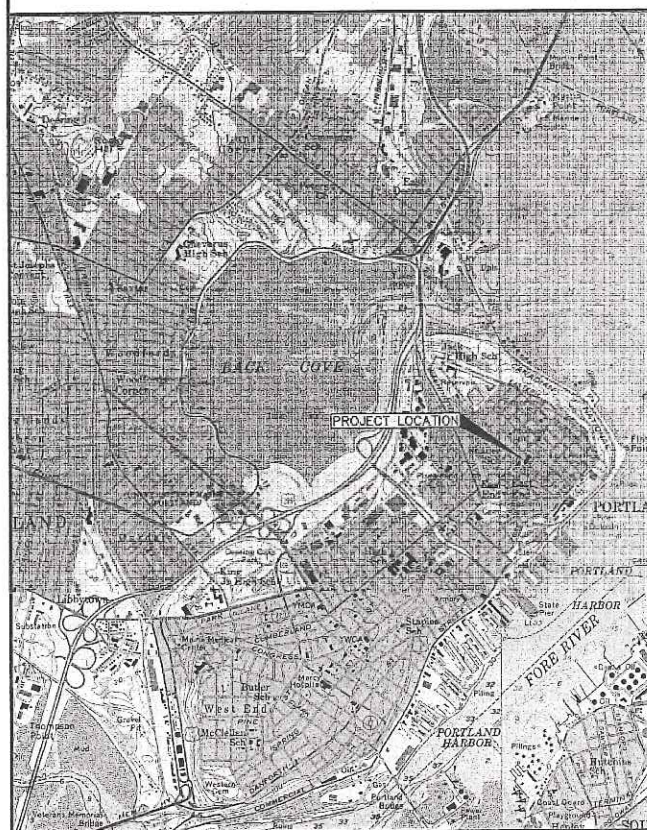


# 4 UNIT APARTMENT BUILDING 93 ST. LAWRENCE STREET LARRY GROSS AND BARBARA COLBY PORTLAND, MAINE

Plan 1

TITLE	DWG NO
COVER SHEET	
GENERAL NOTES, LEGEND AND ABBREVIATIONS AND EXISTING CONDITIONS AND DEMOLITION PLAN	C-100
SITE PLAN	C-101
SUBDIVISION PLAT	C-101A
EROSION CONTROL NOTES AND DETAILS	C-300
SECTIONS AND DETAILS	C-301
STORMWATER MANAGEMENT PLAN	D-100
1st FLOOR PLAN	A1.01
2nd FLOOR PLAN	A1.02
3rd FLOOR PLAN	A1.03
ROOF & MEZZANINE PLAN	A1.04
REAR (EAST) ELEVATION / FRONT(WEST) ELEVATION	A2.01
SIDE (SOUTH) ELEVATION	A2.02
SIDE (NORTH) ELEVATION	A2.03
BOUNDARY & TOPOGRAPHIC SURVEY	1
LANDSCAPE PLAN	L.1

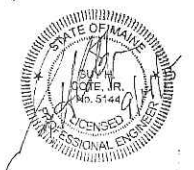
LOCATION MAP

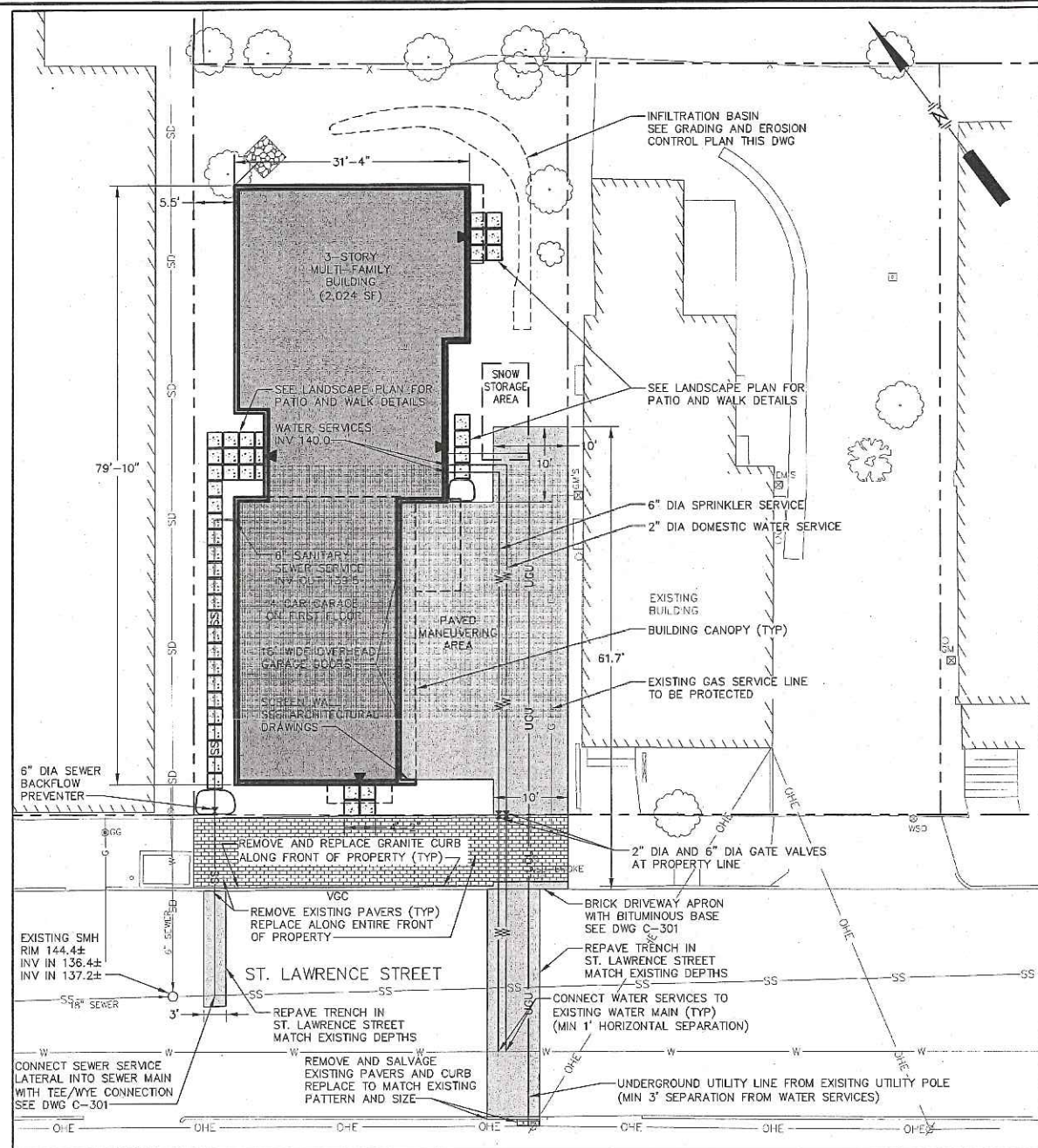


**SME**  
Sevee & Maher Engineers, Inc.

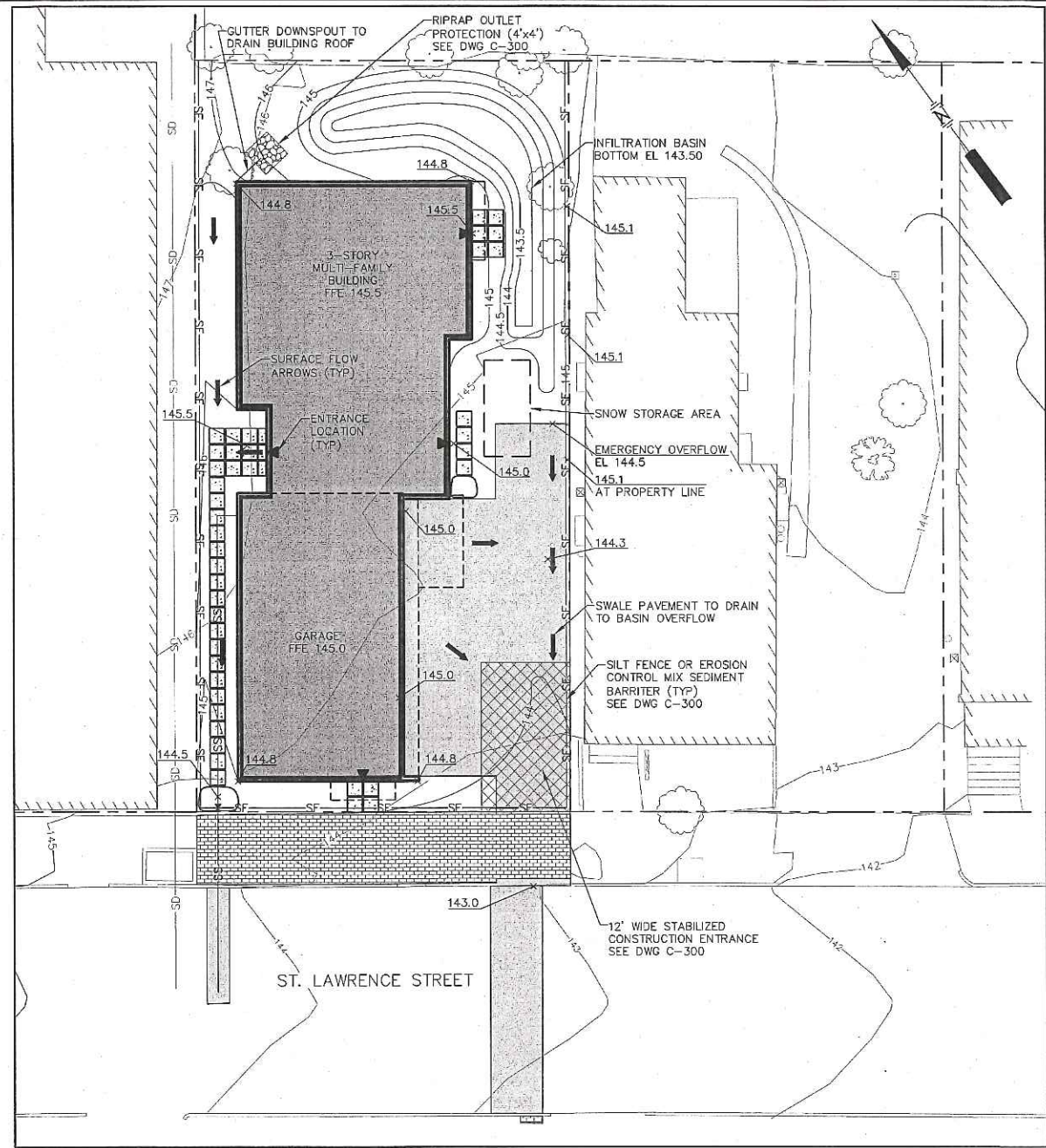
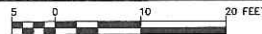
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, PO Box 85A, Cumberland Center, Maine 04021  
Phone 207.829.5016 • Fax 207.829.5692 • www.smemaine.com

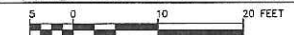




SITE AND UTILITY PLAN

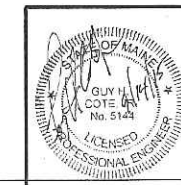


GRADING AND EROSION CONTROL PLAN



NOTES:

1. BASE MAP ADAPTED FROM PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY" BY OWEN HASKELL, INC., FALMOUTH, MAINE, DATED JUNE 11, 2014 AND PLAN ENTITLED "GRADING AND UTILITIES PLAN" BY PINKHAM & GREER CONSULTING ENGINEERS, DATED FEBRUARY 26, 2014.



4 UNIT APARTMENT BUILDING  
93 ST. LAWRENCE STREET  
LARRY GROSS AND BARBARA COLBY  
PORTLAND, MAINE

SITE PLAN

**SME**  
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4 Blanchard Road, PO Box 85A, Cumberland Center, Maine 04021  
Phone 207.829.5016 • Fax 207.829.5692 • www.sremaine.com

DESIGN BY: DPD  
DRAWN BY: JRL  
DATE: 4/27/2015  
CHECKED BY: [Signature]  
LMN: SITE/GRADING  
CTB: SME-STD

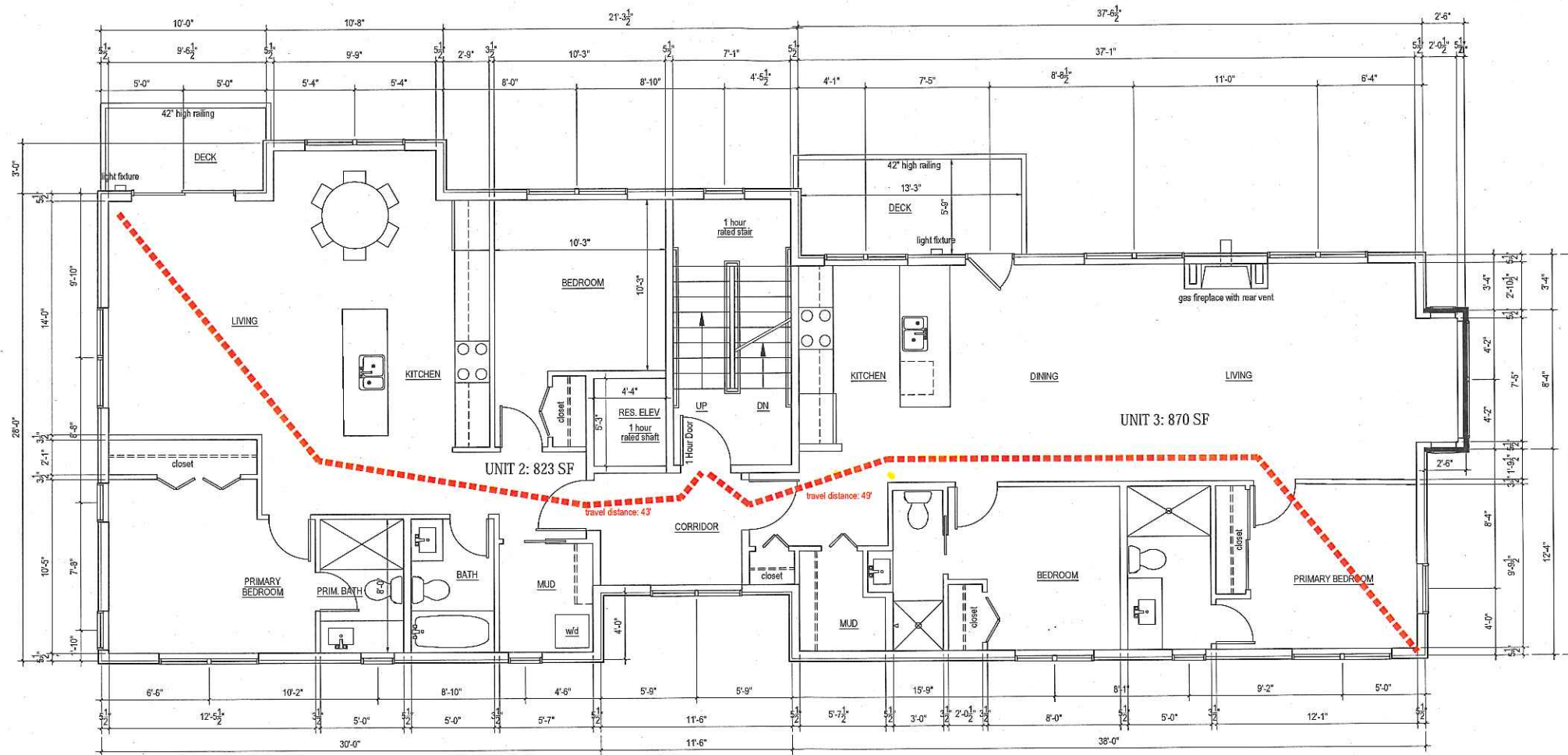
JOB NO. 15086.00 DWG FILE BASE

C-101

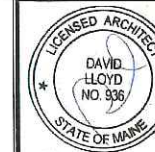
REV.	BY	DATE	STATUS
DPD	9/15	REVISED PER CITY OF PORTLAND COMMENTS	
DPD	7/15	SUBMITTED TO CITY OF PORTLAND FOR SITE PLAN REVIEW	







1 2nd Floor Plan  
1/4" = 1'-0"



Owner/Applicant  
**Barbara Colby and  
 Laurence Gross**  
 PO Box 10152  
 Portland Maine, 04104

Consultant:



Project:  
**4 Unit Apartment Building**  
 93 St. Lawrence Street  
 Portland Maine, 04101  
 CEL: 016 DD10001 B&P 17593/310

Revisions:  
 09-09-2015 revisions per p.b. review

Date:  
 21 July, 2015

Scale:  
 as noted

Submission to  
 Planning Board

**A1.02**



Owner/Applicant  
**Barbara Colby and  
 Laurence Gross**  
 PO Box 10152  
 Portland, Maine, 04104

Consultant:

Architect:  
**ARCHETYPE  
 architects**  
 48 Union Wharf Portland, Maine 04101  
 (207) 772-6022 Fax (207) 772-4056

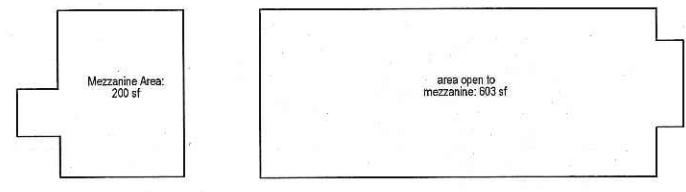
Project:  
**4 Unit Apartment Building**  
 93 St. Lawrence Street  
 Portland, Maine, 04101  
 CUL: 016 D010001 B&P 17303/310

Revisions:  
 09-09-2015 revisions per p.b. review

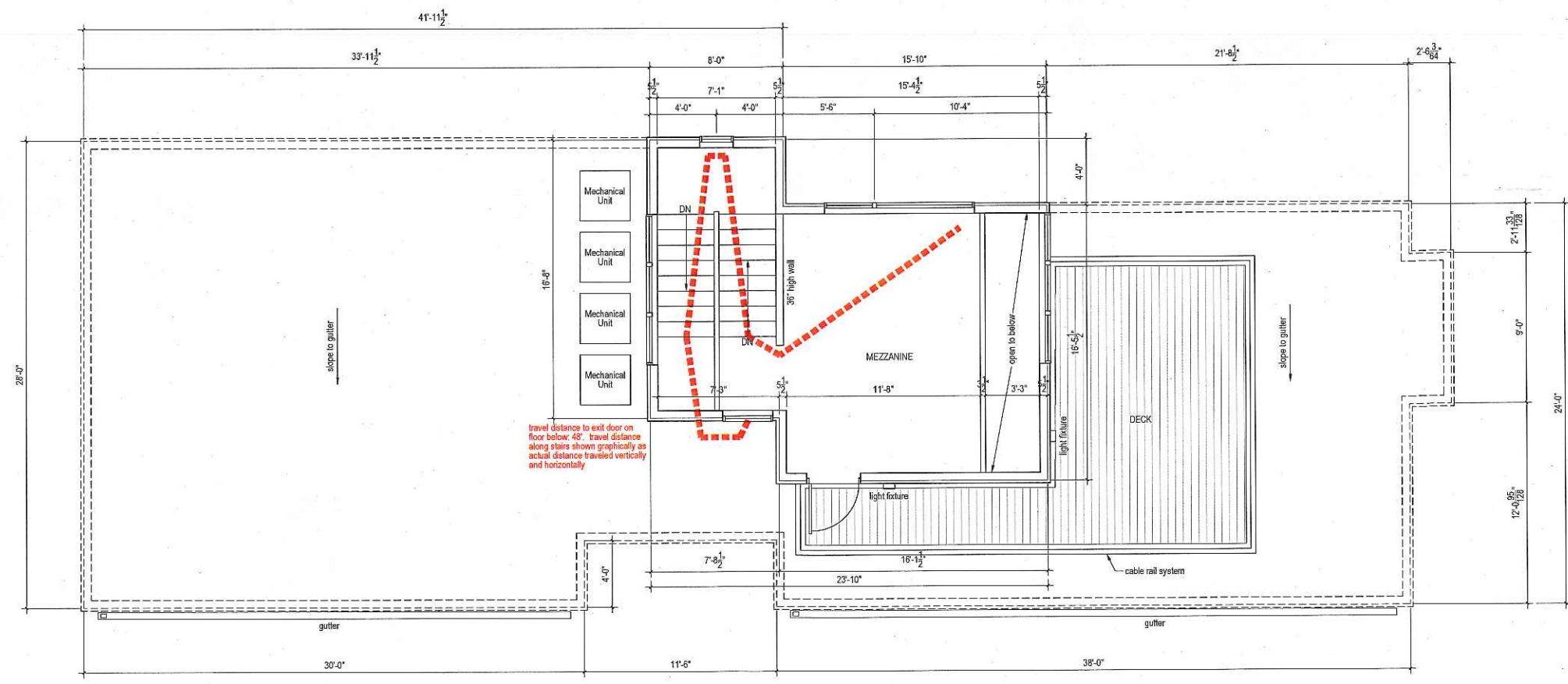
Date: 21 July, 2015  
 Scale: as noted

Submission to  
 Planning Board

**A1.04**

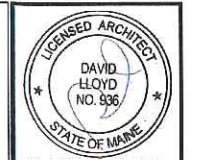


**1 Mezzanine Calculation**  
 1/8" = 1'-0"



travel distance to exit door on floor below 45' travel distance along stairs shown graphically as actual distance traveled vertically and horizontally

**1 Roof & Mezzanine Plan**  
 1/4" = 1'-0"



Owner/Applicant  
**Barbara Colby and  
 Laurence Gross**  
 PO Box 10152  
 Portland, Maine, 04104

Consultant:



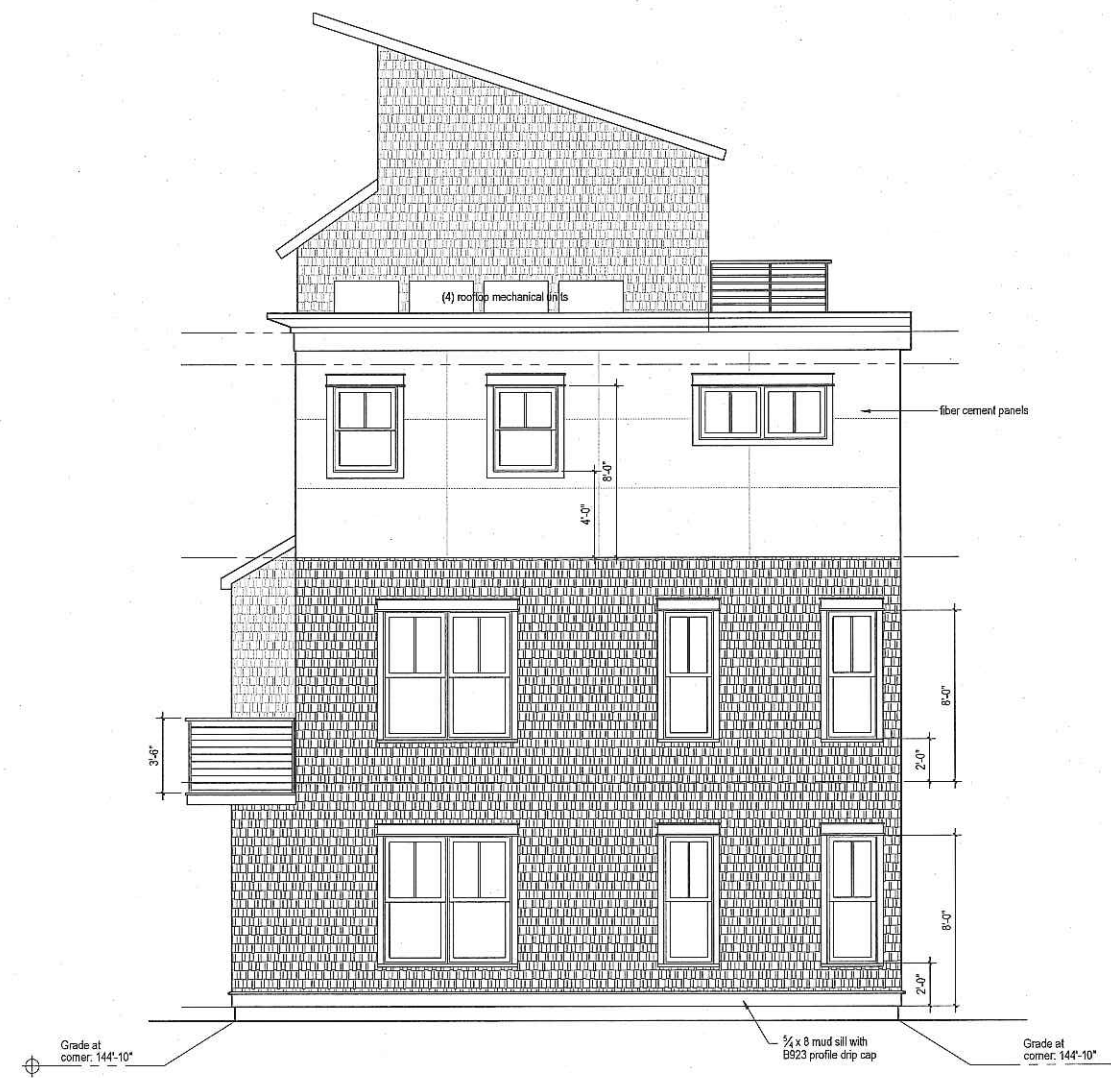
Project:  
**4 Unit Apartment Building**  
 93 St. Lawrence Street  
 Portland, Maine, 04101  
 CBL: 016 D010001 B&P 17303/310

Revisions:  
 09-09-2015 revisions per p.b. review

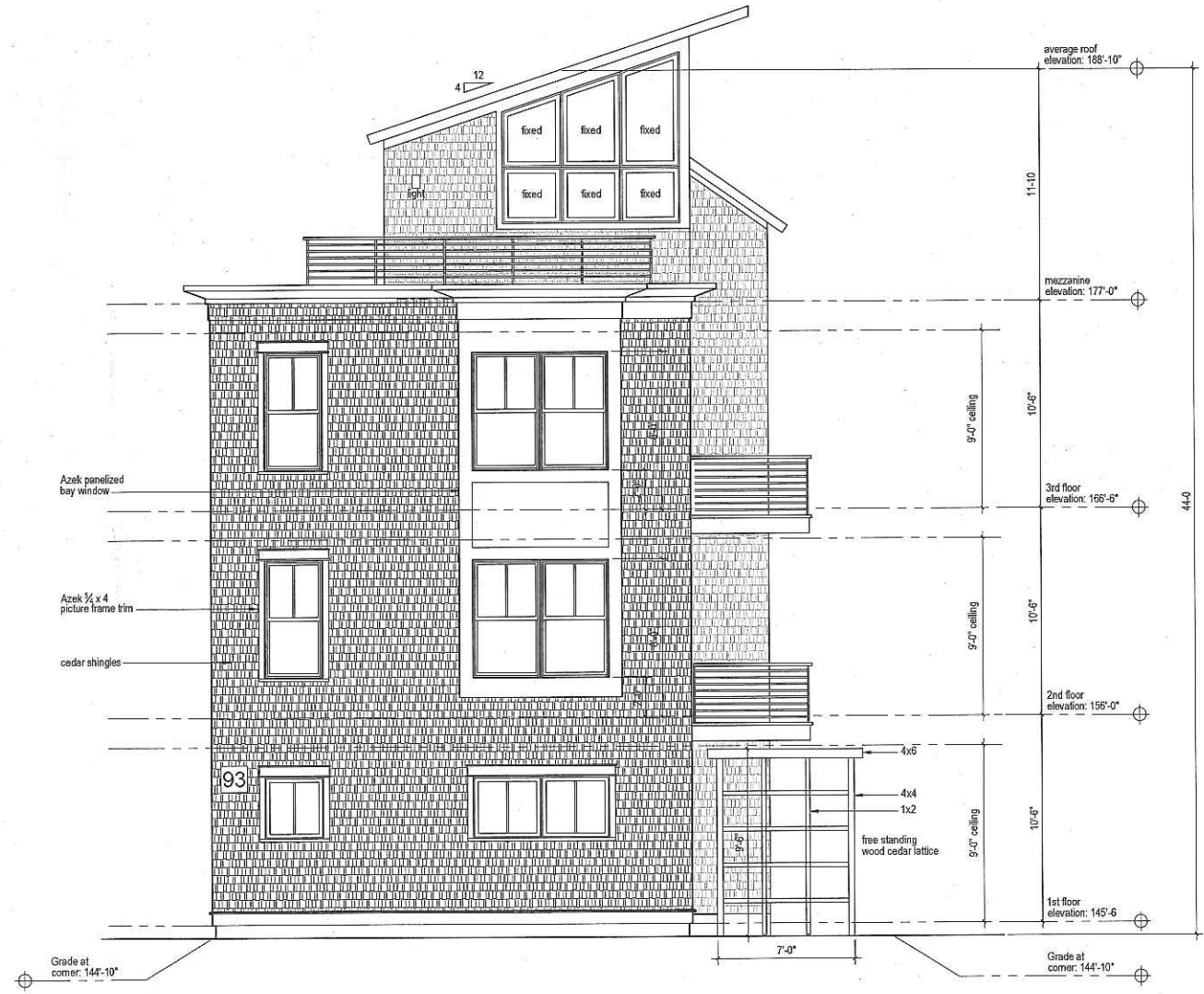
Date:  
 21 July, 2015  
 Scale:  
 as noted

Submission to  
 Planning Board

**A2.01**



**2** Rear (East) Elevation,  
 1/4" = 1'-0"



**1** Front (West) Elevation, St. Lawrence Street  
 1/4" = 1'-0"



2 Side (North) Elevation.  
1/4" = 1'-0"



Owner/Applicant  
**Barbara Colby and  
 Laurence Gross**  
 PO Box 10152  
 Portland Maine, 04104

Consultant

Architect:  
**ARCHETYPE  
 architects**  
 48 Union Wharf Portland, Maine 04101  
 (207) 772-6022 Fax (207) 772-4056

Project:  
**4 Unit Apartment Building**  
 93 St. Lawrence Street  
 Portland Maine, 04101  
 CBL: 016 D01.00001 B&P 17303/510

Revisions:  
 09-09-2015 revisions per p.b. review

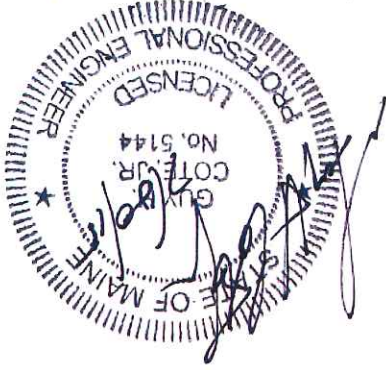
Date: 21 July, 2015  
 Scale: as noted  
 Submission to  
 Planning Board

A2.03





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**CITY OF PORTLAND, MAINE**  
**PLANNING BOARD**  
**LEVEL III SITE PLAN REVIEW APPLICATION**

Prepared for

**LARRY GROSS AND BARBARA COLBY**  
**4-UNIT MULTI-FAMILY APARTMENT BUILDING**

**93 St. Lawrence Street**  
**Portland, Maine**

**July 2015**

**TABLE OF CONTENTS**

Section No.	Title	Page No.
-------------	-------	----------

Application and Submissions Checklist

1	<b>PROJECT DESCRIPTION</b>	1
2	<b>ARTICLE V. - SITE PLAN</b>	2
2	14-526 (a) Transportation Standards	2
2	14-526 (a) Environmental Quality Standards	2
2	A. Preservation of Significant Natural Features	2
3	B. Landscaping and Landscape Preservation	3
3	C. Water Quality, Stormwater Management, and Erosion Control	3
3	14-526 (c) Public Infrastructure and Community Safety Standards	3
3	A. Consistency with City Master Plans	3
4	B. Public Safety and Fire Prevention	4
4	C. Availability and Adequate Capacity of Public Utilities	4
4	14-526 (d) Site Design Standards	4
4	A. Massing, Ventilation and Wind Impact	4
4	B. Shadows	4
4	C. Snow and Ice Loading	4
4	D. View Corridors	4
4	E. Historic Resources	4
4	F. Exterior Lighting	4
5	G. Noise and Vibration	5
5	H. Signage and Wayfinding	5
5	I. Zone Related Design Standards	5
5	J. Solid Waste Generation and Management	5
5	<b>CONSTRUCTION MANAGEMENT PLAN</b>	5

**LIST OF APPENDICES**

APPENDIX A	FIGURE 1 – SITE LOCATION MAP
APPENDIX B	TITLE, RIGHT OR INTEREST
APPENDIX C	FINANCIAL CAPACITY
APPENDIX D	CITY OF PORTLAND GIS MAP
APPENDIX E	FEMA FLOODPLAIN MAP
APPENDIX F	STORMWATER MANAGEMENT REPORT
APPENDIX G	CITY WASTEWATER CAPACITY APPLICATION
APPENDIX H	PORTLAND WATER DISTRICT CAPACITY TO SERVE LETTER

!!



