

City of Portland  
Development Review Application  
Planning Division Transmittal Form

**Application Number:** 2015-125                      **Application Date:** 08/03/2015  
**CBL:** 046 C019001                      **Application Type:** Level III Site Plan 100,001 - 200,00  
**Applicant:** Redfern Properties /Jonathan Culley  
**Project Name:** Longfellow Apartments  
**Address:** 667 CONGRESS ST  
**Project Description:** 8 story apartment building with one ground floor retail suite and 2 levels of parking.  
The total new building will have 1349 market rate rentals and 82 parking spaces.  
**Zoning:** B3

<b>Other Required Reviews:</b>		
<input type="checkbox"/> Traffic Movement	<input type="checkbox"/> 14-403 Streets	<input type="checkbox"/> Housing Replacement
<input type="checkbox"/> Storm Water	# Units _____	<input type="checkbox"/> Historic Preservation
<input checked="" type="checkbox"/> Subdivision	<input type="checkbox"/> Flood Plain	<input type="checkbox"/> Other:
# Lots <u>139</u>	<input type="checkbox"/> Shoreland	
<input type="checkbox"/> Site Location	<input type="checkbox"/> Design Review	
# Unit _____		

**Distribution List:**

<b>Planner</b>		<b>Parking</b>	John Peverada
<b>Zoning</b>	Ann Machado	<b>Design Review</b>	Caitlin Cameron
<b>Traffic Engineer</b>	Tom Errico	<b>Corporation Counsel</b>	Jennifer Thompson
<b>Civil Engineer</b>	David Sensus	<b>Sanitary Sewer</b>	John Emerson
<b>Fire Department</b>	Keith Gautreau	<b>Inspections</b>	Tammy Munson
<b>City Arborist</b>	Jeff Tarling	<b>Historic Preservation</b>	Deb Andrews
<b>Engineering</b>	David Margolis-Pineo	<b>DRC Coordinator</b>	Phil DiPierro
		<b>Outside Agency</b>	

**Comments needed by 8/10/2015**

P.O. Box 8816  
Portland, ME 04104  
Office: 207-221-5746  
Fax: 207-221-2822  
[www.redfernproperties.com](http://www.redfernproperties.com)

July 31, 2015

Shukria Wiar  
Planning Division, City of Portland  
389 Congress Street, 4<sup>th</sup> Floor  
Portland, ME 04101

Re: 667 Congress Street, Level III Site Plan Application

Dear Shukria:

Please find attached the Preliminary Level III Site Plan Application related to our proposed mixed-use development at 667 Congress Street. The proposed project contemplates 139 market rate rental apartments on Floors 2-8, with Joe's Super Variety occupying a ground floor retail suite. Two levels of parking will provide 82 parking spaces. The project is designed to incorporate 'smart growth' principles and a high standard for energy efficiency.

Attached to this application, please find the following documents:

1. Completed Application Form (7 pages)
2. Evidence of Right, Title, & Interest – MSD Properties LLC Deed (3 pages)
3. Zoning Analysis (2 pages)
4. Written Requests for Waivers (2 pages)
5. Traffic Analysis (1 page)
6. Boundary Survey (1 page)
7. Civil Engineer Cover Letter (3 pages)
8. Site Plan/Civil Engineering Drawings (14 pages)
9. Preliminary Stormwater Management Plan (61 pages)
10. Preliminary Erosion Control Plan (12 pages)
11. Capacity to Serve Letters (20 pages)
12. Architectural Drawings & Renderings, including elevation (8 pages)

We have made a separate application to the Historic Preservation Board for a Certificate of Appropriateness related to our Architectural Design.

We do not believe that any federal or state permits are required for this project

With respect to Financial and Technical Capacity, we believe that Redfern Properties LLC track record of developing successful projects in Portland constitutes ample evidence. If the City requires a letter from one of our prospective lenders, we would be happy to provide one.

We look forward to working with the City of Portland to achieve a successful project. Please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jonathan Culley', is positioned above the typed name.

Jonathan Culley  
Redfern Properties LLC



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.

  
\_\_\_\_\_  
Applicant Signature:

7/31/2015  
\_\_\_\_\_  
Date:

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

7/31/2015  
\_\_\_\_\_  
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 prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) 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.

**PROJECT NAME:** Longfellow Apartments

**PROPOSED DEVELOPMENT ADDRESS:** 667 Congress Street

**PROJECT DESCRIPTION:** Project contemplates demolition of existing variety store and subsequent construction of 8-story apartment building with one ground floor retail suite and 2 levels of parking. In total the new building will have 139 market-rate rental apartments and 82 parking spaces.

