MANHOLE
NOT TO SCALE

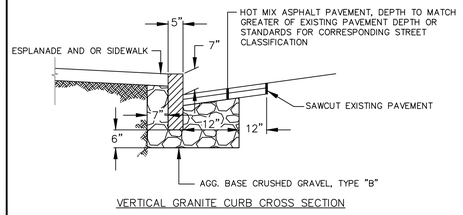
E PRECAST SEWER MANHOLE
N.T.S.



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

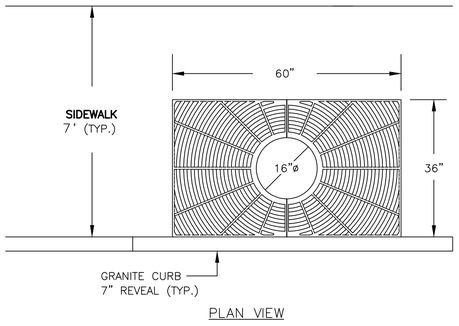
G VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREETS
N.T.S.

NOTES:

16"ø EXPANDABLE TREE OPENING. 0.25" SLOT OPENINGS.

SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

WHEN THE TREE GRATE IS INSTALLED IN A CONCRETE SIDEWALK, A NOTCH MUST BE INSTALLED ALONG THE EDGE TO HOLD THE GRATE, WHEN INSTALLED IN A BRICK SIDEWALK IT REQUIRES A FRAME TO BE INSTALLED TO HOLD THE GRATE IN PLACE.

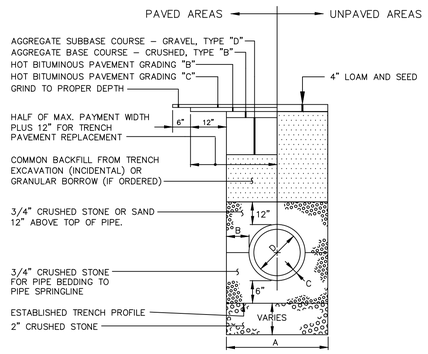


PLAN VIEW

D EXPANDABLE TREE GRATE NEENAH MODEL R-8810
N.T.S.

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..

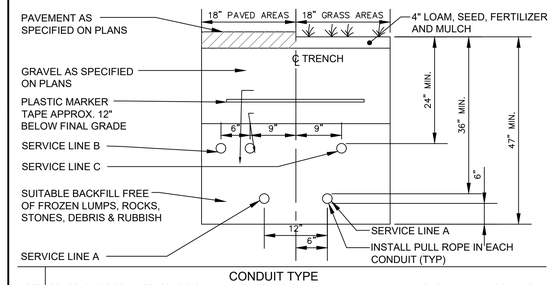


NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
4. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4 – – – –	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18 – – – –	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36 – – – –	6.0
42	7.0
48	7.0

TYPICAL PIPE TRENCH INSTALLATION AND NOTES
F N.T.S.



CONDUIT TYPE

SERVICE	CONDUIT SIZE	GRASS AREAS	PAVED AREAS	UTILITY	REMARKS
A	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	RIGID GALVANIZED STEEL, ASTM A120	POWER	SEE NOTE 1
B	4"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120	TELEPHONE	SEE NOTE 1
C	2"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120	COMMUNICATION	

NOTES:
1. ONE CONDUIT CAPPED FOR SPARE. PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10' ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
2. SEE SITE ELECTRICAL PLAN FOR LOCATION AND NUMBER OF CONDUITS.

H COMBINED UTILITY TRENCH DETAIL
N.T.S.

PRELIMINARY - ISSUED FOR PERMITTING

Kaplan Thompson Architects

PROJECT
337 Cumberland

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
14 Baxter Boulevard
Portland, ME 04101
p: (207) 221-8009

CIVIL & LANDSCAPING
ATLANTIC RESOURCE CONSULTANTS
541 US-1, Suite 21
Freeport, ME 04032
p: (207) 869#9050

EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
p: (617) 608-1551

STATE OF MAINE · ANDREW W. JOHNSTON · NO. 9994 · 8-24-20 · LICENSED PROFESSIONAL ENGINEER

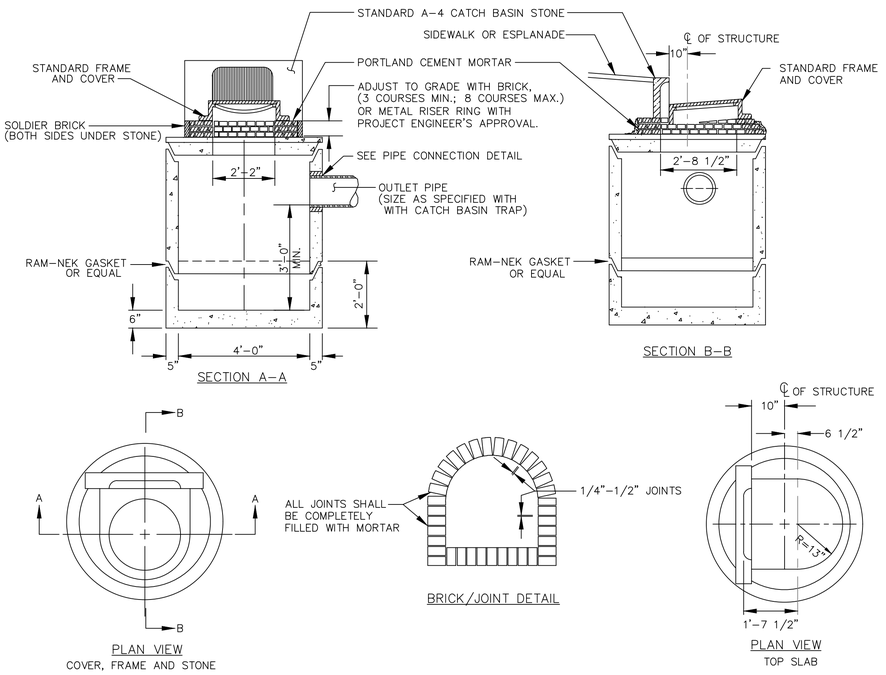
ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE

NOT FOR CONSTRUCTION

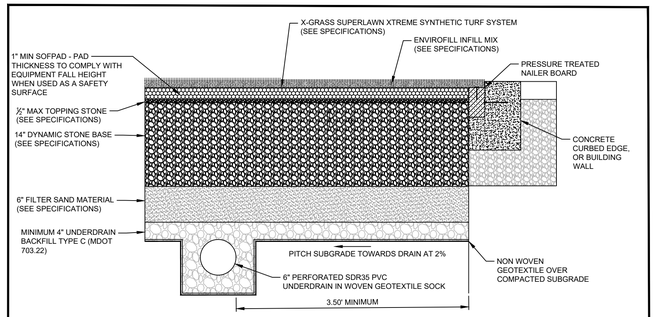
PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

CIVIL DETAILS II

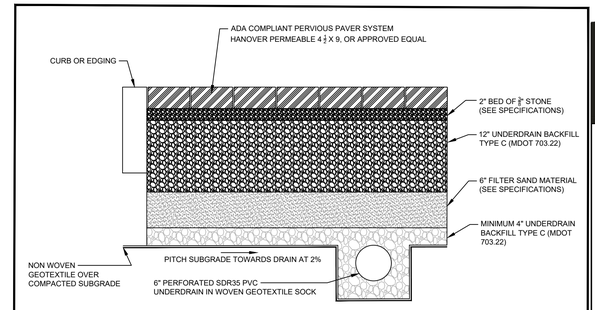
C-302



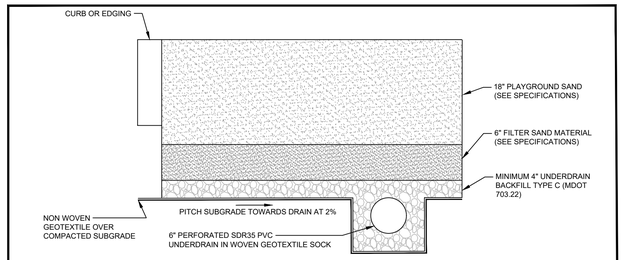
A PRECAST CONCRETE CATCH BASIN - TYPE "E"
N.T.S.



D ARTIFICIAL TURF ON GRADE
N.T.S.



H PERVIOUS PAVER SECTION ON GRADE
N.T.S.



E SAND PLAY AREA ON GRADE
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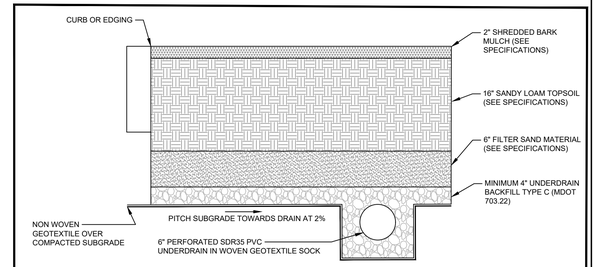
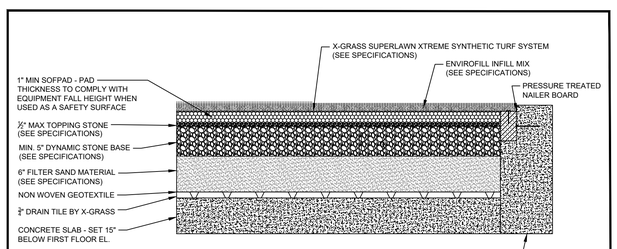
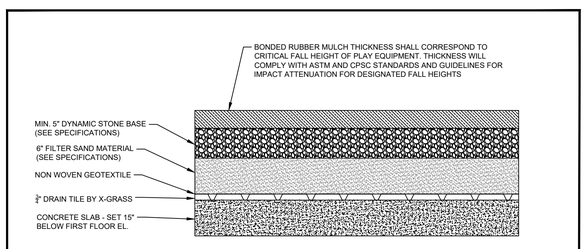


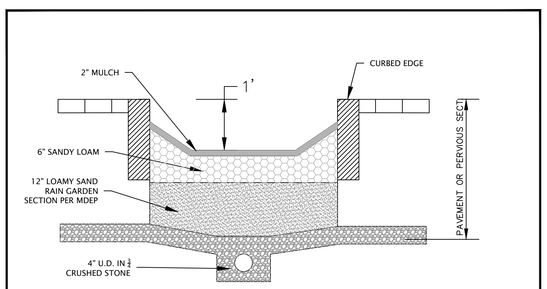
I PLANTING BED ON GRADE
N.T.S.



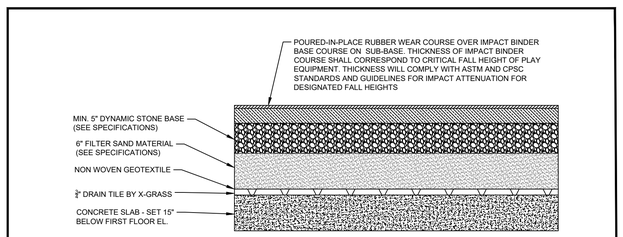
B ARTIFICIAL TURF ON CONCRETE
N.T.S.



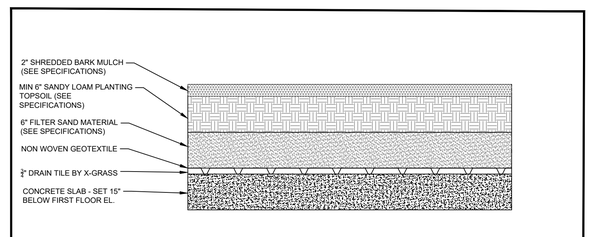
F BONDED RUBBER MULCH ON CONCRETE
N.T.S.



J RAIN GARDEN SECTION
N.T.S.



C POURED IN PLACE RUBBER ON CONCRETE
N.T.S.



G PLANTING BED ON CONCRETE CONCRETE
N.T.S.

PRELIMINARY - ISSUED FOR PERMITTING

Kaplan Thompson Architects

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STATE OF MAINE
ANDREW S. JOHNSTON
No. 9984
5-24-20
LICENSED
PROFESSIONAL ENGINEER

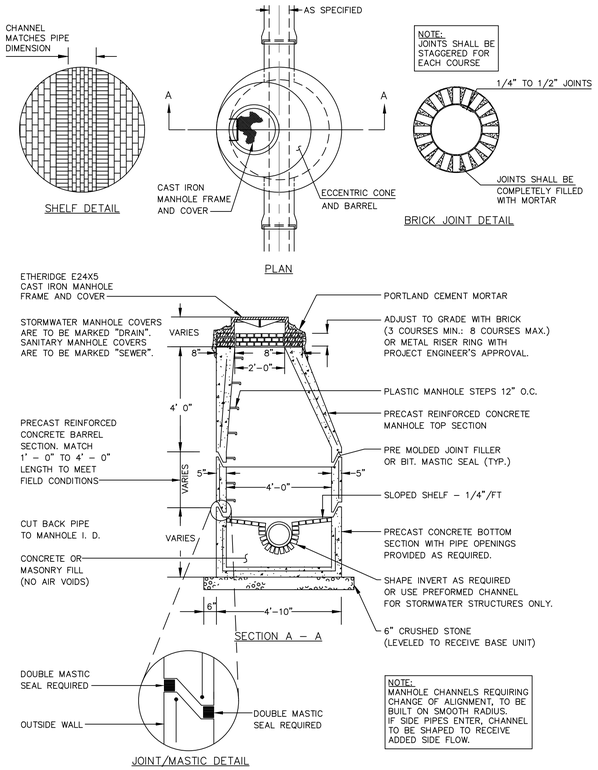
ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

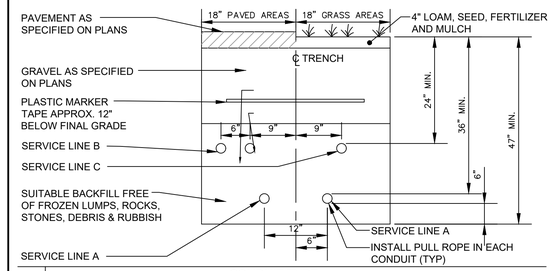
CIVIL DETAILS III

C-303



(A) PRECAST CONCRETE MANHOLE

NOT TO SCALE



CONDUIT TYPE

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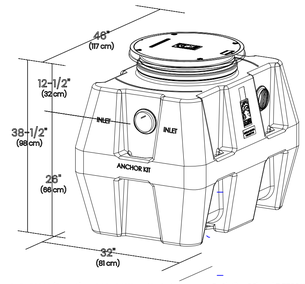
2. SEE SITE ELECTRICAL PLAN FOR LOCATION AND NUMBER OF CONDUITS.

(C) COMBINED UTILITY TRENCH DETAIL

N.T.S.

SPECIFICATION AND SUBMITTAL

GB-75 75 GPM Grease Interceptor for Indoor/Outdoor Use



This unit is certified to ASME A112.14.3 (Type C) and CSA B481.1 and includes an internal flow control. External flow control with vent not required.

Satisfies Mineral DEEM 2014 efficiency requirements when at least 2 units are installed in series

SUBMITTAL

Standard

Location: Indoor/outdoor
Installation: above/below grade
Flow Rates / Grease Capacities:
75 GPM (4.7 l/s) / 653 lbs.
Solids Capacity: 19.2 gal.
Liquid Capacity: 125 gal.
Weight: 130 lbs.
Connections: 4" (100 mm) FPT (triple outlet) with 4" (100 mm) Plain End Adapters
Cover: bolted gas/water tight composite with 16,000 lb. load rating

Options

- ☐ 6" Plain End Inlet/Outlet (straight-through) with Dual Pumpout Port Connections
- ☐ 6" (150 mm) plain end inlet/outlet (triple-outlet)
- ☐ 6" (150 mm) male thread inlet/outlet (stainless steel/straight-through)
- ☐ **-FX:** Fixed outlet (straight-through only)
- ☐ **PLAIN-EA-SX:** 2" (50 mm) plain end fitting
- ☐ **PLAIN-EA-SX:** 3" (75 mm) plain end fitting
- ☐ **FPT-EA-SX:** 3" x 2" (75 x 50 mm) FPT fitting
- ☐ **FPT-EA-SX:** 4" x 3" (100 x 75 mm) FPT fitting
- ☐ **CI-HP:** H20 load rated pickable cast iron cover - 16,000 lbs.
- ☐ **CCK:** membrane clamping collar kit
- ☐ **PPP:** Pumpout Port
- ☐ **AHK:** High Water Anchor Kit

Field Cut Risers

- ☐ **RISE** 5" – 23"
- ☐ **RISE** >23" – 38"
- ☐ **RISE** (x2) >38" – 43"
- ☐ **RISE** + **RISE** >43" – 58"
- ☐ **RISE** (x2)>58" – 72"

Approval

Signature:	Date:	Company:
Specifying Engineer:	Engineering Firm:	

MODEL NUMBER: GB-75	DESCRIPTION: 75 GPM Polyethylene Grease Interceptor			
PART #: 4045-001-02	DWG BY: B. Karrer		REV:	ECO:

9600 Woodland Road | Edwardsville, KS 66111 | Tel: 913-321-3300 | www.schlerproducts.com
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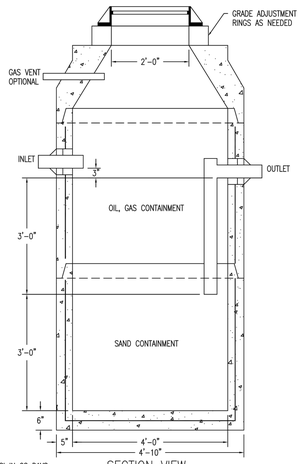
(E) GREASE TRAP

N.T.S.