Jeff Levine, AICP, Director  
Planning & Urban Development Department

### Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a *legal signature* per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no Site Plan or Historic Preservation Applications can be reviewed until payment of appropriate application fees are *paid in full* to the Inspections Office, City of Portland Maine by method noted below:

Within 24-48 hours, once my complete application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

Within 24-48 hours, once my application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

I intend to deliver a payment method through the U.S. Postal Service mail once my application paperwork has been electronically delivered.

*Jeff Levine*  
Applicant Signature: \_\_\_\_\_

July 21, 2015  
Date: \_\_\_\_\_

I have provided digital copies and sent them on: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

NOTE:

All electronic paperwork must be delivered to [buildinginspections@portlandmaine.gov](mailto:buildinginspections@portlandmaine.gov) or by physical means i.e. a thumb drive or CD to the Inspections Office, City Hall, 3<sup>rd</sup> Floor, Room 315.

# Level III – Preliminary and Final Site Plans Development Review Application Portland, Maine Planning and Urban Development Department Planning Division



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

### Level III: Site Plan Development includes:

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

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: <http://me-portland.civicplus.com/DocumentCenter/Home/View/1080>

Design Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2355>

Technical Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2356>

**Planning Division**  
Fourth Floor, City Hall  
389 Congress Street  
(207) 874-8719

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

<b>Billing Information</b> Name: Address: City/State : Zip Code:	e-mail: Cell # Work # Billing Information Fax#
<b>Agent/ Representative</b> Name: Sevee & Maher Engineers, Inc. Address: 4 Blanchard Road City/State : Cumberland, ME Zip Code: 04021	e-mail: dpd@smemaine.com Cell # (207) 240-3315 Work # (207) 829-5016 Agent/Representative Contact Information
<b>Owner – (if different from Applicant)</b> Name: Address: City/State : Zip Code:	e-mail: Cell # Home# Work # Owner Contact Information Fax#
<b>Applicant – must be owner, Lessee or Buyer</b> Name: Laurence Gross and Barbara Colby Business Name, if applicable: Address: 91 Saint Lawrence St. City/State :Portland, ME Zip Code: 04101	e-mail: Cell # (207) 232-1619 Fax# Home# Work # Applicant Contact Information

**CONTACT INFORMATION:**

CHART/BLOCK/LOT: G10NE/16D/10  
 PRELIMINARY PLAN \_\_\_\_\_ (date)  
 FINAL PLAN \_\_\_\_\_ (date)

\_\_\_\_\_  
 \_\_\_\_\_  
 A new multi-family apartment building with a 4 car garage on a 5,000 square foot lot.

**PROJECT DESCRIPTION:**

93 Saint Lawrence St, Portland, ME  
**PROPOSED DEVELOPMENT ADDRESS:**

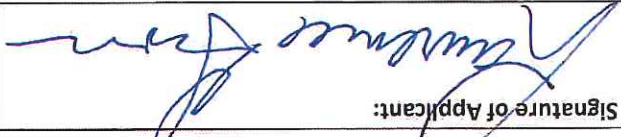
93 Saint Lawrence Street  
**PROJECT NAME:**

<p>Level III Development (check applicable reviews)</p> <p><input checked="" type="checkbox"/> Less than 50,000 sq. ft. (\$500.00)</p> <p><input type="checkbox"/> 50,000 - 100,000 sq. ft. (\$1,000)</p> <p><input type="checkbox"/> 100,000 - 200,000 sq. ft. (\$2,000)</p> <p><input type="checkbox"/> 200,000 - 300,000 sq. ft. (\$3,000)</p> <p><input type="checkbox"/> over \$300,000 sq. ft. (\$5,000)</p> <p><input type="checkbox"/> Parking lots over 11 spaces (\$1,000)</p> <p><input type="checkbox"/> After-the-fact Review (\$1,000.00 plus applicable application fee)</p> <p>Plan Amendments (check applicable reviews)</p> <p><input type="checkbox"/> Planning Staff Review (\$250)</p> <p><input type="checkbox"/> Planning Board Review (\$500)</p> <p>The City invoices separately for the following:</p> <ul style="list-style-type: none"> <li>• Notices (\$.75 each)</li> <li>• Legal Ad (% of total Ad)</li> <li>• Planning Review (\$40.00 hour)</li> <li>• Legal Review (\$75.00 hour)</li> </ul> <p>Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.</p>	<p>Other Reviews (check applicable reviews)</p> <p><input type="checkbox"/> Traffic Movement (\$1,000)</p> <p><input type="checkbox"/> Stormwater Quality (\$250)</p> <p><input type="checkbox"/> Subdivisions (\$500 + \$25/lot)</p> <p><input type="checkbox"/> # of Lots <input type="text"/> x \$25/lot = <input type="text"/></p> <p><input type="checkbox"/> Site Location (\$3,000, except for residential projects which shall be \$200/lot)</p> <p><input type="checkbox"/> # of Lots <input type="text"/> x \$200/lot = <input type="text"/></p> <p><input type="checkbox"/> Other</p> <p><input type="checkbox"/> Change of Use</p> <p><input type="checkbox"/> Flood Plain</p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Design Review</p> <p><input type="checkbox"/> Housing Replacement</p> <p><input type="checkbox"/> Historic Preservation</p>
---	--

**APPLICATION FEES:** Check all reviews that apply. (Payment may be made by Credit Card, Cash or Check payable to the City of Portland.)

<p><b>Engineer</b></p> <p>Name: Daniel P. Diffn, P.E. (SME)</p> <p>Address: 4 Blanchard Rd</p> <p>City/State: Cumberland, ME Zip Code: 04021</p>	<p><b>Engineer Contact Information</b></p> <p>Work # (207) 829-5016</p> <p>Cell # (207) 240-3315</p> <p>Fax# (207) 829-5692</p> <p>e-mail: ddpd@smemaine.com</p>
<p><b>Surveyor</b></p> <p>Name: Owen Haskell</p> <p>Address: 390 U.S. Route 1</p> <p>City/State: Falmouth, ME Zip Code: 04105</p>	<p><b>Surveyor Contact Information</b></p> <p>Work # (207) 774-0424</p> <p>Cell # (207) 774-0511</p> <p>Fax# (207) 774-0511</p> <p>e-mail:</p>
<p><b>Architect</b></p> <p>Name: David Lloyd, Archetype</p> <p>Address: 48 Union Wharf</p> <p>City/State: Portland, ME Zip Code: 04101</p>	<p><b>Architect Contact Information</b></p> <p>Work # (207) 772-6022</p> <p>Call # (207) 831-8627</p> <p>Fax# (207) 772-4056</p> <p>e-mail: lloyd@archetypepa.com</p>
<p><b>Attorney</b></p> <p>Name:</p> <p>Address:</p> <p>City/State:</p> <p>Zip Code:</p>	<p><b>Attorney Contact Information</b></p> <p>Work #</p> <p>Cell #</p> <p>Fax#</p> <p>e-mail:</p>



Date: July 21, 2015	
---------------------	--

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit. This application is for a Level II Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

**APPLICANT SIGNATURE:**

Please refer to the application checklist (attached) for a detailed list of submission requirements.

1. One (1) full size site plans that must be folded.
2. One (1) copy of all written materials or as follows, unless otherwise noted:
  - a. Application form that is completed and signed.
  - b. Cover letter stating the nature of the project.
  - c. All Written Submittals (Sec. 14-525 2. (c)), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

2. In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Building Inspections Office to start the review process.

**APPLICATION SUBMISSION:**

1. All site plans and written application materials must be submitted electronically on a CD or thumb drive with each plan submitted as separate files, with individual file which can be found on the Electronic Plan and Document Submittal page of the City's website at <http://me-portland.civicplus.com/764/Electronic-Plan-and-Document-Submittal>

**PROJECT DATA**

The following information is required where applicable, in order to complete the application.

Total Area of Site	5,000	sq. ft.
Proposed Total Disturbed Area of the Site	4,800	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
<b>Impervious Surface Area</b>		
Impervious Area (Total Existing)	1,310	sq. ft.
Impervious Area (Total Proposed)	3,332	sq. ft.
<b>Building Ground Floor Area and Total Floor Area</b>		
Building Footprint (Total Existing)	0	sq. ft.
Building Footprint (Total Proposed)	2,024	sq. ft.
Building Floor Area (Total Existing)	0	sq. ft.
Building Floor Area (Total Proposed)	6,012	sq. ft.
<b>Zoning</b>		
Existing	Residential 6 (R6)	
Proposed, if applicable		
<b>Land Use</b>		
Existing	Paved parking	
Proposed	Multi-family apartments	
<b>Residential, if applicable</b>		
# of Residential Units (Total Existing)	0	
# of Residential Units (Total Proposed)	4	
# of Lots (Total Proposed)	1	
# of Affordable Housing Units (Total Proposed)	0	
<b>Proposed Bedroom Mix</b>		
# of Efficiency Units (Total Proposed)	0	
# of One-Bedroom Units (Total Proposed)	0	
# of Two-Bedroom Units (Total Proposed)	4	
# of Three-Bedroom Units (Total Proposed)	0	
<b>Parking Spaces</b>		
# of Parking Spaces (Total Existing)	0	
# of Parking Spaces (Total Proposed)	4 - Garage	
# of Handicapped Spaces (Total Proposed)	0	
<b>Bicycle Parking Spaces</b>		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	2	
<b>Estimated Cost of Project</b>		
	\$1,276,000	

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

- Continued on next page -

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

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



PORTLAND FIRE DEPARTMENT  
SITE REVIEW  
FIRE DEPARTMENT CHECKLIST



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

1. Name, address, telephone number of applicant Larry Gross, 91 Saint Lawrence St. Portland, ME 207-232-1619
2. Name address, telephone number of architect David Lloyd, 48 Union Wharf, Portland, ME 207-831-8627

Proposed uses of any structures [NFA and IBC classification]

Square footage of all structures [total and per story] 6,012 square feet

Elevation of all structures 189 FSL (43.5 foot floor to roof)

Proposed fire protection of all structures

- As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)

9. Hydrant locations 120 feet away in St. Lawrence Street

10. Water main[s] size and location 8" main in the street

11. Access to all structures [min. 2 sides] Yes

12. A code summary shall be included referencing NFPA 1 and all fire department. Technical standards.

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

**PROJECT DESCRIPTION**

Larry Gross and Barbara Colby (Owners) propose to construct a 2,024-square-foot apartment building on a 5,000 square foot parcel located at 93 St. Lawrence Street in Portland, Maine see Figure 1 – Site Location Map included in Appendix A. The building will be a three-story, four-unit apartment building with dedicated on-site parking in the garage located on the first floor. The property is located within the Residential 6 (R6) Zoning District and will comply with the City's vision of multifamily dwellings at a high density within this area.

The Owners are residents of the abutting property at 91 St. Lawrence Street and intend to construct a three-story rental property to include; a two-bedroom unit and garage on the first floor and three two-bedroom units between the second and third floors.

The property is currently fully disturbed with a 1,310-square-foot paved parking area along the street frontage and a maintained lawn area to the rear of the property. The proposed building paved vehicle maneuvering area, walks and patios will not result in an increase in developed area on the property, but will increase the on-site impervious area to approximately 3,300 square feet.

The number of dwelling units proposed requires a Level III Site Plan Development Review permit through the City. The following demonstrates the project's compliance with the applicable City of Portland Land Use Ordinance.

**FINAL PLAN – LEVEL III SITE PLAN CHECKLIST REQUIREMENTS**

This application package has been prepared in accordance with the City of Portland Land Use Ordinance and the Level III Site Plan Development Review Application. To address the submission requirements, the Applicant has provided the following:

Right, Title and Interest – See copies of Deed included in Appendix B.

State and/or Federal Permits – Not required for this project.

Evidence of Financial Capacity – See letter of financing provided in Appendix C.

Evidence of Technical Capacity – The Owners have hired qualified professionals to assist in the design, bidding and construction administration for this project as detailed on the application form.

City of Portland GIS Map – See copy of map included in Appendix D.

FEMA Map – See FEMA firmette in Appendix E

**ARTICLE V. - SITE PLAN**

The following demonstrate the project's compliance with Section 14-526 Site Plan Standards.

**14-526 (a) Transportation Standards**

St. Lawrence Street is directly off of Congress Street which is classified as a Major Collector. Four additional housing units would have an insignificant impact on the surrounding street systems. St. Lawrence Street is only 0.3 miles long and has a total travel time of less than 1 minute. The proposed development will not reduce the Level of Service below level "D" as required in in Section 14-526 of the City of Portland Code of Ordinance.

The property will be accessed through one curb cut off St. Lawrence Street. The driveway will be greater than twenty feet from adjacent driveways and has a proposed width of ten feet, in accordance with Section 1.7 of the Portland Technical Manual. A sidewalk exists along the entire length of property's frontage with St. Lawrence Street.

The off-street parking space standards in Section 14-332.1(k) of the City of Portland Code of Ordinances require one parking space per dwelling unit in the Residential 6 (R-6) District. The proposed development provides four parking spots in the first-floor garage, one for each dwelling unit. Section 14-526 of the same document requires two bicycle parking spaces for developments with zero to ten vehicle parking spaces. Two bike hangers will be provided within the garage as shown on the First Floor Plan, Drawing A1.01.

Section 14-526 of the City of Portland Code of Ordinances requires provisions be made for snow storage. The open space north of the driveway will provide sufficient space for snow storage, without encroaching on any of the required parking spaces.

**14-526 (a) Environmental Quality Standards**

**A. Preservation of Significant Natural Features**

The site is currently fully developed with a paved parking area on the southern third of the property and a manicured lawn area over the rest of the property. In addition, the property is in a highly urbanized neighborhood with little to no stands of trees, wetlands or wildlife habitat. Therefore, it is expected that there are no protected natural resources within the property footprint.



**B. Landscaping and Landscape Preservation**

There is limited landscaping on the existing property. With the exception of a narrow row of trees along the northeast property line, the site is generally lawn or paved. The project will result in the cutting of three small trees in this area.

The proposed site landscaping is shown on the Landscape Plan, Drawing L-1. The landscaping is designed to buffer the abutting properties to the northeast and west. In addition, planting areas are designed to enhance the view lines of the new building in accordance with the Ordinance requirements. There will be no exterior servicing areas, dumpsters or on-site utility structures; therefore, screening is not required. There are no required landscaped islands required based on only four (4) proposed parking spaces. Section 4 of the City of Portland Technical Manual requires that one street tree be planted per unit, unless otherwise approved and spaced thirty (30) to forty five (45) feet on center. The site has a total of fifty (50) feet of street frontage and there are street trees to the east and the west, therefore only one street tree is proposed at the frontage of the property, as shown on the Landscape Plan L-1.

**C. Water Quality, Stormwater Management, and Erosion Control**

The proposed development disturbs approximately 4,800 square feet (approximately 0.1 acres). According to Section 4 of the City of Portland Technical Manual any site disturbing less than one acre is exempt from complying with the Basic and General Standards, and acquiring a Stormwater Permit.

However, the City Engineer requested that treatment for the net increase in impervious area be treated for the first 1", or first flush, of all stormwater events. The applicant proposes capturing and infiltrating the runoff from the roof of the new building and north portion of the property in a shallow infiltration basin on the northeast corner of the property. The details of the proposed stormwater management measures are included on the drawings and the Stormwater Management Report in Appendix F. The proposed erosion control measures are detailed on the drawing set provided.

**14-526 (c) Public Infrastructure and Community Safety Standards**

**A. Consistency with City Master Plans**

St. Lawrence Street is considered part of Munjoy Hill, and is included in the Master Plan for Redevelopment of the Eastern Waterfront. The proposed development takes into account the recommendations laid out in the master plan.

**B. Public Safety and Fire Prevention**  
The entrances to the building will be well-lit and visible from the street and adjacent walkways to provide natural surveillance as described in Section 3 of the City of Portland Technical Manual.

There is a fire hydrant located at the corner of Congress Street and St. Lawrence Street, within one hundred twenty (120) feet of the proposed building. The City of Portland Technical Manual requires a fire hydrant within five hundred (500) feet of all structures.

**C. Availability and Adequate Capacity of Public Utilities**  
The proposed development is within two hundred (200) feet of the public sanitary collection and treatment system and is therefore required to connect. A City of Portland Wastewater Capacity Application is included as Appendix G. Water service to the building will be provided from the 8-inch water main in St. Lawrence Street. A Capacity to Serve letter from PWD is included as Appendix H. The electrical and communication services to the building will be underground from the existing utility pole on the opposite side of the street.

#### 14-526 (d) Site Design Standards

**A. Massing, Ventilation and Wind Impact**  
The building will be consistent with the height and mass of the new multi-unit development to the west and existing residential structure to the east. The HVAC equipment will be located on the roof and will not negatively affect the abutting properties.

**B. Shadows**  
The building will be oriented such that there are no impacts to public open space or existing vegetation.

**C. Snow and Ice Loading**  
Snow storage will be provided on site where available and hauled away as necessary. Ice from the building is not in danger of falling onto abutting properties.

**D. View Corridors**  
Site is outside of Downtown Vision View Corridor Protection Plan.

**E. Historic Resources**  
Does not apply to this application.

**F. Exterior Lighting**  
The site lighting has been detailed on the Architectural drawing A1.01 and will consist of full cut-off wall mounted lights at the building entrances and above the garage area. The

utility pole on the south side of St. Lawrence Street has an existing street light to illuminate the streets and walks in front of the property.

**G. Noise and Vibration**

The mechanical equipment will be on the roof of the proposed building and will be screened from St. Lawrence Street by the proposed Mezzanine as shown on the Architectural elevations.

**H. Signage and Wayfinding**

Does not apply to this application.

**I. Zone Related Design Standards**

The proposed multi-family development in the R6 zone will be architecturally compatible with the surrounding neighborhood. The orientation and placement in relationship to the street of the building is consistent with the neighboring structures.

**J. Solid Waste Generation and Management**

Disposal of construction waste will be the responsibility of the selected contractor. Domestic waste will be stored in the trash bin area off the Garage as shown on A1.01.

**CONSTRUCTION MANAGEMENT PLAN**

The proposed development will have minimal impacts on the surrounding traffic patterns. During construction there will be additional truck and construction vehicle traffic, but two-lane traffic will not be interrupted. Due to the proximity to the sidewalk on St. Lawrence Street, foot traffic will be redirected by signs at the nearest intersections during building construction. The installation of water service, sanitary sewer, and utilities will require a new opening in St. Lawrence Street. The resulting lane closers will be coordinated with the City and controlled by the contractor.

**FIGURE 1 – SITE LOCATION MAP**

**APPENDIX A**

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

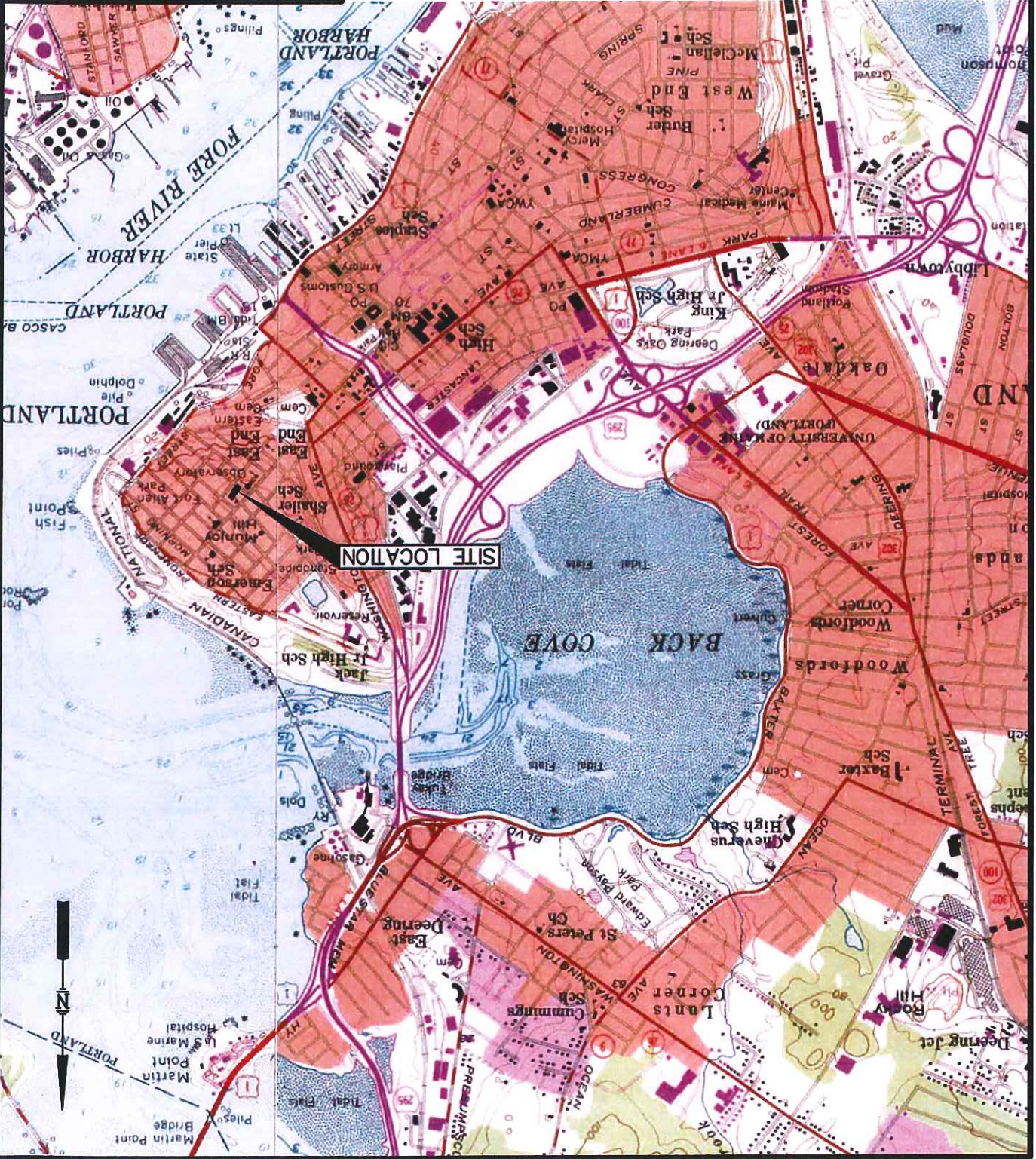
DWG: SITELOC LAM: NONE CTB: SME-STD REV: 7/15/2015

**SME**  
Sevee & Maher Engineers, Inc.



BASE MAP ADAPTED FROM 7.5 MIN USGS TOPO QUADS  
PORTLAND EAST, ME - 1975  
PORTLAND WEST, ME - 1978

**FIGURE 1**  
**SITE LOCATION MAP**  
**4 UNIT APARTMENT BUILDING**  
**93 ST. LAWRENCE STREET**  
**LARRY GROSS AND BARBARA COLBY**  
**PORTLAND, MAINE**



**TITLE, RIGHT OR INTEREST**

**APPENDIX B**

BK 17303FC310

0011710

QUITCLAIM DEED

Know All Men By These Presents That Hilltop Housing, a Maine

General Partnership of 10 Amherst Street, Portland, County of Cumberland and State of Maine,

for consideration paid, grant to Laurence W. Gross

of 91 St. Lawrence Street, Portland, County of Cumberland and State of Maine

with QUITCLAIM COVENANTS:

A certain lot or parcel of land together with any buildings thereon situated in Portland and State of Maine, more particularly described in Exhibit A attached hereto and incorporated herein by reference.

In Witness Whereof, I/we have hereunto set my/our hand(s) this 31st day of January, 2002.

Hilltop Housing

By: *Laurence W. Gross*  
Laurence W. Gross,  
General Partner  
Duly authorized

*Wendy S. Swan*  
Witness

State of Maine  
County of Cumberland

ss.

On this 31st day of January, 2002, personally appeared before me the above named Laurence W. Gross, General Partner of Hilltop Housing

and acknowledged the foregoing to be his/her/their free act and deed in his/her/their said capacity and the free act and deed of said Corporation.

*Wendy S. Swan*  
Notary Public/Attorney at Law

Return to: Laurence W. Gross

*Wendy S. Swan*  
10/13/04



A certain lot or parcel of land, with the buildings thereon, situated on the northwesterly side of St. Lawrence Street adjoining the northwesterly side of land now or formerly of Frederick Rozzi and Patricia J. Rozzi, in the City of Portland, County of Cumberland and State of Maine, and being more particularly described as follows:

Beginning at a point on the northwesterly side of St. Lawrence Street, said point being distant 145 feet southwesterly from the intersection formed by said northwesterly side of St. Lawrence Street and the southwesterly side of Congress Street, said point also marking the northwesterly corner of land now or formerly of Frederick Rozzi and Patricia J. Rozzi, said point being distant 100 feet to the northwesterly side of said Robert S. Morrow, et al, 50 feet to a point which is distant southwesterly 85 feet 8 inches from the southwesterly corner of land now or formerly of Bantam Realty Co., thence in a general westerly direction 100 feet to the northwesterly side of St. Lawrence Street, thence in a general southerly direction by said northwesterly side of St. Lawrence Street 50 feet to land now or formerly of Frederick Rozzi et al, and the point of beginning.

Also, all right title and interest, if any, and to all passages, streets or alleys adjoining, abutting and/or running with the above described premises.

This conveyance is subject to all of the restrictions, covenants, and agreements contained in the Indenture by which said premises were conveyed to Frederick Rozzi and Patricia J. Rozzi by Portland Renewal Authority, said Indenture is dated October 15, 1978 and recorded in said Registry of Deeds in Book 3147, Page 321.

The foregoing, as all the other covenants contained in the aforesaid Indenture to Frederick Rozzi and Patricia J. Rozzi from Portland Renewal Authority, shall be a covenant running with the land and shall be enforceable in the same manner as prescribed in said Indenture for the enforcement of the covenants therein contained.