**CHART/BLOCK/LOT:** \_46-C-19-20 **PRELIMINARY PLAN** \_\_\_\_\_ (date)  
**FINAL PLAN** \_\_\_\_\_ (date)

**CONTACT INFORMATION:**

<b>Applicant – must be owner, Lessee or Buyer</b> Name: Redfern Properties LLC, on behalf of MSD Properties LLC Address: P.O. Box 8816 City/State : Portland, ME      Zip Code: 04104	<b>Applicant Contact Information</b> Work # Home# Cell # 207-776-9715      Fax# e-mail: jonathan@redfernproperties.com
<b>Owner – (if different from Applicant)</b> Name: MSD Properties LLC Address: P.O. Box 5055 City/State : Portland, ME      Zip Code: 04101	<b>Owner Contact Information</b> Work # Home# Adam Taylor Attorney 207-828-2005 Cell # Fax# e-mail: ataylor@tmfttorneys.com
<b>Agent/ Representative</b> Name: Address: City/State :      Zip Code:	<b>Agent/Representative Contact information</b> Work # Cell # e-mail:
<b>Billing Information</b> Name: Redfern Properties LLC Address: Same as Above City/State :      Zip Code:	<b>Billing Information</b> Work # Cell # 207-776-9715      Fax# e-mail: jonathan@redfernproperties.com

<b>Engineer</b> Name: Acorn Engineering/Will Savage Owner Address: 158 Danforth Street City/State : Portland, ME                  Zip Code: 04102	<b>Engineer Contact Information</b> Work # 207-775-2655 Cell # 207-317-1884                  Fax# e-mail: wsavage@acorn-engineering.com
<b>Surveyor</b> Name: Titcomb Associates Address: 133 Gray Road City/State : Falmouth, ME                  Zip Code: 04105	<b>Surveyor Contact Information</b> Work # 207-797-9199 Cell #    Fax# e-mail: dtitcomb@titcombsurvey.com
<b>Architect</b> Name: Ryan Senatore Architecture Address: 565 Congress Street, Suite 304 City/State : Portland, ME                  Zip Code: 04101	<b>Architect Contact Information</b> Work # 207-650-6414 Cell # 207-650-6414                  Fax# e-mail: ryan@senatorearchitecture.com
<b>Attorney</b> Name: Pierce Atwood/Eben Adams Partner Address: 254 Commercial St. City/State : Portland, ME                  Zip Code: 04101	<b>Attorney Contact Information</b> Work # 207-791-1175 Cell #    Fax# e-mail: eadams@pierceatwood.com

**APPLICATION FEES:**

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

<b>Level III Development (check applicable reviews)</b> <input type="checkbox"/> Less than 50,000 sq. ft. (\$500.00) <input type="checkbox"/> 50,000 - 100,000 sq. ft. (\$1,000) <input type="checkbox"/> x 100,000 – 200,000 sq. ft. (\$2,000) <input type="checkbox"/> 200,000 – 300,000 sq. ft. (\$3,000) <input type="checkbox"/> over \$300,00 sq. ft. (\$5,000) <input type="checkbox"/> Parking lots over 11 spaces (\$1,000) <input type="checkbox"/> After-the-fact Review (\$1,000.00 plus applicable application fee)  <b>Plan Amendments (check applicable reviews)</b> <input type="checkbox"/> Planning Staff Review (\$250) <input type="checkbox"/> Planning Board Review (\$500)  <hr/> The City invoices separately for the following: <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> 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.	<b>Other Reviews (check applicable reviews)</b> <input type="checkbox"/> Traffic Movement (\$1,000) <input type="checkbox"/> Stormwater Quality (\$250) <input type="checkbox"/> x Subdivisions (\$500 + \$25/lot) # of Lots <u>139</u> x \$25/lot = <u>\$3,475</u> <u>          </u> Site Location (\$3,000, except for residential projects which shall be \$200/lot) # of Lots <u>          </u> x \$200/lot = <u>          </u> <input type="checkbox"/> Other <u>          </u> <input type="checkbox"/> Change of Use <input type="checkbox"/> Flood Plain <input type="checkbox"/> Shoreland <input type="checkbox"/> Design Review <input type="checkbox"/> Housing Replacement <input type="checkbox"/> Historic Preservation
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**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>
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.

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:


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.