OIL, GAS, AND SAND TRAP

ITEM #C-11
WEIGHT – VARIES DEPENDING ON HEIGHT



DESIGN NOTES:
1 – CONCRETE 4000 PSI IN 28 DAYS.
– CONE SECTION IS FIBER REINFORCED CONCRETE.
2 – DESIGNED TO CONFORM TO A.S.T.M. C-478.
3 – ALL MANHOLE MATERIAL MEETS H-20 LOADING REQUIREMENTS.
4 – JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT. AASHTO M-19

OPTIONS:
1 – DAMP PROOF EXT. COATING.
2 – CAST IRON FRAMES AND COVERS/GRATES.
3 – FLEXIBLE WATERTIGHT PIPE BOOTS A.S.T.M. C-923.

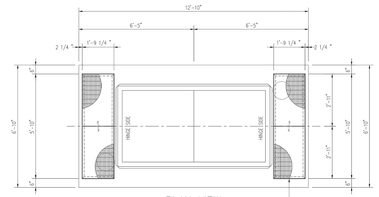
PRECAST CONCRETE PRODUCTS OF MAINE, INC. PHONE (207) 729-1628 FAX (207) 729-8710

(B) OIL/WATER SEPARATOR

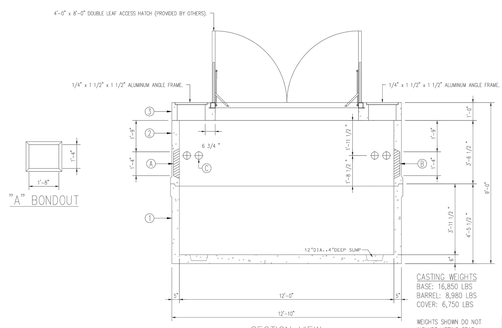
N.T.S.

NOTE: GRATES SHALL BE WHEELS N' HEELS METRO HEAVY DUTY BY OHIO GRATINGS

1) MID* 6000621670 Grates
2) MID* 6000621525 Bilco Door



NOTES:
1.) CONCRETE: 5,000 PSI AFTER 28 DAYS.
2.) JOINTS TO BE SEALED WITH CONSEAL CS102 JOINT SEALANT.
3.) KNOCKOUTS EXTEND 4" INTO THE WALL WITH SIDES SLOPED @ 45° PROVIDING A BELL TYPE OPENING. KNOCKOUTS SHOULD BE CLEAR OF ANY REINFORCING.
4.) REINFORCING: DESIGNED FOR H-20 LOADING.
5.) HATCH & GALV. GRATING PROVIDED BY OTHERS.
6.) HATCH DOORS SHALL BE COATED WITH AN ANTI-SKID ANTI-SKID SURFACE HAVING A MINIMUM COEFFICIENT OF FRICTION OF 0.5 AND BE LISTED AS SLIP RESISTANT BY THE UNDERWRITERS LABORATORIES.



CASTING WEIGHTS
BASE: 16,850 LBS
BARREL: 8,980 LBS
COVER: 6,750 LBS

WEIGHTS SHOWN DO NOT INCLUDE LIFTING GEAR.

NOTES
1) Vault shall be designed to withstand H20 wheel loading with 6 inches of overburden. The design shall also comply with the strength requirements of National Electrical Safety Code Section 323A. Provide shop drawings stamped by a State of Maine Registered Professional Engineer upon Request
2) Joints sealed with asphalt.
3) Mountings for cable racks etc. cast in wall by further plans or field located.
4) Manhole shall be set on a suitable gravel base.
5) Cables are to be racked along one wall only.
6) Option of using 8" thick walls to offset any other load factors, soils or other factors specific to site.

NO	REVISION	DATE	BY	CK
1	PER UPDATE	01/14/08	REC	BAC
2	UPDATE NOTE #4	04/08/08	KS	JLM
3	ADD 6" TO DEPTH	11/06/08	REC	JLM
4	ADDED SUMP, ADJUSTED	11/06/08	KS	JLM

DESIGNED: KS
DRAWN: REC
CHECKED:
APPROVED:

REVISED

NO	REVISION	DATE	BY	CK

6 X 12 SIDEWALK VAULT

CENTRAL MAINE POWER COMPANY
DISTRIBUTION ENGINEERING
AUGUSTA, MAINE

SCALE: NONE

905A-18

SCANNED 11/24/15

(D) SIDEWALK TRANSFORMER VAULT

N.T.S.

PRELIMINARY
ISSUED FOR PERMITTING

Kaplan Thompson Architects

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REVISED 1	08/10/2020
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DRAWN BY	
PHASE	SITE PLAN REVIEW

CIVIL DETAILS IV

C-304

A. SOIL EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, SILTATION FENCE, CATCH BASIN SEDIMENT COLLECTION BAGS, AND TEMPORARY SEEDING AND MULCHING AS REQUIRED.

A. GENERAL

1. IT IS ANTICIPATED THAT CONSTRUCTION MAY BEGIN AS SOON AS POSSIBLE FOLLOWING RECEIPT OF NECESSARY PERMITS.

2. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION & SEDIMENT CONTROL BMPS - MANUAL FOR DESIGNERS AND ENGINEERS (2016), OR AS CURRENTLY REVISED OR U.S. ENVIRONMENTAL PROTECTION AGENCY PUBLICATION 832/R-92-005 (SEPTEMBER, 1992) STORM WATER MANAGEMENT FOR CONSTRUCTION, CHAPTER 3, WHICHEVER IS MORE STRINGENT.

3. ANY ADDITIONAL EROSION AND SEDIMENTATION CONTROL DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERSONNEL AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.

4. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION, REPAIR/ REPLACEMENT/ MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF ACCEPTABLE PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:
   a.a. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
   a.b. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

B. EROSION AND SEDIMENTATION CONTROL MEASURES

1. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE TEMPORARY SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE, OR ENGINEER. SILT FENCE SHALL BE INSTALLED ALONG THE DOWNGRADIENT SIDE OF CONSTRUCTION WORK AREAS, WITH LOCATIONS BEING ADJUSTED ALONG WITH THE CONSTRUCTION PHASING AREAS. THE CONTRACTOR MAY USE EROSION MIX IN PLACE OF SINGLE SILT FENCE BARRIER.

2. THE SILT FENCE SHALL BE INSTALLED PER THE DETAIL PROVIDED IN THE PLAN SET AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST WEEKLY IN THE ABSENCE OF SIGNIFICANT RAINFALL. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE SILT BARRIERS. THE CONTRACTOR SHALL MAKE REPAIRS IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE. IF SUCH EROSION IS OBSERVED, THE CONTRACTOR SHALL TAKE PROACTIVE ACTION TO IDENTIFY THE CAUSE OF THE EROSION AND TAKE ACTION TO AVOID ITS REOCCURRENCE. PROPER PLACEMENT OF STAKES AND KEYING THE BOTTOM OF THE FABRIC INTO THE GROUND IS CRITICAL TO THE FENCE'S EFFECTIVENESS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM AND MEASURES TAKEN TO AVOID THE CONCENTRATION OF FLOWS NOT INTENDED TO BE DIRECTED TO THE SILT FENCE. SILT FENCE SHALL BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION.

3. A CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED AT ALL ACCESS POINTS ONTO THE SITE TO PREVENT TRACKING OF SOIL ONTO ADJACENT LOCAL ROADS AND STREETS.

4. SILTSACKS ™ WILL BE UTILIZED IN CATCH BASINS IN OR NEAR WORK AREAS AT RISK FROM RECEIVING TRANSPORTED SEDIMENT.

5. ALL CATCH BASINS AND FIELD INLETS, NEW OR EXISTING, THAT MAY RECEIVE RUNOFF FROM DISTURBED AREAS MUST BE PROTECTED DURING CONSTRUCTION.

6. PERMANENT SEEDING SPECIFICATION. IF A LANDSCAPE PLAN HAS BEEN PREPARED FOR THE PROJECT, SOIL PREPARATION AND SEED SPECIFICATIONS OF THAT PLAN SHALL SUPERSEDE THESE GENERAL PERMANENT SEEDING REQUIREMENTS. IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND JUNE 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1SHALL BE SEEDED WITH AROOSTOOK RYE OR MULCHED AT RATES PREVIOUSLY SPECIFIED. SEE WINTER CONDITIONS NOTES FOR SEEDING STABILIZATION AFTER NOVEMBER 1.
   a. APPLY TOPSOIL TO A MINIMUM DEPTH OF 4 INCHES. MIX TOPSOIL WITH THE SUBSOIL TO A MINIMUM DEPTH OF 6 INCHES.
   b. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND GRANULAR, COMMERCIAL-GRADE, 10-10-10 (N-P2O5-K2O) FERTILIZER AT A RATE OF 800 LBS PER ACRE (18.4 LBS PER1,000 SQUARE FEET).
   c. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY.
   d. THE SEED MIXTURE FOR LAWN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
      30% CREEPING RED FESCUE
      50% KENTUCKY BLUEGRASS
      20% ITALIAN/PERENNIAL RYE GRASS
   NOTE: SEED MIXTURE SHALL CONSIST OF AT LEAST TWO VARIETIES OF EACH TYPE OF GRASS. WHEN USED IN A FILTER BASIN, STORMWATER SHALL NOT BE DIRECTED TO THE BASIN UNTIL THE GRASS IS ESTABLISHED.

7. MULCH ALL AREAS SEEDED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE.

8. TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

C. SPECIAL MEASURES FOR SUMMER CONSTRUCTION

DURING DRY SUMMER CONDITIONS, THE CONTRACTOR SHALL:
9. IMPLEMENT A PROGRAM TO APPLY DUST CONTROL MEASURES ON A DAILY BASIS EXCEPT THOSE DAYS WHERE PRECIPITATION IS SUFFICIENT TO SUPPRESS DUST FORMATION. THIS PROGRAM SHALL EXTEND TO AND INCLUDE SWEEPING OF ADJACENT STREETS.
10. TAKE ADDITIONAL STEPS NEEDED, INCLUDING WATERING, OR COVERING EXCAVATED MATERIALS TO CONTROL FUGITIVE DUST EMISSIONS TO MINIMIZE REDUCTIONS IN VISIBILITY AND THE AIRBORNE DISBURSEMENT OF FINE-GRAINED SOILS. THIS IS PARTICULARLY IMPORTANT GIVEN THE POTENTIAL PRESENCE OF SOIL CONTAMINANTS, AND THEIR PROXIMITY ALONG THE ADJACENT STREETS AND PROPERTIES.
11. THESE MEASURES MAY ALSO BE REQUIRED IN THE SPRING AND FALL DURING THE DRIER PERIODS OF THESE SEASONS.

D. WINTER CONDITIONS

1. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1ST THROUGH APRIL 15TH. IF AREAS WITHIN THE CONSTRUCTION ACTIVITY ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15TH, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.
2. SILT FENCE: IN LIEU OF PROVIDING THE 6" X 6" TRENCH, FOR FROZEN GROUND, STONY SOIL, THE PRESENCE OF LARGE ROOTS, OR OTHER PROHIBITIVE CONDITIONS, THE BOTTOM 8" TO 12" OF THE FABRIC MAY BE LAID ON EXISTING GRADE AND BACK FILLED WITH STONE ANCHORING MATERIAL, AS SHOWN ON THE DRAWINGS.

E. HOUSEKEEPING
1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON-SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORM WATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS, ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

3. 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:
- DISCHARGES FROM FIREFIGHTING ACTIVITY;
- FIRE HYDRANT FLUSHINGS;
- VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
- DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
- ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
- 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;
- UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
- UNCONTAMINATED GROUNDWATER OR SPRING WATER;
- FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED; UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
- POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND LANDSCAPE IRRIGATION.

4. 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:
- WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
- FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
- SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

5. 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.

6. DEBRIS AND OTHER MATERIAL. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER, MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

7. COMPLY WITH THE REQUIREMENTS OF SPECIFICATION SECTION 024116, STRUCTURE DEMOLITION MANAGEMENT, FOR REMOVAL AND DISPOSAL OF CONSTRUCTION DEBRIS AND WASTE.

8. TRENCH OR FOUNDATION DE-WATERING. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED AREAS THAT ARE SPECIFICALLY DESIGNATED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFER DAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.

F. INSPECTION AND MAINTENANCE

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORM WATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AND BEFORE AND AFTER A STORM EVENT, PRIOR TO COMPLETION OF PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORM WATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT AND ANY DEP OR MUNICIPAL COMPANION DOCUMENTS, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE MODIFIED OF IF ADDITIONAL BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (0.5IN OR GREATER IN 24-HOUR PERIOD). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

2. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME AND QUALIFICATIONS OF THE PERSON PERFORMING THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES.

3. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:
a. IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET.
b. DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS PROPERLY OPERATING. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.
c. IDENTIFY AREAS WHICH APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES WHICH SHOULD BE USED TO IMPROVE CONDITIONS.

4. IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, TO EITHER IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.

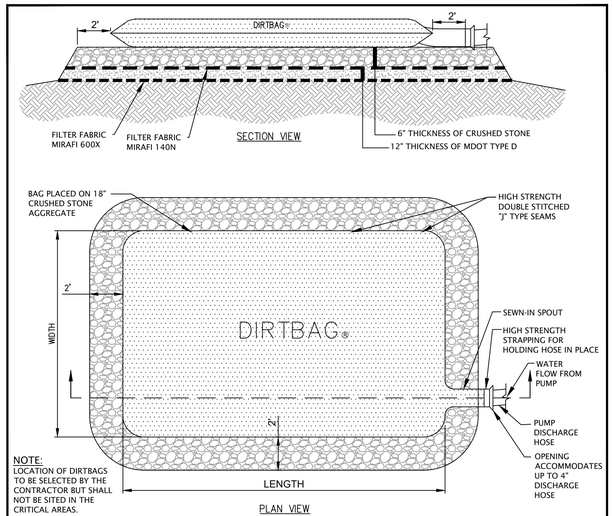
5. ALL CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS PREPARED BY THE INSPECTOR(S) SHALL BE FILED WITH THE OWNER, AND THE PERMIT FILE CONTAINED ON THE PROJECT SITE. ALL WRITTEN CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS MUST BE FILED WITHIN ONE (1) WEEK OF THE INSPECTION DATE AND RECORDS MUST BE RETAINED FOR THREE YEARS FROM THE TIME PERMANENT STABILIZATION IS ACHIEVED.

6. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION/SEDIMENT CONTROL REPORT, INCLUDING CONTROL OF FUGITIVE DUST, AND SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

G. CONSTRUCTION SCHEDULE & SEQUENCE (TIMELINES ARE APPROXIMATE AND WILL BE DEPENDENT ON WEATHER AND SITE CONDITIONS).

1. PRE-CONSTRUCTION CONFERENCE: PRIOR TO ANY CONSTRUCTION AT THE SITE, REPRESENTATIVES OF THE CONTRACTOR, THE ARCHITECT, THE OWNER, AND THE SITE DESIGN ENGINEER SHALL MEET TO DISCUSS THE SCHEDULING OF THE SITE CONSTRUCTION AND THE DESIGNATION OF THE RESPONSIBLE PARTIES FOR IMPLEMENTING THE PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE MEETING. PRIOR TO THE MEETING, THE CONTRACTOR WILL PREPARE A DETAILED SCHEDULE AND A MARKED-UP SITE PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL CONDUCT A MEETING WITH EMPLOYEES AND SUB-CONTRACTORS TO REVIEW THE EROSION CONTROL PLAN, THE CONSTRUCTION TECHNIQUES WHICH WILL BE EMPLOYED TO IMPLEMENT THE PLAN, AND PROVIDE A LIST OF ATTENDEES AND ITEMS DISCUSSED AT THE MEETING TO THE OWNER. THREE COPIES OF THE SCHEDULE, THE CONTRACTOR'S MEETING MINUTES, AND MARKED-UP SITE PLAN SHALL BE PROVIDED TO THE OWNER.

2. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES IS OPTIMIZED.
a. INSTALL SAFETY AND CONSTRUCTION FENCE TO SECURE THE SITE FOR CONSTRUCTION.
b. INSTALL ALL PERIMETER SILTATION FENCE AND EROSION CONTROL BARRIERS.
c. INSTALL CONSTRUCTION ENTRANCES.
d. INSTALL UTILITIES AND CONSTRUCT STABILIZED PAD FOR FOUNDATION AND BUILDING CONSTRUCTION.
e. FINE GRADE THE SITE .
f. INSTALL AND COMPACT NEW PAVEMENT BASE GRAVEL MATERIALS AND INSTALL BINDER PAVEMENT.
g. LANDSCAPE (LOAM AND SEED).
h. INSTALL STRIPING, SIGNAGE, AND MISCELLANEOUS SITE IMPROVEMENTS.
i. REVIEW SITEWORK WITH ENGINEER AND OWNER AND COMPLETE ANY PUNCH LIST ITEMS.
j. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES.



(A) DIRTBAG / SPECIFICATIONS FOR DEWATERING DETAIL
N.T.S.