RECEIVED  
REGISTRY OF DEEDS  
2002 FEB - 8 AM 11:31  
PORTLAND COUNTY  
John R. Carr



Exhibit A - Deed

Title No: 02030146

BK 17303 PG 11



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

[New Search!](#)

**Current Owner Information:**

**CBL** 016 D010001

**Land Use Type** VACANT LAND

**Verify legal use with** Inspections Division

**Property Location** 93 ST LAWRENCE ST

**Owner Information** GROSS LAURENCE W

PO BOX 10152

PORTLAND ME 04104

**Book and Page** 17303/310

**Legal Description** 16-D-10

ST LAWRENCE ST 93-95

**Acres** 5000 SF

0.1148

**Current Assessed Valuation:**

**TAX ACCT NO.** 2558

**LAND VALUE** \$47,400.00

**BUILDING VALUE** \$0.00

**NET TAXABLE - REAL ESTATE** \$47,400.00

PO BOX 10152

PORTLAND ME 04104

**TAX AMOUNT** \$948.00

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



[View Map](#)

**Sales Information:**

**Sale Date** 2/8/2002

**Type** LAND

**Price** \$0.00

**Book/Page** 17303/310

**Price** \$0.00

**Book/Page** 7458/345

**Sale Date** 10/30/1986

**Type** LAND + BUILDING

**Price** \$0.00

**Book/Page** 17303/310

**Price** \$0.00

**Book/Page** 7458/345

Best viewed at 800x600, with Internet Explorer



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- [Applications](#)
- [Doing Business](#)
- [Maps](#)
- [Tax Relief](#)
- [Tax Roll](#)
- [Q & A](#)
- [Browse City](#)
- [Services a-z](#)
- [Browse facts and links a-z](#)

**FINANCIAL CAPACITY**

**APPENDIX C**



MAILING ADDRESS - 50 Industrial Park Rd, Saco, ME 04072 - 1-877-5ACO-BID

July 1, 2015

City of Portland  
389 Congress Street  
Portland, Maine 04101

Property: 93 St. Lawrence Street, Portland, Maine 04101

To Whom It May Concern:

Please be advised that Laurence "Larry" Gross and Barbara Colby have been preapproved for construction loan financing by Saco & Biddeford Savings Institution reference the construction of a 4 unit owner occupied property located at 93 St. Lawrence Street in Portland, Maine.

The loan is contingent upon final underwriting and approval by Saco & Biddeford Savings Institution and the City of Portland issuing a building permit.

I may be contacted at our South Portland Office at (207) 602-7657 or via email at [decourceyp@sbsavings.com](mailto:decourceyp@sbsavings.com).

Sincerely,

Patrick Decourcey  
AVP-Loan Officer

Saco & Biddeford Savings Institution/South Portland  
Mailing: 50 Industrial Park Road  
Saco, ME 04072  
Phone: 207-602-7657  
Fax: 207-504-8049  
Email: [decourceyp@sbsavings.com](mailto:decourceyp@sbsavings.com)

SACO • 207-284-4591 • Fax: 207-282-7908  
BIDDEFORD • 207-284-0134 • Fax: 207-282-7909  
WESTBROOK • 207-856-0049 • Fax: 207-856-0031  
SCARBOROUGH • 207-883-2955 • Fax: 207-883-3862  
SOUTH PORTLAND • 207-767-7422 • Fax: 207-767-7234  
OLD ORCHARD BEACH • 207-934-2191 • Fax: 207-934-3872

MEMBER FDIC



[www.sbsavings.com](http://www.sbsavings.com)

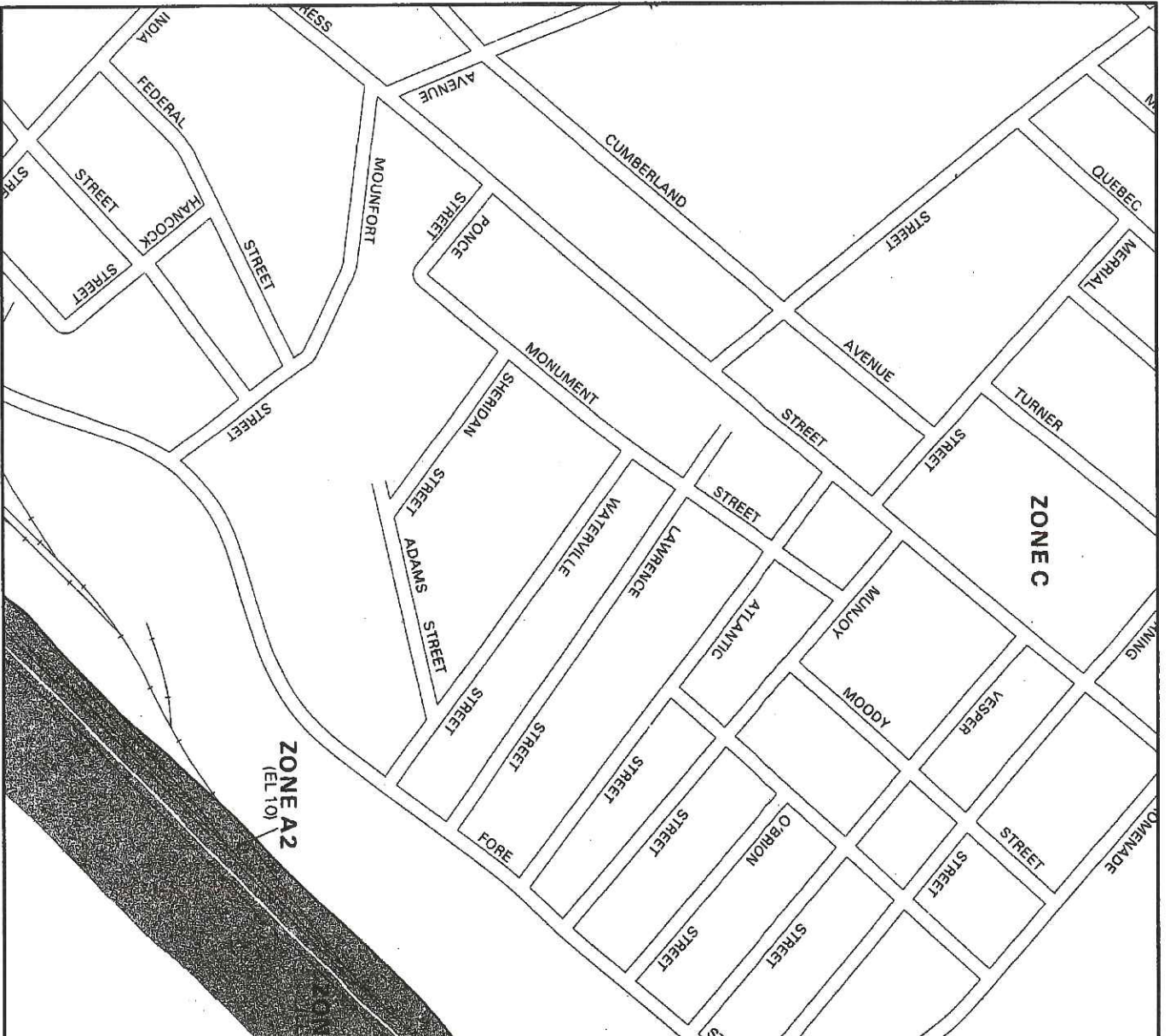
**CITY OF PORTLAND GIS MAP**

**APPENDIX D**



**FEMA FLOODPLAIN MAP**

**APPENDIX E**



**NATIONAL FLOOD INSURANCE PROGRAM**

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**FIRM**  
**FLOOD INSURANCE RATE MAP**

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CITY OF  
**PORTLAND, MAINE**  
CUMBERLAND COUNTY

---


PANEL 14 OF 17  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

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**COMMUNITY-PANEL NUMBER**  
230051 0014 B

**EFFECTIVE DATE:**  
JULY 17, 1986

---

  
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](http://www.msc.fema.gov)

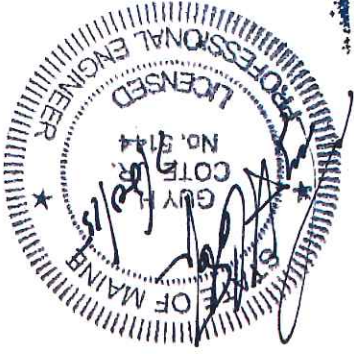
**STORMWATER MANAGEMENT REPORT**

**APPENDIX F**



ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

Sevee & Maher Engineers, Inc.



July 2015

93 St. Lawrence Street  
Portland, Maine

LARRY GROSS AND BARBARA COLBY  
4-UNIT MULTI-FAMILY APARTMENT BUILDING

Prepared for

CITY OF PORTLAND, MAINE  
PLANNING BOARD  
STORMWATER MANAGEMENT REPORT

Table No.	Title	Page No.
1	PROPOSED INCREASE OF IMPERVIOUS AREA.....	2
2	STORMWATER QUANTITY SUMMARY.....	3

**LIST OF TABLES**

APPENDIX A NRCS SOIL REPORT  
 APPENDIX C PRE-DEVELOPMENT HYDROCAD CALCULATIONS  
 APPENDIX D POST-DEVELOPMENT HYDROCAD CALCULATIONS

**LIST OF APPENDICES**

Section No.	Title	Page No.
1.0	INTRODUCTION.....	1
2.0	PROJECT DESCRIPTION.....	1
3.0	SITE WATERSHED.....	1
4.0	STORMWATER QUANTITY ANALYSIS.....	3
5.0	SUMMARY.....	3

**TABLE OF CONTENTS**

# STORMWATER MANAGEMENT REPORT

## 1.0 INTRODUCTION

The following outlines the stormwater management design for the proposed apartment building and associated site improvements at 93 St. Lawrence Street in Portland, Maine. The stormwater design prepared by Sevee & Maher Engineers, Inc. (SME) is based on the water quality and quantity objectives identified in the City Ordinances and by the City of Portland Engineer during the pre-application meeting.

## 2.0 PROJECT DESCRIPTION

Larry Gross proposes to construct a three-story, 2,042-square-foot multifamily apartment building on the existing 5,000 square foot lot. The site is currently fully developed with 1,310 square feet of paved parking along St. Lawrence Street and manicured lawn on the remainder of the site. The project will include the building, 1,150 square feet of paved vehicular access and sidewalks, plantings, utility connections and an infiltration basin to address stormwater. The project will result in no increase in developed area and an increase in impervious area of 1,864 square feet.

## 3.0 SITE WATERSHED

On-site soils were identified using the Natural Resources Conservation Service (NRCS) soil information for Cumberland County, Maine. A copy of the custom Soil Resource Report is included in Appendix B. The soil within the area of work consists of Hincley gravelly sandy loam (HIB) which is classified as "excessively drained" and hydrologic soil group (HSG) A soils. In existing conditions, the north portion of the site drains to the east and onto the abutting property. The majority of the site drains to the southeast and then flows onto the street. For the purposes of this analysis, the low point in the sidewalk to the south of the property was identified as Analysis Point (AP) 1, and the eastern property line near the abutter's backyard was identified as Analysis Point (AP) 2.

In developed conditions, the flow to the abutter's backyard has been removed and the north portion of the lot and the entire building will drain to a proposed infiltration basin on the eastern corner of the site. An emergency overflow has been provided so that if the infiltration basin overtops during larger storms, the flow will drain across the paved traffic area and flow into the St. Lawrence Street road drainage. The southern portion of the site will sheet flow to St. Lawrence Street similar to existing conditions.

Pre-development and post-development stormwater management plans identify the on-site drainage patterns before and after development (See Drawings D-100 and D-101) and are included in the plan set. Appendices B and C provide pre- and post-development calculations using TR-20 methodologies prepared with the HydroCAD computer stormwater modeling system by Applied Microcomputer Systems of Chocorua, New Hampshire.

#### **4.0 STORMWATER QUALITY ANALYSIS**

The City of Portland has requested as a form of stormwater quality and quantity control that the first inch of rain water be collected and treated for the net increase of impervious area on the property. Table 1 provides more detail on the proposed increase of impervious area.

**TABLE 1**

**PROPOSED INCREASE OF IMPERVIOUS AREA**

	Existing (sf)	Post Development (sf)	Difference (sf)
<b>Total Impervious</b>	1,310	3,174	1,864
Pavement/Sidewalks	1,310	1,150	-160
Building	0	2,024	2,024
<b>Open Space</b>	3,690	1,826	1,864

The additional 1,864 square feet (sf) of impervious area will be treated by collecting the runoff from the proposed building roof area (2,024 sf) in a gutter system and directing it into the proposed infiltration basin. Therefore, the basin will treat in excess of the net increase of impervious area through infiltration.

The stormwater management for the 93 St. Lawrence Street project will have no adverse impact to the downstream drainage or abutting properties and the required treatment is provided for the net increase in impervious area.

## 6.0 SUMMARY

The post-development flows have been analyzed for the 2-year, 10-year and 25-year storms using HydroCAD (see Appendices C and D). The infiltration qualities of the soil for the infiltration basin were conservatively estimated at 1.42 inches/hour, based on the National Resources Conservation Service's characterization of the soils on site (Hinckley gravelly sandy loam). Using the higher infiltration rates for Hinckley soils would greatly reduce the post development peak flows. In addition, based on the size of the area draining to the existing storm drains, the increased peak flows would have an insignificant impact on the existing stormwater infrastructure.

AP	2-yr Storm		10-yr Storm		25-yr Storm	
	Pre- (cfs)	Post- (cfs)	Pre- (cfs)	Post- (cfs)	Pre- (cfs)	Post- (cfs)
1	0.01	0.05	0.11	0.14	0.17	0.24
2	0.00	0.00	0.00	0.00	0.00	0.00

**STORMWATER QUANTITY SUMMARY**

**TABLE 2**

Stormwater quantity is managed to the maximum extent practicable through minimizing the amount of impervious area on the site and through the proposed infiltration basin on the east portion of the property. Table 2 below demonstrates peak flow rates from the subwatershed areas at the two analysis points shown on Drawings D-100 and D-101.

## 5.0 STORMWATER QUANTITY ANALYSIS

The infiltration basin has been designed in accordance with the MEDDP Stormwater BMP Manual. The post-development analysis provided in Appendix C demonstrates that the infiltration basin will collect and infiltrate the runoff directed to it during a 2-year storm without overtopping.

NRCS SOIL REPORT

APPENDIX A



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine



# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCs State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCs) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCs Web Soil Survey, the site for official soil survey information.

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# Contents

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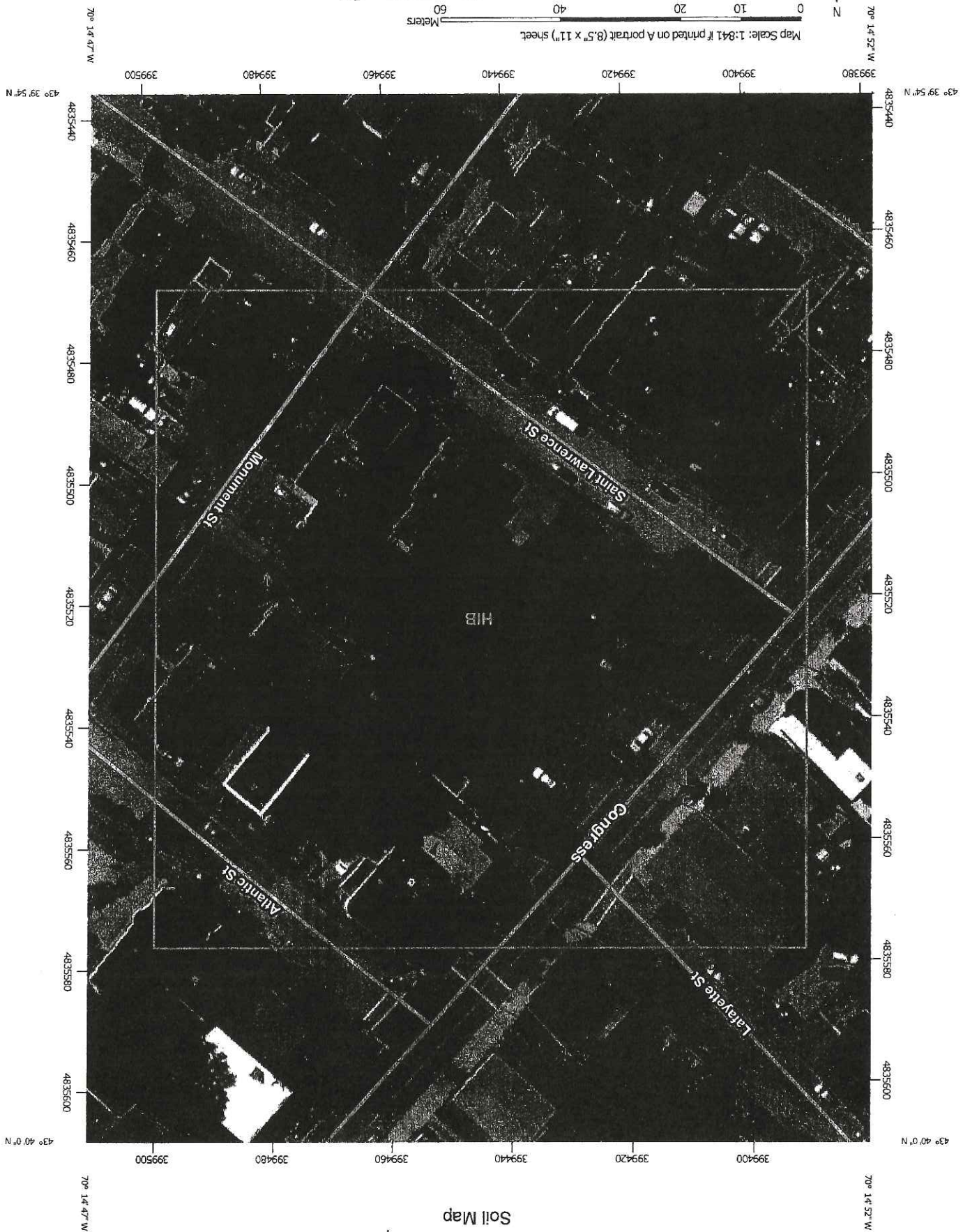
Preface.....	2
Soil Map.....	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Cumberland County and Part of Oxford County, Maine.....	10
H1B—Hinckley gravelly sandy loam, 3 to 8 percent slopes.....	10
References.....	11

# Soil Map







































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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report  
Soil Map



## MAP LEGEND

	Area of Interest (AOI)		Spot Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
<b>Special Point Features</b>			
	Blowout	<b>Water Features</b>	
	Borrow Pit		Streams and Canals
	Clay Spot	<b>Transportation</b>	
	Closed Depression		Rails
	Gravel Pit		Interstate Highways
	Gravelly Spot		US Routes
	Landfill		Major Roads
	Lava Flow		Local Roads
	Marsh or swamp	<b>Background</b>	
	Mine or Quarry		Aerial Photography
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

## 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: <http://websilsurvey.nrcs.usda.gov>  
 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 9, Sep 13, 2014

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

Date(s) aerial images were photographed: Jul 31, 2013—Aug 11, 2013

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

## Map Unit Legend

Cumberland County and Part of Oxford County, Maine (ME005)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
H1B	Hinckley gravelly sandy loam, 3 to 8 percent slopes	2.9	100.0%
Totals for Area of Interest		2.9	100.0%

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example. Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Cumberland County and Part of Oxford County, Maine

### HIB—Hinkley gravelly sandy loam, 3 to 8 percent slopes

#### Map Unit Setting

National map unit symbol: bhnp  
Elevation: 10 to 2,000 feet  
Mean annual precipitation: 30 to 48 inches  
Mean annual air temperature: 37 to 46 degrees F  
Frost-free period: 90 to 160 days  
Farmland classification: Farmland of statewide importance

#### Map Unit Composition

Hinkley and similar soils: 85 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Hinkley

##### Setting

Landform: Outwash terraces  
Landform position (two-dimensional): Toeslope  
Landform position (three-dimensional): Tread  
Down-slope shape: Linear  
Across-slope shape: Linear  
Parent material: Sandy-skeletal glaciofluvial deposits derived from granite and gneiss

##### Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material  
H1 - 1 to 8 inches: gravelly sandy loam  
H2 - 8 to 11 inches: gravelly sandy loam  
H3 - 11 to 25 inches: gravelly loamy sand  
H4 - 25 to 65 inches: very gravelly sand

##### Properties and qualities

Slope: 3 to 8 percent  
Depth to restrictive feature: More than 80 inches  
Natural drainage class: Excessively drained  
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 14.17 in/hr)  
Depth to water table: More than 80 inches  
Frequency of flooding: None  
Frequency of ponding: None  
Available water storage in profile: Very low (about 2.6 inches)

##### Interpretive groups

Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 3s  
Hydrologic Soil Group: A



## References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilias, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)
- Soil Survey Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=steiprdb1043084>

Custom Soil Resource Report

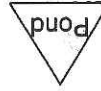
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

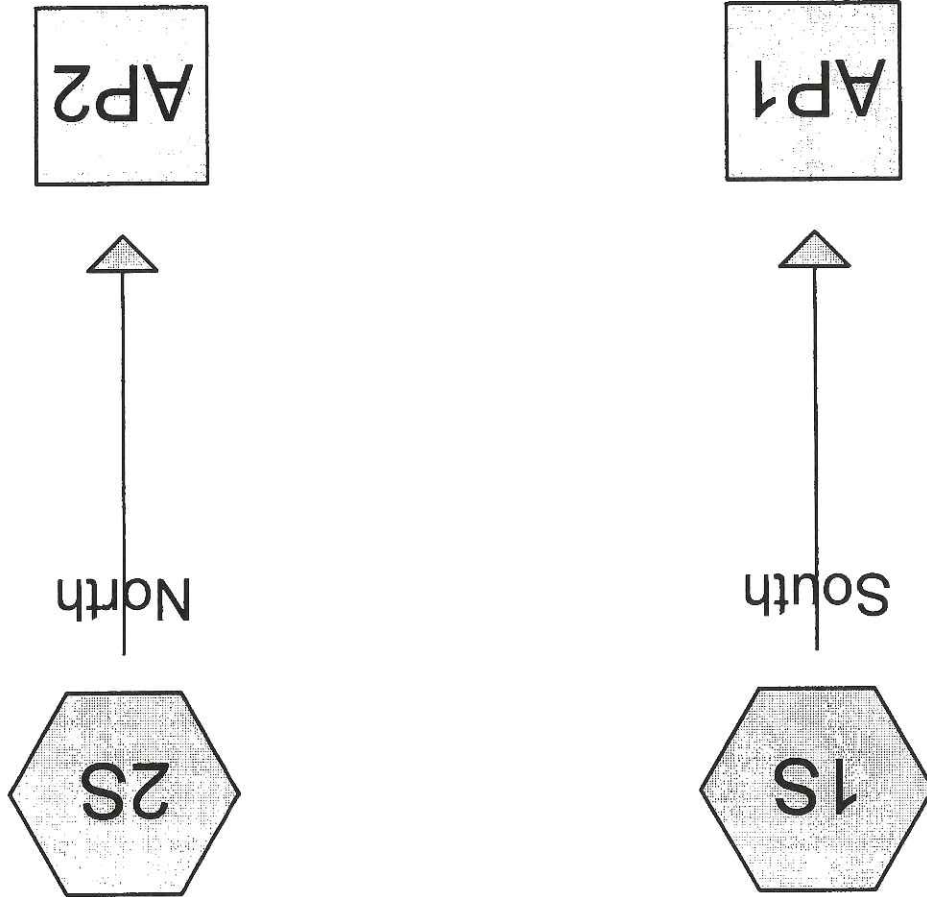
**PRE-DEVELOPMENT HYDROCAD CALCULATIONS**

**APPENDIX B**



# St. Lawrence Street Drainage

## Abutter's Backyard



**Summary for Subcatchment 1S: South**

Runoff = 0.01 cfs @ 12.34 hrs, Volume= 0.003 af, Depth= 0.27"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3,576	39	>75% Grass cover, Good, HSG A	8.9	0.0250	0.18	0.16	Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.00"
1,754	98	Paved parking, HSG A	0.1	0.0250	0.80	0.21	Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.00"
5,330	58	Weighted Average	0.2	0.0250	3.21	3.21	Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
133	Total		9.2				

**Summary for Subcatchment 2S: North**

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
815	39	>75% Grass cover, Good, HSG A	5.7	0.0250	0.16	0.16	Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.00"
815	39	>75% Grass cover, Good, HSG A	815	100.00%	100.00%	100.00%	Pervious Area

**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.122 ac, 32.91% Impervious, Inflow Depth = 0.27" for 2-Year event  
 Inflow = 0.01 cfs @ 12.34 hrs, Volume= 0.003 af  
 Outflow = 0.01 cfs @ 12.34 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min  
 Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

**Summary for Reach AP2: Abutter's Backyard**

Inflow Area = 0.019 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min  
 Routing by Stor-Ind+Trans method, Time Span = 0.00-30.00 hrs, dt = 0.01 hrs

**Summary for Subcatchment 1S: South**

Runoff = 0.11 cfs @ 12.15 hrs, Volume= 0.010 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3,576	39	>75% Grass cover, Good, HSG A	8.9	95	0.0250	0.18	Sheet Flow, A-B	
1,754	98	Paved parking, HSG A	0.1	5	0.0250	0.80	Sheet Flow, B-C	
5,330	58	Weighted Average	0.2	33	0.0250	3.21	Sheet Flow, C-D	
3,576		67.09% Pervious Area					Smooth surfaces n= 0.011 P2= 3.00"	
1,754		32.91% Impervious Area					Paved Kv= 20.3 fps	
9.2	133	Total						

Runoff = 0.00 cfs @ 13.75 hrs, Volume= 0.000 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
815	39	>75% Grass cover, Good, HSG A	5.7	54	0.0250	0.16	Sheet Flow, A-B	
100.00%		Pervious Area						
815		100.00% Pervious Area						
9.2	133	Total						

**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.122 ac, 32.91% Impervious, Inflow Depth = 1.01" for 10-Year event  
 Inflow = 0.11 cfs @ 12.15 hrs, Volume= 0.010 af  
 Outflow = 0.11 cfs @ 12.15 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

**Archetype- 93 Saint Lawrence Existing**

Prepared by Sevee & Maher Engineers, Inc.