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

**APPLICANT SIGNATURE:**

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

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

Signature of Applicant: 	Date: 7/31/2015
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## PROJECT DATA

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

<b>Total Area of Site</b>	26,126.91	sq. ft.
<b>Proposed Total Disturbed Area of the Site</b>	26,126.91	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)	26,126.91	sq. ft.
Impervious Area (Total Proposed)	26,126.91	sq. ft.
<b>Building Ground Floor Area and Total Floor Area</b>		
Building Footprint (Total Existing)	3,672.72	sq. ft.
Building Footprint (Total Proposed)	23,968	sq. ft.
Building Floor Area (Total Existing)	3,672.72	sq. ft.
Building Floor Area (Total Proposed)	141,742	sq. ft.
<b>Zoning</b>		
Existing	B-3	
Proposed, if applicable		
<b>Land Use</b>		
Existing	Retail & Parking Lot	
Proposed	Retail, Residential	
<b>Residential, If applicable</b>		
# of Residential Units (Total Existing)	0	
# of Residential Units (Total Proposed)	139	
# of Lots (Total Proposed)	1	
# of Affordable Housing Units (Total Proposed)	0 (no subsidized units)	
<b>Proposed Bedroom Mix</b>		
# of Efficiency Units (Total Proposed)	34	
# of One-Bedroom Units (Total Proposed)	97	
# of Two-Bedroom Units (Total Proposed)	8	
# of Three-Bedroom Units (Total Proposed)	0	
<b>Parking Spaces</b>		
# of Parking Spaces (Total Existing)	63	
# of Parking Spaces (Total Proposed)	81	
# of Handicapped Spaces (Total Proposed)	2	
<b>Bicycle Parking Spaces</b>		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	56	
<b>Estimated Cost of Project</b>	\$20,000,000.00	

## PRELIMINARY PLAN (Optional) - Level III Site Plan

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

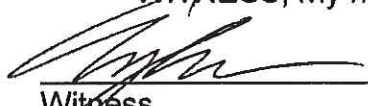
## DEED OF SALE BY PERSONAL REPRESENTATIVE Maine Statutory Short Form

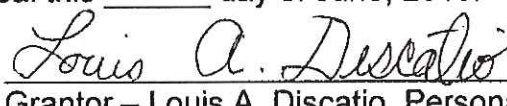
**WE, LOUIS A. DISCATIO**, of 18 Smith Farm Lane, Portland ME 04103, and **TERESA REO**, aka **THERESA DISCATIO**, of 99 Lowell Street, South Portland ME 04106, duly appointed and acting **PERSONAL REPRESENTATIVES** of the **ESTATE** of **JOSEPH L. DISCATIO**, **Cumberland Probate Docket #2012-1034**, by the power conferred by the Probate Code, and every other power, and with the right provided by decedent to convey property without notice to devisees or heirs, for consideration paid, **grant to MSD PROPERTIES, LLC**, a Maine Limited Liability Company with a principal place of business at 665 Congress Street, Portland ME 04101, certain lots or parcels of land and improvements in Portland, Cumberland County Maine on the northerly side of Congress Street bounded on the south by Congress Street, on the west by Vernon Place, and on the east by Avon Street, of approximately .6 acres, described on Exhibit A attached.

This property was conveyed to Joseph L. Discatio and Mary Discatio as joint tenants by warranty deed of Joseph L. Discatio dated September 16, 1990 and recorded on September 18, 1990 in Book 9322 Page 86 of the Cumberland County Registry of Deeds. Mary Discatio died on July 8, 1999; her estate was not probated.


MAINE REAL ESTATE TAX PAID

WITNESS, my hand and seal this 10 day of June, 2013.

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Grantor – Louis A. Discatio, Personal Representative  
Estate of Joseph L. Discatio

  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Grantor – Teresa Reo, aka Theresa Discatio,  
Personal Representative Estate of Joseph L. Discatio

State of Maine  
Cumberland, SS

Personally appeared before me, the above named Louis A. Discatio and Teresa Reo, aka Theresa Discatio, in their capacity as Joint Personal Representatives of the Estate of Joseph L. Discatio, acknowledged the foregoing instrument to be their free act and deed, and subscribed the same.

Before me,  
6-10-2013  
Date


  
\_\_\_\_\_  
Andrew J. Doukas, Attorney At Law  
ME BAR #2932

EXHIBIT A – LEGAL DESCRIPTION OF PROPERTY AT 665 CONGRESS STREET,  
PORTLAND, CUMBERLAND COUNTY, MAINE

PARCEL I

A certain lot or parcel of land with the buildings thereon, situated on the northwesterly corner of Congress Street and Congress Place, in said City of Portland, County of Cumberland and State of Maine, and having a frontage of thirty-eight (38) feet on Congress Street, and a frontage of about two hundred two (202) feet on Congress Place, with a depth of forty-five (45) feet at the northerly end. Said premises being bounded on the south by Congress Street, on the east by Congress Place, on the north by land now or formerly of T.A. and W.H. Roberts, and on the west by land now or formerly of H.W. and A. Deering, and by land of St. Stephens Church.

Congress Place is now known as Avon Street.