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Kaplan Thompson Architects

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STATE OF MAINE
ANDREW JOHNSTON
LIC. NO. 9994
8-24-20
LICENSED PROFESSIONAL ENGINEER

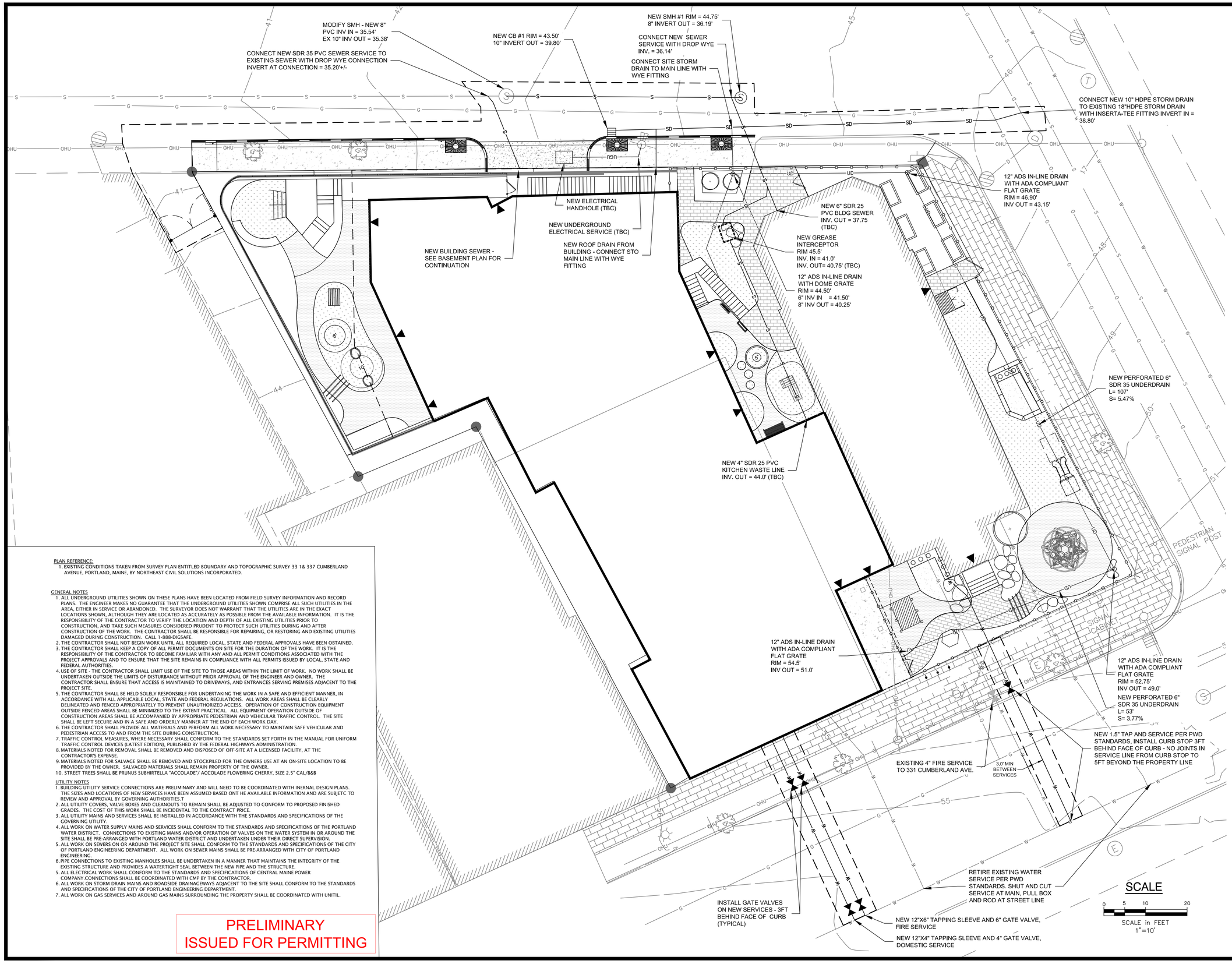
ISSUE NO.	DESCRIPTION	DATE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
REVISED 1	08/10/2020
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

EROSION CONTROL NOTES & DETAILS

C-300



PLAN REFERENCE:

1. EXISTING CONDITIONS TAKEN FROM SURVEY PLAN ENTITLED BOUNDARY AND TOPOGRAPHIC SURVEY 33 1& 337 CUMBERLAND AVENUE, PORTLAND, MAINE, BY NORTHEAST CIVIL SOLUTIONS INCORPORATED.

GENERAL NOTES

1. ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD PLANS. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UTILITIES ARE IN THE EXACT LOCATIONS SHOWN, ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE AVAILABLE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND TAKE SUCH MEASURES CONSIDERED PRUDENT TO PROTECT SUCH UTILITIES DURING AND AFTER CONSTRUCTION OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, OR RESTORING AND EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CALL 1-888-DIGSAFE.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNTIL ALL REQUIRED LOCAL, STATE AND FEDERAL APPROVALS HAVE BEEN OBTAINED.
3. THE CONTRACTOR SHALL KEEP A COPY OF ALL PERMIT DOCUMENTS ON SITE FOR THE DURATION OF THE WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME FAMILIAR WITH ANY AND ALL PERMIT CONDITIONS ASSOCIATED WITH THE PROJECT APPROVALS AND TO ENSURE THAT THE SITE REMAINS IN COMPLIANCE WITH ALL PERMITS ISSUED BY LOCAL, STATE AND FEDERAL AUTHORITIES.
4. USE OF SITE - THE CONTRACTOR SHALL LIMIT USE OF THE SITE TO THOSE AREAS WITHIN THE LIMIT OF WORK. NO WORK SHALL BE UNDERTAKEN OUTSIDE THE LIMITS OF DISTURBANCE WITHOUT PRIOR APPROVAL OF THE ENGINEER AND OWNER. THE CONTRACTOR SHALL ENSURE THAT ACCESS IS MAINTAINED TO DRIVEWAYS, AND ENTRANCES SERVING PREMISES ADJACENT TO THE PROJECT SITE.
5. THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR UNDERTAKING THE WORK IN A SAFE AND EFFICIENT MANNER, IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. ALL WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED APPROPRIATELY TO PREVENT UNAUTHORIZED ACCESS. OPERATION OF CONSTRUCTION EQUIPMENT OUTSIDE FENCED AREAS SHALL BE MINIMIZED TO THE EXTENT PRACTICAL. ALL EQUIPMENT OPERATION OUTSIDE OF CONSTRUCTION AREAS SHALL BE ACCOMPANIED BY APPROPRIATE PEDESTRIAN AND VEHICULAR TRAFFIC CONTROL. THE SITE SHALL BE LEFT SECURE AND IN A SAFE AND ORDERLY MANNER AT THE END OF EACH WORK DAY.
6. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND PERFORM ALL WORK NECESSARY TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN ACCESS TO AND FROM THE SITE DURING CONSTRUCTION.
7. TRAFFIC CONTROL MEASURES, WHERE NECESSARY SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION), PUBLISHED BY THE FEDERAL HIGHWAYS ADMINISTRATION.
8. MATERIALS NOTED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT A LICENSED FACILITY, AT THE CONTRACTOR'S EXPENSE.
9. MATERIALS NOTED FOR SALVAGE SHALL BE REMOVED AND STOCKPILED FOR THE OWNERS USE AT AN ON-SITE LOCATION TO BE PROVIDED BY THE OWNER. SALVAGED MATERIALS SHALL REMAIN PROPERTY OF THE OWNER.
10. STREET TREES SHALL BE PRUNUS SUBHIRTELLA "ACCOLADE"/ ACCOLADE FLOWERING CHERRY, SIZE 2.5" CAL/B&B

UTILITY NOTES

1. BUILDING UTILITY SERVICE CONNECTIONS ARE PRELIMINARY AND WILL NEED TO BE COORDINATED WITH INERNAL DESIGN PLANS. THE SIZES AND LOCATIONS OF NEW SERVICES HAVE BEEN ASSUMED BASED ONT HE AVAILABLE INFORMATION AND ARE SUBJETC TO REVIEW AND APPROVAL BY GOVERNING AUTHORITIES.T
2. ALL UTILITY COVERS, VALVE BOXES AND CLEANOUTS TO REMAIN SHALL BE ADJUSTED TO CONFORM TO PROPOSED FINISHED GRADES. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT PRICE.
3. ALL UTILITY MAINS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING UTILITY.
4. ALL WORK ON WATER SUPPLY MAINS AND SERVICES SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE PORTLAND WATER DISTRICT. CONNECTIONS TO EXISTING MAINS AND/OR OPERATION OF VALVES ON THE WATER SYSTEM IN OR AROUND THE SITE SHALL BE PRE-ARRANGED WITH PORTLAND WATER DISTRICT AND UNDERTAKEN UNDER THEIR DIRECT SUPERVISION.
5. ALL WORK ON SEWERS ON OR AROUND THE PROJECT SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT. ALL WORK ON SEWER MAINS SHALL BE PRE-ARRANGED WITH CITY OF PORTLAND ENGINEERING.
6. PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE UNDERTAKEN IN A MANNER THAT MAINTAINS THE INTEGRITY OF THE EXISTING STRUCTURE AND PROVIDES A WATERTIGHT SEAL BETWEEN THE NEW PIPE AND THE STRUCTURE.
5. ALL ELECTRICAL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF CENTRAL MAINE POWER COMPANY.CONNECTIONS SHALL BE COORDINATED WITH CMP BY THE CONTRACTOR.
6. ALL WORK ON STORM DRAIN MAINS AND ROADSIDE DRAINAGEWAYS ADJACENT TO THE SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
7. ALL WORK ON GAS SERVICES AND AROUND GAS MAINS SURROUNDING THE PROPERTY SHALL BE COORDINATED WITH UNITIL.

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STATE OF MAINE
ANDREW D. JOHNSTON
NO. 9994
6-1-2020
LICENSED
PROFESSIONAL ENGINEER

ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE

NOT FOR CONSTRUCTION

PROJECT	YFP
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REVISED 1	
REVISED 2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

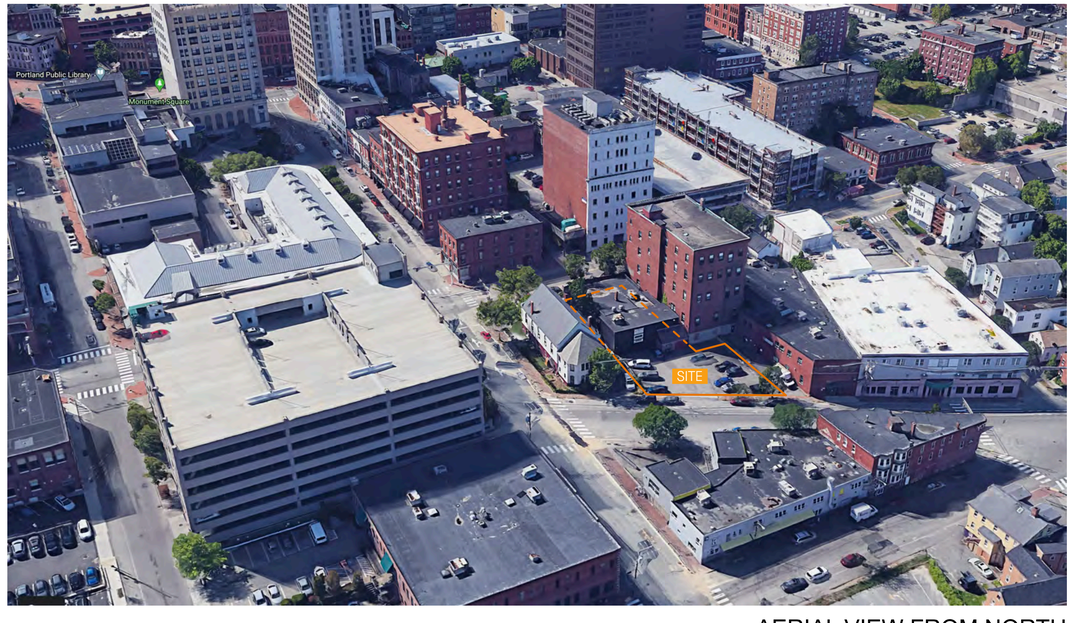
UTILITY PLAN

C-101A

AERIAL PLAN

AERIAL VIEW FROM WEST

AERIAL VIEW FROM EAST



AERIAL VIEW FROM NORTH

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No. 3275
STATE OF MAINE

NOT FOR CONSTRUCTION

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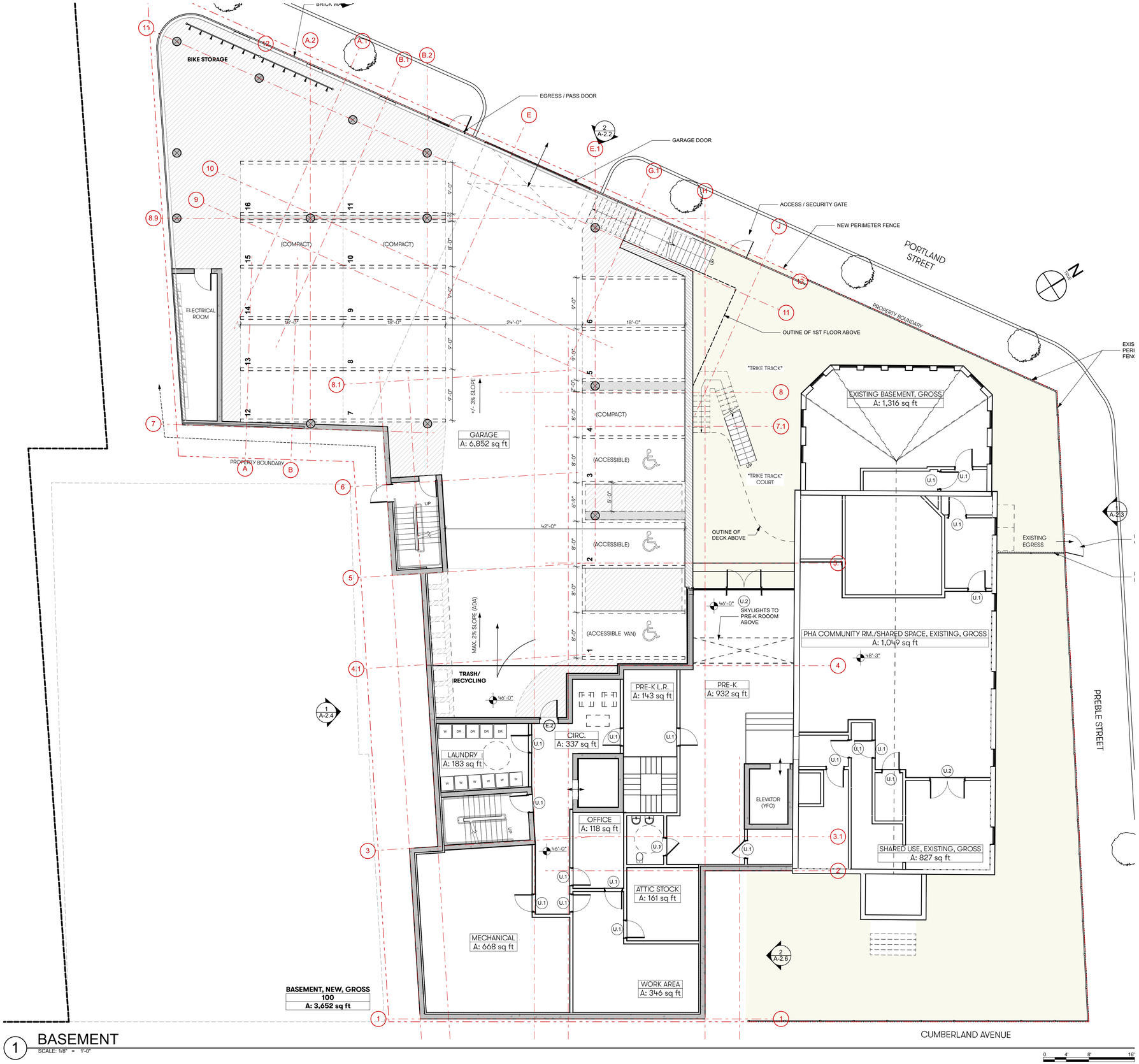
PHASE	SITE PLAN REVIEW

CONTEXT IMAGES
A-0.0



1 BASEMENT
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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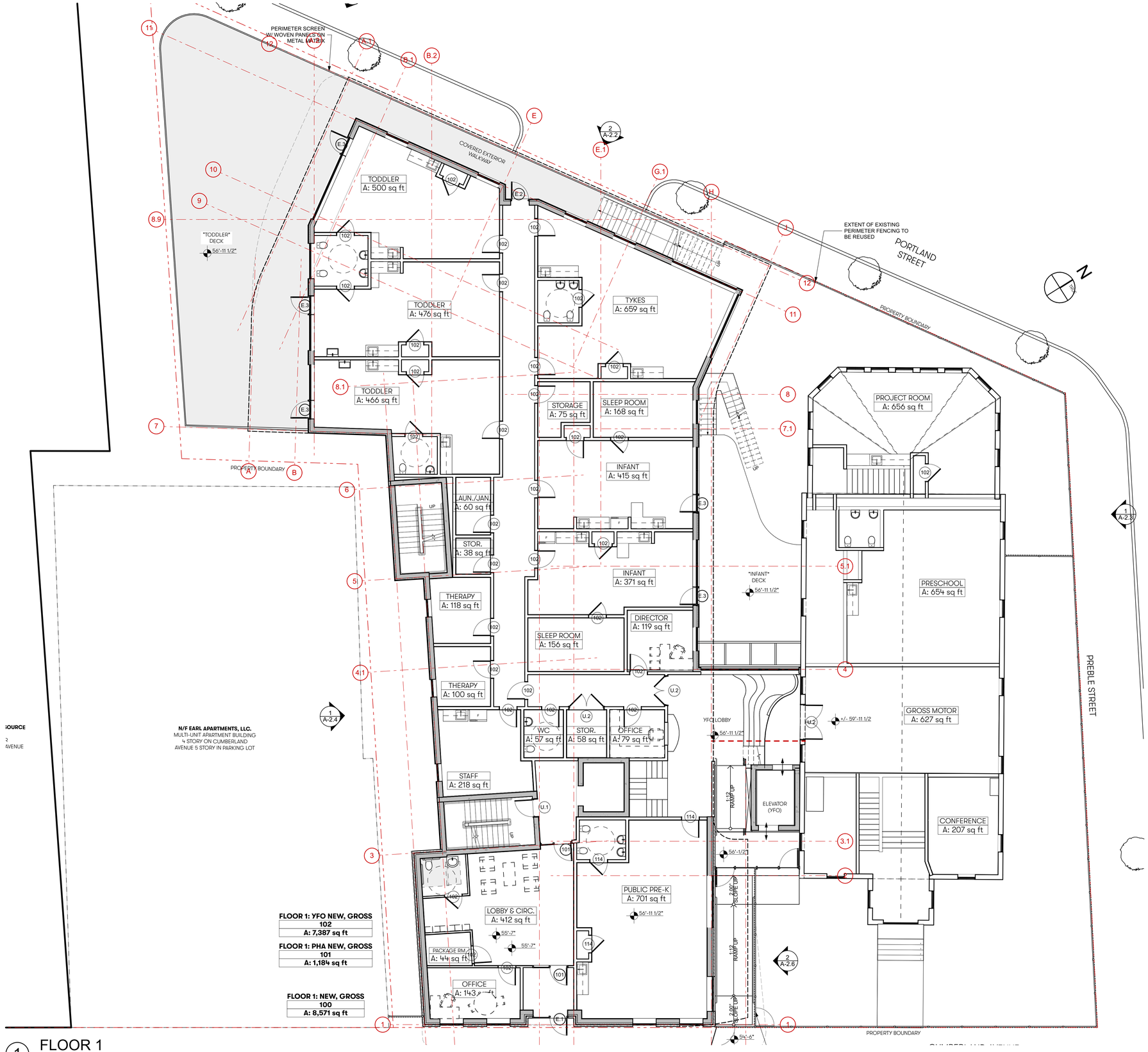
BASEMENT PLAN
A-1.1