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**Summary for Reach AP2: Abutter's Backyard**

Inflow Area = 0.019 ac, 0.00% Impervious, Inflow Depth = 0.14" for 10-Year event  
Inflow = 0.00 cfs @ 13.75 hrs, Volume = 0.000 af  
Outflow = 0.00 cfs @ 13.75 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min  
Routing by Stor-Ind+Trans method, Time Span = 0.00-30.00 hrs, dt = 0.01 hrs



**Summary for Subcatchment 1S: South**

Runoff = 0.17 cfs @ 12.14 hrs, Volume= 0.015 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description	39	98	Total
3,576	39	>75% Grass cover, Good, HSG A	1,754	98	1,754
5,330	58	Weighted Average	3,576	1,754	5,330
1,754	98	Paved parking, HSG A	67.09% Pervious Area	32.91% Impervious Area	
8.9	95	Sheet Flow, A-B	0.18	0.0250	0.18
		Grass: Short n= 0.150 P2= 3.00"			
0.1	5	Sheet Flow, B-C	0.80	0.0250	0.80
		Smooth surfaces n= 0.011 P2= 3.00"			
0.2	33	Shallow Concentrated Flow, C-D	3.21	0.0250	3.21
		Paved K <sub>v</sub> = 20.3 fps			
9.2	133	Total			

Runoff = 0.00 cfs @ 12.39 hrs, Volume= 0.000 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description	39	54	Total
815	39	>75% Grass cover, Good, HSG A	100.00% Pervious Area		
5.7	54	Sheet Flow, A-B	0.16	0.0250	0.16
		Grass: Short n= 0.150 P2= 3.00"			
Tc Length (min)					
815					
Slope (ft/ft)					
0.16					
Velocity (ft/sec)					
Capacity (cfs)					
Description					

**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.122 ac, 32.91% Impervious, Inflow Depth = 1.45" for 25-Year event  
 Inflow = 0.17 cfs @ 12.14 hrs, Volume= 0.015 af  
 Outflow = 0.17 cfs @ 12.14 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

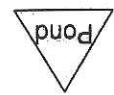
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

**Summary for Reach AP2: Abutter's Backyard**

Inflow Area = 0.019 ac, 0.00% Impervious, Inflow Depth = 0.31" for 25-Year event  
 Inflow = 0.00 cfs @ 12.39 hrs, Volume = 0.000 af  
 Outflow = 0.00 cfs @ 12.39 hrs, Volume = 0.000 af, Atten = 0%, Lag = 0.0 min  
 Routing by Stor-Ind+Trans method, Time Span = 0.00-30.00 hrs, dt = 0.01 hrs

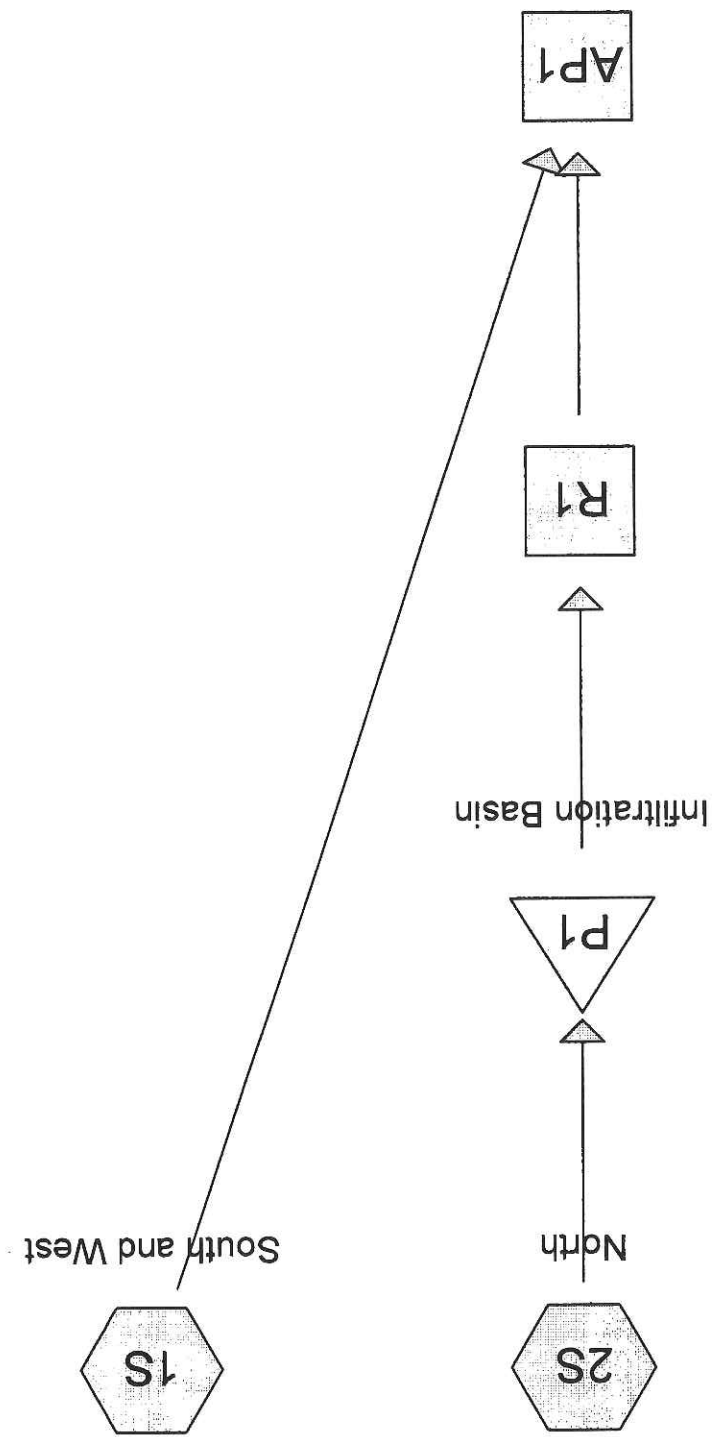
POST-DEVELOPMENT HYDROCAD CALCULATIONS

APPENDIX C



Routing Diagram for Archetype- 93 Saint Lawrence Proposed  
 Prepared by Sevee & Maher Engineers, Inc., Printed 7/16/2015  
 HydroCAD® 10.00 s/n 01260 © 2012 HydroCAD Software Solutions LLC

St. Lawrence Street  
 Drainage



**Summary for Subcatchment 1S: South and West**

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1,125	39	>75% Grass cover, Good, HSG A	1,125				
1,451	98	Paved parking, HSG A	1,451				
2,576	72	Weighted Average					
		43.67% Pervious Area					
		56.33% Impervious Area					
4.4	40	0.0250	4.4				Sheet Flow, A-B
		Grass: Short n= 0.150 P2= 3.00"					
0.7	60	0.0333	0.7				Sheet Flow, B-C
		Smooth surfaces n= 0.011 P2= 3.00"					
0.2	45	0.0220	0.2				Shallow Concentrated Flow, C-D
		Paved Kv= 20.3 fps					
5.3	145	Total	5.3				

**Summary for Subcatchment 2S: North**

Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.006 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

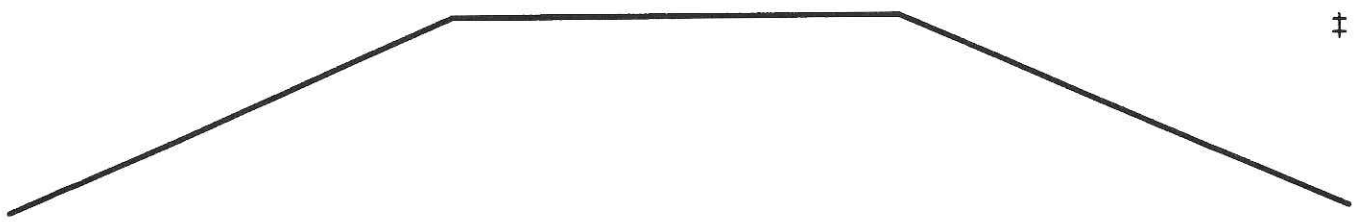
Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1,501	39	>75% Grass cover, Good, HSG A	1,501				
2,024	98	Unconnected roofs, HSG A	2,024				
27	98	Paved parking, HSG A	27				
3,552	73	Weighted Average					
		42.26% Pervious Area					
		57.74% Impervious Area					
2,051			2,051				
		98.68% Unconnected					
2,024			2,024				
5.0			5.0				Direct Entry, Tc MUST BE 5 MIN OR GREATER

**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.141 ac, 57.15% Impervious, Inflow Depth = 0.34" for 2-Year event  
 Inflow = 0.05 cfs @ 12.09 hrs, Volume = 0.004 af  
 Outflow = 0.05 cfs @ 12.09 hrs, Volume = 0.004 af, Atten=0%, Lag=0.0 min  
 Routing by Stor-Ind+Trans method, Time Span=0.00-30.00 hrs, dt=0.01 hrs

**Summary for Reach R1:**

Inflow Area = 0.082 ac, 57.74% Impervious, Inflow Depth = 0.00" for 2-Year event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af, Atten=0%, Lag=0.0 min  
 Routing by Stor-Ind+Trans method, Time Span=0.00-30.00 hrs, dt=0.01 hrs  
 Max. Velocity=0.00 fps, Min. Travel Time=0.0 min  
 Avg. Velocity = 0.00 fps, Avg. Travel Time=0.0 min  
 Peak Storage=0 cf @ 0.00 hrs  
 Average Depth at Peak Storage=0.00'  
 Bank-Full Depth=0.50' Flow Area=10.0 sf, Capacity=80.40 cfs  
 10.00' x 0.50' deep channel, n=0.013 Asphalt, smooth  
 Side Slope Z-value=20.0' /' Top Width=30.00'  
 Length=70.0' Slope=0.0214' /'  
 Inlet Invert=144.50', Outlet Invert=143.00'



**Summary for Pond P1: Infiltration Basin**

Inflow Area = 0.082 ac, 57.74% Impervious, Inflow Depth = 0.86" for 2-Year event  
 Inflow = 0.08 cfs @ 12.08 hrs, Volume = 0.006 af  
 Outflow = 0.01 cfs @ 13.58 hrs, Volume = 0.006 af, Atten=90%, Lag=89.9 min  
 Discarded = 0.01 cfs @ 13.58 hrs, Volume = 0.006 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume = 0.000 af  
 Routing by Stor-Ind method, Time Span=0.00-30.00 hrs, dt=0.01 hrs  
 Peak Elev=144.10' @ 13.58 hrs Surf.Area=235 sf Storage=98 cf  
 Plug-Flow detention time=149.5 min calculated for 0.006 af (100% of inflow)  
 Center-of-Mass det. time=149.5 min ( 1,018.3 - 868.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	143.50'	525 cf	Custom Stage Data (Prismatic) listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.50	96	0	0
144.00	206	76	76
144.50	346	138	214
145.00	900	312	525

Device	Routing	Invert	Outlet Devices
#1	Primary	144.50'	9.0' long x 5.0' breadth Broad-Crested Rectangular Weir
Head (feet)			0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
Coef. (English)			2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English)			2.34 2.50 2.70 2.68 2.66 2.65 2.65
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	143.50'	1.420 in/hr Exfiltration over Surface area above 143.40'
Conductivity to Groundwater Elevation = 0.00'			Excluded Surface area = 0 sf

Discarded Outflow Max=0.01 cfs @ 13.58 hrs HW=144.10' (Free Discharge)  
 ↳2=Exfiltration (Controls 0.01 cfs)

Primary Outflow Max=0.00 cfs @ 0.00 hrs HW=143.50' (Free Discharge)  
 ↳1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

**Summary for Subcatchment 1S: South and West**

Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.010 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1,125	39	>75% Grass cover, Good, HSG A	1,451	98			
1,451	98	Paved parking, HSG A	2,576	72			
		Weighted Average	1,125				
		43.67% Pervious Area	1,451				
		56.33% Impervious Area					
4.4	40	0.0250	0.15				Sheet Flow, A-B
		Grass: Short n= 0.150 P2= 3.00"					
		Sheet Flow, B-C					
		Smooth surfaces n= 0.011 P2= 3.00"					
0.7	60	0.0333	1.47				Shallow Concentrated Flow, C-D
		3.01					
0.2	45	0.0220					Paved Kv= 20.3 fps
5.3	145	Total					

**Summary for Subcatchment 2S: North**

Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1,501	39	>75% Grass cover, Good, HSG A	1,501	98			
2,024	98	Unconnected roofs, HSG A	2,024	98			
27	98	Paved parking, HSG A	3,552	73			
		Weighted Average	1,501				
		42.26% Pervious Area	2,051				
		57.74% Impervious Area	2,024				
		98.68% Unconnected					
5.0		Direct Entry, Tc MUST BE 5 MIN OR GREATER					

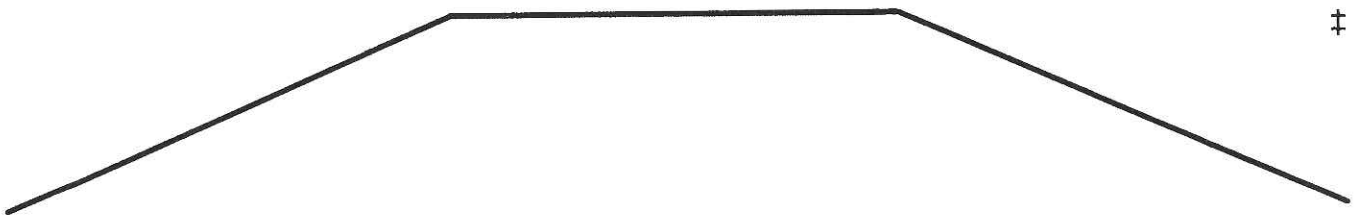


**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.141 ac, 57.15% Impervious, Inflow Depth = 1.01" for 10-Year event  
 Inflow = 0.14 cfs @ 12.08 hrs, Volume = 0.012 af  
 Outflow = 0.14 cfs @ 12.08 hrs, Volume = 0.012 af, Atten=0%, Lag=0.0 min  
 Routing by Stor-Ind+Trans method, Time Span=0.00-30.00 hrs, dt=0.01 hrs

**Summary for Reach R1:**

Inflow Area = 0.082 ac, 57.74% Impervious, Inflow Depth = 0.31" for 10-Year event  
 Inflow = 0.06 cfs @ 12.37 hrs, Volume = 0.002 af  
 Outflow = 0.06 cfs @ 12.43 hrs, Volume = 0.002 af, Atten=4%, Lag=3.5 min  
 Routing by Stor-Ind+Trans method, Time Span=0.00-30.00 hrs, dt=0.01 hrs  
 Max. Velocity=0.70 fps, Min. Travel Time=1.7 min  
 Avg. Velocity = 0.50 fps, Avg. Travel Time=2.3 min  
 Peak Storage=6 cf @ 12.40 hrs  
 Average Depth at Peak Storage=0.01'  
 Bank-Full Depth=0.50' Flow Area=10.0 sf, Capacity=80.40 cfs  
 10.00' x 0.50' deep channel, n=0.013 Asphalt, smooth  
 Side Slope Z-value=20.0'/' Top Width=30.00'  
 Length=70.0' Slope=0.0214'/'  
 Inlet Invert=144.50', Outlet Invert=143.00'



**Summary for Pond P1: Infiltration Basin**

Inflow Area = 0.082 ac, 57.74% Impervious, Inflow Depth = 2.05" for 10-Year event  
 Inflow = 0.20 cfs @ 12.08 hrs, Volume = 0.014 af  
 Outflow = 0.07 cfs @ 12.37 hrs, Volume = 0.014 af, Atten=64%, Lag=17.7 min  
 Discarded = 0.01 cfs @ 12.37 hrs, Volume = 0.012 af  
 Primary = 0.06 cfs @ 12.37 hrs, Volume = 0.002 af  
 Routing by Stor-Ind method, Time Span=0.00-30.00 hrs, dt=0.01 hrs  
 Peak Elev=144.52' @ 12.37 hrs Surf.Area=368 sf Storage=221 cf  
 Plug-Flow detention time=203.1 min calculated for 0.014 af (100% of inflow)  
 Center-of-Mass det. time=203.1 min ( 1,045.3 - 842.2 )

**Archetype- 93 Saint Lawrence Proposed**

Prepared by Sevee & Maher Engineers, Inc.

HydroCAD® 10.00 s/n 01260 © 2012 HydroCAD Software Solutions LLC

Volume	Invert	Avail. Storage	Storage Description
#1	143.50'	525 cf	Custom Stage Data (Prismatic) listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
143.50	96	0	0
144.00	206	76	76
144.50	346	138	214
145.00	900	312	525

Device	Routing	Invert	Outlet Devices
#1	Primary	144.50'	9.0' long x 5.0' breadth Broad-Crested Rectangular Weir

Head (feet)	2.50	3.00	3.50	4.00	4.50	5.00	5.50
Coef. (English)	2.34	2.50	2.70	2.68	2.66	2.65	2.65
1.420 in/hr Exfiltration over Surface area above 143.40'	2.67	2.66	2.68	2.70	2.74	2.79	2.88
Conductivity to Groundwater Elevation = 0.00'	143.50'	Excluded Surface area = 0 sf					

Discarded Outflow Max=0.01 cfs @ 12.37 hrs HW=144.52' (Free Discharge)  
 ↳2=Exfiltration ( Controls 0.01 cfs)

Primary Outflow Max=0.06 cfs @ 12.37 hrs HW=144.52' (Free Discharge)  
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 0.06 cfs @ 0.33 fps)

**Summary for Subcatchment 15: South and West**

Runoff = 0.18 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 2.59"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1,125	39	>75% Grass cover, Good, HSG A	1,125				
1,451	98	Paved parking, HSG A	1,451				
2,576	72	Weighted Average					
		43.67% Pervious Area					
		56.33% Impervious Area					
4.4	40	0.0250	4.4	0.15			Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.00"
0.7	60	0.0333	0.7	1.47			Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.00"
0.2	45	0.0220	0.2	3.01			Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
5.3	145	Total	5.3				

**Summary for Subcatchment 25: North**

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 2.68"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1,501	39	>75% Grass cover, Good, HSG A	1,501				
2,024	98	Unconnected roofs, HSG A	2,024				
27	98	Paved parking, HSG A	27				
3,552	73	Weighted Average					
		42.26% Pervious Area					
		57.74% Impervious Area					
2,051			2,051				
2,024			2,024				
5.0			5.0				Direct Entry, Tc MUST BE 5 MIN OR GREATER

**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.141 ac, 57.15% Impervious, Inflow Depth = 1.54" for 25-Year event  
 Inflow = 0.24 cfs @ 12.21 hrs, Volume = 0.018 af  
 Outflow = 0.24 cfs @ 12.21 hrs, Volume = 0.018 af, Atten= 0%, Lag= 0.0 min  
 Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

**Summary for Reach R1:**

Inflow Area = 0.082 ac, 57.74% Impervious, Inflow Depth = 0.78" for 25-Year event  
 Inflow = 0.15 cfs @ 12.17 hrs, Volume = 0.005 af  
 Outflow = 0.14 cfs @ 12.21 hrs, Volume = 0.005 af, Atten= 5%, Lag= 2.5 min  
 Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.98 fps, Min. Travel Time= 1.2 min  
 Avg. Velocity = 0.53 fps, Avg. Travel Time= 2.2 min  
 Peak Storage= 10 cf @ 12.19 hrs  
 Average Depth at Peak Storage= 0.01'  
 Bank-Full Depth= 0.50' Flow Area= 10.0 sf, Capacity= 80.40 cfs  
 10.00' x 0.50' deep channel, n= 0.013 Asphalt, smooth  
 Side Slope Z-value= 20.0' /' Top Width= 30.00'  
 Length= 70.0' Slope= 0.0214' /'  
 Inlet Invert= 144.50', Outlet Invert= 143.00'



**Summary for Pond P1: Infiltration Basin**

Inflow Area = 0.082 ac, 57.74% Impervious, Inflow Depth = 2.68" for 25-Year event  
 Inflow = 0.26 cfs @ 12.08 hrs, Volume = 0.018 af  
 Outflow = 0.16 cfs @ 12.17 hrs, Volume = 0.018 af, Atten= 38%, Lag= 5.7 min  
 Discarded = 0.01 cfs @ 12.17 hrs, Volume = 0.013 af  
 Primary = 0.15 cfs @ 12.17 hrs, Volume = 0.005 af  
 Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Peak Elev= 144.54' @ 12.17 hrs Surf.Area= 387 sf Storage= 227 cf  
 Plug-Flow detention time= 172.6 min calculated for 0.018 af (100% of inflow)  
 Center-of-Mass det. time= 172.6 min ( 1,007.0 - 834.4 )

Volume	Invert	Avail. Storage	Storage Description
#1	143.50'	525 cf	Custom Stage Data (Prismatic) listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.50	96	0	0
144.00	206	76	76
144.50	346	138	214
145.00	900	312	525

Device	Routing	Invert	Outlet Devices
#1	Primary	144.50'	9.0' long x 5.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 Coef. (English) 2.34 2.50 2.70 2.68 2.66 2.65 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88 1.420 in/hr Exfiltration over Surface area above 143.40' Conductivity to Groundwater Elevation = 0.00' Excluded Surface area = 0 sf			
#2	Discarded	143.50'	1.420 in/hr Exfiltration over Surface area above 143.40'

**Discarded Outflow** Max=0.01 cfs @ 12.17 hrs HW=144.54' (Free Discharge)  
 ↳2=Exfiltration ( Controls 0.01 cfs)

**Primary Outflow** Max=0.15 cfs @ 12.17 hrs HW=144.54' (Free Discharge)  
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 0.15 cfs @ 0.45 fps)

**CITY WASTEWATER CAPACITY APPLICATION**

**APPENDIX G**

**CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION**

Department of Public Services,  
55 Portland Street,  
Portland, Maine 04101-2991  
Date: 6/25/205



Mr. Frank J. Brancey,  
Senior Engineering Technician,  
Phone #: (207) 874-8832,  
Fax #: (207) 874-8852,  
E-mail: fjb@portlandmaine.gov

1. Please, Submit Utility, Site, and Locus Plans.  
Site Address: 93 Saint Lawrence Street

Chart Block Lot Number: G10NE/16D/10

Proposed Use: Multi-Family Housing	Site Category
Existing Sanitary Flows: 0 GPD	Commercial (see part 4 below)
Existing Process Flows: 0 GPD	Industrial (complete part 5 below)
Description and location of City sewer that is to receive the proposed building sewer lateral.	Governmental
18" line located in Saint Lawrence St. south of the lot.	Residential
	Other (specify)

2. Please, Submit Contact Information.

City Planner's Name: Larry Gross  
 Owner/Developer Name: 91 Saint Lawrence St, Portland, ME  
 Owner/Developer Address: 91 Saint Lawrence St, Portland, ME  
 Phone: 207-232-1619  
 Fax: E-mail:  
 Engineering Consultant Name: Daniel P. Diffin, P.E.  
 Engineering Consultant Address: 4 Blanchard Rd, Cumberland, ME 04021  
 Phone: 207-829-5016  
 Fax: E-mail: ddpd@smemaine.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: 630 GPD  
 Peaking Factor/ Peak Times: 6

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, X Other (specify) TR-16

(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:

Size of External Grease Interceptor:

Retention Time:

Peaking Factor/ Peak Times:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet)

**5. Please, Submit Industrial Process Wastewater Flow Calculations**

Estimated Industrial Process Wastewater Flows Generated:

0 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 below, or attached, as a separate sheet)

Notes, Comments or Calculation

Number of Bedrooms: 7

Daily Water Demand: 7 x 90 gallons/day = 630 gallons/day

Peak Flow: 630 gallons/day x 6 = 3,780 gallons/day 2.625 gal/min



**PORTLAND WATER DISTRICT  
CAPACITY TO SERVE LETTER**

**APPENDIX H**



**Portland Water District**

FROM SEBAGO LAKE TO CASCO BAY

June 11, 2015

Sevee & Maher Engineers, Inc.  
4 Blanchard Road  
P.O. Box 85A  
Cumberland Center, ME 04021

Attn: Daniel Diffin, P.E.  
Re: 91 St. Lawrence Street - Portland  
Ability to Serve with PWD Water

Dear Mr. Diffin:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on May 13, 2015. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter.

Conditions of Service

The following conditions of service apply:

- New service(s) may be installed through the properties frontage on St. Lawrence Street. A single service line may be used to serve both domestic and fire protection needs. The split for the sprinkler service must be located after the water meter, and must include a non-testable backflow prevention device. The meter must be appropriately sized to accommodate the necessary flows for fire protection. Prior to activation of the water service, the sprinkler system designer must provide documentation of the sprinkler system demands.

- Please note that only one meter and one bill will be associated to each domestic service line. This one master meter would be located in a common space that all tenants could gain access to if necessary.

- Water District approval of water infrastructure plans will be required for the project prior to construction. As your project progresses, we advise that you submit any preliminary design plans to MEANS for review of the water main and water service line configuration. We will work with you to ensure that the design meets our current standards.

Existing Site Service

According to District records, the project site does not currently have existing water service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main on the southerly side of Saint Lawrence Street and a public fire hydrant located 100 feet from the site.

The current data from the nearest hydrant with flow test information is as follows:

Hydrant Location: Saint Lawrence Street near Congress  
Hydrant Number: POD-HYD00406  
Last Tested: 9/5/2014  
Static Pressure: 50 psi  
Residual Pressure: Not Measured  
Flow: 919 GPM

Public Fire Protection

It is not anticipated that this project will include the installation of new public hydrants to be accepted into the District water system. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.


Domestic Water Needs

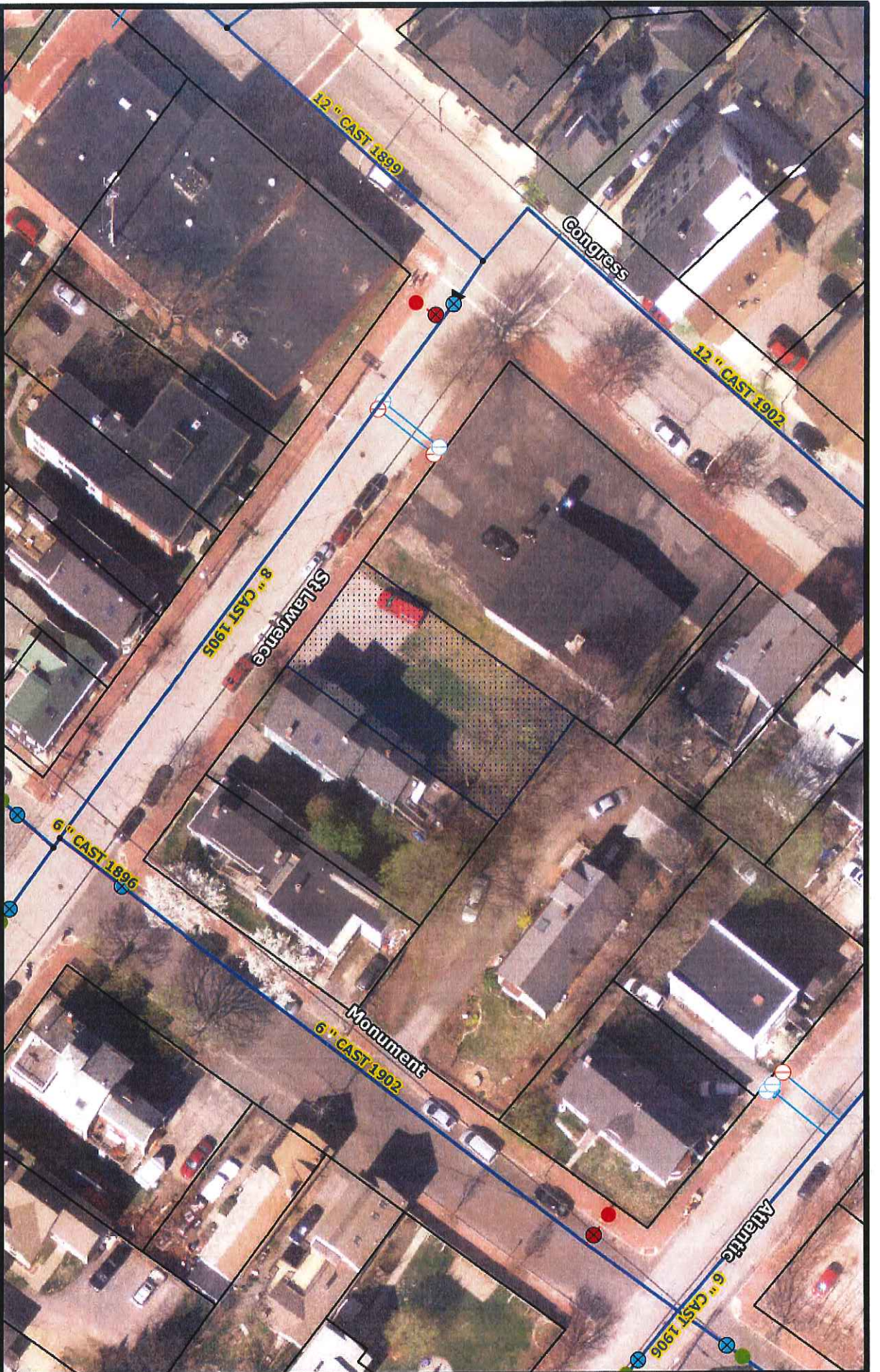
The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project.

Private Fire Protection Water Needs

It is anticipated 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 the MEANS Division to request a hydrant flow test and we will work with you to get more complete data.

If the District can be of further assistance in this matter, please let us know.

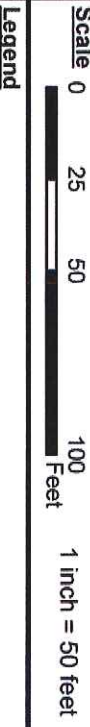
Sincerely,  
Portland Water District  
  
Glissen Havu, E.I.  
Design Engineer



# 91 Saint Lawrence Street

## Portland

**PORTLAND WATER DISTRICT**  
 225 Douglass Street  
 Portland, ME 04104



- Legend**
- Air Valve
  - Connection
  - Blow Off
  - Attribute Change
  - By Pass
  - ▲ Reducer
  - Distribution
  - Hydrant
  - Transmission
  - Hydrant Control
  - Meter Pits
  - Combined Service
  - Domestic Service
  - Manhole
  - CSO
  - Gravity
  - Force

N

Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.

Drawn By: GJH  
 Prepared For: SWE  
 Scale: As Noted  
 Date: June 12, 2015

1. Subdivision Plat shall be submitted for review. The Plat shall show all easements (existing and proposed) on site.  
SME Response: A Subdivision Plat has been prepared and is included on Drawing C-101A in the drawing set.
2. Photometric and lighting plan needs to be replaced, as well as catalogue cuts.  
SME Response: Site lighting will be provided with light fixtures near the building entryways as shown on the Architectural Plans.
3. Landscaping Plan will need to be submitted.

**PLANNING DEPARTMENT – Shukria Wiar**

On behalf of Larry Gross and Barbara Colby (Applicants), Sevee & Maher Engineers, Inc. (SME) has prepared this response to comments made by City staff in regards to the multi-family building proposed at 93 St. Lawrence Street. Comments from City Staff were provided in an email dated August 27, 2015. The comments and associated responses are detailed below.

Dear Ms. Wiar:

Subject: Application ID 2015-120  
93 St. Lawrence Street  
Larry Gross and Barbara Colby  
Response to City Staff Comments

Shukria Wiar  
Planning Division  
City of Portland  
389 Congress Street  
Portland, Maine 04101

September 14, 2015

15086.00  
20150911resp

SME Response: The Landscaping Plan L.1 is included in the resubmitted drawing set.

4. Sidewalks will need to be replaced along the whole frontage.

SME Response: Drawing C-101 has been revised to indicate new sidewalk pavers and curbing along the whole frontage of the property.

5. Street trees will need to be installed; requirement is one tree per unit, therefore four trees are required. If there is not space along the frontage, then the applicant can request a waiver and make a contribution to the City's Tree Fund of \$200 per tree. The preference is that there be attempt to plant the trees.

SME Response: There is inadequate spacing along the front of the property to accommodate four street trees. The Applicant requests a waiver from the installation of four street trees and proposes to provide one street tree and \$600 to the City's Tree Fund.

6. Why is the tree box being removed in front of the proposed building?

SME Response: The tree box in front of the proposed building is being replaced with a new tree box better centered on the building and to provide more consistent spacing between existing street trees.

7. There seems to be curbing missing in front of the proposed building; this will need to be replaced.

SME Response: Curbing will be provided along the whole frontage of the property as revised on Drawing C-101.

8. The site plan reference a landscaping plan, a landscaping plan has not been submitted.

SME Response: The Landscaping Plan L.1 is included in the resubmitted drawing set.

9. The following zoning notes are incorrect and needs to be corrected:  
#2: correct the CBL number  
#3: zoning district is Residential R-6 not RG

#8; "...existing services in School Street..." This project in on St. Lawrence

and the services is coming off of this street.

Front yard setback is 5 feet not 4 feet.

Minimum street frontage-provide what is being proposed. The frontage is

not > 20 feet, as stated on the plans.

SME Response: The CBL number has been revised per the City's parcel viewer.

the Zoning District has been revised and the street name has been corrected. The Front Yard has been revised as 5-feet and the proposed frontage has been added

to the notes.