PARCEL II

First: A certain lot or parcel of land situated in said Portland on the easterly side of Vernon Court and numbered 13 and 15 on said Court, and being the same property conveyed by Grenville H. Deering to Ernest J. Eddy by deed dated November 2, 1907 and recorded in Cumberland County Registry of Deeds in Book 816, Page 149, to which deed and the deeds therein referred to reference is hereby made for a more particular description.

Second: A certain lot or parcel of land, with any buildings thereon, situated on the easterly side of Vernon Court in said Portland and being the most northerly lot of land on the easterly side of said Court and being the premises numbered 19 and 21 as shown on the city valuation plan recorded in Cumberland County Registry of Deeds in Book 5, Page 46, and being the same premises conveyed by Elizabeth E. Deering to said Ernest J. Eddy by deed dated December 18, 1908 and recorded in said Registry of Deeds in Book 835, Page 6, to which deed and the deeds therein referred to reference is hereby made for more particular description of the premises.

Third: A certain lot or parcel of land, with any buildings thereon, situated on the northeasterly side of Vernon Court, otherwise known as Vernon Place, and being the same property conveyed by Robert C. Schmidt to said Ernest J. Eddy by deed dated December 14, 1908 and recorded in said Registry of Deeds in Book 835, Page 4, to which deed and the deeds therein referred to reference is hereby made for a more particular description of the premises.

Fourth: A certain lot or parcel of land at 18-22 Avon Street running in a southerly direction towards Congress Street from the southerly boundary line of the former Kelsey property at the southwest corner of Avon and Deering Streets, a distance of seventy-three and one-half (73 ½) feet, more or less to a junction with the property now or formerly of the Avon Corp. located at the west corner of Avon and Congress Streets, bounded on the southerly side by the said property now or formerly of the Trustees of the Dalton Memorial Chapel and Burnham Hall; bounded on the west by property now or formerly of the Trustees of the Dalton Memorial Chapel and Burnham Hall and

bounded on the north by said former Kelsey property and property now or formerly of said Avon Corp.

Fifth: A certain lot or parcel of land at number 11 (called 5) Vernon Place, together with the brick frame dwelling, or apartment house thereon, the said property being bounded as follows: On the northerly side by the land, brick and frame house of the said Dalton Memorial Chapel and Burnham Hall, a distance of forty-five (45) feet, more or less, on the easterly side by property now or formerly of the Avon corp. located at the northwesterly corner of Congress and Avon Streets a distance of approximately thirty-six (36) feet, more or less, to a junction with the land and Parish house of the Rector, Wardens and Vestrymen of St. Stephen's Parish, or Church; on the southerly side by the said land and Parish House of said Rector, Wardens and Vestrymen of St. Stephens's Parish or Church; on the westerly side by the line of Vernon Place.

Sixth: Also releasing and conveying all my right, title and interest in the following described real estate: A certain lot or parcel of land with (any) buildings thereon, situated on the northerly side of Congress Street and numbered 665 ½ Congress Street and now or formerly known as "Joe's Smoke Shop," said land beginning at a point one hundred and eighty-five (185) feet, more or less, from State Street at the easterly line of St. Stephen's Episcopal Church edifice and extending in an easterly direction eight and one-half (8 ½) or nine (9) feet thence in a northerly direction a distance of thirty-six (36) feet; thence approximately seven (7) feet in a westerly direction to the easterly wall of the said St. Stephen's Episcopal Church edifice, the said wall being the westerly boundary of the said property.

Seventh: Also a certain other lot or parcel of land, with any buildings thereon, known as St. Stephen's Church, and situated on the northerly side of Congress Street in said Portland, bounded and described as follows:

Said lot is on the corner of Congress Street and Vernon Court, so-called, and is sixty-three (63) feet on Congress Street running back on Vernon Court one hundred and thirty (130) feet, more or less, on the easterly side of said court as far northerly as the land formerly owned and occupied by Hiram W. and Alvin Deering, said lot is bounded on the easterly side thereof by a line described in a Decree of the Supreme Judicial Court held in and for the County of Cumberland, April Term 1838 in the case of Hannah Harding In Equity vs. Job Randall, as a "line drawn from the northerly corner of said lot to Main Street and intersecting said Street two (2) feet easterly of the easterly end of the dwelling house in said pleadings mentioned and excluding the well near said house," to which Decree, duly entered on the Docket of said Court, in said suit, reference for a particular description of said easterly side line of the lot hereby conveyed is always to be had.

Meaning and intending to convey, and hereby conveying, all right, title and interest in and to lots 19-23 as shown on City of Portland Assessors Chart Plan 46, Block C, as recorded in the City Assessors, Portland, Maine.

Meaning and intending to convey, and hereby conveying, all real estate of the grantor which is situated in the block in said Portland which is bounded southerly by Congress Street; westerly by Vernon Place and easterly by Avon Street.