1 FLOOR 1
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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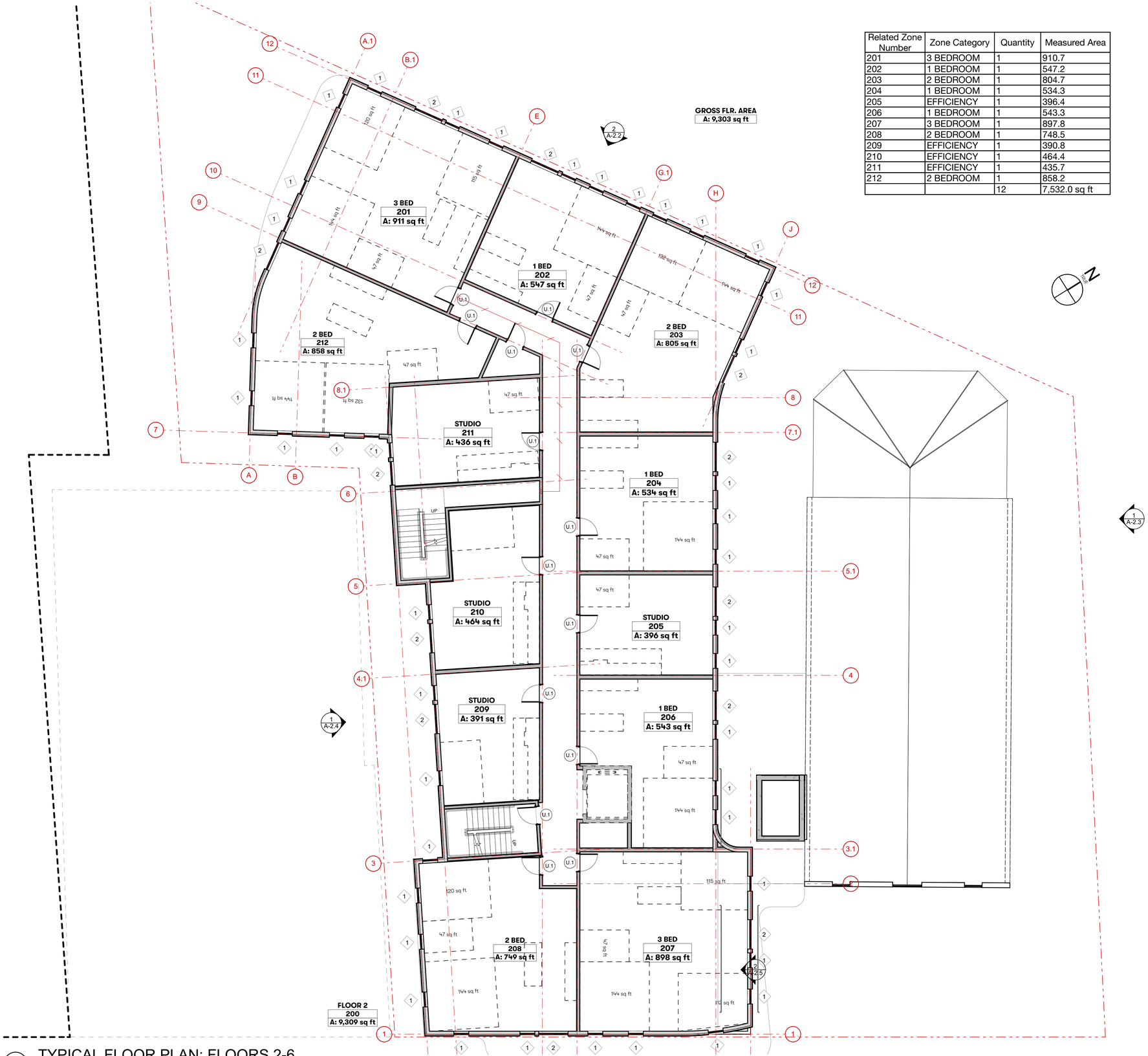
1ST FLOOR PLAN
A-1.2



Related Zone Number	Zone Category	Quantity	Measured Area
201	3 BEDROOM	1	910.7
202	1 BEDROOM	1	547.2
203	2 BEDROOM	1	804.7
204	1 BEDROOM	1	534.3
205	EFFICIENCY	1	396.4
206	1 BEDROOM	1	543.3
207	3 BEDROOM	1	897.8
208	2 BEDROOM	1	748.5
209	EFFICIENCY	1	390.8
210	EFFICIENCY	1	464.4
211	EFFICIENCY	1	435.7
212	2 BEDROOM	1	858.2
		12	7,532.0 sq ft

1 TYPICAL FLOOR PLAN: FLOORS 2-6
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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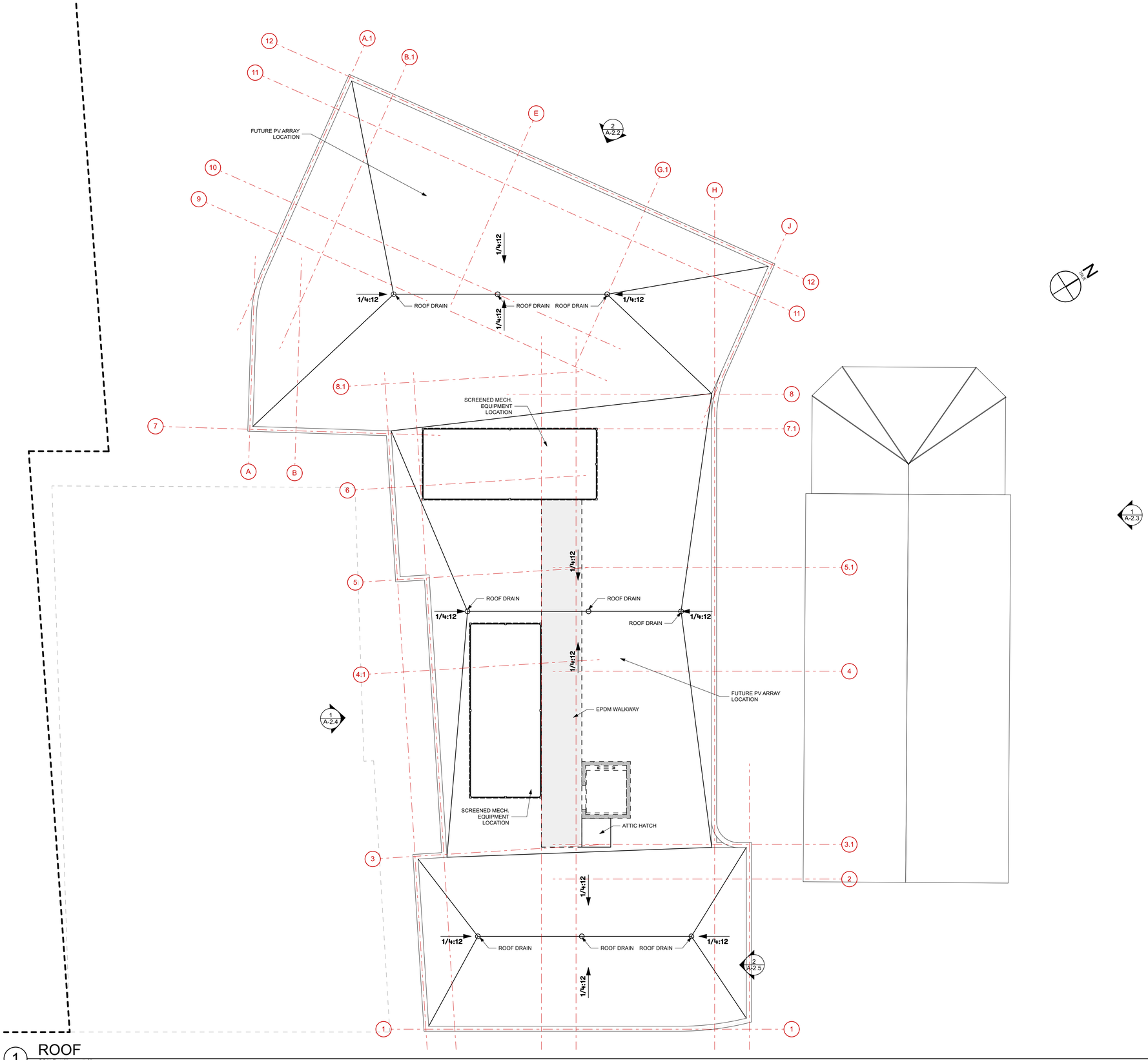
PROJECT	YFP
DATE	06/01/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

TYPICAL FLOOR PLAN: FLOORS 2-6
A-1.3



1 ROOF
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

Kaplan Thompson Architects
102 Exchange Street
Portland, ME 04101
(207) 842-2888
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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
14 Baxter Boulevard
Portland, ME 04101
p: (207) 221-8009

CIVIL & LANDSCAPING
ATLANTIC RESOURCE CONSULTANTS
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Freeport, ME 04032
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EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
p: (617) 608-1551

LICENSED ARCHITECT
JAMES JESSE THOMPSON
No. 3275
STATE OF MAINE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
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PHASE	SITE PLAN REVIEW

ROOF PLAN
A-1.4

1 ENLARGED ELEVATION - CUMBERLAND AVENUE

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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PROJECT

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PROJECT	YFP
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PHASE	SITE PLAN REVIEW

ENLARGED ELEVATION CUMBERLAND AVENUE

A-2.1

1 SOUTH-EAST ELEVATION - CUMBERLAND AVENUE

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

2 NORTH-WEST ELEVATION - PORTLAND STREET

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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PROJECT
337 CUMBERLAND

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EARLY CHILDCARE EDUCATION
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NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	09/03/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

CUMBERLAND AVENUE (SE) & PORTLAND STREET (NW) ELEVATIONS
A-2.2

1 NORTH-EAST ELEVATION - PREBLE STREET

SCALE: 1/8" = 1'-0"

0 4' 8' 16'

Kaplan Thompson Architects
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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

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PORTLAND HOUSING DEVELOPMENT CORPORATION
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LICENSED ARCHITECT
JAMES JESSE THOMPSON
NO. 3275
STATE OF MAINE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
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PHASE	SITE PLAN REVIEW

PREBLE STREET (NE) ELEVATION
A-2.3

1 SOUTH-WEST ELEVATION
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
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EARLY CHILDCARE EDUCATION
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p: (617) 608-1551

LICENSED ARCHITECT
JAMES JESSE THOMPSON
No. 3275
STATE OF MAINE

ISSUE NO.	DESCRIPTION	CH ID	CHANGE NAME	DATE
A	Pricing Set			5/15/20

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

SOUTH-WEST ELEVATION
A-2.4

1 NW ELEVATION - PORTLAND STREET
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

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EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
p: (617) 608-1551

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PROJECT	YFP
DATE	09/03/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

ENLARGED ELEVATION PORTLAND STREET
A-2.5

VIEW FROM CUMBERLAND AVENUE

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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

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Portland, ME 04101

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EARLY CHILDCARE EDUCATION
STUDIO MLA ARCHITECTS
320 Washington Street
Brookline, MA 02445
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LICENSED ARCHITECT
JAMES JESSE THOMPSON
NO. 3275
STATE OF MAINE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

PERSPECTIVE
A-9.1

VIEW FROM PORTLAND STREET

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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

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STUDIO MLA ARCHITECTS
320 Washington Street
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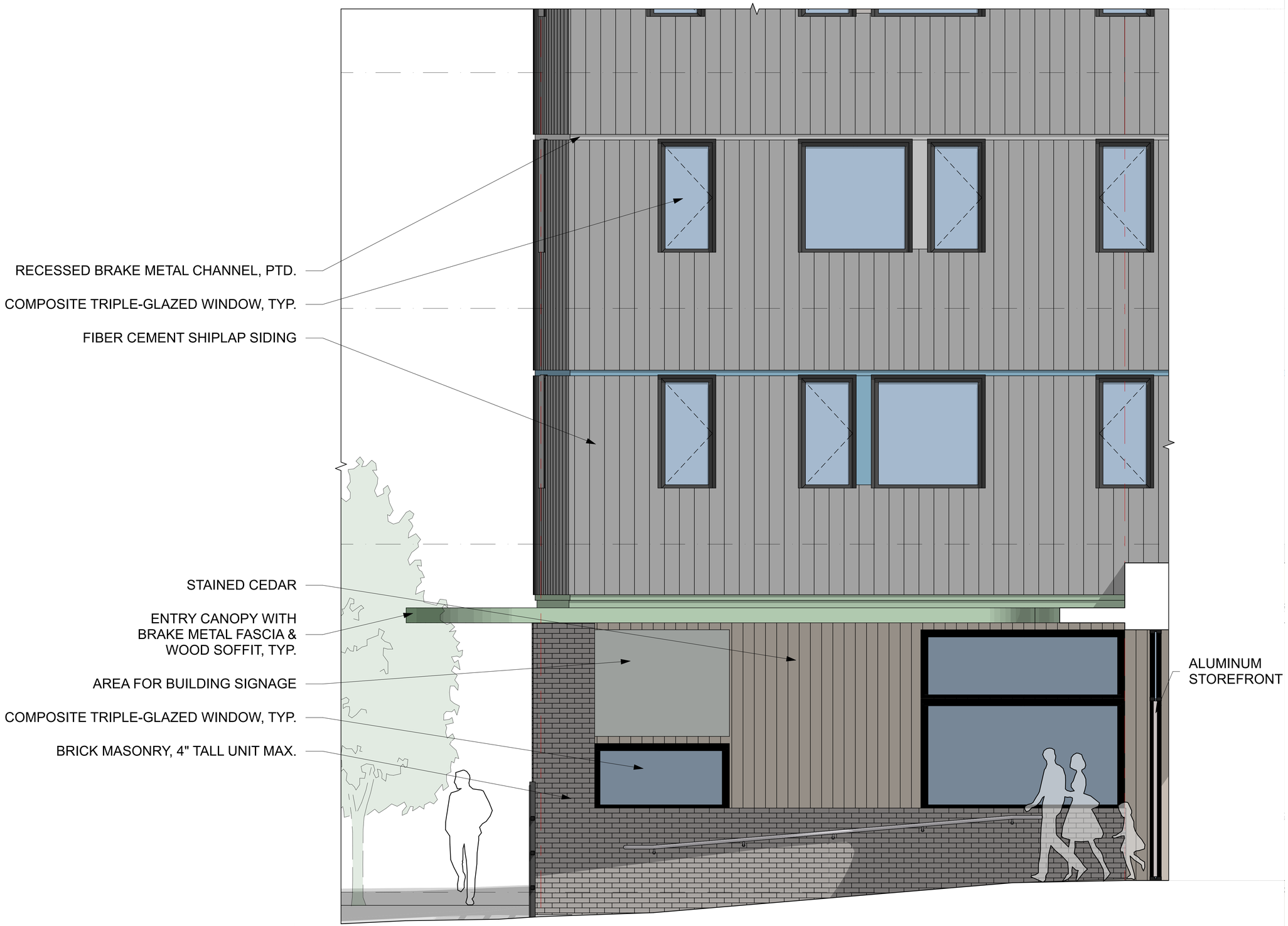
p: (617) 608-1551

LICENSED ARCHITECT
JAMES JESSE THOMPSON
NO. 3275
STATE OF MAINE

NOT FOR CONSTRUCTION

PROJECT	YFP
DATE	06/01/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

PERSPECTIVE
A-9.2



1 SW ELEVATION - YFO ENTRY
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

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Portland, ME 04101

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STUDIO MLA ARCHITECTS
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PROJECT	YFP
DATE	09/03/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