**FIRE DEPARTMENT – Keith Gautreau:**

1. Premises Identification - The main entrance of the building must be the

address for the property. This should be consistent with 911, tax

assessor, Inspections Division and future mailing address. Street

addresses shall be marked on the structure and shall be as approved by

the City E-911 Addressing Officer. If the building entry faces a different

street, both the street name and number should be large enough to read

from the street. Address numbers must be a minimum of 4 inches high.

SME Response: Large lettering demarcating the street number (93) has been

added to the Front (West) Elevation as shown on Drawing A2.01.

2. Hydrant is close by at St. Lawrence & Congress. All new construction

shall be sprinkled in accordance with NFPA 13R. All construction and

installation shall comply with City Code Chapter 10.

<http://www.portlandmaine.gov/citycode/chapter010.pdf>

SME Response: The building will be sprinkled in accordance with City Code

Chapter 10.

3. Site access is good to two side of the proposed structure.

SME Response: No response necessary.

**DEPARTMENT OF PUBLIC SERVICES/ENGINEERING – Dave Margolis-Pineo:**

1. Please add note to sheet C-100 stating that all work within the street right of way shall meet City of Portland Technical Manual standards.  
SME Response: General Site Note #5 was added to Drawing C-100 in accordance with the comment.

2. The plans propose connecting the development's sanitary sewer lateral into a manhole in the street. No manhole exists at that location. Please show the lateral connecting directly into the sewer main in the street using acceptable City standards.  
SME Response: The sewer lateral connection was revised on Drawing C-101 to tie into the sewer main with a tee/wye connection.

3. The existing sidewalk a curbing abouting this project is in poor condition. The applicant is request to re-set the granite curbing and replace the brick walk meeting all City standards where possible.  
SME Response: Drawing C-101 has been revised to indicate new sidewalk pavers and curbing along the whole frontage of the company.

4. Survey comments will be submitted under a separate cover.

SME Response: No response necessary.

5. The Wastewater Capacity Application is currently being reviewed and will be acted on shortly.

SME Response: No response necessary.

**CIVIL ENGINEERING PEER REVIEW – David Senus:**

1. The Applicant has provided a letter from the Portland Water District confirming capacity to serve the proposed development and awaits a response from the Department of Public Services related to capacity to serve wastewater; confirmation of capacity to serve wastewater should be forwarded to the Planning Office upon receipt.



SME Response: SME will forward the letter to the Planning Office when received.

2. In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:
- a. Basic Standard: Plans, notes, and details have been provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices in general accordance with Appendix A, B, & C of MaineDEP Chapter 500.
  - b. General Standards: The project will result in a net increase in impervious area of approximately 1,864 square feet. As such, the project is required to include stormwater management features for stormwater quality control. The Applicant has proposed an infiltration basin to treat a sufficient amount of impervious area; however, the following comments should be addressed per Chapter 6 of Volume III of the MaineDEP Stormwater BMP Manual:
    - i. The Applicant should provide calculations demonstrating that the proposed basin has been properly designed and sized to accommodate one inch of runoff over the impervious area, including water quality volume calculations and the storage depth for a required recovery time.

SME Response: The Water Quality Volume calculations that demonstrate the sizing of the infiltration basin are attached to this comment response letter. The basin is appropriately sized following the design guidelines in Chapter 6 of Volume III of the Maine Department of Environmental Protections Stormwater BMP Manual. The infiltration basin will completely drain within 72 hours of a runoff event. Calculations are attached to this comment response letter.

- c. Flooding Standard: The project will result in a net increase in impervious area of approximately 1,864 square feet and is located in an area that drains to the City's combined sewer. As such, the project is required to include stormwater management features to control the rate of stormwater runoff from the site. The Applicant is proposing to infiltrate some of the stormwater that falls on the site; however, their stormwater model predicts a slight increase in the rate of runoff being directed towards St. Lawrence Street. We request that the Applicant evaluate

additional storage capacity for the infiltration basin, potentially below grade, to further reduce runoff potential from the site (to at least match existing conditions), or conduct a soil infiltration test at the site and reevaluate the model based on potentially higher infiltration rates.

**SME Response:** The infiltration basin has been enlarged to reduce the quantity of stormwater runoff towards St. Lawrence Street. The results are included in Table 1.

**TABLE 1**

**STORMWATER QUANTITY SUMMARY**

AP	2-yr Storm		10-yr Storm		25-yr Storm	
	Pre- (cfs)	Post- (cfs)	Pre- (cfs)	Post- (cfs)	Pre- (cfs)	Post- (cfs)
1	0.01	0.05	0.11	0.14	0.17	0.18

SME revised the HydroCAD model and the post-development peak flows during the 25-year storm have been reduced to an insignificant 0.01 cubic feet per second (cfs) increase at Analysis Point 1 (AP1). The post-development peak flows during the 2- and 10-year storms have not changed as a result of the additional infiltration area and still show an increase of 0.04 cfs and 0.03 cfs, respectively.

The flows during the 2- and 10-year storms are from the parking area near the front of the property not captured in the infiltration basin. SME feels that these minor increases in runoff to St. Lawrence Street will not adversely affect the City's stormwater infrastructure. A revised stormwater quantity summary from the Stormwater Management Plan is located in Table 1. Updated stormwater calculations are included in this comment response letter.

3. **The Stormwater Management Plan should include a stormwater inspection and maintenance plan developed in accordance with and in reference to Maine DEP Stormwater BMP Manual Maintenance Criteria and Chapter 32 of the City of Portland Code of Ordinances.**

**SME Response:** A Post Construction Stormwater Management Plan has been prepared and is attached to this comment response letter.

4. **In accordance with Section 2.3.4 of the City of Portland Technical Manual, service laterals shall not connect to sanitary manholes; in accordance**

with Section 2.6.7, building sewers shall be connected to the main sanitary sewer line by the use of wyes, teewyes, Inserta-Tees or similar approved methods as determined by the Department of Public Services. SME Response: The sewer lateral connection was revised on Drawing C-101 to tie into the sewer main with a tee/wye connection. A connection detail was added to Drawing C-301 in accordance with City of Portland Technical Standards.

5. In accordance with Section 2.6.9 of the City's Technical Manual, all new (sewer) laterals connecting to a combined sewer system shall have a back water valve. The back water valve should be located on private property and a detail should be provided. SME Response: A back water valve was added to Drawing C-101 on the Applicant's property.

6. The Applicant should provide details for the pavement repair work in St. Lawrence Street and brick sidewalk in accordance with the City of Portland Technical Manual for work within the Right-of-Way; additionally, the Vertical Granite Curb Section and Brick Driveway Apron with Bituminous Base details should comply with the City of Portland Technical Manual. SME Response: Details for the pavement repair and brick sidewalk have been added to Drawing C-301. The Vertical Granite Curb Section and Brick Driveway Apron with Bituminous Base details have been updated to comply with the City of Portland Technical Manual.

7. The Applicant should provide details for the proposed patio and site walkway. SME Response: Details for the proposed patio and site walkway are included on the Landscape Plan L.1.

## **R-6 DESIGN REVIEW – Caitlin Cameron:**

David Lloyd from Archetype met with Caitlin Cameron, city planner to review design comments. Per our discussion we removed the front door leading to the garage, separated the lattice from the building so that it is now free standing, redesigned street facade with clearstory windows into garage space and eliminated horizontal band trim, added a

distinguishing bollard at walkway entry to side door and reviewed walkway details from street to side entry showing the granite slab at entry to walkway.

The comments and further design development of the building have led to revisions to the preliminary plans, therefore, a revised drawing set is attached. If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

SEVEE & MAHER ENGINEERS, INC.



Daniel P. Diffin, P.E., LEED AP BD+C

Project Manager

Attachments: Revised Drawings  
Updated Stormwater Calculations  
Post Construction Stormwater Management Plan

**REVISED DRAWINGS**

# 4 UNIT APARTMENT BUILDING 93 ST. LAWRENCE STREET LARRY GROSS AND BARBARA COLBY PORTLAND, MAINE

TITLE \_\_\_\_\_  
DWG NO \_\_\_\_\_

C-100 GENERAL NOTES, LEGEND AND ABBREVIATIONS AND  
EXISTING CONDITIONS AND DEMOLITION PLAN

C-101 SITE PLAN

C-101A SUBDIVISION PLAT

C-300 EROSION CONTROL NOTES AND DETAILS

C-301 SECTIONS AND DETAILS

D-100 STORMWATER MANAGEMENT PLAN

A1.01 1st FLOOR PLAN

A1.02 2nd FLOOR PLAN

A1.03 3rd FLOOR PLAN

A1.04 ROOF & MEZZANINE PLAN

A2.01 REAR (EAST) ELEVATION / FRONT(WEST) ELEVATION

A2.02 SIDE (SOUTH) ELEVATION

A2.03 SIDE (NORTH) ELEVATION

1 BOUNDARY & TOPOGRAPHIC SURVEY

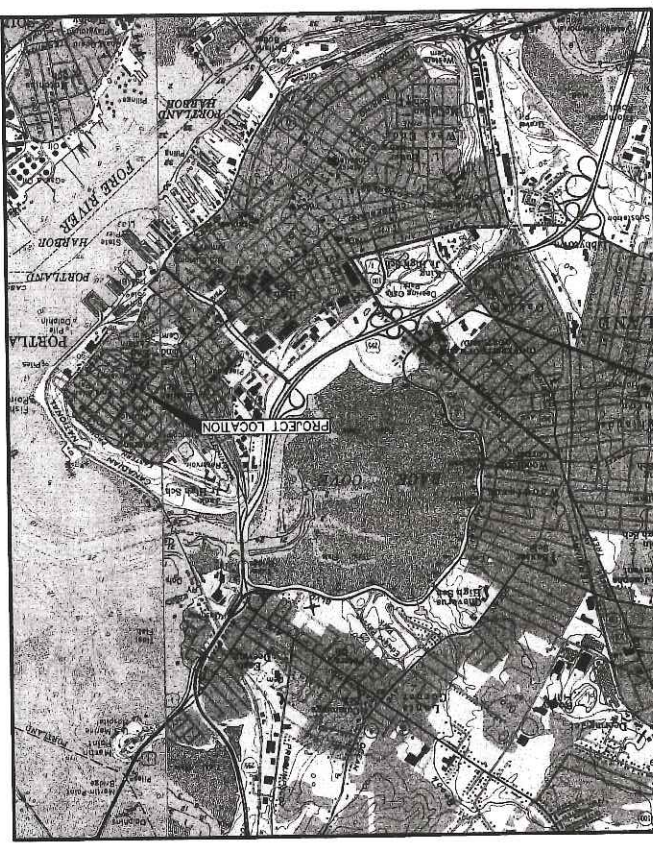
L-1 LANDSCAPE PLAN

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

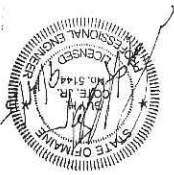
4 Blanchard Road, PO Box 85A, Cumberland Center, Maine 04021  
Phone 207.829.5016 • Fax 207.829.5692 • www.smemaine.com

Sevee & Maher Engineers, Inc.

## SME



LOCATION MAP









**ZONING NOTES:**

1. PROPERTY OWNER/APPLICANT: LARRY GROSS AND BARBARA COLBY, 91 SAINT LAWRENCE STREET, PORTLAND, MAINE
2. LOT INFORMATION - CHART/BLOCK/LOT: 0160D10
3. ZONING DISTRICT: R6 - RESIDENTIAL 6 AND B-1 NEIGHBORHOOD BUSINESS ZONE
4. ZONING REQUIREMENTS: DIMENSIONAL STANDARDS TO BE IN ACCORDANCE WITH THE APPROVED ZONE AS SHOWN BELOW.

**DIMENSIONAL STANDARDS**

REQUIRED (R6)	REQUIRED (B-1)	PROVIDED
MINIMUM LOT SIZE	2,000 SF	5,000 SF
MINIMUM LOT AREA PER DWELLING	725 SF	1,250 SF
MINIMUM STREET FRONTAGE	20 FEET	>50 FEET
MINIMUM FRONT YARD SETBACK	5 FEET	10 FEET OR AVG OF ADJACENT BUILDING
MINIMUM SIDE SETBACK	5 FEET	5.5 FEET
MINIMUM REAR SETBACK	10 FEET	16 FEET
MAXIMUM BUILDING HEIGHT	45 FEET	43.5 FEET
MAXIMUM LOT COVERAGE	60%	90%

REQUIRED (R6)	REQUIRED (B-1)	PROVIDED
BUILDING	2,024 SF (40%)	2,024 SF (40%)
PAVEMENT	1,150 SF (23%)	1,826 SF (37%)
OPEN SPACE	1,826 SF (37%)	5,000 SF (100%)
TOTAL LOT SIZE	5,000 SF (100%)	5,000 SF (100%)

5. PROPOSED USE: 4-UNIT APARTMENT BUILDING WITH 4 CAR GARAGE
6. THERE ARE NO WETLANDS, FLOODPLAINS OR SHORELAND ZONING ON THE PROPERTY.
7. PARKING SUMMARY:
  - REQUIRED PARKING: 1 SPACES/UNIT
  - PROVIDED PARKING: 4 SPACES
  - TOTAL: 4 SPACES
  - PARKING RATIO: 1 SPACES/UNIT
  - PROVIDED PARKING: 4 SPACES
8. SITE UTILITIES WILL BE PROVIDED FROM EXISTING SERVICES IN ST. LAWRENCE STREET AS FOLLOWS:
  - ELECTRIC/COMMUNICATIONS: EXISTING SERVICE
  - WATER SUPPLY: PORTLAND WATER DISTRICT
  - SEWER SERVICE: CITY OF PORTLAND
  - NATURAL GAS: MAINE NATURAL GAS

**SURVEYOR'S NOTES**

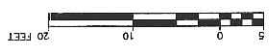
1. OWNER OF RECORD: LAWRENCE W. GROSS, C.R.D. BOOK 17303 PAGE 310, BOOK 30580 PAGE 89
2. LOCUS IS SHOWN AT LOT 16-D-10 & 11 ON THE CITY OF PORTLAND'S ASSESSOR'S MAPS.
3. BEARINGS ARE MAGNETIC 1926, PER PLAN REFERENCE #2.
4. ELEVATIONS ARE BASED ON CITY DATUM, BASED ON MONUMENT AT NORTHEAST CORNER OF NORTH AND CONGRESS STREETS, ELEV. 146.69'.

**PLAN REFERENCE**

1. PLAN OF LAND IN PORTLAND, MAINE, SURVEYED FOR STANDARD OIL COMPANY OF NEW YORK DECEMBER 1926 BY E.C. JORDAN, CO.
2. CITY WORKING PLANS 25, 140, 148, DATED 1924 AND 1925.
3. "STANDARD BOUNDARY SURVEY ON 118 CONGRESS STREET, PORTLAND, MAINE MADE FOR THE RYAN/LANDMANN ASSOCIATES, PORTLAND, MAINE, DATED JULY 13, 1998 REV. 3 10-31/13 BY OWEN HASKELL, INC.

CITY OF PORTLAND PLANNING BOARD

DATE

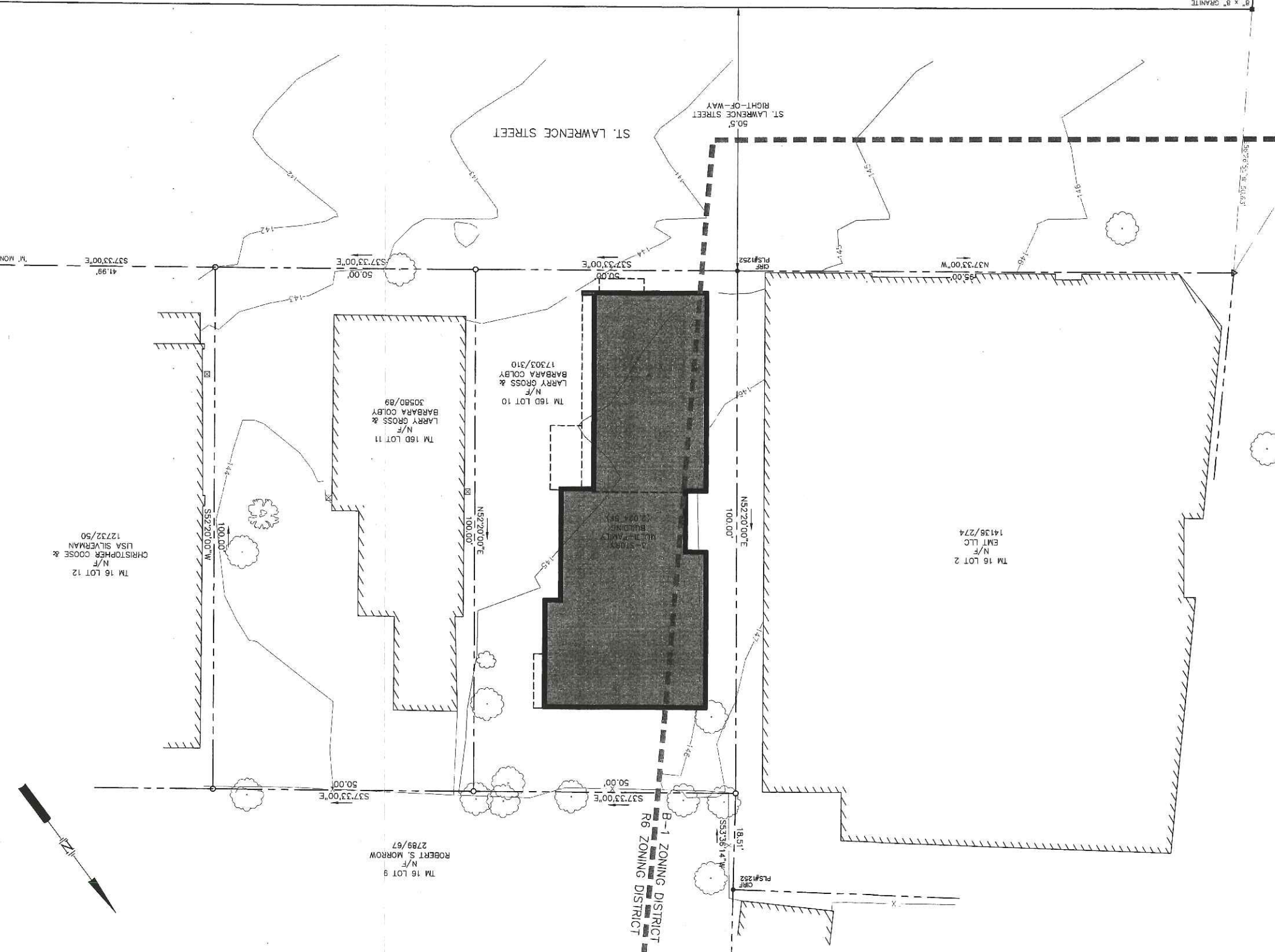


REV.	BY	DATE	STATUS
1	DPD	9/15	REVISED PER CITY OF PORTLAND COMMENTS



4 UNIT APARTMENT BUILDING  
93 ST. LAWRENCE STREET  
LARRY GROSS AND BARBARA COLBY  
PORTLAND, MAINE  
SUBDIVISION PLAT

DESIGN BY: DPD  
DRAWN BY: JRL  
DATE: 4/27/2019  
CHECKED BY: *[Signature]*  
SME & Maher Engineers, Inc.  
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE  
4 Blanchard Road, PO Box 85A, Cumberland Center, Maine 04021  
Phone 207 829 5016 • Fax 207 829 5992 • www.smeinc.com  
CTB: SME-STD  
C-101A

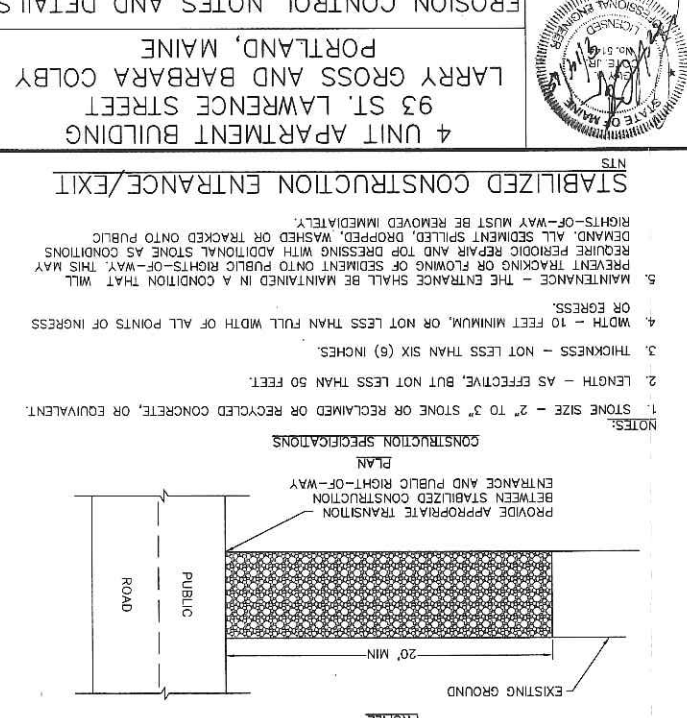
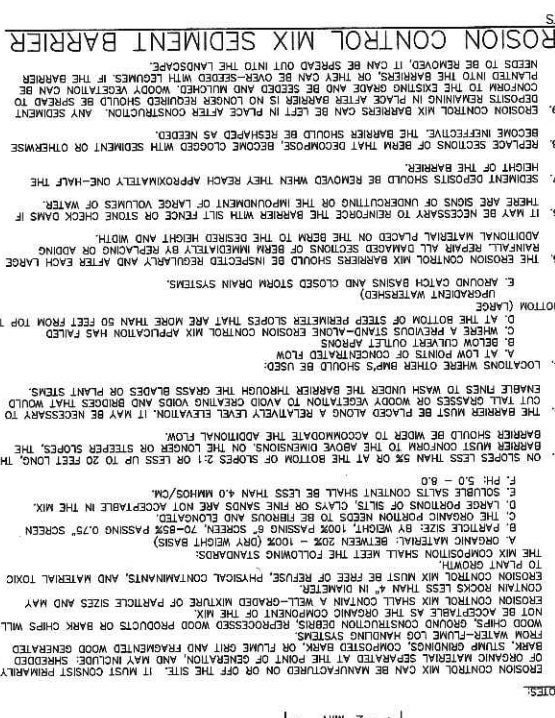
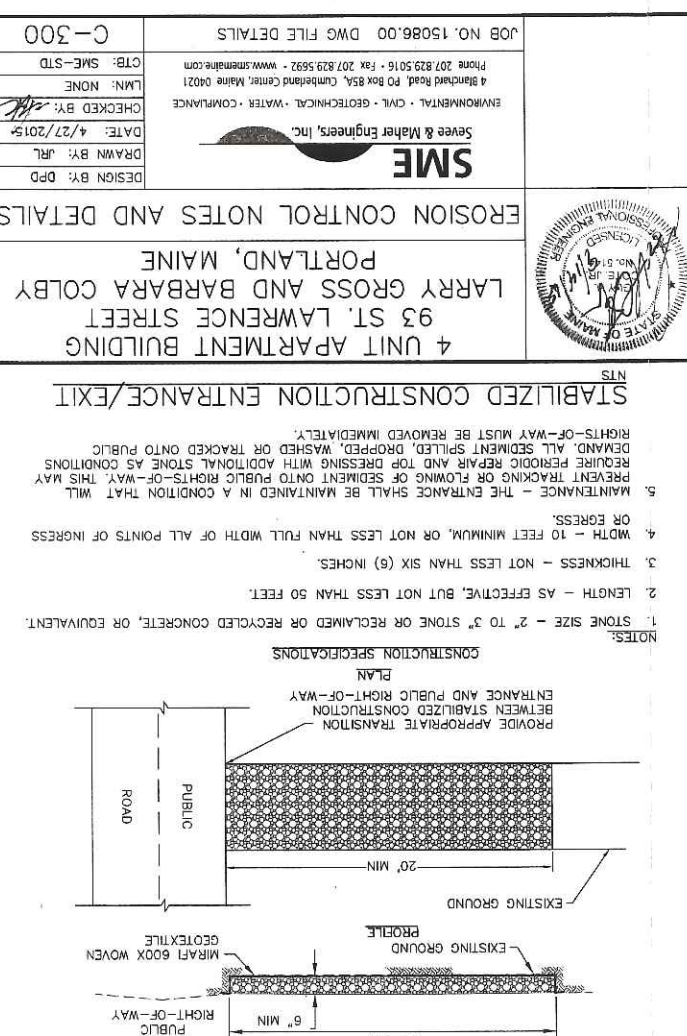
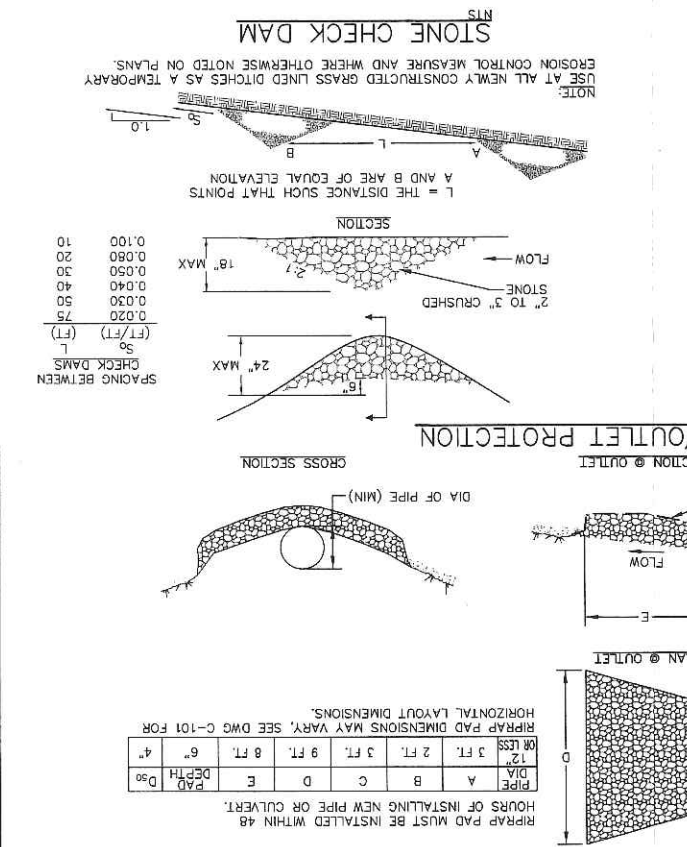
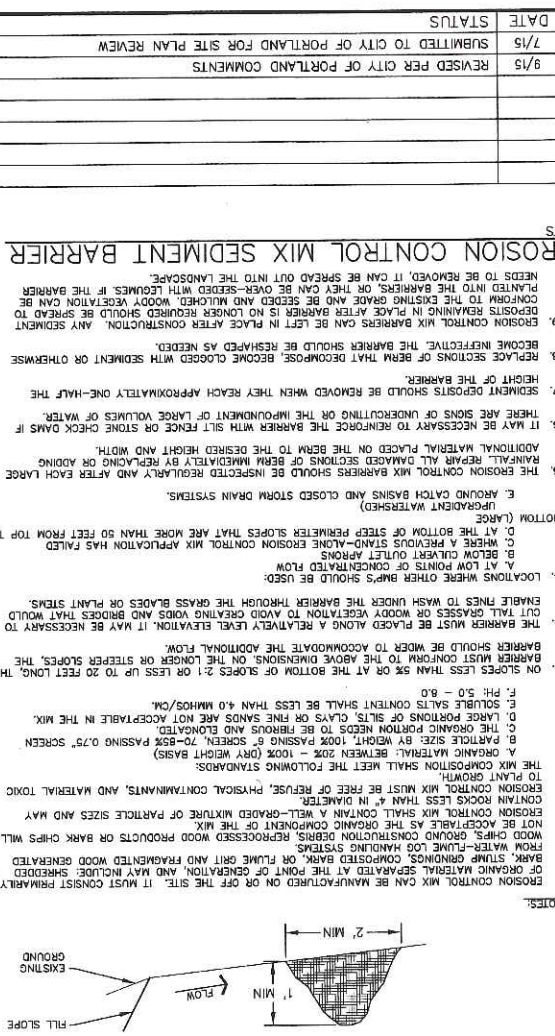
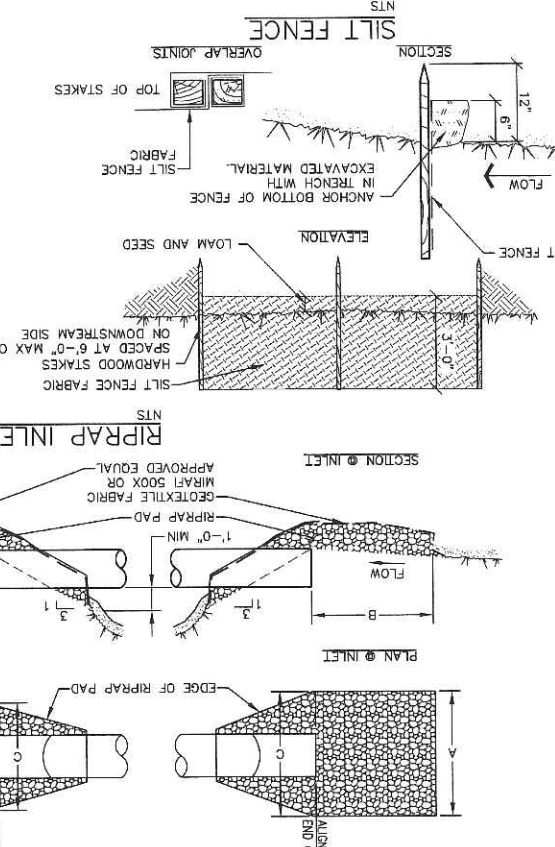
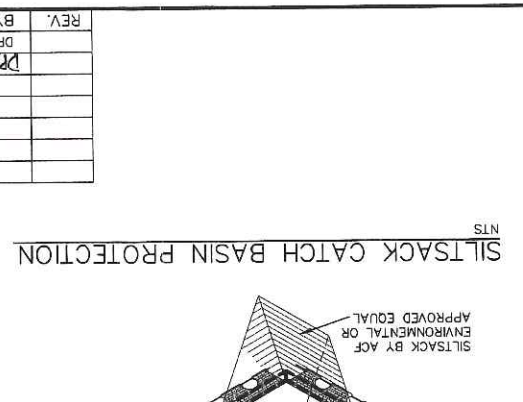
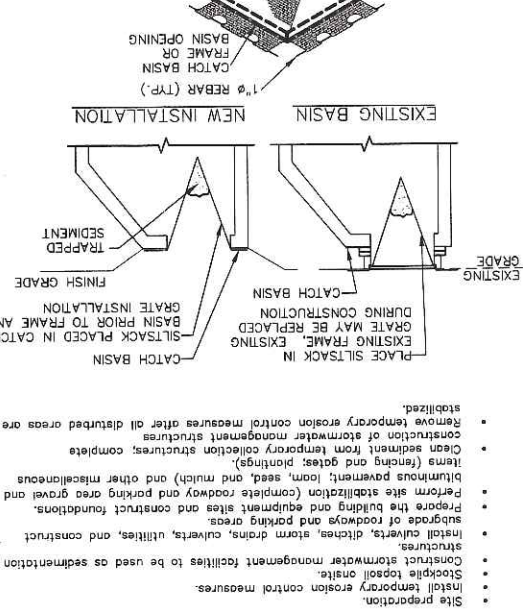
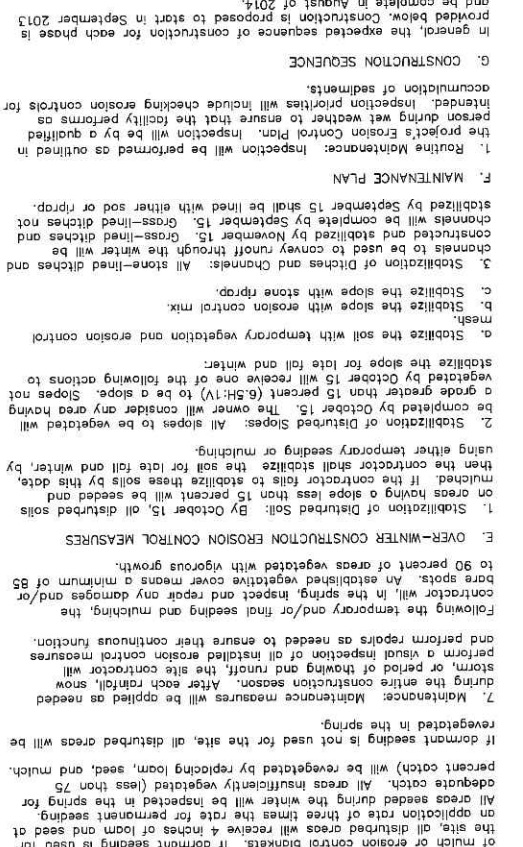