Received  
Recorded Register of Deeds  
Jun 10, 2013 03:36:33P  
Cumberland County  
Pamela E. Lovley

April 7, 2015

## Apartments

665 Congress, Portland, Maine

# Zoning Analysis

Zone: B3 Downtown Business Zone 14-216  
 - Congress Street Historic District  
 - Pedestrian Overlay Zone  
 - Downtown Urban Design Guidelines

CBL: Portland Tax Map 046, Block C, Lots 19, 20  
 Street Address: 663-669 Congress Street, 1-21 Vernon Place, 2-22 Avon Street  
 Lot Size: 25,730 sf = 0.5907 acres

**Uses Allowed:** Multifamily Residential, Retail

### Dimensional Requirements:

	Required	Provided
Minimum Lot Size	none	25,730 sf
Minimum Street Frontage	15 ft	641 ft
Street wall line max setback	5 ft	2 ft
Minimum Yard Dimensions	none	-
Minimum Lot Width	none	-
Maximum Lot Coverage	100%	100%
Maximum Blank Facade (Congress Street Only)	15 ft	3 ft
Maximum Blank Facade (Vernon and Avon Only)	30 ft	12 ft

207-650-6414

senatorearchitecture.com

ryan@senatorearchitecture.com

565 Congress St, Portland ME

	Required	Provided
Maximum building height (to top of highest roof beam)	85 ft	85' from avg grd.
Maximum Street Wall 65' (All 3 streets)	65 ft	65 ft
Minimum Building Height within 50' of Street (not required at covered parking, exception 1)	35'	65 ft
Residential Density	No Limit	-
Parking	1 per Unit	81 total spaces
PAD Overlay Zone 75% Street Facade (Congress Only)	20' deep retail	80%

## Written Request for Waivers

The existing commercial building and parking lot on 667 Congress St (Map, Book, Lot 46 C020 and C019) are to be redeveloped into a 139-unit residential and single unit commercial building with covered parking on the basement and first floors (81 total parking spaces). The existing business, Joe's Variety Store, will remain on the first floor with the upper seven floors consisting of studio, single bedroom, and double bedroom apartments for rent.

The following is a list of known project related waivers.

1. **City Standard Parking Size** – The applicant is requesting a waiver to increase the number of Compact Parking Spaces per Standard Parking Spaces (9' X 18'). Of the proposed 81 spaces, 41% are Standard spaces and 59% may be defined as Compact Parking. According to the Technical Standards the maximum allowable Compact spaces for this space is 16. However, in order to adhere to the required parking spaces for residential units, there must be more compact parking within the covered lots.

Circulation of vehicles within the site has been performed using AutoTurn, a vehicle circulation CAD accessory, and simulations that include these design waivers have shown circulation to be possible.

2. **City Minimum Driveway Width** – The applicant is requesting a waiver for the required 20' wide driveway; the proposed driveway is 18' wide at the overhead door but is otherwise 20' wide after entering the building.
3. **Parking Lot Landscaping** – The applicant is requesting a waiver to the parking lot landscaping requirements to not include the suggested 33 trees for the 81 parking spaces; due to the covered nature of the parking lots in both the basement and first floor (too limited of open air on first floor for tree or shrub growth), it is not feasible to landscape these features. Therefore, the applicant is prepared to contribute an amount proportionate to the cost of required parking lot trees to the City of Portland Tree Fund.





4. **Street Trees** – The applicant is seeking a waiver to the street trees requirements. Due to limited sidewalk space along the Avon Street and Vernon Place street fronts, there will not be street trees along these walls. There will be 3 trees spaced between 30 – 45 feet along Congress Street as illustrated further in the preliminary drawings. In all, the design decreases the total required street trees from 16 to 3. However, this is an increase in total trees on the property from the original zero. The equivalent of 13 trees will be contributed to the City of Portland Tree Fund.





**Traffic Solutions**

*William J. Bray, P.E.*  
235 Bancroft Street  
Portland, ME 04102  
(207) 774-3603  
(207) 400-6890 mobile  
[trafficsolutions@maine.rr.com](mailto:trafficsolutions@maine.rr.com)

**MEMORANDUM**

**TO:** Will Savage, Acorn Engineering, Inc.  
**FROM:** Bill Bray, P.E., Traffic Consultant  
**DATE:** July 30, 2015  
**SUBJECT:** 667 Congress Street – Traffic and Parking Assessment Requirements

---

Based upon my understanding, the proposed 667 Congress Street project is a 139-unit infill development located near Longfellow Square in Portland. The current site proposal calls for an eight-story building with first floor commercial retail space (Joe’s Smoke Shop) and the remaining floors reserved for the proposed residential apartment units. There are two-levels of underground parking contemplated with approximately 81 spaces dedicated to building tenants. The first floor of the proposed parking will outlet onto Vernon Place and the second floor will outlet onto Avon Street. The proposed project will rebuild the existing sidewalk along the Congress Street frontage of the project and will construct a wider sidewalk along the full length of Avon Street.