ENTRY ELEVATION
A-2.6

VIEW FROM CUMBERLAND AVE

VIEW FROM CUMBERLAND AVE

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PROJECT
337 CUMBERLAND

CHILDCARE, MULTI-FAMILY HOUSING, & COMMUNITY SERVICES

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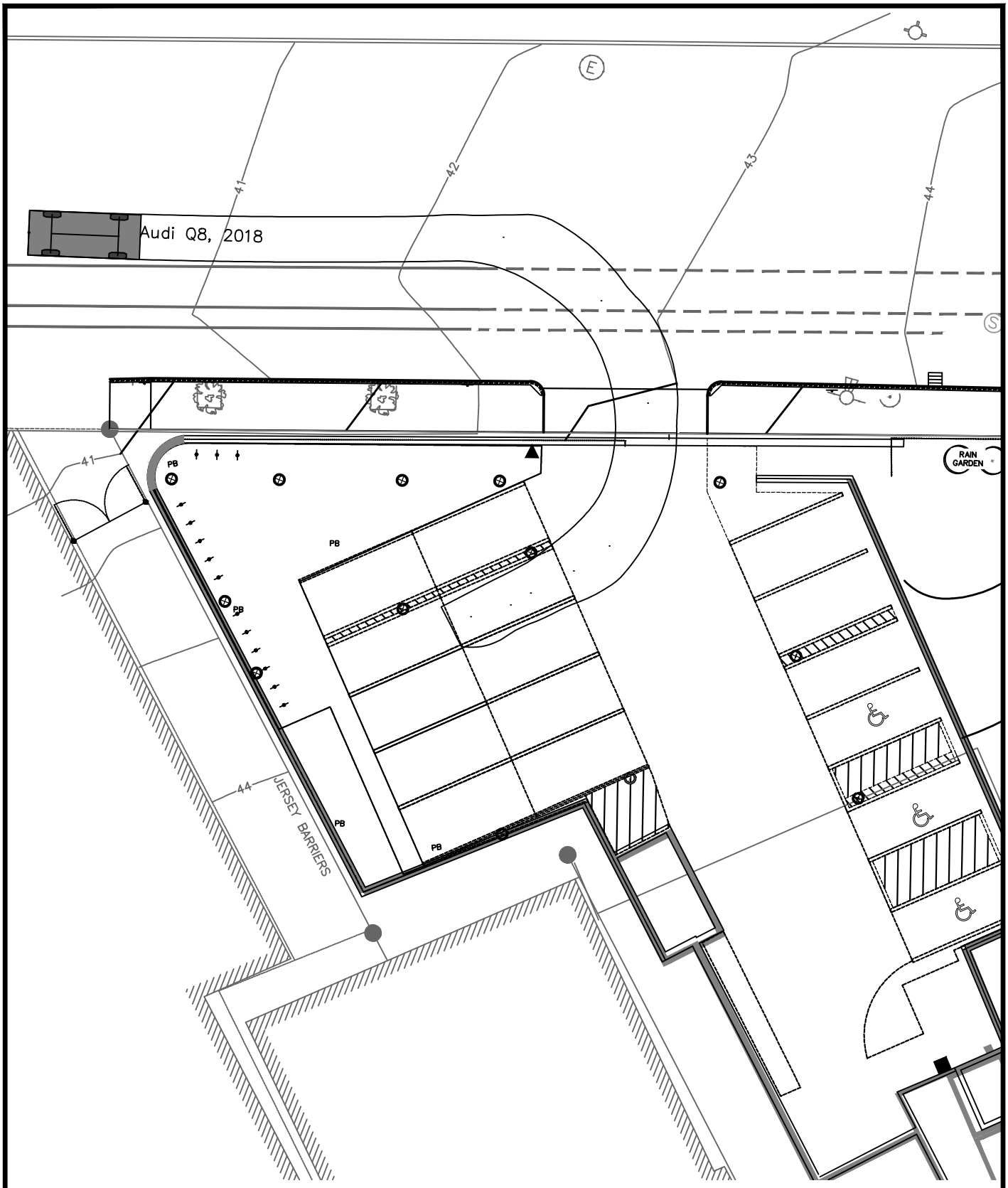
PROJECT	YFP
DATE	09/03/2020
DRAWN BY	RL/CB
PHASE	SITE PLAN REVIEW

PERSPECTIVES
A-9.3



337 CUMBERLAND AVENUE, PORTLAND, MAINE

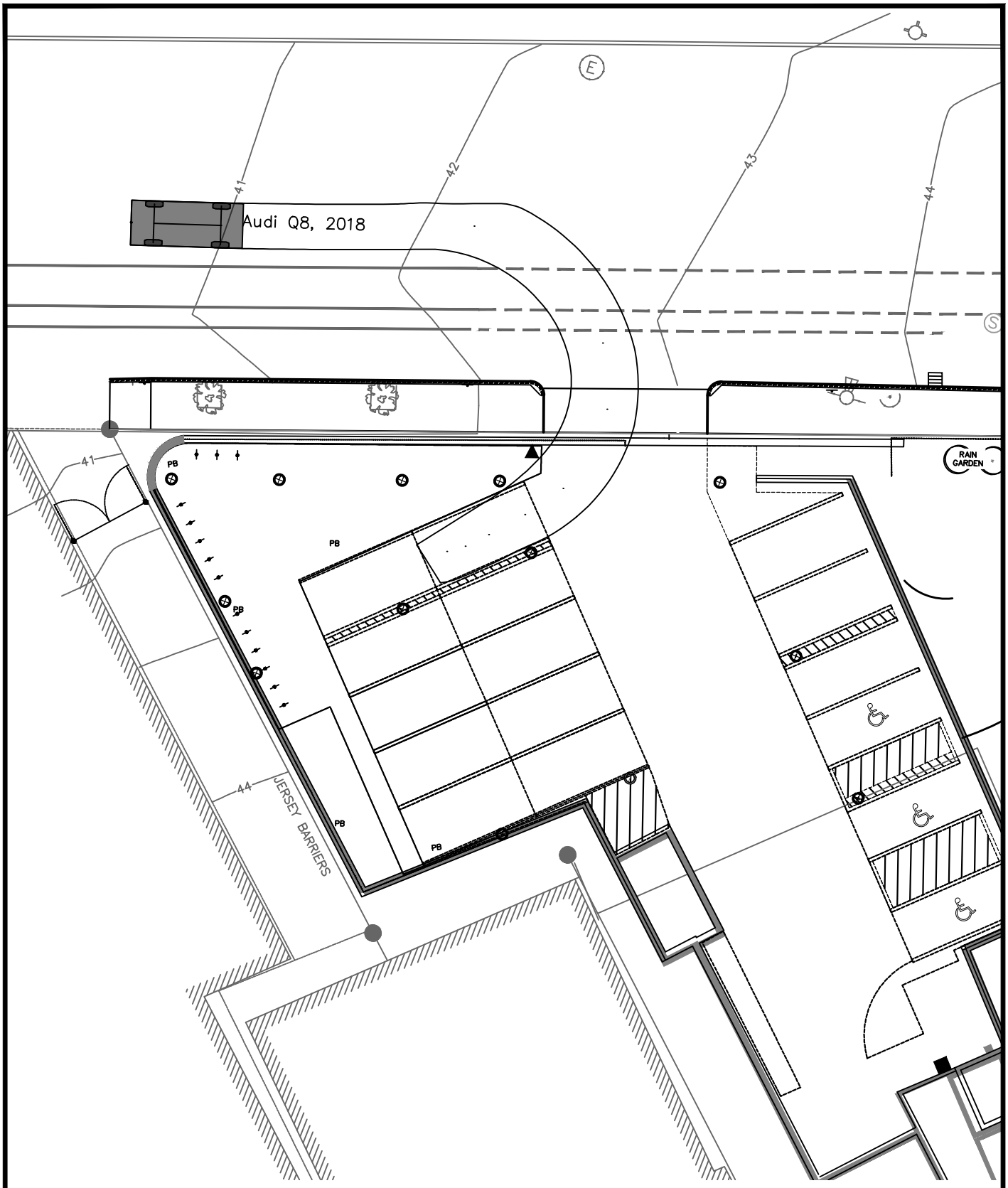
TURNING TEMPLATE FIGURE

Atlantic Resource Consultants
Engineering Strategies and Solutions

DRAWN:	TP	DATE:	AUG 2020
DESIGNED:	TP	SCALE:	1"=20'
CHECKED:	AJ.	JOB NO.	20-010
FILE NAME:	20-010 BASEMENT PARKING		

FIGURE 1

S:\20-010 PHA Cumberland Ave\Drawings\20-010 Base Parking.dwg civil03 9/3/2020 9:16 AM



337 CUMBERLAND AVENUE, PORTLAND, MAINE

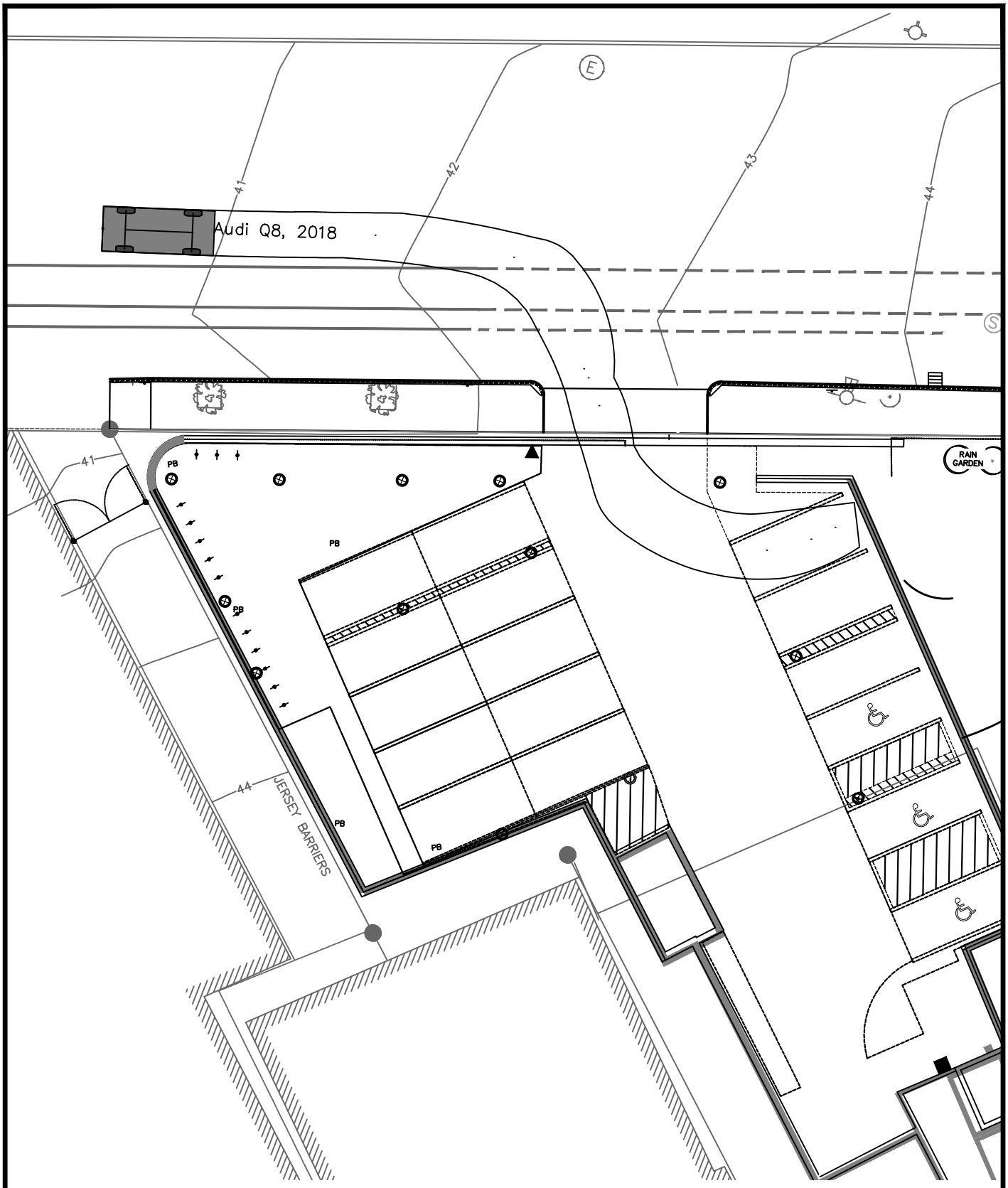
TURNING TEMPLATE FIGURE

Atlantic Resource Consultants
Engineering Strategies and Solutions

DRAWN:	TP	DATE:	AUG 2020
DESIGNED:	TP	SCALE:	1"=20'
CHECKED:	AJ.	JOB NO.	20-010
FILE NAME:	20-010 BASEMENT PARKING		

FIGURE 2

S:\20-010 PHA Cumberland Ave\Drawings\20-010 Base Parking.dwg civil03 9/3/2020 9:17 AM



337 CUMBERLAND AVENUE, PORTLAND, MAINE

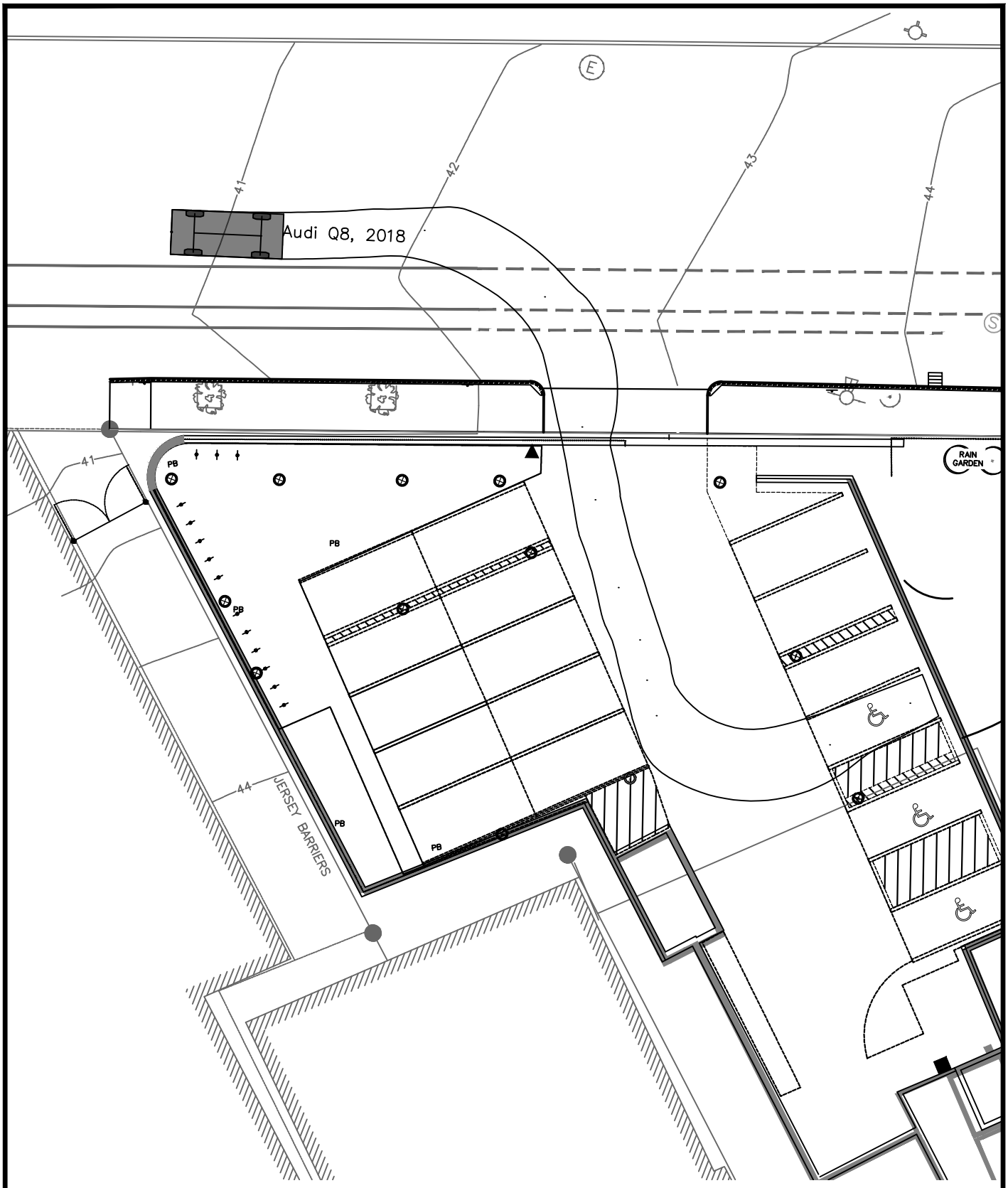
TURNING TEMPLATE FIGURE

Atlantic Resource Consultants
Engineering Strategies and Solutions

DRAWN:	TP	DATE:	AUG 2020
DESIGNED:	TP	SCALE:	1"=20'
CHECKED:	AJ.	JOB NO.	20-010
FILE NAME:	20-010 BASEMENT PARKING		

FIGURE 3

S:\20-010 PHA Cumberland Ave\Drawings\20-010 Base Parking.dwg civil03 9/3/2020 9:17 AM