A. GENERAL

- All soil erosion and sediment control will be done in accordance with: (1) The Maine Erosion and Sediment Control Handbook: Best Management Practices, Maine Department of Environmental Protection (MEDEP), March 2003
- The site contractor (to be determined) will be responsible for the repair/replacement/maintenance of all erosion control measures until grades are stabilized.
- Disturbed areas will be permanently stabilized within 7 days of final grading. Disturbed areas not to be worked upon within 14 days of disturbance.
- In all areas, removal of trees, bushes and other vegetation, as well as disturbance of topsoil will be kept to a minimum while allowing proper site operations.
- Any suitable topsoil will be stripped and stockpiled for reuse as directed by the owner. Topsoil will be stockpiled in a manner such that natural drainage is not obstructed and no off-site sediment damage will result. In any event, stockpiles will not be located within 100 feet of wetlands. The stockpiles of the topsoil stockpile will not exceed 2.1'. Silt fences will be installed around the perimeter of stockpiles perimeter. Topsoil stockpiles will be surrounded with all topsoil stockpiles. Topsoil stockpiles will be surrounded with silt fence and will be temporarily seeded with Aroostook Ryb or bermudagrass or perennial ryegrass within 7 days of formation, or temporarily mulched.
- TEMPORARY MEASURES
  - STABILIZED CONSTRUCTION ENTRANCE/EXIT
    - A crushed stone stabilized construction entrance/exit will be placed at any point of vehicle access to the site, in accordance with the details shown on this sheet.
    - SILT FENCE
      - Silt fence will be installed prior to all construction activity, where locations shown on the plans and/or downgrading of all construction activity.
      - Silt fences will be removed when they have served their useful purpose, but not before the upgraded areas have been permanently stabilized.
      - Silt fences will be inspected immediately after each rainfall and at least daily during prolonged rainfall. They will be inspected if there are any signs of erosion or sedimentation below them. Any required repairs will be made immediately. If there are signs of undercutting, the contractor shall be notified immediately.
      - Sediment deposits will be removed after each storm event if significant build-up has occurred or if deposits exceed half the height of the barrier.
      - STONE CHECK DAMS
        - Stones check dams will be installed in grass-lined swales and ditches during construction.
        - BARK MULCH SEDIMENT BARRIER
          - Where approved, bark mulch sediment barriers may be used as a substitute for silt fence. See the details in this drawing set for specifications.
          - Rock Filter Barriers: To provide more filtering capacity or to act as a velocity check dam, a berm 3' center can be composed of clean crushed rock ranging in size from the french drain stone to riprap. Stabilize disturbed areas that will not be brought to final grade for a year or less and reduce problems associated with mud and dust production from exposed soil surface during construction with temporary vegetation.
          - TEMPORARY MULCHING
            - Use temporary mulch in the following locations and/or circumstances:
              - In sensitive areas (within 100 feet of streams, wetlands and in the following 15 days and that can be mulched in one day prior to any snow event). All areas will be mulched until the storm and seed have been loaned, seeded, and mulched.
              - Apply temporary mulch within 14 days of disturbance or prior to exposing soil or prior to any storm event.
              - Areas which cannot be seeded within the growing season will be mulched immediately following seeding.
              - Areas which have been temporarily or permanently seeded, will be mulched immediately following seeding.
              - Areas which cannot be seeded within the growing season will be mulched immediately following seeding.
              - Mulch can be used in conjunction with tree, shrub, vine, and ground cover plantings.
              - Mulch can be used in conjunction with tree, shrub, vine, and ground cover plantings.
              - Mulch anchoring will be used on slopes greater than 5 percent in fall (last October 15), and over-winter (October 15 - April 15).
            - The following materials may be used for temporary mulch:
              - Hay or straw material shall be air-dried, free of seeds and coarsen material. Apply 2 bags/1,000 sq ft or 1.5 to 2 tons/acre to cover 90% of ground surface.
              - Erosion Control Mix: It can be used as a stand-alone reinforcement:
                - on slopes 2 horizontal to 1 vertical or less;
                - on frozen ground or forested areas; and
                - at the edge of gravel parking areas and areas under construction.
              - Erosion control mix alone is not suitable:
                - on slopes with groundwater seepage;
                - at low points with concentrated flow and in gullies;
                - at the bottom of steep perimeter slopes exceeding 100 feet in length;
                - around outlet aprons, and
                - around culvert outlet aprons, and
              - Chemical Mulches and Soil Binders: Wide ranges of synthetic spray-on mulches are marketed to protect the soil surface. These are emulsions that are mixed with water and applied to the soil. They may be used alone, but most often are used to hold wood fiber hydro-mulches or straw to the soil surface.

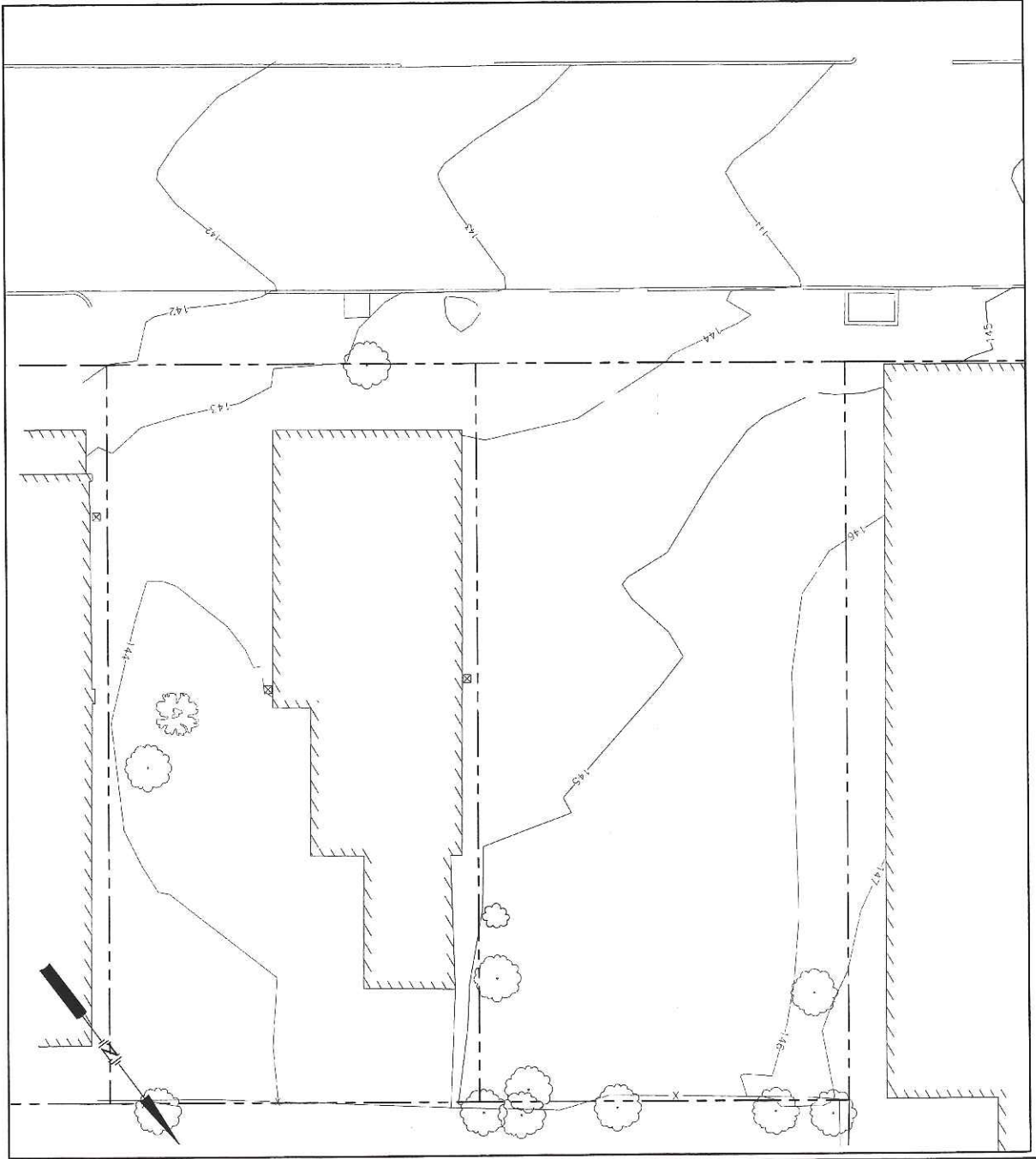
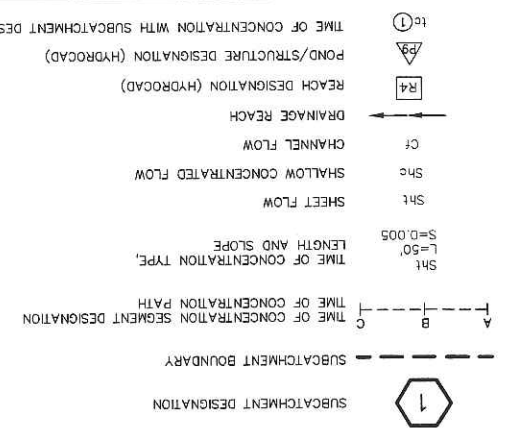
- Erosion Control Blankets and Mats: Mats are manufactured from the de-watering operation into a temporary sediment basin created by a surrounding filter berm of uncompacted erosion control mix immediately backed by staked hay bales (see the details). Locate the temporary sediment basin at least 100 feet from the nearest water body, such that the filtered water will flow through the de-watering operation to a temporary sediment basin.
- CONSTRUCTION DE-WATERING
  - Stabilization of Disturbed Soil: By October 15, all disturbed soils on areas having a slope less than 15 percent will be seeded and mulched. If the contractor fails to stabilize these soils by the date, using either temporary seeding or mulching.
  - Stabilization of Disturbed Slopes: All slopes to be vegetated will be completed by October 15. The owner will consider any area having a grade greater than 15 percent (6.5H:1V) to be a slope. Slopes not vegetated by October 15 will receive one of the following actions to stabilize the slope for late fall and winter:
    - Stabilization of Disturbed Slopes: All slopes to be vegetated will be completed by October 15. The owner will consider any area having a grade greater than 15 percent (6.5H:1V) to be a slope. Slopes not vegetated by October 15 will receive one of the following actions to stabilize the slope for late fall and winter:
      - Stabilize the slope with stone riprap.
      - Stabilize the slope with erosion control mix.
      - Stabilize the slope with temporary vegetation and erosion control mesh.
- PERMANENT MEASURES
  - Riprapped Aprons: All storm drain pipe outlets and the inlet and outlet of culverts will have riprap aprons to protect against scour and deterioration.
  - Topsoil, Seed, and Mulch: All areas disturbed during construction, but not subject to other restoration (grazing, riprap, etc.) will be inspected during wet weather to ensure that the facility performs as intended. Inspection priorities will include checking erosion controls for accumulation of sediment.
  - Seeding Preparation: Use stockpiled material spread to the depths shown on the plans, if available. Approved topsoil substitutes may be used. Grade the site as needed.
  - Seeding will be completed by August 15 of each year. Late October 15, will be seeded with Aroostook Ryb or mulched. After November 15, or the first killing frost, disturbed areas will be seeded at double the specified application rates, mulched, and anchored.
- PERMANENT SEEDING SPECIFICATIONS
 

Mixture:	Lawn
(lbs/acre)	50
Kentucky Bluegrass	20
White Clover	50
Creeping Red Fescue	20
Perennial Ryegrass	5
15	
- Mulch in accordance with specifications for temporary mulching:
  - Where approved, bark mulch sediment barriers may be used as a substitute for silt fence. See the details in this drawing set for specifications.
  - Rock Filter Barriers: To provide more filtering capacity or to act as a velocity check dam, a berm 3' center can be composed of clean crushed rock ranging in size from the french drain stone to riprap. Stabilize disturbed areas that will not be brought to final grade for a year or less and reduce problems associated with mud and dust production from exposed soil surface during construction with temporary vegetation.
  - TEMPORARY SEEDING
    - Stabilize disturbed areas that will not be brought to final grade for a year or less and reduce problems associated with mud and dust production from exposed soil surface during construction with temporary vegetation.
    - TEMPORARY MULCHING
      - Winter excavation and earthwork will be completed as to limited exposed areas with satisfactory competing the project. Limit exposed areas to those areas in which work is to occur during the following 15 days and that can be mulched in one day prior to any snow event. All areas will be mulched until the storm and seed have been loaned, seeded, and mulched.
      - Install any added measures necessary to control erosion/sedimentation. The particular measure used will be dependent upon site conditions, the size of the area to be protected, and weather conditions.
      - To minimize areas without erosion control protection, continuation of earthwork operations on additional areas will not begin until the exposed soil surface on the area being worked has been stabilized.
      - Natural Resource Protection: During winter construction, a double-row of sediment barriers (i.e., silt fence backed with hay bales or erosion control mix) will be placed between any natural resources and the disturbed area. Projects crossing the natural resources will be protected a minimum distance of 100 feet on either side from the resource.
      - Sediment Barriers: During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barrier that prevents the proper installation of hay bales or silt fences.
      - Mulching: All areas will be considered to be denuded until seeded and mulched. Hay and straw mulch will be applied at a rate of twice the normal accepted rate.
      - After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting.
      - Between the dates of November 1 and April 15, all mulch will be anchored by either mulch netting, emission chemical, tracking or wood cellulose fiber.
      - Soil Stockpiling: Stockpiles of soil or subsoil will be mulched for over-winter protection with hay or straw at twice the normal rate or 4-inches of straw or hay or straw at twice the normal rate. Any soil stockpiles shall not be placed within 100 feet from any natural resources.

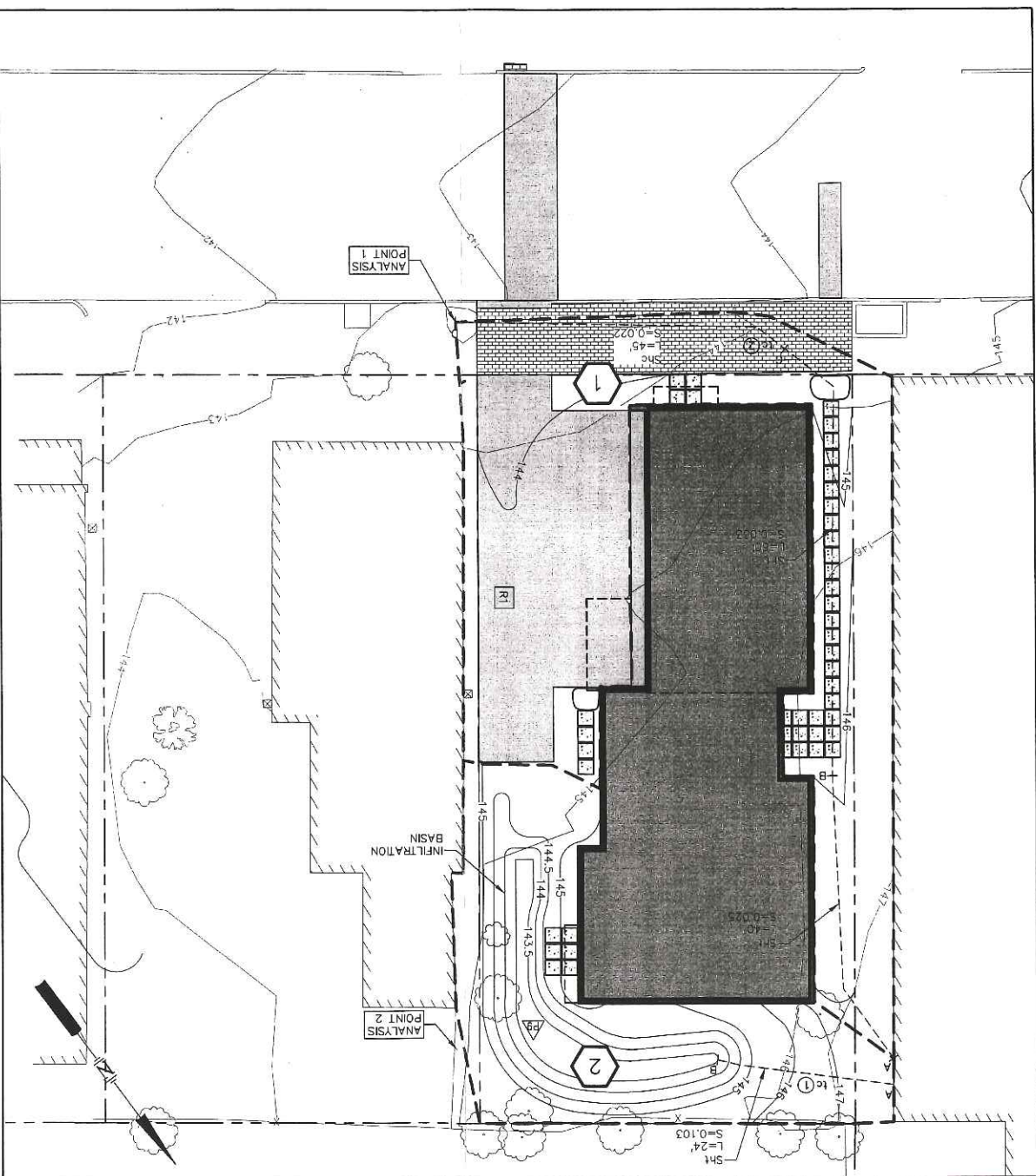
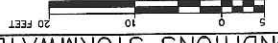




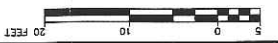
**STORMWATER MANAGEMENT LEGEND**



PRE-DEVELOPMENT CONDITIONS STORMWATER MANAGEMENT PLAN

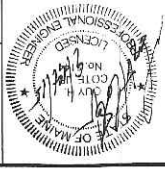


POST DEVELOPMENT CONDITIONS STORMWATER MANAGEMENT PLAN



REV.	BY	DATE	STATUS
DPD	DPD	8/15	REVISED PER CITY OF PORTLAND COMMENTS
		7/15	SUBMITTED TO CITY OF PORTLAND FOR SITE PLAN REVIEW

NOTES:  
 1. BASE MAP ADAPTED FROM PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY" BY OWEN HASKELL, INC., FALMOUTH, MAINE, DATED JUNE 11, 2014.  
 AND PLAN ENTITLED "GRADING AND UTILITIES PLAN" BY PINKHAM & GREER CONSULTING ENGINEERS, DATED FEBRUARY 26, 2014.



**SME**  
 Sevee & Maher Engineers, Inc.  
 ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE  
 4 Birchard Road, PO Box 854, Cumberland Center, Maine 04021  
 Phone: 207.829.5015 • Fax: 207.829.5992 • www.smeinc.com

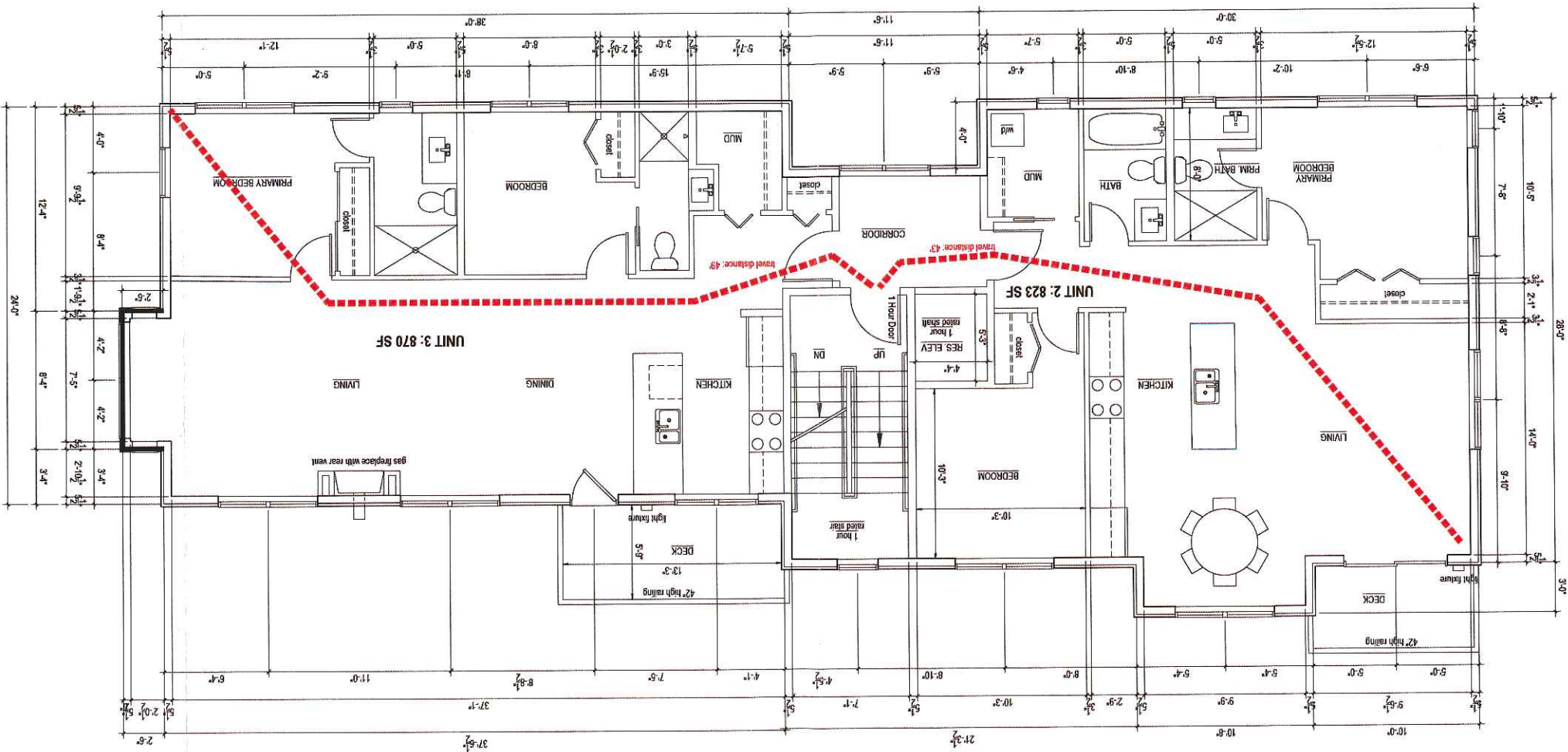
DESIGN BY: DPD  
 DRAWN BY: JRL  
 DATE: 4/27/2015  
 CHECKED BY: [Signature]  
 LMN: SMP-E/SMP-P  
 CTB: SME-STD

**4 UNIT APARTMENT BUILDING**  
**LARRY GROSS AND BARBARA COLBY**  
**PORTLAND, MAINE**  
**STORMWATER MANAGEMENT PLAN**

D-100  
 JOB NO. 15086.00 DWG FILE BASE



1/4" = 1'-0"  
 2nd Floor Plan



A1.02

Date: 21 July, 2015  
 Scale: as noted  
 Submission to Planning Board

Revisions:  
 09-09-2015 revisions per p.b. review

Project:  
 4 Unit Apartment Building  
 93 St. Lawrence Street  
 Portland Maine, 04101  
 CBL-016 D0100001 B&P 17303/310

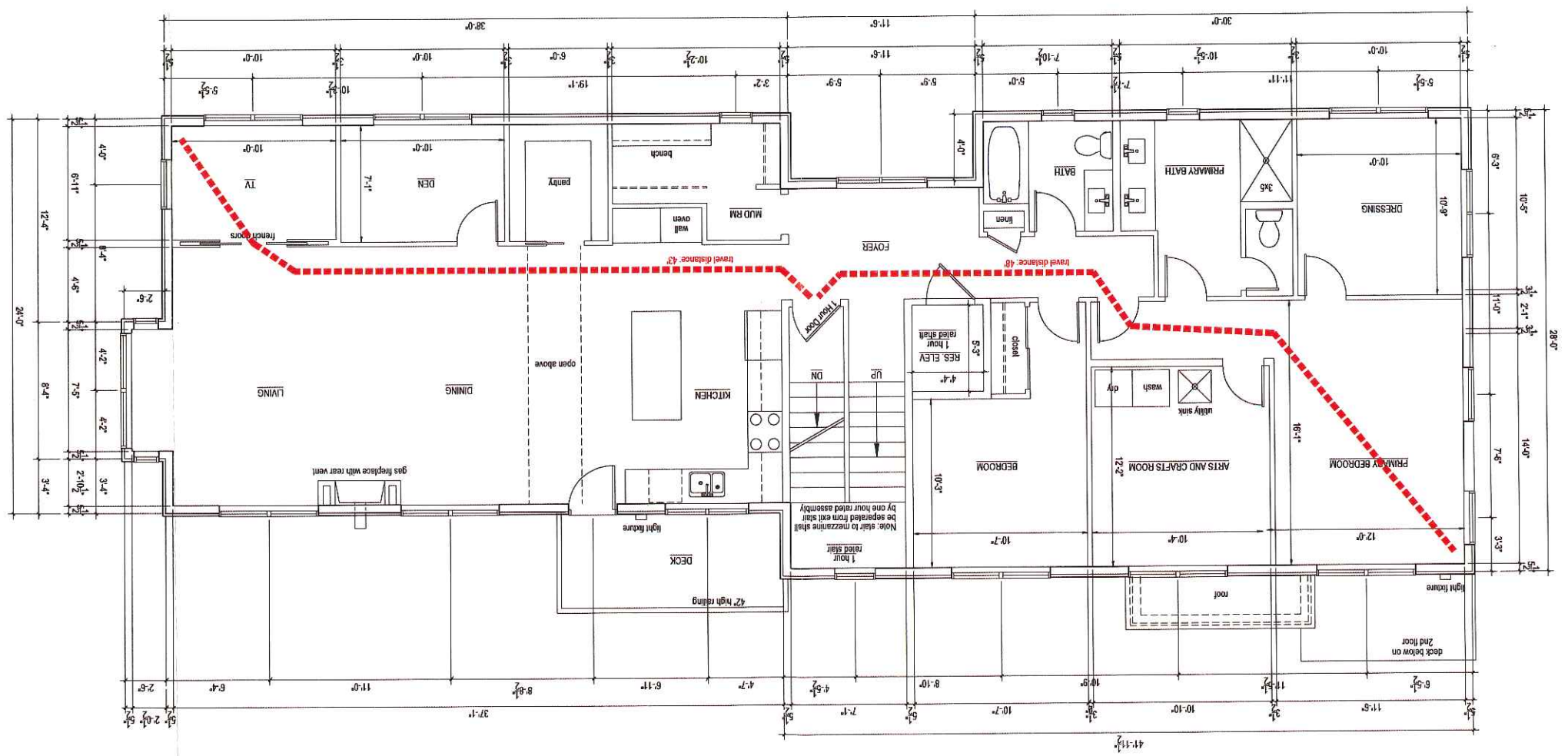
Architect:  
**ARCHITYPE** architects  
 48 Union Wharf Portland, Maine 04101  
 (207) 772-6022 Fax (207) 772-4056