An informal meeting was held with Thomas Errico, P.E., the City’s Traffic Peer Review Consultant, to determine the scope of effort required to permit the proposed project. Mr. Errico advised the need for a detailed traffic impact study that measures the post-development traffic impact of the proposed project on the following roadway intersections:

1. Congress Street @ Avon Street
2. Avon Street @ Deering Street
3. Congress Street @ Vernon Place

Manual traffic counts have been collected at the noted intersections during both the morning and afternoon “peak” commuter hours and the data summarized to reflect existing “peak” travel conditions. Trip generation estimates and the assignment of those trips to the roadway network will be prepared for the proposed project based upon national data; current roadway safety trends will be reviewed and evaluated for the study area intersections; intersection operations and level of service measurements will be determined for each study intersection for both a pre and post-development travel condition. This effort will be summarized in the preparation of a detailed traffic impact study for the proposed project. A separate parking demand assessment will be conducted at multiple existing residential properties in the City of Portland to determine an appropriate parking space requirement per residential unit for the proposed project. Finally, in accordance with the City Ordinance, a detailed Transportation Demand Management plan will be prepared for the proposed project that details what efforts will be employed by the apartment complex in reducing vehicle miles traveled and parking demand of the proposed project.



A C O R N

ENGINEERING, INC.

Shukria Wiar – Planner  
City Planner  
**Planning Division**  
389 Congress Street  
4th Floor  
Portland, ME 04101

July 30<sup>th</sup>, 2015

Re: Preliminary Civil Application  
667 Congress St Redevelopment  
667 Congress St, Portland ME 04101

Shukria,

Acorn Engineering, Inc., in coordination with the project team, is pleased to submit the civil engineering components for a Preliminary Application for a Level III Site Plan for the redevelopment of 667 Congress Street. The proposed development design is at a considerable level of completion for a preliminary application. The following design work has been completed:

- 1) Existing Conditions:** Acorn Engineering has teamed up with Titcomb Associates to produce an initial survey of the development site. The survey outlines the existing utilities and grades of the area and serves as a basis for all continued design. A geotechnical report has also been completed by Summit Geoengineering Services and defines the structural soundness of the subsurface as well as outlines any structural guidelines for further development based on existing soil conditions. The report is included as an attachment in the Stormwater Report.

Acorn is also aware of the current Deering Street reconstruction by Woodard & Curran and have incorporated the anticipated finished project into the initial design; this reconstruction will directly impact the Congress Street redevelopment's drainage system.

Regarding exiting easements there is an existing stormwater drain easement that extends 10 feet from the northernmost property line as well. Proposed easements may include a grease trap within the City ROW, a pedestrian easement from the developer to the City and guy wire easement to reinforce an existing pole.

- 2) Site Plan:** The current layout includes an interior parking garage in the basement and first floor of the building. The proposed basement parking access is located on Avon Street while the first floor access is off of Vernon Place; this outlet arrangement allows for split traffic patterns and ease of access from two separate points. There is a total of 81 physical parking spaces comprised of both standard and compact spaces. However, with the introduction of a single shared parking space, the effective parking space total increases to 88 (1 shared space as the equivalent of 8 spaces) which represents 63% of total residential units.

Because the majority of parking need is residential, it is defined as a low turnover lot and can therefore support a more compact layout. Using a parking lot design study published by Carl Walker, Inc. as a basis of design, the proposed layout uses a 75 degree angled, elongated

compact parking space (8.5' X 16-18') with a one-way drive aisle width. Carl Walker, Inc. is an engineering firm that specializes in parking structure design. This layout is supported by the User Comfort Factor (UCF) and Level of Service (LOS) approach and is able to maximize parking spaces while maintaining parking maneuverability.

Due to the covered nature of the parking lots, no landscaping was incorporated into the interior design; these lots are most like a parking garage and therefore do not apply to the requirements set by the City of Portland Code of Ordinances for Land Use. However, there will be three trees planted along Congress Street in front of the building. This is an improvement to the lack of trees or landscaping currently on the property. The additional street trees required along Vernon Place and Avon Street will not be put into place due to space restrictions but the equivalent of 13 trees will be contributed to the City of Portland Tree Fund.

The remaining building space will be occupied by a commercial space (Joe's Variety Store) on the first floor with seven additional floors of residential units.