337 CUMBERLAND AVENUE, PORTLAND, MAINE

TURNING TEMPLATE FIGURE

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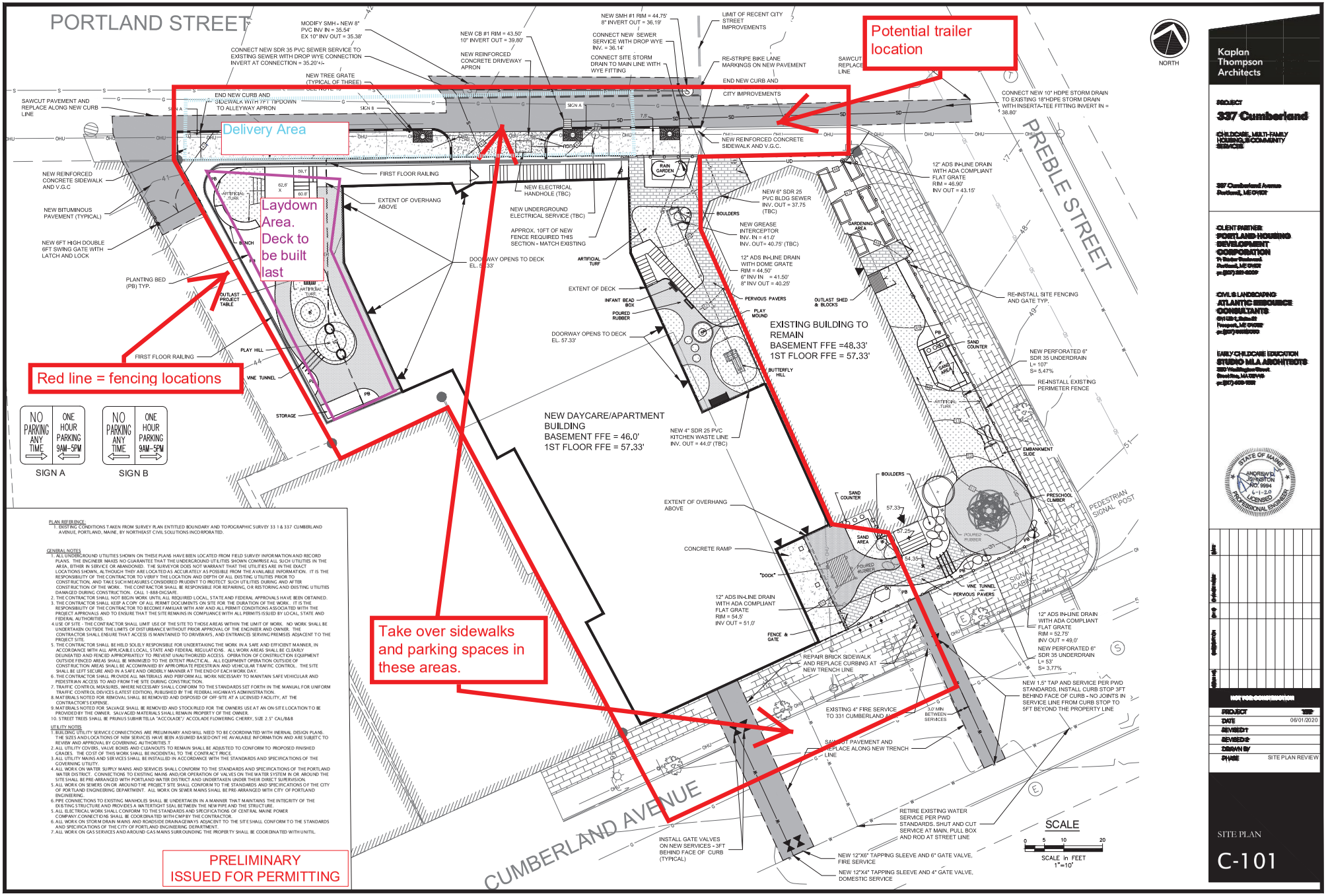
Engineering Strategies and Solutions

DRAWN:	TP	DATE:	AUG 2020
DESIGNED:	TP	SCALE:	1"=20'
CHECKED:	AJ.	JOB NO.	20-010
FILE NAME:	20-010 BASEMENT PARKING		

FIGURE 4

S:\20-010 PHA Cumberland Ave\Drawings\20-010 Base Parking.dwg civil03 9/3/2020 9:19 AM



PLAN REFERENCE

1. EXISTING CONDITIONS TAKEN FROM SURVEY PLAN ENTITLED BOUNDARY AND TOPOGRAPHIC SURVEY 33 1 & 337 CUMBERLAND AVENUE, PORTLAND, MAINE, BY NORTHEAST CIVIL SOLUTIONS INCORPORATED.

GENERAL NOTES

1. ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD PLANS. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UTILITIES ARE IN THE EXACT LOCATIONS SHOWN, ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE AVAILABLE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND TAKE SUCH MEASURES CONSIDERED PRUDENT TO PROTECT SUCH UTILITIES DURING AND AFTER CONSTRUCTION OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, OR RESTORING AND EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CALL 1-888-DIGSAFE.
2. THE CONTRACTOR SHALL NOT BEGIN WORK UNTIL ALL REQUIRED LOCAL, STATE AND FEDERAL APPROVALS HAVE BEEN OBTAINED.
3. THE CONTRACTOR SHALL KEEP A COPY OF ALL PERMIT DOCUMENTS ON SITE FOR THE DURATION OF THE WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME FAMILIAR WITH ANY AND ALL PERMIT CONDITIONS ASSOCIATED WITH THE PROJECT APPROVALS AND TO ENSURE THAT THE SITE REMAINS IN COMPLIANCE WITH ALL PERMITS ISSUED BY LOCAL, STATE AND FEDERAL AUTHORITIES.
4. USE OF SITE - THE CONTRACTOR SHALL LIMIT USE OF THE SITE TO THOSE AREAS WITHIN THE LIMIT OF WORK. NO WORK SHALL BE UNDERTAKEN OUTSIDE THE LIMITS OF DISTURBANCE WITHOUT PRIOR APPROVAL OF THE ENGINEER AND OWNER. THE CONTRACTOR SHALL ENSURE THAT ACCESS IS MAINTAINED TO DRIVEWAYS, AND ENTRANCES SERVING PREMISES ADJACENT TO THE PROJECT SITE.
5. THE CONTRACTOR SHALL BE HELD SOLELY RESPONSIBLE FOR UNDERTAKING THE WORK IN A SAFE AND EFFICIENT MANNER, IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. ALL WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED APPROPRIATELY TO PREVENT UNAUTHORIZED ACCESS. OPERATION OF CONSTRUCTION EQUIPMENT OUTSIDE FENCED AREAS SHALL BE MINIMIZED TO THE EXTENT PRACTICAL. ALL EQUIPMENT OPERATION OUTSIDE OF CONSTRUCTION AREAS SHALL BE ACCOMPANIED BY APPROPRIATE PEDESTRIAN AND VEHICULAR TRAFFIC CONTROL. THE SITE SHALL BE LEFT SECURE AND IN A SAFE AND ORDERLY MANNER AT THE END OF EACH WORK DAY.
6. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND PERFORM ALL WORK NECESSARY TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN ACCESS TO AND FROM THE SITE DURING CONSTRUCTION.
7. TRAFFIC CONTROL MEASURES, WHERE NECESSARY SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION), PUBLISHED BY THE FEDERAL HIGHWAYS ADMINISTRATION.
8. MATERIALS NOTED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT A LICENSED FACILITY, AT THE CONTRACTOR'S EXPENSE.
9. MATERIALS NOTED FOR SALVAGE SHALL BE REMOVED AND STOCKPILED FOR THE OWNERS USE AT AN ON-SITE LOCATION TO BE PROVIDED BY THE OWNER. SALVAGED MATERIALS SHALL REMAIN PROPERTY OF THE OWNER.
10. STREET TREES SHALL BE PRUNUS SUBHIRTELLA 'ACCOLADE'/ ACCOLADE FLOWERING CHERRY, SIZE 2.5" CAL/B&B

UTILITY NOTES

1. BUILDING UTILITY SERVICE CONNECTIONS ARE PRELIMINARY AND WILL NEED TO BE COORDINATED WITH INERNAL DESIGN PLANS. THE SIZES AND LOCATIONS OF NEW SERVICES HAVE BEEN ASSUMED BASED ONT HE AVAILABLE INFORMATION AND ARE SUBJETC TO REVIEW AND APPROVAL BY GOVERNING AUTHORITIES.T
2. ALL UTILITY COVERS, VALVE BOXES AND CLEANOUTS TO REMAIN SHALL BE ADJUSTED TO CONFORM TO PROPOSED FINISHED GRADES. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT PRICE.
3. ALL UTILITY MAINS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING UTILITY.
4. ALL WORK ON WATER SUPPLY MAINS AND SERVICES SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE PORTLAND WATER DISTRICT. CONNECTIONS TO EXISTING MAINS AND/OR OPERATION OF VALVES ON THE WATER SYSTEM IN OR AROUND THE SITE SHALL BE PRE-ARRANGED WITH PORTLAND WATER DISTRICT AND UNDERTAKEN UNDER THEIR DIRECT SUPERVISION.
5. ALL WORK ON SEWERS ON OR AROUND THE PROJECT SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT. ALL WORK ON SEWER MAINS SHALL BE PRE-ARRANGED WITH CITY OF PORTLAND ENGINEERING.
6. PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE UNDERTAKEN IN A MANNER THAT MAINTAINS THE INTEGRITY OF THE EXISTING STRUCTURE AND PROVIDES A WATERTIGHT SEAL BETWEEN THE NEW PIPE AND THE STRUCTURE.
5. ALL ELECTRICAL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF CENTRAL MAINE POWER COMPANY.CONNECTIONS SHALL BE COORDINATED WITH CMP BY THE CONTRACTOR.
6. ALL WORK ON STORM DRAIN MAINS AND ROADSIDE DRAINAGEWAYS ADJACENT TO THE SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
7. ALL WORK ON GAS SERVICES AND AROUND GAS MAINS SURROUNDING THE PROPERTY SHALL BE COORDINATED WITH UNITIL.

Kaplan Thompson Architects

PROJECT
337 Cumberland

CHILDCARE, MULTI-FAMILY HOUSING & COMMUNITY SERVICES

337 Cumberland Avenue
Portland, ME 04101

CLIENT PARTNER
PORTLAND HOUSING DEVELOPMENT CORPORATION
[redacted]

CIVIL & LANDSCAPING
ATLANTIC RESOURCE CONSULTANTS
[redacted]

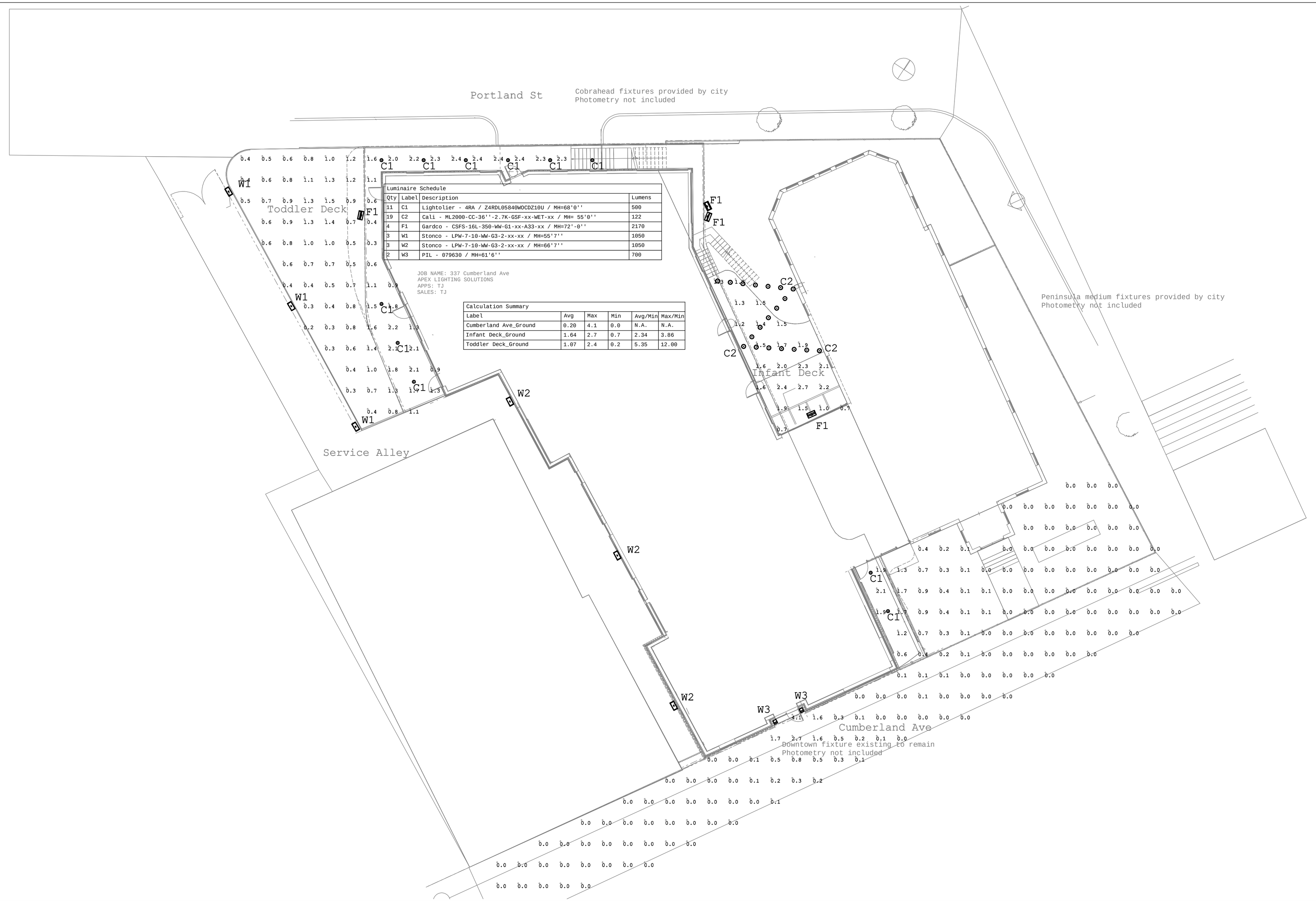
EARLY CHILDCARE EDUCATION
STUDIO M.A. ARCHITECTS
[redacted]

STATE OF MAINE
ANDREW D. JOHNSTON
NO. 9994
6-1-2020
LICENSED
PROFESSIONAL ENGINEER

PROJECT	337
DATE	06/01/2020
REVISED1	
REVISED2	
DRAWN BY	
PHASE	SITE PLAN REVIEW

SITE PLAN

C-101



Luminaire Schedule			
Qty	Label	Description	Lumens
11	C1	Lightolier - 4RA / Z4RDL05840WOCDZ10U / MH=68'0''	500
19	C2	Cali - ML2000-CC-36''-2.7K-GSF-xx-WET-xx / MH= 55'0''	122
4	F1	Gardco - CSFS-16L-350-WW-G1-xx-A33-xx / MH=72'-0''	2170
3	W1	Stonco - LPW-7-10-WW-G3-2-xx-xx / MH=55'7''	1050
3	W2	Stonco - LPW-7-10-WW-G3-2-xx-xx / MH=66'7''	1050
2	W3	PIL - 079630 / MH=61'6''	700

JOB NAME: 337 Cumberland Ave
APEX LIGHTING SOLUTIONS
APPS: TJ
SALES: TJ

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
Cumberland Ave_Ground	0.20	4.1	0.0	N.A.	N.A.
Infant Deck_Ground	1.64	2.7	0.7	2.34	3.86
Toddler Deck_Ground	1.07	2.4	0.2	5.35	12.00

GENERAL DISCLAIMER:

Calculations have been performed according to IES standards and good practice Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:

Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.

For proper comparison of photometric layouts, it is essential that you insist all designers use correct Light Loss Factors.

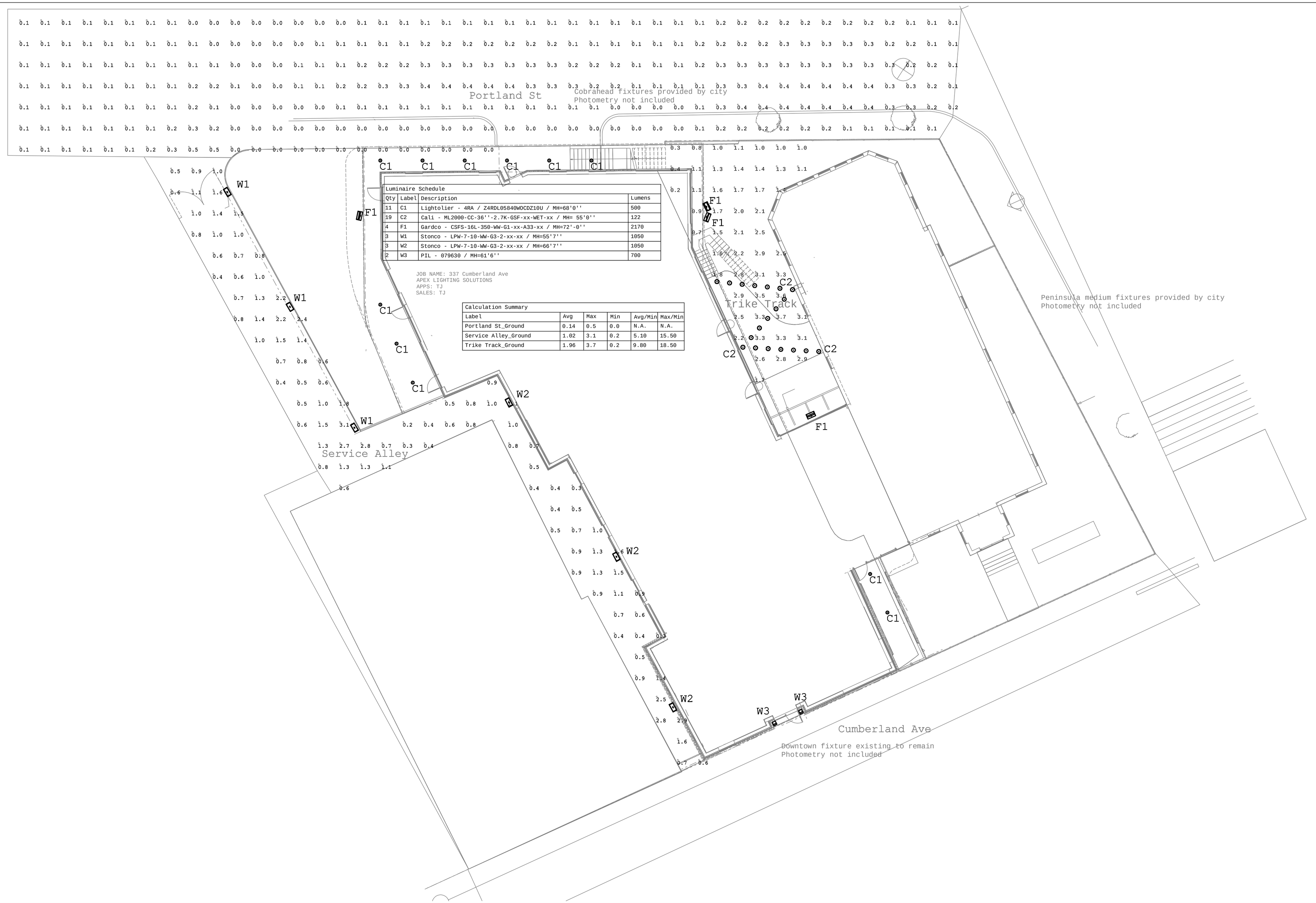
APEX LIGHTING SOLUTIONS
THE POINT WHERE ALL ASCENDING LINES CONVERGE
telephone 860.632.8766
www.apexlightingsolutions.com

PROJECT TITLE:
337 CUMBERLAND AVE
1ST FLOOR LEVEL EXTERIOR LIGHTING

DRAWING TITLE:
EXTERIOR LIGHTING
PHOTOMETRIC CALCULATION

FILE NAME: 337 Cumberland Avenue 1st Floor Level 090420.dwg

SCALE : NTS
DATE: 9/4/20
DRAWN BY: TJ
SHEET:
SL-2a



GENERAL DISCLAIMER:

Calculations have been performed according to IES standards and good practice Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:

Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.