Consultant:

Owner/Applicant  
 Barbara Colby and  
 Laurence Gross  
 PO Box 10152  
 Portland Maine, 04104

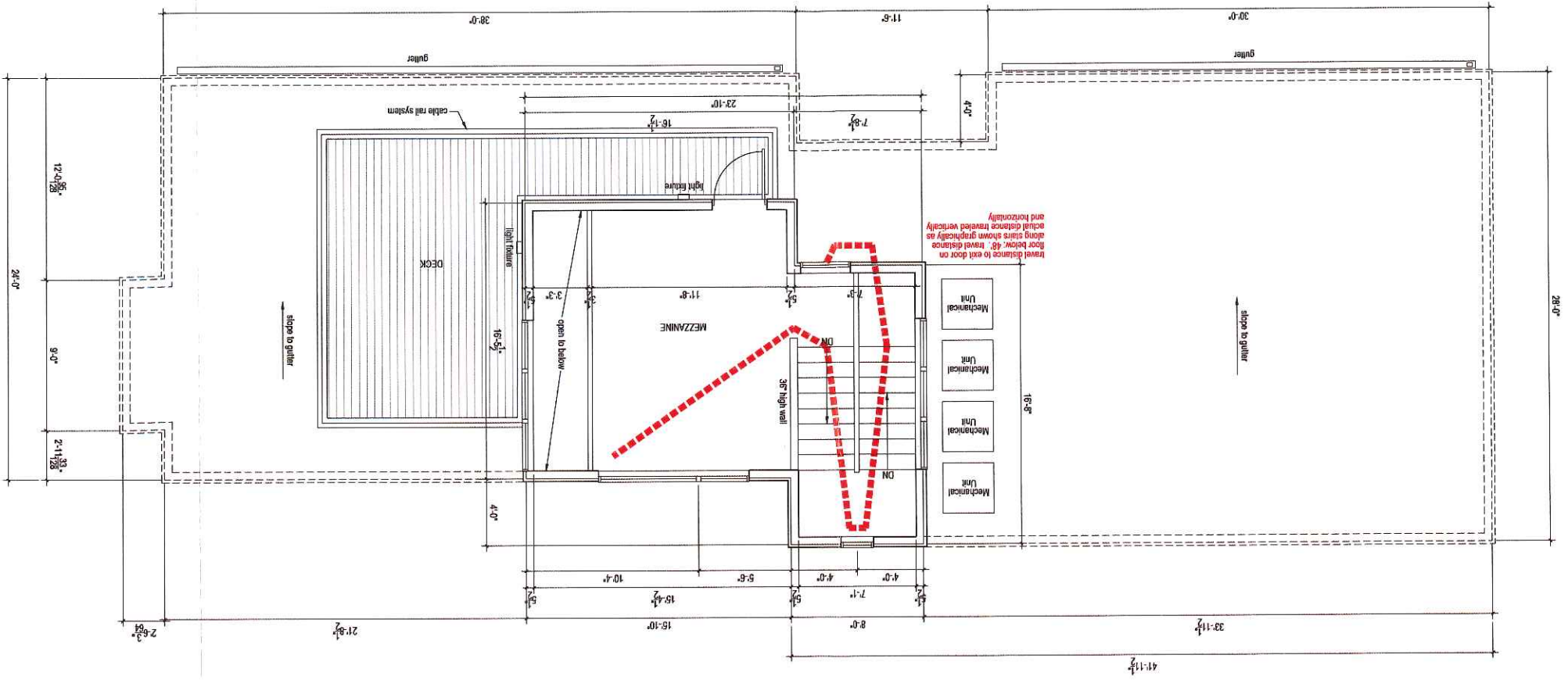


3rd Floor Plan  
1/4" = 1'-0"

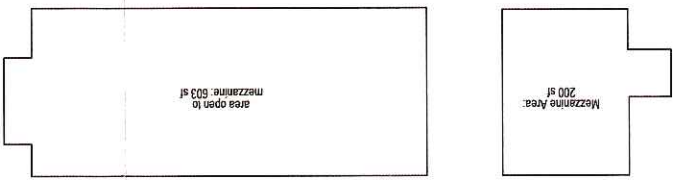


<b>A1.03</b>	Date: 21 July, 2015	Scale: as noted
	Revisions: 09-09-2015 revisions per p.b. review	
<b>Submission to Planning Board</b>	Project: 4 Unit Apartment Building 93 St. Lawrence Street Portland Maine, 04101 CBL: 016 D010001 B&P 17309/310	
	Architect: <b>ARCHITYPE</b> Architects 48 Union Wharf Portland, Maine 04101 (207) 772-6022 Fax: (207) 772-4056	
Consultant:		
Owner/Applicant: <b>Barbara Colby and Laurence Gross</b> PO Box 10152 Portland Maine, 04104		

1/4" = 1'-0"  
 Root & Mezzanine Plan



1/8" = 1'-0"  
 Mezzanine Calculation



A1.04

Date: 21 July, 2015  
 Scale: as noted  
 Submission to Planning Board

Revisions: 09-09-2015 revisions per p.l. review

Project: 4 Unit Apartment Building  
 93 St. Lawrence Street  
 Portland Maine, 04101  
 CBL: 016 D010001 B&P 17303/310

Architect: ARCHETYPE architects  
 48 Union Wharf Portland, Maine 04101  
 (207) 772-6022 Fax (207) 772-4056

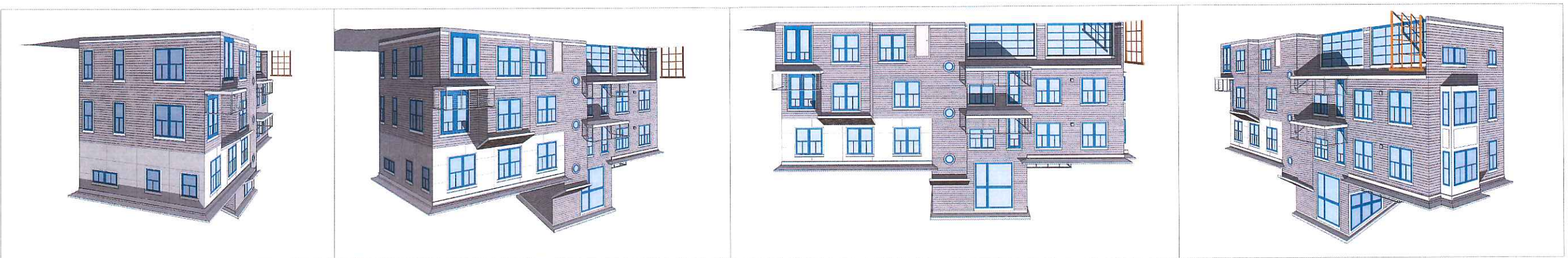
Consultant:

Owner/Applicant: Barbara Colby and Laurence Gross  
 PO Box 10152  
 Portland Maine, 04104





Perspective Views of Proposed Building



St. Lawrence Street Context Elevations



A2.00

Date: 21 July, 2015  
 Scale: as noted  
 Submission to Planning Board

Revisions: 09-09-2015 revisions per p.b. review

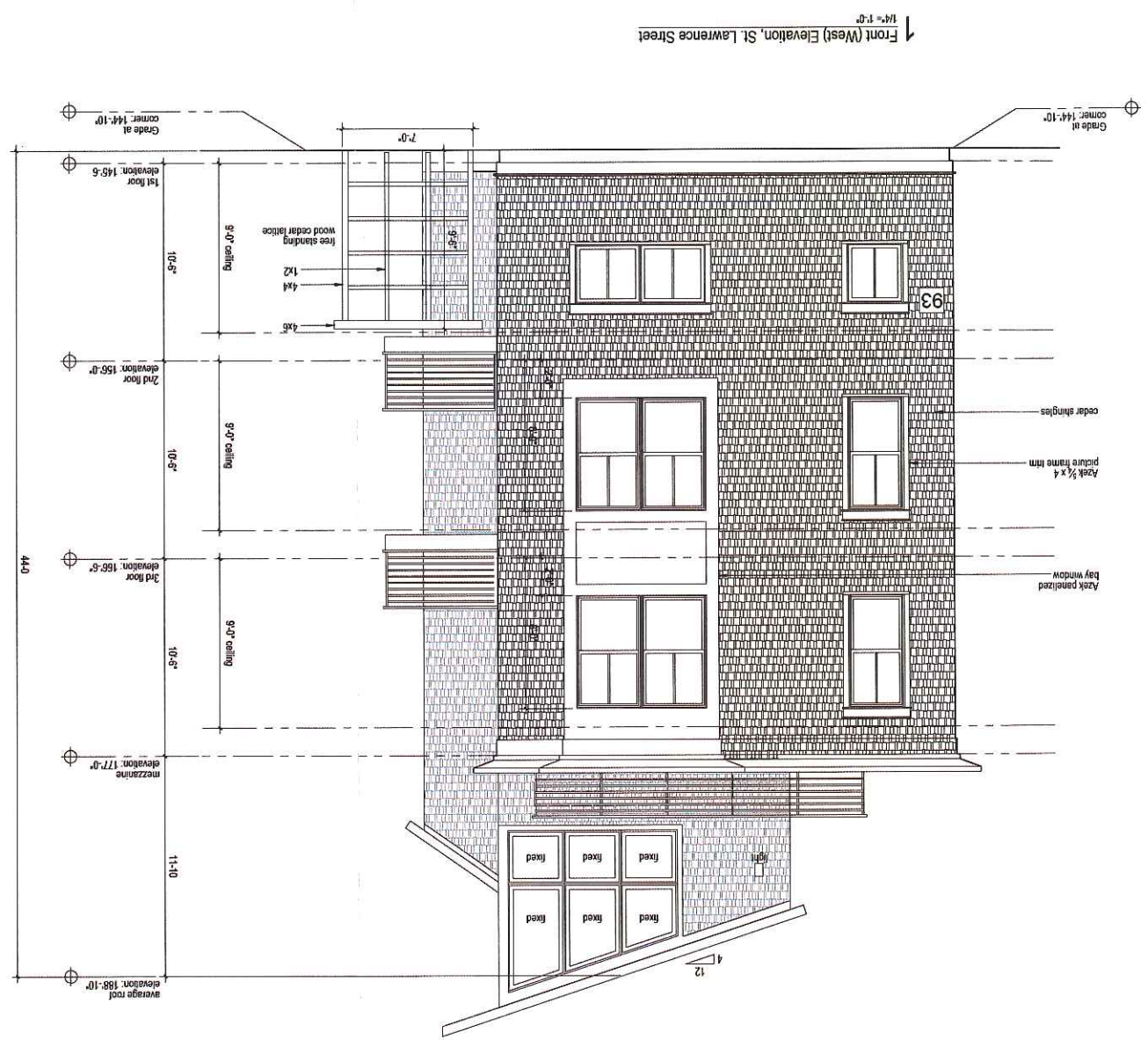
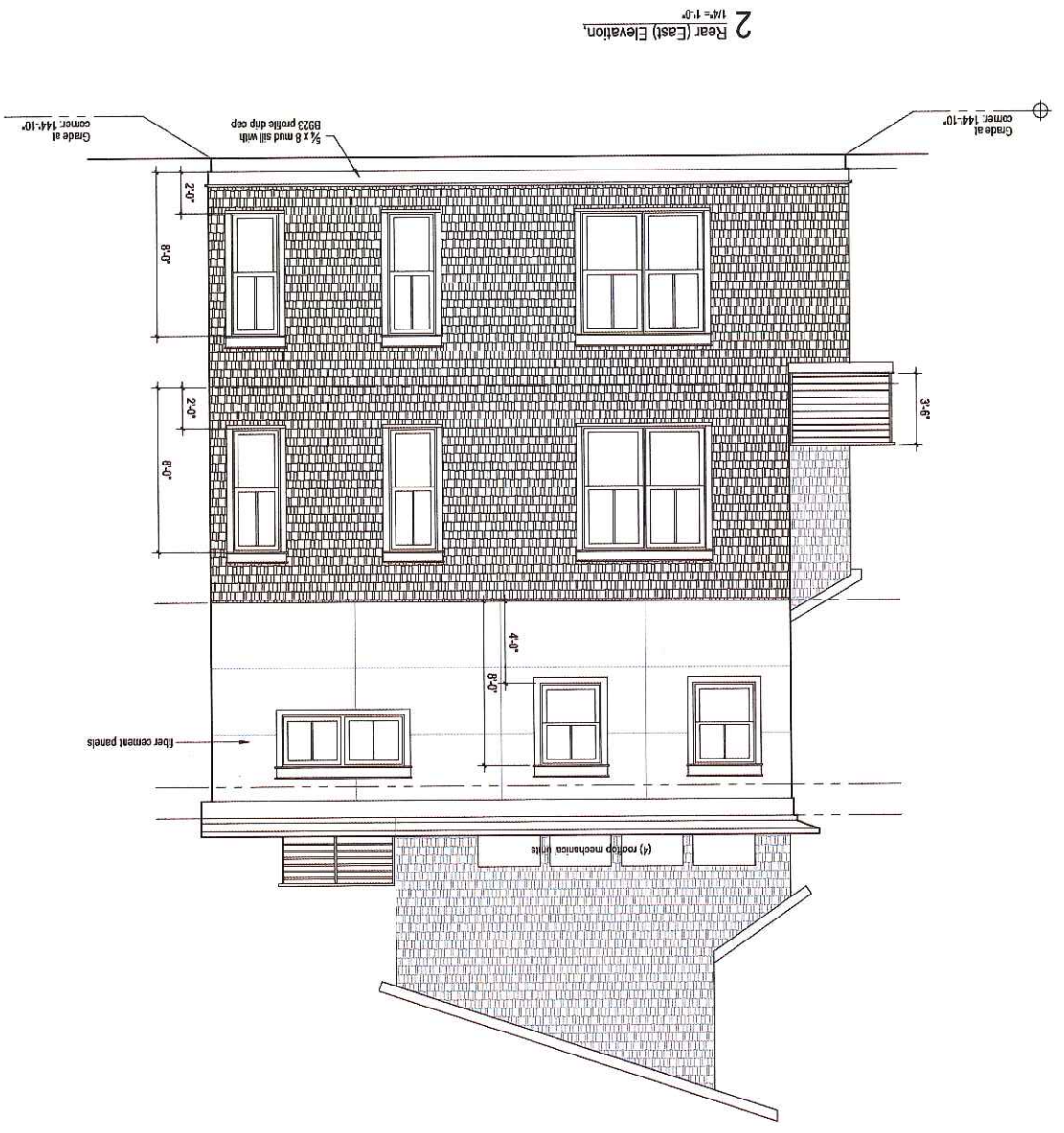
Project: 4 Unit Apartment Building  
 93 St. Lawrence Street  
 Portland Maine, 04101  
 CBL: 016 D010001 B&P 17303/310

Architect: ARCHITYPE architects  
 48 Union Wharf Portland, Maine 04101  
 (207) 772-6022 Fax (207) 772-4056

Consultant:

Owner/Applicant: Barbara Colby and Laurence Gross  
 PO Box 10152  
 Portland Maine, 04104

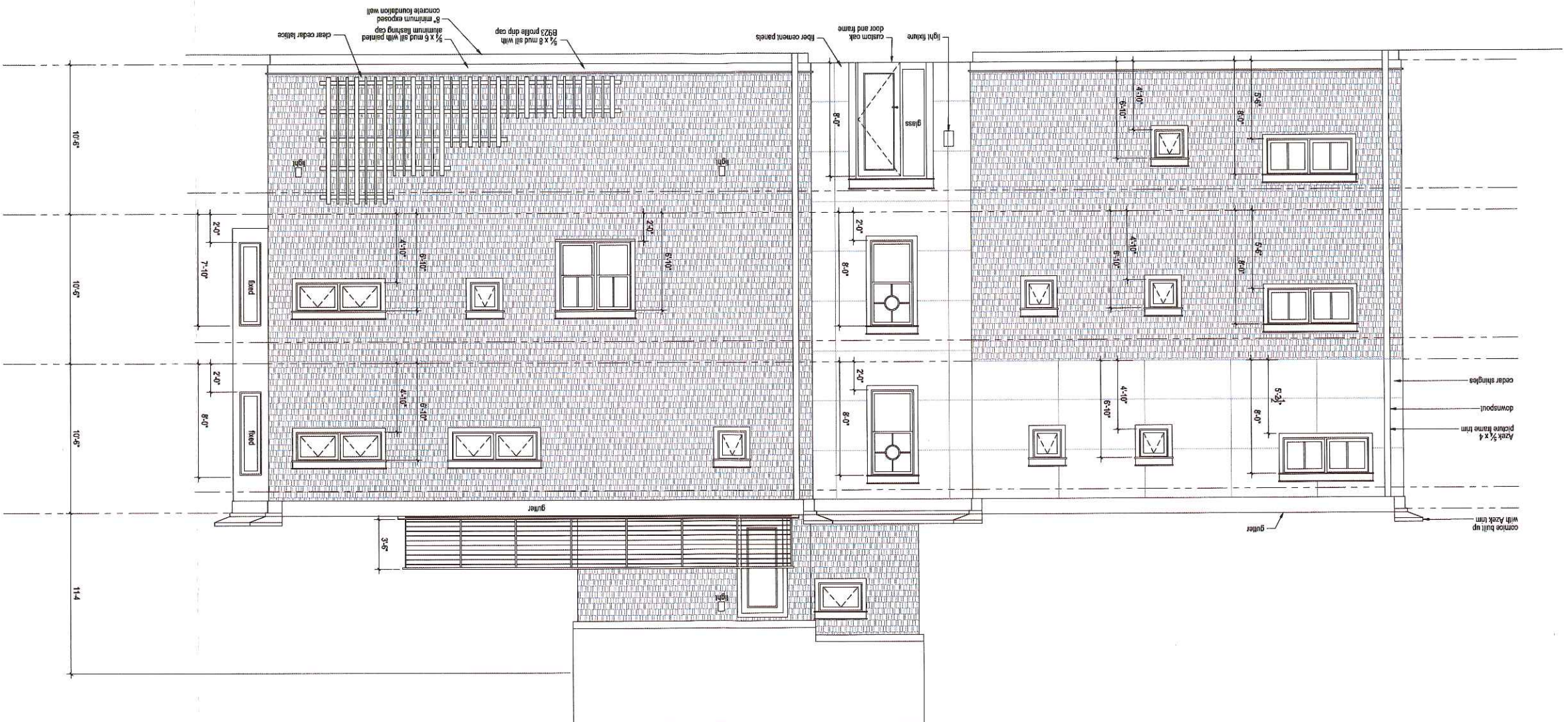




Date: 21 July, 2015	Scale: as noted	Revisions: 09-09-2015 revisions per p.h. review	Project: 4 Unit Apartment Building 93 St. Lawrence Street Portland Maine, 04101 CBL: 016 D010001 B&P 17303/310	Architect: <b>ARCHITECTS</b> 48 Union Wharf Portland, Maine 04101 (207) 772-6022 Fax: (207) 772-4056	Consultant:	Owner/Applicant: Barbara Colby and Laurence Gross PO Box 10152 Portland Maine, 04104
A2.01						



2 Side (North) Elevation  
1/4"=1'-0"



A2.03

Date: 21 July, 2015  
Scale: AS NOTED

Submission to Planning Board

Revisions: 09-09-2015 revisions per p.b. review

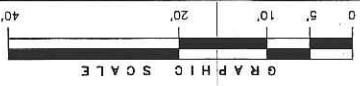
Project: 4 Unit Apartment Building  
93 St. Lawrence Street  
Portland Maine, 04101  
CBL: 016 D010001 B&P 17303210

Architect: ARCHETYPED architects  
48 Union Wharf Portland, Maine 04101  
(207) 772-6022 Fax: (207) 772-4056

Consultant:

Owner/Applicant  
Barbara Colby and Laurence Gross  
PO Box 10152  
Portland Maine, 04104





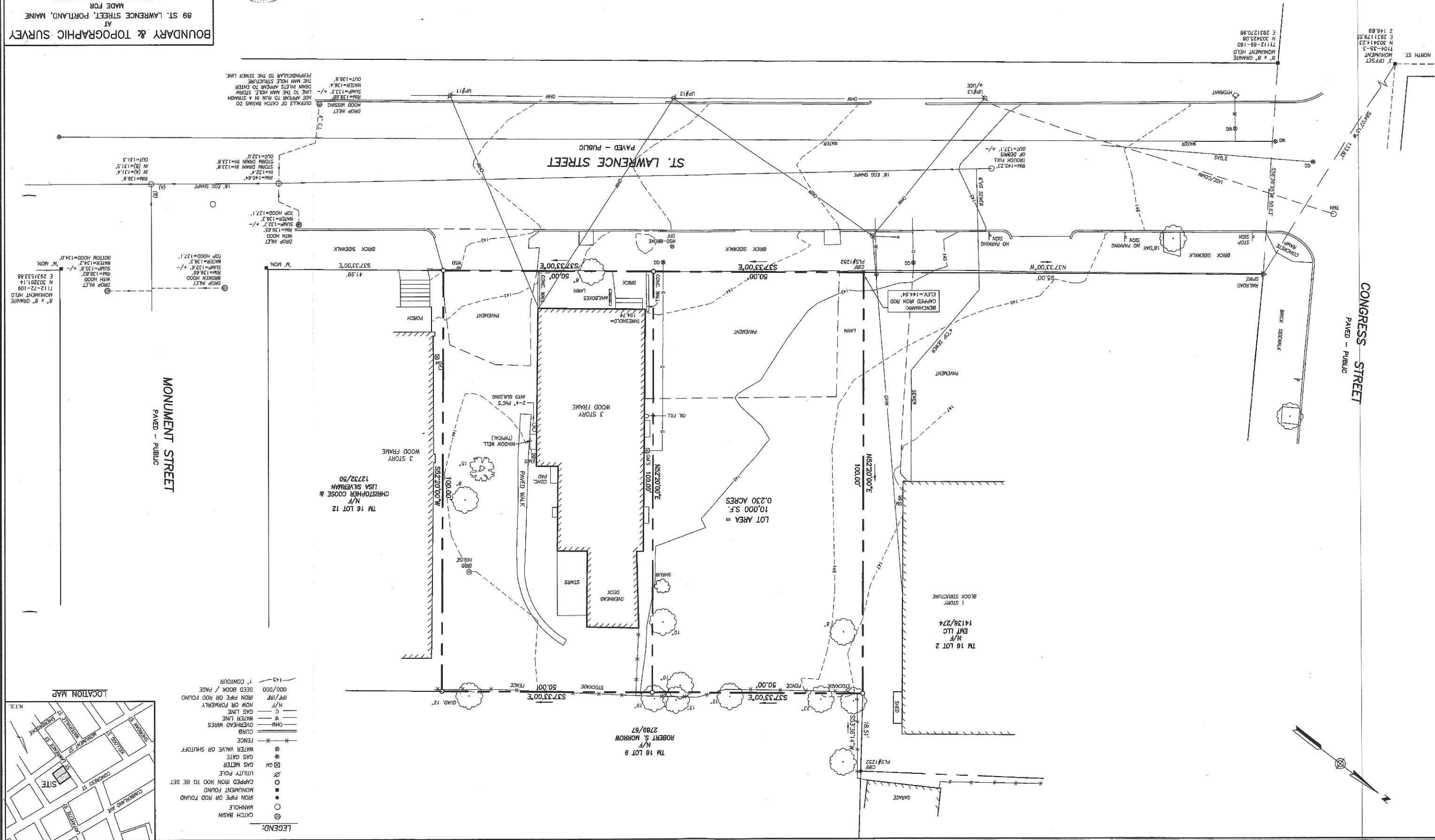
**UTILITY NOTE**  
 THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-800-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

**PLAN REFERENCES**  
 1. PLAN OF LAND IN PORTLAND, MAINE SURVEYED FOR STANDARD OIL COMPANY OF NEW YORK DECEMBER 1926 BY E.C. JORDAN CO.  
 2. CITY WORKING PLANS 25, 140, 148, DATED 1924 AND 1925.  
 3. STANDARD BOUNDARY SURVEY ON 118 CONGRESS STREET, PORTLAND, MAINE MADE FOR THE REALTY/AMMANHAM ASSOCIATES, PORTLAND, MAINE, DATED JULY 13, 1998 REV. 3-10-21/13 BY OWEN HASKELL, INC.

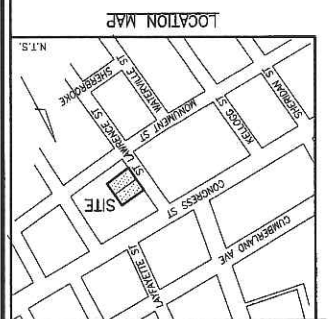
**NOTES**  
 1. OWNER OF RECORD: LAWRENCE W. GROSS  
 C.R.D. BOOK 17303 PAGE 310, BOOK 30580 PAGE 89  
 2. LOCUS IS SHOWN AT LOT 16-D-10 & 11 ON THE CITY OF PORTLAND'S ASSESSOR'S MAPS.  
 3. BEARINGS ARE MAGNETIC 1926, PER PLAN REFERENCE #2.  
 4. ELEVATIONS ARE BASED ON CITY DATUM, BASED ON MONUMENT AT NORTHEAST CORNER OF NORTH AND CONGRESS STREETS, ELEV. 146.69.