**3) Utility Plan:** Acorn Engineering has sent out Ability to Serve letters to gas, water, telephone, cable, electricity, solid waste removal, and sewer utilities and have successfully secured responses from Unitil (gas), Portland Water District (water), Fairport Communications (phone/cable), and Central Maine Power (electricity). The majority of these providers have also been met with onsite and reviewed proposed changes to existing utilities. A summary of the responses is included in this application.

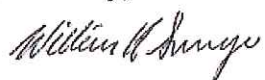
**4) Grading, Drainage and Erosion Control Plan:** Through implementation of a covered parking lot, the majority of surface runoff will be from the roof with minimal runoff from some exposed bituminous concrete on the first floor. Therefore, the proposed development produces cleaner runoff than the existing, uncovered surface parking lot. All runoff is to be redirected to the basement floor and then connected to the newly separated stormwater system within Avon Street.

For a more detailed description of the proposed drainage and grading system, refer to the Stormwater Report. This report includes evidence that the proposed development will not increase surface runoff flows.

**5) Lighting:** The existing building front is directly lit by a street light on Congress Street that meets the downtown district municipal standards. A portion of the site is also lit by another approved lamp on the corner of Congress Street and Vernon Place. Vernon Place and Avon Street will be lit by mounted lamps along the building's edge; these lamps will comply with the Historic District's guidelines.

Please do not hesitate to contact our office with any questions or comments.

Sincerely,



Will Savage, P.E.  
President  
Acorn Engineering, Inc.



**A C O R N**

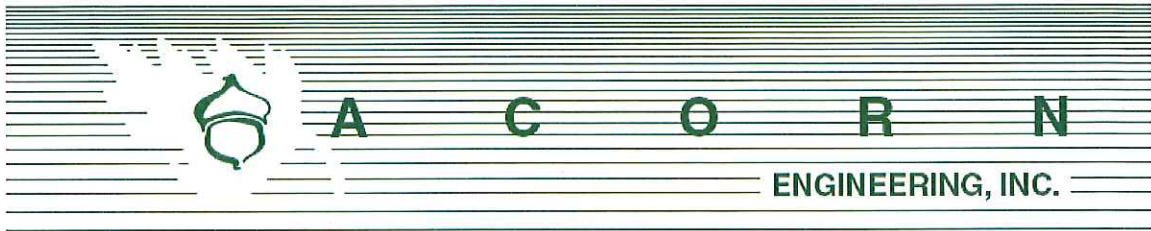
**ENGINEERING, INC.**

**667 CONGRESS STREET PRELIMINARY CIVIL APPLICATION:  
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1. Cover Letter
  - 1.1. Existing Conditions
  - 1.2. Site Plan
  - 1.3. Utility Plan
  - 1.4. Grading, Drainage, and Erosion Control
  - 1.5. Lighting
2. Preliminary Traffic Analysis (under separate cover)
3. Utilities - Ability to Serve Requests and Responses
4. Stormwater Report
  - 4.1. Pre-Development Watershed Map
  - 4.2. Post-Development Watershed Map
  - 4.3. Soils Map
  - 4.4. HydroCAD Calculations
  - 4.5. Summit Geoengineering Services – Soil Boring Logs, May 2015
5. Erosion Control Report
6. Waste Removal Letter
7. List of Requested Waivers

**APPENDICIES:**

- C-01 Cover Plan
- C-02 General Notes
  - EX Existing Conditions Plan – Titcomb Surveying
- C-10 Site Layout Plan: Basement
- C-11 Site Layout Plan: First Floor
- C-20 Utility Plan
- C-30 Grading & Drainage Plan: Basement
- C-31 Grading & Drainage Plan: First Floor
- C-40 Site Details – 1
- C-41 Site Details – 2
- C-42 Utility Details
- C-43 Drainage Details - 1
- C-44 Drainage Details - 2
- C-45 Erosion Control Details & Notes
- SNOW Snow Storage Plan



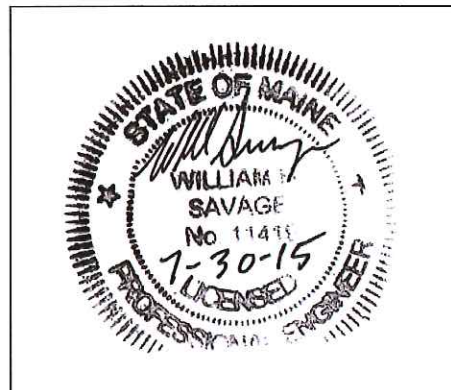
# STORMWATER MANAGEMENT REPORT

Prepared For:

**Redfern Properties, LLC**  
**667 Congress Street Redevelopment**  
**Portland, Maine 04101**

Prepared By:

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



**July 2015**

## INTRODUCTION

Acorn Engineering, Inc. has been retained by Redfern Properties, LLC to provide civil engineering services for the proposed development of Joe's Variety Store. The proposed redevelopment project is located at 665 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. The existing commercial building and parking lot are to be redeveloped to include:

- 1 Commercial Spaces on the first floor (approximately 4500 SF).
- 139 Residential Units on seven floors.
- 44 Parking Spaces on the first floor off of Commercial Street and 37 spaces located below in a lower level parking garage.