For proper comparison of photometric layouts, it is essential that you insist all designers use correct Light Loss Factors.

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PROJECT TITLE:

337 CUMBERLAND AVE
BASEMENT LEVEL EXTERIOR LIGHTING

DRAWING TITLE:

EXTERIOR LIGHTING
PHOTOMETRIC CALCULATION

FILE NAME: 337 Cumberland Avenue Basement Level 090420.dwg

SCALE : NTS

DATE: 9/4/20

DRAWN BY: TJ

SHEET:

SL-1a

PLANNING BOARD REPORT
PORTLAND, MAINE

337 Cumberland Avenue
Level III Site Plan, Subdivision; IZ Conditional Use
PL-001140-2020
Portland Housing Development Corporation and Elysian Enterprises, LLC, Applicants

Submitted to: Portland Planning Board Public Hearing Date: September 15, 2020	Prepared by: Caitlin Cameron, Urban Designer Date: September 11, 2020

I. INTRODUCTION

Portland Housing Development Corporation and Elysian Enterprises LLC have submitted a Level III Site Plan, Subdivision, and Inclusionary Zoning Conditional Use application for a mixed-use affordable residential project and childcare facility on Preble Street between Cumberland and Portland streets in the Bayside neighborhood. The proposal is for a six/seven story new building of 60 affordable rental apartments and 16 structured parking spaces to be attached to an existing day care facility. Of the 16 spaces, three are ADA and 10 are tandem spaces. The required six affordable units will be provided on-site. The project is located in the B-3 zone and within 100 feet of the Congress Street Historic District and received an Advisory Historic Review by staff.

This Hearing was noticed to 77 neighbors and interested parties, and the public notice appeared in the *Portland Press-Herald* on September 3rd and 4th 2020. The applicant held a Neighborhood Meeting on July 29, 2020, with notes included with this report (Attachment M). As of the writing of this report, three public comments have been received.

Applicant: Portland Housing Development Corporation and Elysian Enterprises LLC (represented by Matthew Peters)
Agent and Civil Engineer: Atlantic Resource Consultants (Andy Johnston)
Architect: Kaplan Thompson Architects (Richard Lo)

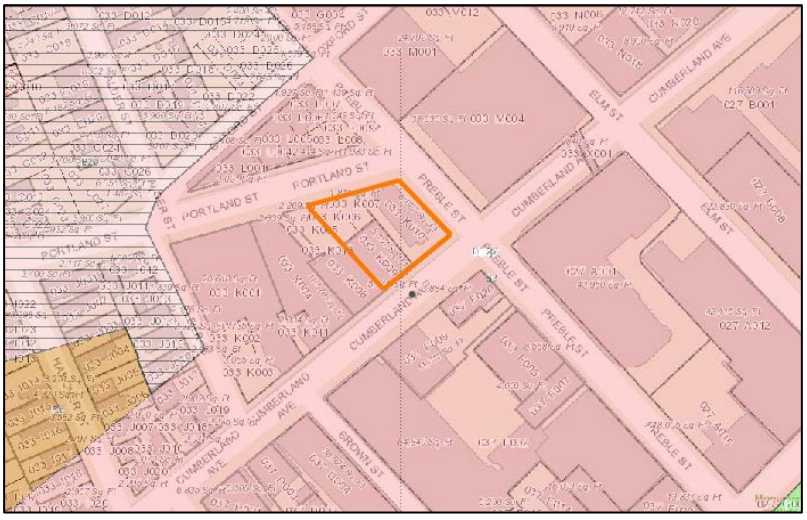


Figure 1 Project Location and Zoning

Required reviews and requested waivers:

Applicant's Proposal	Applicable Standards
New construction over 20,000 sf	Sec 14-526 Level III Site Plan Review, B-3 Design Review, HP Advisory
Subdivision (60 dwelling units)	Sec 14-497 Subdivision Review
Multi-family Residential >10 units	Sec 14-487 Inclusionary Zoning Conditional Use
Parking Requirement Reduction (27%)	Ch 14 Div. 20 Off-street Parking/B-3 Zone
Waivers	**Citation**
Light Trespass exceeds 0.1 fc at property line	City of Portland Technical Manual 12.3.4 Light Trespass

II. PROJECT DATA

SUBJECT	*DATA*
Total area of the site	19,592 sq ft
Total Disturbed Area	16,400 sq ft
Existing Zoning	B-3
Existing Use	Commercial building, surface parking, Day Care
Proposed Use	Residential, Daycare facility
Impervious Surface Area --Existing --Proposed --Net Change	 16,280 sq ft 14,890 sq ft -1,390 sq ft
Building Footprint --Existing --Proposed --Net Change	 5,470 sq ft 15,445 sq ft +9,975 sq ft
Building Floor Area --Existing --Proposed -Net Change	 10,940 sq ft 71,950 sq ft +61,010 sq ft
Proposed Room Mix -Efficiencies -One-bedroom -Two-bedroom -Three-bedroom	 20 15 15 10
Parking Spaces	16 (10 tandem, 3 ADA)
Bicycle parking Spaces	34 (none existing)

III. EXISTING CONDITIONS

This site is within the Bayside neighborhood downhill from downtown and has frontage on three streets – Cumberland Avenue, Preble and Portland street. The development site has been aggregated by combining the existing church with the adjacent property. The property is currently occupied by a historic church building used for day care, a one-story commercial building, and surface parking.

The immediate surroundings include a mix of building scales and uses including parking garages, mixed-use commercial buildings, homeless services, and the Preble Teen Center. The site is within B-3 Downtown zone and sits on the corner. The scale of buildings varies but being a block away from the high spine of Congress Street and the downtown includes some of the taller buildings on the peninsula along Cumberland Avenue. The streets are fairly

wide but the sidewalks and streetscape tends to be narrow. The City of Portland is undertaking several street improvement projects in this area in 2020, including replacing some of the sidewalks at the site of this proposal.

The parcel is also within 100' of the Congress Street Historic District and the 100' rule does apply, requiring advisory Historic Preservation review. The existing church is a historic structure with significance but has not been officially designated as a landmark or included in the historic district.

The site is not visually prominent from most directions. The most visible portion of the project is the existing church and yard at the corner. The treatment of this landscape and the surrounding streetscape edges of the project is considered the most important as it relates to fitting the project into the context and intent of the B-3 zone.

AERIAL VIEW FROM EAST

Figure 2 Project Context

IV. PROPOSED DEVELOPMENT

The proposed building is shown in the Plan set and described in the applicant's submittal. The new construction includes an expansion of the day care facilities on the basement and ground floors with affordable residential units above. The yard spaces are almost completely dedicated to day care use. This image (Plan P23) shows the overall project view from Cumberland Avenue at Preble Street.

Figure 3 Project Rendering from Cumberland Avenue

The proposal includes:

- 60 affordable apartments
    - Six workforce housing units are required by Inclusionary Zoning – provided on-site
- Parking for 16 vehicles (structured) – 10 tandem, 3 ADA, 3 compact
- Day Care Facility (existing + expanded) – within the existing church and expanded into the new construction
- Outdoor play areas

The elevation below faces Cumberland Avenue and shows the connection from the existing church building and the residential building (Plan P20 – P22). This parcel in the B-3 has a 85 foot height maximum and a 35 foot minimum.

Figure 4 Elevations (Cumberland and Portland)

V. STAFF REVIEW

VI. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

This hearing was noticed to 77 neighbors and interested parties and the public notice appeared in the *Portland Press-Herald* on September 3th and September 4th, 2020. The applicant held a Neighborhood Meeting on July 29th, 2020 with no attendees and the notes are included in Attachment M. Three public comments were received as of the writing of this report.

VII. PLANNING BOARD WORKSHOP 7.21.2020

A workshop was held July 21, 2020 to discuss the design, parking, and zoning exceptions. The applicant revised their parking proposal to eliminate the carshare service. The Board expressed support for a reduction in parking from the zoning requirement but determined that in order to use the exception for historic structures for the minimum height requirement, the Historic Preservation Board (rather than staff) would need to make a determination of eligibility for the chapel. The Board also asked for additional information regarding the screen/wall on Portland Street.

VIII. RIGHT, TITLE AND INTEREST

The applicant has submitted deeds for 331 and 337 Cumberland Avenue, an Option to Lease Agreement, and documentation showing name change from Trustees of the Portland Ministry at Large to Youth and Family

Outreach (Attachment B). The applicant was not able to provide right, title, and interest to the adjoining alley, and thus the new gate has been removed from the proposal.

IX. ZONING ASSESSMENT

General Assessment: The proposed building is located in the B-3 zone and includes three street frontages. The project is not within the Pedestrian Activity District. The zoning dimensional requirements are permissive in this urban downtown zone – in most cases the requirements are intended to create dense, taller buildings that fill the site and maintain a street wall line. Regarding height, there is a minimum of 35 feet and for these blocks and an 85-foot maximum (as shown on the Downtown Height Overlay map). The table below contains the relevant dimensional standards for the project:

	Required	Proposed
Lot Size (minimum)	none	19,592 sf
Street Frontage (minimum)	15'	122.82'; 110.84'; 175.16'
Build-to Line	5'	Met on all streets except for the connector on Cumberland*; Existing structure exempt
Lot Width (minimum)	0'	122.82'; 110.84; 175.16'
Blank Wall (maximum)	30'	Met on all streets
Height (min)	35'	Met except for connector on Cumberland**
Height (max)	85'	76.58'
Rear Setback	-	-
Side Setback	-	-
Side Setback	-	-
Lot coverage (max 100%)	19,592 sf (100%)	13,248 sf (68%)
Impervious	-	14,890 sf
Parking	60 + 28 = 88	16
Bike Parking	28	34

*See Design memo for evaluation of build-to line criteria
** Exemption for additions less than 10% of original structures

The project meets zoning requirements except for the items noted below for the Board's discretionary approval:

- Height Minimum – a portion of the "connector" between the church and residential building is 24 feet tall to structure – 11 feet below the 35-foot minimum. The B-3 zone allows for exemptions to the height minimum in certain circumstances. Staff propose that the following exemption should apply to the connector to allow the design to remain as proposed, provided that the portion of the building within 50 feet of the property line under 35 feet in height is verified to be less than 10% of the chapel footprint to which it attaches. As per Land Use Code Section 14-220 (h):

- *Minimum building height: No new construction of any building shall be less than thirty-five (35) feet in height within fifty (50) feet of any street frontage, except that this provision shall not apply to:*

- *4. Additions to buildings existing as of June 4, 2007 provided that the cumulative additions since June 4, 2007 do not exceed ten percent (10%) of the building footprint on June 4, 2007, except building additions on those portions of the lot located closer to the street line than the building footprint existing as of June 4, 2007 shall not be included in this 10% limitation.*

- Build-to Line – The project exceeds the build-to line at the location of the connector between the church and the residential tower. The front yard setback at that location is 26 feet and is only present for the width of the connector (15 feet). The B-3 zone allows for an increased setback for projects that meet the following findings set forth in the Design Manual:

  (1)d.2.Standards for increasing setback beyond street build-to line:

  i. Provides substantial and viable publicly accessible open space or other amenity at the street level that supports and reinforces pedestrian activity and interest.
  - The space is currently designed to include a walkway and entrance to the day care facility. Some of this area also includes fenced play yard. Staff suggest additional landscaping would better meet the requirement for public amenity.

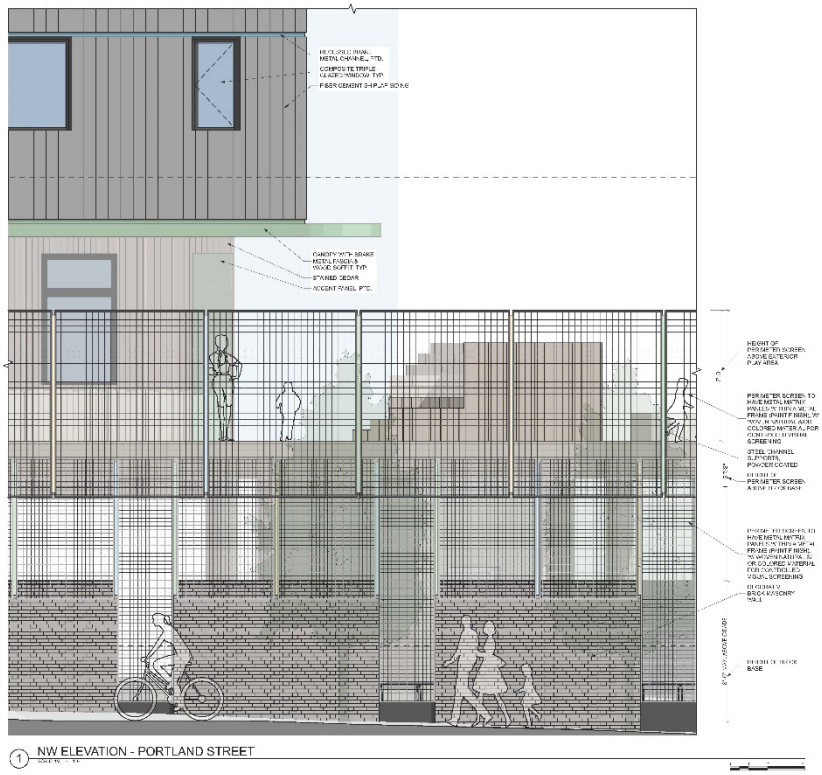
  ii. Does not substantially detract from the prevailing street wall character by introducing such additional setback at critical building locations such as prominent form-defining corners, or create a sense of discontinuity in particularly consistent or continuous settings;
  - Staff do not find the street wall to be negatively impacted by this increased setback because the width of the deviation is limited, the street wall is maintained by the fenced yard and residential building line. The increased set back is mid-block rather than at the corner.

  iii. Does not detract from existing publicly accessible open space by creating an excessive amount of open space in one (1) area or by diminishing the viability or liveliness of that existing open space;
  - Not applicable

  iv. The area of setback is of high quality and character of design and of acceptable orientation to solar access and wind impacts as to be attractive to pedestrian activity.
  - Pedestrian activity is not negatively impacted by this increased setback either via shadow or wind.

  v. Roof top appurtenances: All mechanical equipment, ventilating and air conditioning and other building systems, . . . or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building, as described and illustrated in the Downtown Urban Design Guidelines.
  - This criteria appears to be met with regards to the small portion of the building that is seeking the exception. The elevator overrun is minimized in scale and placed to have limited visibility from the public right-of-way.

- Blank Wall Minimum – B-3 is intended to be an urban, active zone and includes limitations on the length of undifferentiated walls that may impact the ground floor experience and building interface with the public realm. The previous proposal had included a parking wall on Portland Street which exceeded the 30 foot blank wall maximum with an undifferentiated, solid brick wall at the ground level and screen above. The design was since revised to include breaks in the brick wall and screen to provide visual connection, scale, and texture. Staff find that this zoning dimensional requirement is now met.



Parking Requirement Reduction – The Applicant seeks Planning Board approval for a reduced parking requirement. A minimum of 88 spaces (60 residential and 28 staff) are required by Division 20 Off-Street parking. The applicant has provided a Transportation Demand Management plan, traffic analysis, parking analysis, and a parking management plan. Staff, in review of the additional materials, agree with the applicant's projected parking demand of 49 spaces and support the request for a reduced parking requirement based on this analysis (Attachment N). The B-3 zone allows for parking requirements to be met by a variety of methods – fee-in-lieu, off-site parking, car share. See comments below in the Site Plan review for additional staff comment.

X. SUBDIVISION STANDARDS

(14-497(a). Review Criteria)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's subdivision ordinance. Staff comments are below and in *Attachments 1-3.*

1. Water, Air Pollution

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

2 & 3. Adequacy of Water Supply

The applicant has provided evidence of capacity from the Portland Water District with conditions *(*Attachment E*)*.

4. Soil Erosion

No unreasonable soil erosion or reduction in the capacity of the land to hold water is anticipated given the infill site. Site Plan (Plan P4) and Erosion Control Plan (Plan P7) provide information about stabilizing the site during and after construction.