**CERTIFICATE**  
 OWEN HASKELL, INC. CERTIFIES THAT THIS PLAN IS BASED ON AND THE RESULT OF AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO CURRENT STANDARDS OF PRACTICE.  
 RANDY LOUBIER  
 NO. 2407  
 PROFESSIONAL LAND SURVEYOR  
 STATE OF MAINE  
 DATE: 6/11/14  
 RANDY R. LOUBIER, PLS #22407

**BOUNDARY & TOPOGRAPHIC SURVEY**  
 AT  
 89 ST. LAWRENCE STREET, PORTLAND, MAINE  
 MADE FOR  
 LAWRENCE W. GROSS  
 P.O. BOX 10152, PORTLAND, MAINE 04104  
**OWEN HASKELL, INC.**  
 PROFESSIONAL LAND SURVEYORS  
 390 U.S. ROUTE ONE, FALMOUTH, ME 04406 (207) 774-0424  
 Job No. 2014-011P  
 Date JUNE 11, 2014  
 Drawn By JLM  
 Check By RRL  
 Book No. 1123  
 Scale 1" = 10'  
 Dwg. No. 1



- LEGEND:**
- CATCH BASIN
  - MANHOLE
  - IRON PIPE OR ROD FOUND
  - MONUMENT FOUND
  - CAPPED IRON ROD TO BE SET
  - UTILITY POLE
  - GAS METER
  - GAS GATE
  - WATER VALVE OR SHUTOFF
  - FENCE
  - CURB
  - OVERHEAD WIRES
  - WATER LINE
  - GAS LINE
  - NOW OR FORMERLY
  - IRON PIPE OR ROD FOUND
  - DEED BOOK / PAGE
  - 1' CONTOUR



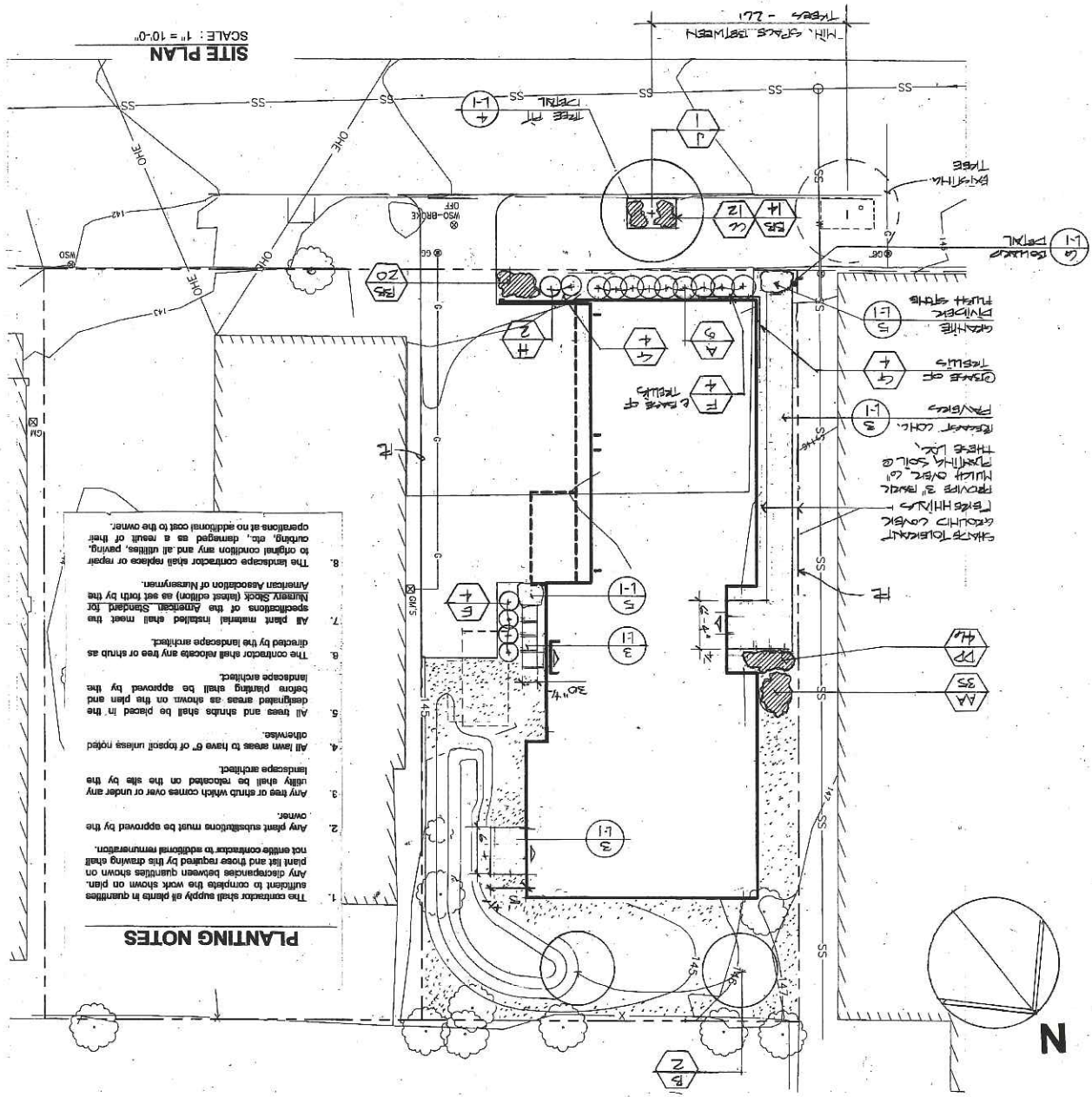
KEY	COMMON & BOTANICAL NAME	SIZE	ROOT QTY	NOTES
A	HIGHBUSH BLUEBERRY	3' HT.	CONT. 9	3 TRUNK
B	AMERICAN BILBERRY	2 1/2" CAL.	B&B 2	3 TRUNK
C	SHASTA VIBURNUM	4.5' HT.	B&B 2	3 CANES
D	SHASTA VIBURNUM			
E	SUMMER SNOWFLAKE VIBURNUM	#5	CONT. 4	
F	CLEMATIS		CONT. 4	VINE
G	WOODBINE		CONT. 8	VINE
H	SARGENT JUNIPER	#3	2	
J	YELLOWWOOD	3" CAL.	B&B 1	SHRUB TREE

**PLANT LIST**

TREES, SHRUBS & VINES

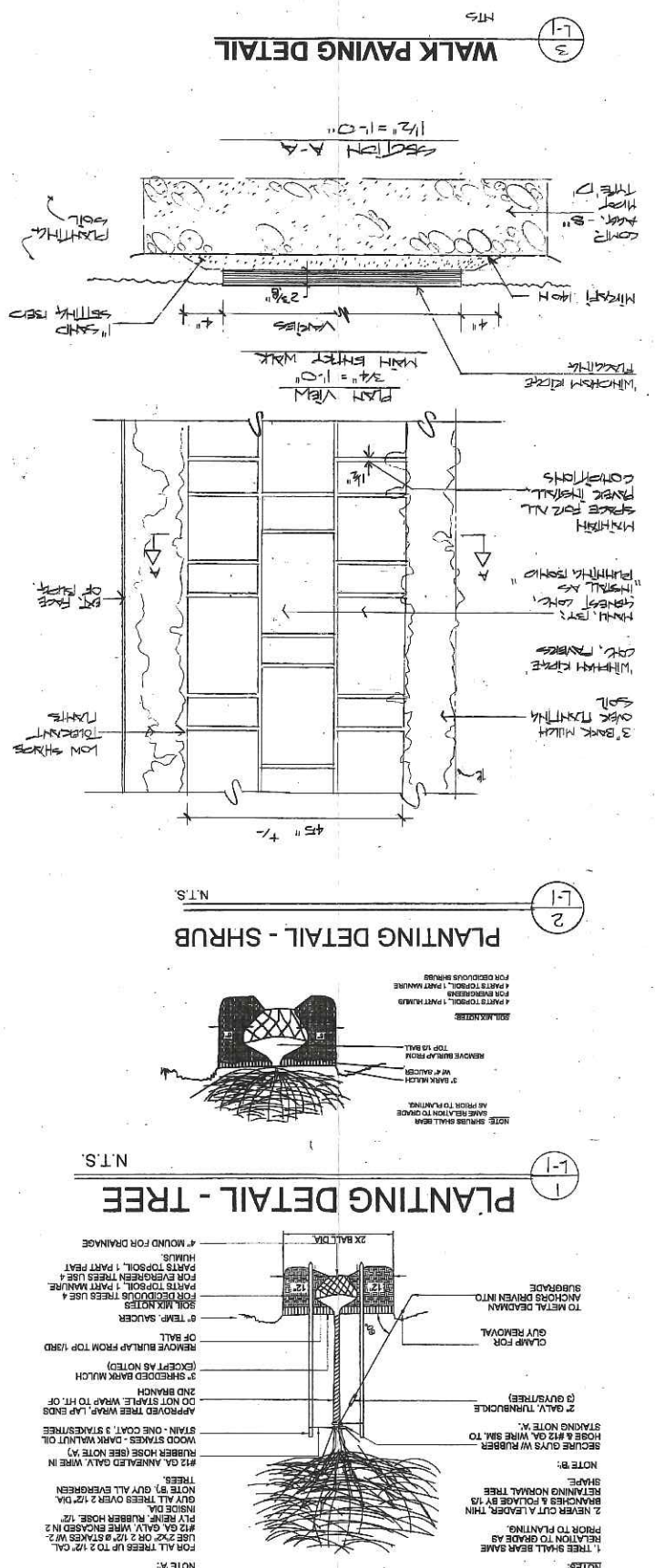
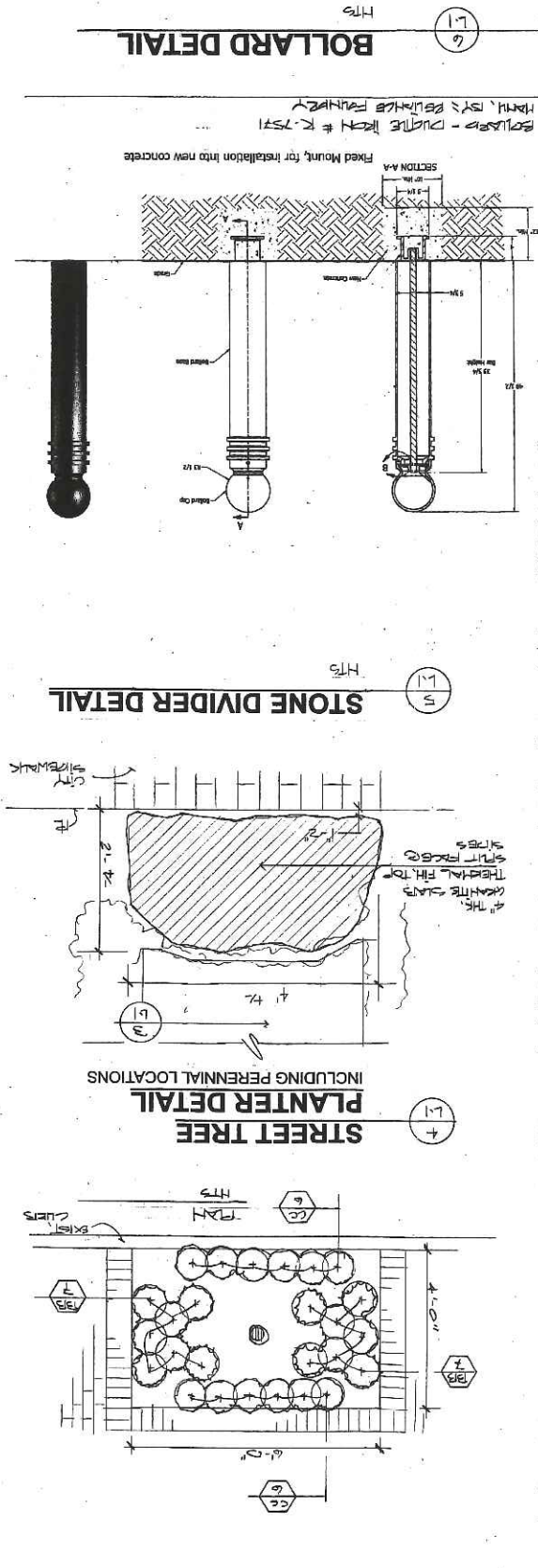
PERENNIALS	QTY	SIZE	ROOT QTY	NOTES
AA CORNUS CANADENSIS	45	CONT.		@ 9" OC
BB DAYLILY VAR. HEMEROCALLIS	34	PTD		TRIM 50%
CC ASTILBE	12	PTD		
DD WILD GINGER	40	CONT.		@ 9" OC

**ST. LAWRENCE STREET**



**PLANTING NOTES**

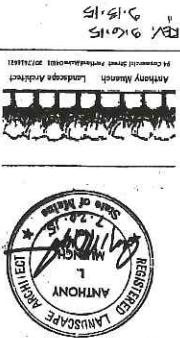
- The contractor shall supply all plants in quantities sufficient to complete the work shown on plan. Any discrepancies between quantities shown on plan list and those required by the drawing shall not entitle contractor to additional remuneration.
- Any plant substitutions must be approved by the owner.
- Any tree or shrub which comes over or under any utility shall be relocated on the site by the landscape architect.
- All lawn areas to have 6" of topsoil unless noted otherwise.
- All trees and shrubs shall be placed in the landscape planting shall be approved by the landscape architect.
- The contractor shall replace any tree or shrub as directed by the landscape architect.
- All plant material installed shall meet the specifications of the American Standard for Nursery Stock (latest edition) as set forth by the American Association of Nurserymen.
- The landscape contractor shall replace or repair to original condition any and all utilities, paving, curbing, etc., damaged as a result of the operations at no additional cost to the owner.



LANDSCAPE PLAN

DATE: 7-20-15

**4 UNIT APARTMENT BUILDING**  
93 ST. LAWRENCE STREET  
PORTLAND, MAINE 04101

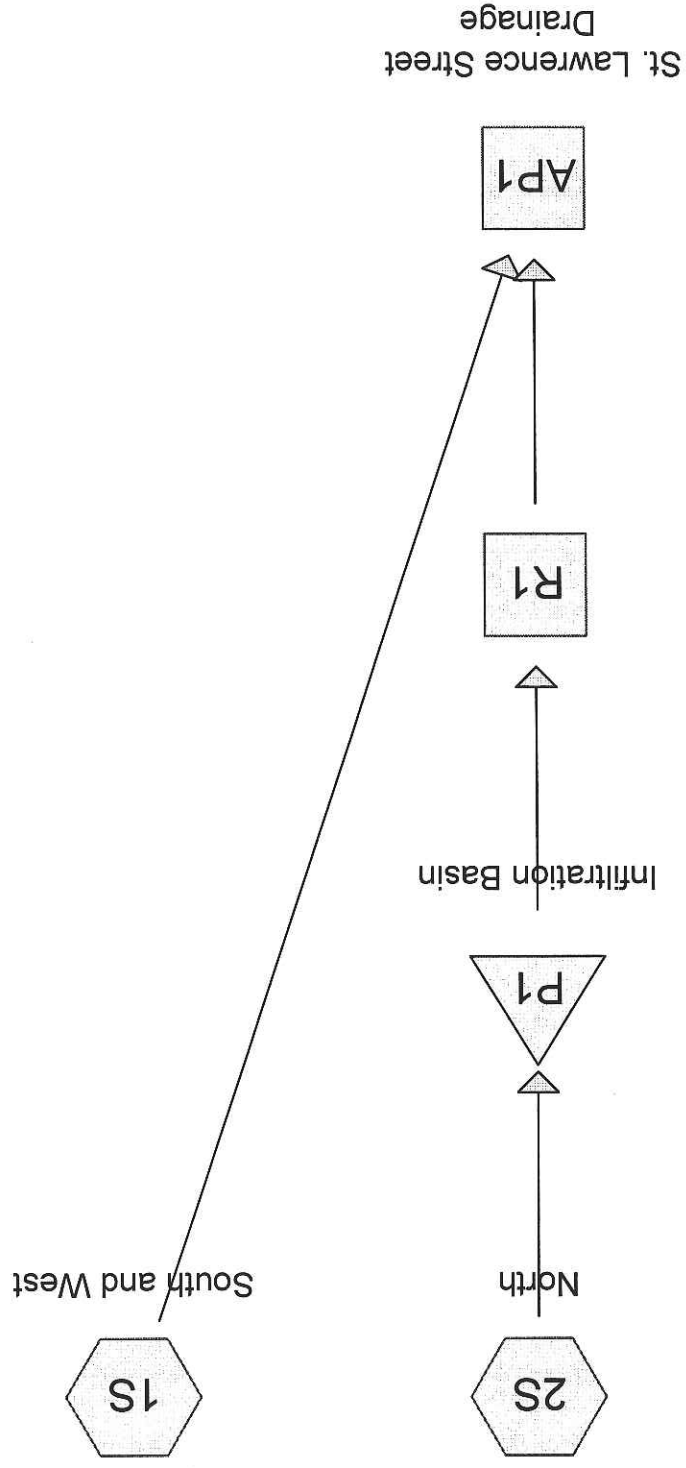
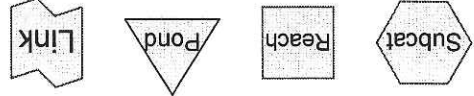


UPDATED STORMWATER CALCULATIONS





Routing Diagram for Archetype- 93 Saint Lawrence Proposed  
Prepared by {enter your company name here}, Printed 9/11/2015  
HydroCAD® 10.00 s/n 01260 © 2012 HydroCAD Software Solutions LLC



Type III 24-hr 2-Year Rainfall=3.00"  
 Printed 9/11/2015

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
 Runoff by SCS TR-20 method, UH=SCS  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: South and West**  
 Runoff Area=2,576 sf 56.33% Impervious Runoff Depth=0.81"  
 Flow Length=145' Tc=5.3 min CN=72 Runoff=0.05 cfs 0.004 af

**Subcatchment 2S: North**  
 Runoff Area=3,552 sf 57.74% Impervious Runoff Depth=0.86"  
 Tc=5.0 min CN=73 Runoff=0.08 cfs 0.006 af

**Reach AP1: St. Lawrence Street Drainage**  
 Inflow=0.05 cfs 0.004 af  
 Outflow=0.05 cfs 0.004 af

**Reach R1:**  
 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
 n=0.013 L=70.0' S=0.0214 1/1' Capacity=80.40 cfs Outflow=0.00 cfs 0.000 af

**Pond P1: Infiltration Basin**  
 Peak Elev=143.96' Storage=91 cf Inflow=0.08 cfs 0.006 af  
 Discarded=0.01 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.006 af

**Total Runoff Area = 0.141 ac Runoff Volume = 0.010 af Average Runoff Depth = 0.84"**  
**42.85% Pervious = 0.060 ac 57.15% Impervious = 0.080 ac**

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: South and West**  
Runoff Area=2,576 sf 56.33% ImperVIOUS Runoff Depth=1.97"  
Flow Length=145' Tc=5.3 min CN=72 Runoff=0.14 cfs 0.010 af

**Subcatchment 2S: North**  
Runoff Area=3,552 sf 57.74% ImperVIOUS Runoff Depth=2.05"  
Tc=5.0 min CN=73 Runoff=0.20 cfs 0.014 af

**Reach AP1: St. Lawrence Street Drainage**  
Inflow=0.14 cfs 0.010 af  
Outflow=0.14 cfs 0.010 af

**Reach R1:**  
Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
n=0.013 L=70.0' S=0.0214 1/ Capacity=80.40 cfs Outflow=0.00 cfs 0.000 af

**Pond P1: Infiltration Basin**  
Peak Elev=144.48' Storage=279 cf Inflow=0.20 cfs 0.014 af  
Discarded=0.01 cfs 0.014 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.014 af

**Total Runoff Area = 0.141 ac Runoff Volume = 0.024 af Average Runoff Depth = 2.01"**  
42.85% Pervious = 0.060 ac 57.15% ImperVIOUS = 0.080 ac

**Summary for Subcatchment 1S: South and West**

Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.010 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)
1,125	39	>75% Grass cover, Good, HSG A	1,451	98		
1,451	98	Paved parking, HSG A	1,451	98		
2,576	72	Weighted Average	1,125			
		43.67% Pervious Area				
		56.33% Impervious Area				
4.4	40	0.0250	0.15			
<b>Sheet Flow, A-B</b>						
Grass: Short n= 0.150 P2= 3.00"						
0.7	60	0.0333	1.47			
<b>Sheet Flow, B-C</b>						
Smooth surfaces n= 0.011 P2= 3.00"						
0.2	45	0.0220	3.01			
<b>Shallow Concentrated Flow, C-D</b>						
Paved Kv= 20.3 fps						
5.3	145	Total				

**Summary for Subcatchment 2S: North**

Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description	Tc Length (min)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)
1,501	39	>75% Grass cover, Good, HSG A	1,501	98		
2,024	98	Unconnected roofs, HSG A	2,024	98		
27	98	Paved parking, HSG A	27	98		
3,552	73	Weighted Average	1,501			
		42.26% Pervious Area				
		57.74% Impervious Area				
2,051			2,051			
2,024			2,024			
		98.68% Unconnected				
5.0						

Direct Entry, Tc MUST BE 5 MIN OR GREATER

**Summary for Reach AP1: St. Lawrence Street Drainage**

Inflow Area = 0.141 ac, 57.15% Impervious, Inflow Depth = 0.83" for 10-Year event  
 Inflow = 0.14 cfs @ 12.08 hrs, Volume= 0.010 af  
 Outflow = 0.14 cfs @ 12.08 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

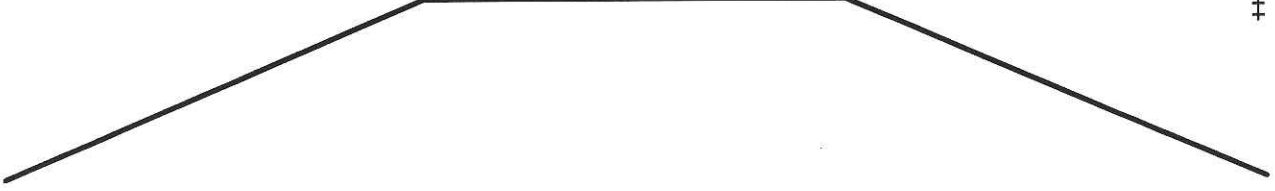
**Summary for Reach R1:**

Inflow Area = 0.082 ac, 57.74% ImperVIOUS, Inflow Depth = 0.00" for 10-Year event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 10.0 sf, Capacity= 80.40 cfs

10.00' x 0.50' deep channel, n= 0.013 Asphalt, smooth  
 Side Slope Z-value= 20.0 ' / Top Width= 30.00'  
 Length= 70.0' Slope= 0.0214 ' /  
 Inlet Invert= 144.50', Outlet Invert= 143.00'



**Summary for Pond P1: Infiltration Basin**

Inflow Area = 0.082 ac, 57.74% ImperVIOUS, Inflow Depth = 2.05" for 10-Year event  
 Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af  
 Outflow = 0.01 cfs @ 13.80 hrs, Volume= 0.014 af, Atten= 93%, Lag= 103.1 min  
 Discarded = 0.01 cfs @ 13.80 hrs, Volume= 0.014 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Peak Elev= 144.48' @ 13.80 hrs Surf.Area= 454 sf Storage= 279 cf

Plug-Flow detention time= 227.7 min calculated for 0.014 af (100% of inflow)  
 Center-of-Mass det. time= 227.7 min ( 1,069.9 - 842.2 )

Volume	Invert	Avail. Storage	Storage Description
#1	143.50'	627 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
143.50	128	0	0
144.00	279	102	102
144.50	460	185	287
145.00	900	340	627

Device Routing Invert Outlet Devices

Device	Routing	Invert	Outlet Devices
#1	Primary	144.50'	9.0' long x 5.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	143.50'	1.420 in/hr Exfiltration over Surface area above 143.40'
			Conductivity to Groundwater Elevation = 0.00'
			Excluded Surface area = 0 sf

Discarded Outflow Max=0.01 cfs @ 13.80 hrs HW=144.48' (Free Discharge)  
 ↳=Exfiltration ( Controls 0.01 cfs)

Primary Outflow Max=0.00 cfs @ 0.00 hrs HW=143.50' (Free Discharge)  
 ↳=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment1S: South and West**

Runoff Area=2,576 sf 56.33% Impervious Runoff Depth=2.59"  
Flow Length=145' Tc=5.3 min CN=72 Runoff=0.18 cfs 0.013 af

**Subcatchment2S: North**

Runoff Area=3,552 sf 57.74% Impervious Runoff Depth=2.68"  
Tc=5.0 min CN=73 Runoff=0.26 cfs 0.018 af

**Reach AP1: St. Lawrence Street Drainage**

Inflow=0.18 cfs 0.015 af  
Outflow=0.18 cfs 0.015 af

**Reach R1:**

Avg. Flow Depth=0.01' Max Vel=0.76 fps Inflow=0.08 cfs 0.003 af  
n=0.013 L=70.0' S=0.0214' Capacity=80.40 cfs Outflow=0.07 cfs 0.003 af

**Pond P1: Infiltration Basin**

Peak Elev=144.52' Storage=298 cf Inflow=0.26 cfs 0.018 af  
Discarded=0.02 cfs 0.016 af Primary=0.08 cfs 0.003 af Outflow=0.09 cfs 0.018 af

Total Runoff Area = 0.141 ac Runoff Volume = 0.031 af Average Runoff Depth = 2.64"  
42.85% Pervious = 0.060 ac 57.15% Impervious = 0.080 ac

**POST CONSTRUCTION STORMWATER MANAGEMENT PLAN**



ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE



**September 2015**

**LARRY GROSS AND BARBARA COLBY  
4-UNIT MULTI-FAMILY APARTMENT BUILDING  
93 St. Lawrence Street  
Portland, Maine**

**Prepared for**

**POST-CONSTRUCTION STORMWATER  
MANAGEMENT PLAN**

**TABLE OF CONTENTS**

Section No. Title Page No.

1.0 SITE DESCRIPTION ..... 1

2.0 CONTACTS ..... 1

3.0 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN OVERVIEW AND OBJECTIVES ..... 2

    3.1 Site Management Practices ..... 2

    3.2 Inspections ..... 3

    3.3 Routine Maintenance and Corrective Actions ..... 3

    3.4 Annual Report ..... 5

**POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN  
LARRY GROSS AND BARBARA COLBY  
4-UNIT MULTI-FAMILY APARTMENT BUILDING**

**1.0 SITE DESCRIPTION**

Larry Gross and Barbara Colby (Owners) propose to construct a 2,024-square-foot apartment building on a 5,000 square foot parcel located at 93 St. Lawrence Street in Portland, Maine. The building will be a three-story, four-unit apartment building with dedicated on-site parking in the garage located on the first floor. The property is located within the Residential 6 (R6) Zoning District and will comply with the City's vision of multifamily dwellings at a high density within this area.

The Owners are residents of the abutting property at 91 St. Lawrence Street and intend to construct a three-story rental property to include; a two-bedroom unit and garage on the first floor and three two-bedroom units between the second and third floors.

The property is currently fully disturbed with a 1,310-square-foot paved parking area along the street frontage and a maintained lawn area to the rear of the property. The proposed building, paved vehicle maneuvering area, walks and patios will not result in an increase in developed area on the property, but will increase the on-site impervious area to approximately 3,300 square feet.

**2.0 CONTACTS**

Facility:

93 St. Lawrence Street  
Portland, Maine 04101

Owner Representative:

Larry Gross & Barbara Colby  
Telephone: 207-232-1619

Scott Beal, Environmental Manager

Consultant/Designer:

Sevee & Maher Engineers

4 Blanchard Road

Cumberland, Maine 04021

Telephone: 207-829-5016

Daniel P. Diffin, P.E.

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### **3.0 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN OVERVIEW AND**

#### **OBJECTIVES**

The Post Construction Stormwater Management Plan (PCSWMP) is an important component of the overall stormwater management system for the site. PCSWMP addresses various maintenance activities that should occur after construction and site stabilization. Proper implementation of the SVP can minimize pollutant generation and transport and maintain the stormwater treatment system to ensure proper operation. This PCSWMP includes three primary components:

1. Site Management Practices

2. Inspections

3. Routine Maintenance and Corrective Actions

#### **3.1 Site Management Practices**

Site management practices are aimed at reducing pollutants by minimizing use of certain materials, using alternative materials, or removing pollutants prior to discharge to the stormwater treatment system. These practices shall include:

a. Use slow release sulfur or plastic coated ureaform fertilizers (e.g., Nutralene).

b. Do not fertilize vegetated swales once vegetation is established.

c. Minimize use of pesticides by using a sound integrated pest management (IPM)

approach to monitor and control the actual pests present.

- d. Collect and remove autumn leaves to minimize transport to the stormwater treatment system.
- e. Minimize use of de-icing materials and sand.
- f. Routine sweeping of parking areas and driveways.
- g. Fertilizers, pesticides and other hazardous materials should be stored in enclosed areas to avoid exposure to precipitation.
- h. Material handling should be conducted to minimize risk of spillage and release to the stormwater treatment system.

3.2 Inspections

A series of routine inspections by the Owner or their agent shall be completed to allow for the early identification of potential problems, and to guide routine maintenance activities. Inspections shall be carried out in accordance with the Site Inspection Schedule (Table 1). Dates and observations shall be recorded for each inspection on the attached 'Inspection Log'. In addition to the routine inspections, an inspection by a qualified post-construction stormwater inspector to inspect the BMPs is required on a minimum annual basis.

3.3 Routine Maintenance and Corrective Actions

Routine maintenance activities are designed to ensure proper function of the stormwater management system and minimize pollutant transport from the site. Routine maintenance activities must be completed according to the schedule (Table 1) provided in this plan. This schedule is the minimum amount of maintenance required, and maintenance that is more frequent may be needed when indicated by the inspections. Corrective actions (supplemental maintenance activities or repairs) should be completed as soon as possible, but no more than 7 days, after the inspection identifying the problem. Each maintenance activity will be recorded on the attached 'Maintenance and Repair Log'. Records of the deficiencies and corrective actions shall be included in the annual report.

During construction, the Sitework Contractor shall be responsible for cleaning and maintaining stormwater components on the schedule outlined in Table 1.

Following completion of construction, the Owner will be responsible for cleaning and maintaining stormwater components on the schedule outlined in Table 1.

Place removed sediments in an area of low erosion potential, either on-site or off-site, and seed with erosion control seed mix.

The following describes specific stormwater facilities maintenance requirements and minimum schedule of inspection and maintenance.

1. Open swales and ditches need to be inspected in the spring and fall, or after a major rainfall event, to assure that debris or sediments do not reduce the effectiveness of the system. Debris needs to be removed at that time. Sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper functioning. Swales that show newly formed channels or gullies will be immediately repaired by reseeding/sodding or bare spots, removal of trash, leaves and/or accumulated sediments, and the control of woody or other undesirable vegetation.

2. Vegetated ditches should be mowed at least once during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.

3. If sediment in culverts or piped drainage systems exceeds 20 percent of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing or other mechanical means; however, care should be taken to not flush the sediments into the infiltration basin as it will reduce the pond's capacity and hasten the time when it must be cleaned. Storm pipes should be inspected on an annual basis.

4. Paved surfaces shall be swept or vacuumed at least annually in the spring to remove winter sand and periodically during the year on an as-needed basis to minimize the transportation of sediment during rainfall events.

5. Sediments within the infiltration basin shall be removed and the basin bottom repaired. Any areas around the infiltration basin found to have erosion should be corrected as necessary. Any bare areas should be seeded or sodded, as necessary. Inspect the area around the basin semi-annually for eroding soil and other sediment sources. Repair eroding areas using appropriate erosion control BMPs immediately. Control sediment sources, such as stockpiles of winter sand, by removing them from the basin's drainage area or surrounding them with sediment control BMP's. Prohibit vehicle access to all filtration areas, and limit pedestrian access into the basin. Heavy equipment used to maintain or rehabilitate the basins should work from the basin's perimeter.

### 3.4 Annual Report

The Owner or a qualified post-construction stormwater inspector shall provide a completed and signed certification to the department of public services (DPS) in a form provided by DPS certifying that the person has inspected the BMPs and that they are adequately maintained and functioning as required by this Plan, or that they require maintenance or repair, including the record of the deficiencies and corrective actions taken. The Owner will be required to pay a filing fee established by the DPS.

LARRY GROSS AND BARBARA COLBY  
4-UNIT MULTI-FAMILY APARTMENT BUILDING

TABLE 1

Vegetated Areas		Spring	Fall or Yearly	After a Major Storm	Every 2-5 Years
Inspect all slopes and embankments	X	X	X	X	
Replant bare areas or areas with sparse growth	X	X	X	X	
Armor areas with rill erosion with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows.	X	X	X	X	
<b>Driveways and Parking Surfaces</b>					
Clear accumulated winter sand in parking lots and along roadways	X				
Sweep pavement to remove sediment	X				
<b>Infiltration Basins</b>					
Inspect soil filter to see that collected water drains within 72 hours.	X	X	X	X	
Rototill top 3" soil, or remove and replace the top 3" of soil with clean soil to the proper specification, when the bed fails to drain dry within 72 hours.					X
Remove accumulated sediment, dead portions of plants, excessive growth, and weeds.		X			
Mow grass-covered filter bed no shorter than 6", at a frequency of no more than 2 times per growing season to maintain a high-grass meadow. Do not fertilize unless absolutely needed.	X	X			

The maintenance needs for most vegetative and stabilization measures may be found in the Maine Erosion and Sediment Control BMPs manual as published in 2003 (or latest version) and/or the Maine Stormwater Best Management Practices Manual.