5. Impacts on Existing or Proposed Highways and Public Roads

The applicant provided a traffic and transportation analysis, Transportation Demand Management Plan, parking analysis, and Parking Management statement. Mike Tremblay, Senior Engineer, points out the degree to which Cumberland Avenue will be impacted by the utility connections (Attachment 2):

- *The utilities need to be installed in a moratorium street, per MaineDOT standards, which call for pavement repair of no less than 100 feet in length, for the width of the roadway affected up to the pavement seam or opposite granite curb. This represents the entire width of Cumberland Avenue (about 47 feet) over the 100 foot required distance.*

6. Sanitary Sewer/Stormwater Disposal

A 6-inch sewer line is proposed to service the building and would outlet downhill to Portland Street. No grease trap is proposed – restaurant uses are not allowed as part of the building. The applicant received wastewater capacity letter from Department of Public Works (Attachment F). Storm drain also connects to existing Portland Street infrastructure. Of note is the current City of Portland work being conducted in the surrounding rights-of-way – moratorium repairs will be required in several locations.

7. Solid Waste

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

8. Scenic Beauty

This proposal is not deemed to have an adverse impact on the scenic beauty of the area. The project is within 100' of a historic landmark and included a Historic Preservation Advisory Review at the staff level.

9. Comprehensive Plan

Portland's Plan 2030

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

Livable City: Housing – Local Goals met by this project

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.
- Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.

10. Financial and Technical Capacity

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

11. Wetland/Water Body Impacts

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

12. Groundwater Impacts

There are no anticipated impacts to groundwater supplies.

13. Flood-Prone Area

Per the FEMA flood maps, the site is not located in a flood zone.

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

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

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

XI. SITE PLAN STANDARDS

14-526 Site Plan Standards

Traffic - Access, Circulation, Loading and Servicing
The current proposal keeps one curb cut onto Portland Street for a single entry/exit for all parking spaces. Pick-up/drop-off plan for the day care facility will continue to take place on Cumberland Avenue. The applicant requests the Planning Board to approve changes to the on-street parking designation (Attachment P) which has been reviewed and supported by Senior Traffic Engineer Jeremiah Bartlett. Staff stipulate that the loading zone should be limited to the hours of operation for the day care. The Planning Board must approve changes to on-street parking in this case. The area and signage are indicated on the site plan and will be as follows:

The plan is to remove all the existing parking signage along the project frontage on Cumberland Avenue. This currently shows (from east to west):

- *60 ft of 5 Minute Passenger Loading Zone between the corner of Preble Street and the frontage of Maria's*
- *48' +/- of 30 Minute Vehicle Loading Zone along the frontage of Marias terminating just short of the western end of Maria's frontage*

The proposal is to revise both zones to 15 Minute Passenger Loading zone 7:00 AM to 5:30 PM and extend the zone approximately six feet west to the end of the frontage of the project site.

Sidewalks – The surrounding sidewalks have recent or current sidewalk reconstruction projects that impact this site. Cumberland Avenue was reconstructed three years ago including decorative street lights – the applicant is requested to limit as much as possible disturbance to the sidewalk and moratorium repairs will be required (water connection is currently shown to Cumberland Avenue but could be relocated to Portland Street to avoid the extent of disruption). Preble Street is currently under construction and the sidewalk there will be reconstructed (without street lights) prior to the construction of this proposal – staff do not expect this project to affect that sidewalk. Regarding the Portland Street sidewalk design and reconstruction, staff requested revisions for the sidewalk design to meet the *City of Portland Technical Manual* standards especially regarding curb alignment, pedestrian crossings ramp, street trees, material transition – Portland Street is a concrete sidewalk designation that must transition to brick on Preble Street.

Public Transit Access - No transit shelter is required. The project is within a quarter mile of several existing bus stops.

Parking – The land use code requires 60 parking spaces for the residential project and 28 spaces for day care staff (28 employees according to the applicant's submittal) – yielding a total requirement of 88 parking spaces. 16 spaces are proposed (3 ADA) to be used by day care users according to the Parking Management Plan (Attachment K). The onsite parking is provided in a structured garage (Plan P6). The B-3 zone allows for several options to meet the remainder of the parking requirement including off-site parking, fee-in-lieu, and a carshare equivalent (8 spaces). The Land Use Code gives the Planning Board the discretion to approve a reduced number based on the information provided by the applicant. Staff reviewed the backup data to support the parking demand of 49 spaces stated in the

TDM plan as well as the proposed parking management scheme for tandem parking spaces. However, staff are concerned that no on-site parking is provided for the residential use (Attachment 4). A condition of approval is proposed allowing the applicant to meet the gap of 33 spaces using a combination of off-street lease and fee-in-lieu. In addition, staff made the following requests (Attachment 4):

> *The Applicant indicated that they plan to make up for this gap in demand by providing leased parking offsite or paying into the City's pay-in-lieu program. DPW recommends that off-site parking be identified for at least a majority of the 33 spaces, as parking demand is otherwise likely to be accommodated by public on-street parking.*

City Parking Manager, John Peverada, makes recommendations based on a different framework (Attachment 4), that scales the parking demand to the bedroom count. Though this method is certainly due consideration, as a new method of calculating parking need it would need further evaluation as to the impacts on this project and others.

Snow Storage – None shown – there are no exposed paved areas associated with this project.

Transportation Demand Management – A TDM plan is included in the submission though not required for approval.

Landscape Preservation / Site Landscaping and Screening – There are no significant landscape or natural features to preserve. The applicant shows fence screening for the majority of the site to provide protection/enclosure for the play areas. The majority of the open space is paved hardscape rather than landscape.

Landscape Plan – The project does not include landscaped area – most surface area is used for children's play. The City Arborist requests that a plan to preserve or replace the existing trees.

- On Portland Street, the tree pits pinch the sidewalk down to 4 feet. As such, DPW prefers grates, but defers to the City Arborist.
- Sixty (60) trees are required, ten (10) are provided = 50 trees x $400 = **$20,000 contribution to the Street Tree Fund**

Water Quality, Stormwater Management and Erosion Control - A Stormwater Maintenance Agreement will be required. Staff comments have been addressed regarding the oil/water separator.

- *The project is required to comply with Maine DEP Chapter 500 and City of Portland Technical Manual Section 5 requirements for stormwater management,*
- *They are constructing pervious pavement, roof filters, and a rain garden on their site*

Public Safety - The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime.

The final submission was evaluated for the lighting and safety. The majority of the property has a fence or building at the property line. High levels of lighting are provided at the entrances and recessed areas. Visibility to and from the street through the site is good with sight lines to recessed areas.

Fire Prevention and Public Utilities – Applicant has provided the letter from the Water District and Department of Public Works showing capacity to serve (Attachment E, F). There are no additional comments or concerns from the Fire Department at this time. Peer reviewer comments submitted by Lauren Swett, P.E., consulting civil engineering, have been addressed.

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

Historic Resources – The project is within 100 feet of the Congress Street historic district and included an Advisory Historic Preservation Review as part of the design review (E. Design Standards).

Exterior Lighting incl Street Lighting – Staff evaluated the photometric plan and building lighting for compliance with the Technical Manual. Street lights are not required in this case – already existing on Cumberland Avenue and Portland Street. Sidewalk on Preble will be reconstructed by City. One waiver is required related to light trespass - City of Portland Technical Manual 12.3.4 Light Trespass standard limits the illumination levels to .1 fc at property boundaries. Given the urban, dense built conditions in this downtown location, the area to be illuminated between this new construction and the neighboring buildings is narrow – staff agree that providing more lighting in these locations follows safety and CPTED principles. While the proposed lighting levels exceeds the .1 fc standard, they do not exceed the overall 5.0 fc illumination maximum and therefore should not create nuisance.

In addition, staff recommend a condition of approval to ensure that all building and site lighting proposed meet the Technical Manual with regards to color temperature, full-cut off, and mounting height.

Noise and Vibration – The HVAC will be located and screened from the public ROW and neighboring residential properties.

Construction Management Plan – Staff provided comment as follows – a revised construction management plan must be submitted for review and approval as a condition of approval.

> *- A more detailed CM plan should be submitted, with more detail on trailer locations, site driveways, solid waste storage, erosion and sedimentation controls, etc.*
> *- The current plan appears to call for long-term closure of parking lanes and possibly vehicle travel lanes. It shows fencing extending into both Cumberland Avenue and Portland Street. If closures that affect vehicle traffic are proposed, a detailed traffic management plan must be submitted and approved.*
> *- The CM plan proposes full closure of sidewalks on both Portland Street and Cumberland Avenue. ADA-compliant pedestrian detours must be provided, using MUTCD-compliant signage,*
> *- The CM plan narrative should include a dewatering plan. The Applicant should refer to the more recent CM plan template saved here: https://www.portlandmaine.gov/DocumentCenter/View/18030/General-Construction-Management-Template*

XII. DESIGN STANDARDS

The site is located within B-3 Zone with Downtown Design Guidelines and within 100 feet of the Congress Street Historic District.

Figure 5 View from Portland Street

Staff Analysis: Final design review concluded that the building design generally meets the overall intent of the zone. Revisions were reviewed regarding materials, façade design, screening wall and undifferentiated wall. For full comments, please see Attachment 1.

The surrounding built context includes a variety of building types, eras, and uses. City policy and the B-3 design standards are supportive of infill development with urban character that strengthens the street wall, increases density of uses, creates active frontages. It is appropriate to place taller buildings in this location. The existing church building provides a challenge – the design successfully attaches to this historic, low-rise structure with the use of a connector "hyphen" that provides physical connection of the uses but also keeps the two architectural expressions separate, giving breathing room to the church. The contemporary, simple expression of the residential building is an appropriate foil to the historic church architecture with its more elaborate roof forms and historic character. Applicant is asked to clarify the roof form of the connector.

The scale and massing of the new residential building is appropriate for the downtown setting and keeps the established street walls created on Cumberland Avenue and Portland Street. Staff point out that buildings on these downtown streets typically have a clear, directional face.

Staff originally raised concern about ground level façade design on Cumberland Avenue at the residential building entrance – the level of transparency and material placement was revised to provide more emphasis to the residential entrance and to simplify the material palette. The window size and placement was not significantly altered due to the constraints of the floor elevations and the uses.

The Portland Street façade is primarily structured parking and yard areas – the zoning maximum for inactive façade is exceeded here. More information was provided for the proposed screen on Portland Street (Attachment P25).

Brick at the ground floor creates a grounded base for the building and relates somewhat to the materials of the surrounding street. The ground floor areas were revised to provide transparency and engagement with the pedestrian realm with windows/screens. Generally, staff support the choice to make this building clearly different from the church/day care and finds the contemporary design and grey palate to successfully fit into the existing streetscape. The simple and consistent material placement, dark grey/neutral color are also found to be an appropriate choice in this context.

XIII. INCLUSIONARY ZONING CONDITIONAL USE

The applicant is required by Division 30, Section 14-487 to provide six workforce housing units (on-site or off-site) or pay the fee-in-lieu. The applicant has proposed to provide all of these units on-site and meet the requirements. The Housing Program Manager has the following comments (Attachment 5):

- *The applicant has elected to provide forty-eight (48) units of low-income housing. Of those units, thirty-six (36) are targeted towards households earning at or below 50% AMI, and twelve (12) units target households earning at or below 60% AMI. Twelve (12) out of the 60 units will remain unrestricted.*
- *Based on the requirements outlined in Section 14-487, the development is required to provide a minimum of six (6) units with a total of 8 bedrooms for households earning at or below 100% AMI. As the applicant has elected to provide 80% of its units affordable at 50-60% AMI, they are providing a greater percentage of affordable units (80% versus the IZ requirement of 10%) at lower income targets (50-60% AMI versus the IZ requirement of 100% AMI) than required by the Ensuring Workforce Housing Ordinance. 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 maintains a minimum of six units of housing at or below 100% AMI for a minimum of twenty years. Should the applicant fail to maintain these minimum housing guidelines then the Applicant and the City should enter into an agreed upon Affordable Housing Agreement (AHA).*

XIV. PROPOSED MOTIONS FOR THE PLANNING BOARD TO CONSIDER

A. WAIVERS

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on September 15, 2020 for application PL-001140-2020 relevant to Portland's technical and design standards and other regulations; and the testimony presented at the Planning Board hearing:

1. The Planning Board [**finds/does not find**] that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual *Section 12.3.4 Light Trespass.* The Planning Board [**waives/does not waive**] the *Technical Manual* standard (Technical Manual Section 12.3.4) to allow illumination levels to exceed .1 fc at the property line.

B. INCLUSIONARY ZONING CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on September 15, 2020 for application #PL-001140-2020 relevant to Portland's Inclusionary Zoning Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing, the Planning Board [**finds/does not find**] the proposed conditional use for workforce housing meets the standards of Section 14-484 with the following condition:

1. Should the applicant fail to maintain a minimum of six units of housing restricted to households earning at or below 100% AMI for a term of twenty years, then the applicant and the city should enter into an agreed upon Affordable Housing Agreement (AHA) to be filed as a covenant to the property's deed with the Cumberland County Registry of Deeds based on the requirements outlined in Division 30, Section 14-487, Ensuring Workforce Housing.

C. SUBDIVISION 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 September 15, 2020 for application #PL-001140-2020 relevant to the subdivision regulations, and the testimony presented at the Planning Board hearing, the Planning Board **[finds/does not find]** that the plan is in conformance with the subdivision standards of the land use code subject to the following conditions of approval:

PRIOR TO THE SUBMISSION OF THE PLAT FOR PLANNING BOARD SIGNATURE

1. **Subdivision Plat:** That the Subdivision Plat shall be finalized to the satisfaction of the Planning Authority, Department of Public Works and Corporation Counsel prior to signature by the Planning Board, to include references to residential unit counts; on and off-site parking requirements, stormwater management, waste collection, and other relevant conditions and information.
2. **Easements and Licenses:** That easement and licenses shall be finalized to the satisfaction of the Planning Authority, Department of Public Works, and Corporation Counsel prior to the Planning Board signature of the subdivision plat, pursuant to the following item:
    i. Canopy overhang into the public right-of-way

PRIOR TO ISSUANCE OF A BUILDING PERMIT

1. The signed subdivision plat shall be recorded at the Cumberland County Registry of Deeds.

PRIOR TO CERTIFICATE OF OCCUPANCY

2. A Stormwater Maintenance Agreement for the stormwater drainage system shall be submitted for review by the Planning Authority and Corporation Counsel. Once approved, the document shall be signed and recorded at the Cumberland County Registry of Deeds prior to the issuance of a building permit. Please submit final copies to the Planning Authority.

D. SITE PLAN REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on September 15, 2020 for application PL-001140-2020 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 and [**approves/does not approve**] the application, subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The lighting fixtures shall be revised to meet City of Portland Technical Manual Section 12 standards regarding color temperature, full cut-off fixtures, and mounting heights.

PRIOR TO THE ISSUANCE OF A BUILDING PERMIT

2. The applicant shall submit documentation as to how the existing street trees are to be saved under the Technical Manual standard, Section 4.3, Preservation of Existing Vegetation and tree save measures shall be defined and located in the field as part of the preconstruction meeting.
3. Applicant shall submit to the Planning Authority and Building Authority for review and approval the final Construction Management Plan (CMP).

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

4. Due to site constraints preventing the planting of required street trees in the right-of-way, the sixty (60) street trees as required in Section 14-526(2)(b)(iii) of the Site Plan Ordinance cannot be met; the applicant shall contribute to the tree fund of $400 per tree for fifty (50) trees for a total of $20,000.

E. SITE PLAN REVIEW – PARKING REDUCTION

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 September 15, 2020 for application #PL-001140-2020 relevant to the parking requirement; and the testimony presented at the Planning Board hearing, the Planning Board [approves/does not approve] a reduced parking requirement of 49 parking spaces, subject to the following conditions of approval:

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

5. The applicant shall provide the majority of the thirty-three (33) parking spaces through off-site arrangement with documentation to the Planning Authority of a lease for off-street parking spaces within a quarter mile of the site with a minimum duration of five years. The balance of required spaces shall be met through a contribution to the sustainable transportation fund a fee-in-lieu using the 2020 ENR construction cost index value applied to the baseline $5,000/parking space ($6,637.41) for a total, one-time.

ATTACHMENTS:

Attachments to Memorandum

1. Design Memorandum
2. Department of Public Works comments (revised)
3. IZ Conditional Use Memorandum
4. Parking Comments

Public Comment

PC1 George Rheault 9-11-20
PC2 George Rheault 9-11-20
PC3 George Rheault 9-11-20

Applicant's Submittal

A. Project Description
B. Right, Title and Interest
C. Technical & Financial Capacity
D. Consistency with City Master Plans
E. Utilities
F. Wastewater Capacity Letter
G. Stormwater Management Plan
H. Design Standards Review
I. Zoning Assessment
J. Traffic Assessment
K. Parking Management Plan + TDM
L. Construction Management Plan
M. Neighborhood Meeting Materials
N. Parking Study
O. Lighting cut sheets
P. On-street Parking Diagram
Q. Geotechnical Report

Plans

P1 Cover Sheet
P2 Boundary Survey

P3 C-100 Existing Conditions + Demolition Plan
P4 C-101 Site Plan
P5 C-101A Utility Plan
P6 C102 Basement Parking Plan
P7 C-300 Erosion Control Notes + Details
P8 C-301 Civil Details I
P9 C-302 Civil Details II
P10 C-303 Civil Details III
P11 C-304 Civil Details IV
P12 ESC Notes
P13 Utility Plan
P14 A0.0 Context Images
P15 A1.1 Basement Plan
P16 A1.2 1st Floor Plan
P17 A1.3 Typical Floor Plan
P18 A1.4 Roof Plan
P19 A2.1 Elevations
P20 A2.2 Elevations
P21 A2.3 Elevation
P22 A2.4 Elevation
P23 A2.5 Elevation Details
P24 Renderings
P25 Turning Templates
P26 Construction Management Plan
P27 Photometrics Plans