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

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (F) Level III Site Plan Review.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management Amended January 11, 2015.

On May 12<sup>th</sup> representatives of Acorn Engineering met with Frank Rubino onsite to discuss the condition existing sewer main with Avon St. Under Frank's supervision the City of Portland – Department of Public Services tv'd approximately 246 lf of the existing 10" vitrified clay pipe starting at the intersection with Deering St working south. Overall the condition of the existing sewer main was found to be in good condition with relatively few cracks. A copy of the video inspection and observation and report with still images was provided for Acorn Engineering documenting the results.

Acorn has also coordinated with Woodard & Curran Deering Street Reconstruction Plans Sheets 4 and 7, dated 3/23/2015. Specifically the separation of the combined sewer with the construction of CB12A and Pipe 9D within Avon Street. Should field conditions change the inverts of CB12A we would request that the City provide the applicant with a set of As-Built Plans.

## EXISTING CONDITIONS

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which are to be demolished as part of the proposed project.

The City of Portland has rezoned the entire parcel as a B-3 zone due to its proximity to Commercial Street and Downtown Portland.

Abutting Uses:

- North R-6 Zone – Single and Multi-Family Residential

- East B-3 Zone – Green Hand Bookshop, Parking Lot
- Southwest B-3 Zone – Boda/Bangkok Thai
- Northwest R-6 Zone – Single and Multi-Family Residential
- South B-3 Zone – Video Expo, Empire Theater, Barber Shop

The existing project area is made up of a single paved and gravel parking area with a single, existing building. The distribution of surfaces is as follows:

- Paved Surface: 81%
- Existing Building: 14%
- Gravel with Limited Overgrowth: 5%

All surfaces are impervious with an existing grade ranging from approximately 0-10%.

Based on the most recent survey data, all surface runoff can be defined in two subcatchments ending in the existing catch basins located in the Northeast and Northwest corners of the property. The majority of runoff, about 96%, flows from the existing building, parking lot, and eastmost border to the newly proposed catchbasin and separated storm drain piping on Avon Street. The remaining runoff, about 4%, consists of flow from the westmost border along an overgrown gravel area to the catch basin at the end of Vernon Place. This catch basin also flows to the newly built catch basin on Avon St.

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

## **PROPOSED DEVELOPMENT**

The 667 Congress Street Redevelopment is an eight floor, 139-unit residential and commercial building with parking garage features on the basement and first floors. Both the basement and first floor will include mechanical and electrical facilities for development as well as two elevator shafts located at the North and South ends of the building.

The parking lot grading topography will be kept between 1% to 2% slopes directing stormwater towards internal floor drains on the eastern and western sides of the development; all stormwater flow, including snowmelt, from the first floor parking will be redirected to the basement floor and then connected to the existing municipal system. The majority of the first floor parking will be covered by the proposed building while the perimeter parking will be open (no roof). The drainage collection points are located as not to direct surface below the proposed building. The basement parking will be covered by the first floor parking with the exception of the basement entrance ramp.

Due to proposed basement grades the existing 12" RCP pipe along the northern property line will need to be rebuilt to lower the elevations. The work will be coordinated with recently completed catch basin along Avon St.

No landscape is anticipated and all undeveloped areas are assumed to be covered with mulch. Currently, only overgrown weeds cover a very small section of non-paved impervious gravel adjacent to a guardrails and signage.



The development is anticipated to be served by the Portland Water District, underground power/cable/communications, natural gas and the municipal sewer system. Solid waste and recycling will be contracted through a private waste disposal and recycling provider.

### **GENERAL STANDARDS - WATER QUALITY**

It is our understanding that the project will not be required to meet the General Standards because of the exception set forth in the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500, B. General Standards (3) Exception from the general standards, (e).

“Stormwater Management Law project including redevelopment. For a project requiring a Stormwater Management Law permit that includes redevelopment of impervious area that was in existence as of November 16, 2005 (the effective date of Chapter 500 revisions), the redevelopment of that impervious area is not required to meet General standards provided the department determines that the new use of the existing impervious area is not likely to increase stormwater impacts resulting from the proposed project’s stormwater runoff beyond the level of impact already caused by the runoff from the existing impervious area. The requirements of Appendix D must still be met, if applicable.”

Although additional stormwater treatment is not required, the project has been designed to improve upon the existing condition for the following reasons:

- The significant change in land use from surface parking to the building/covered parking.
- The stabilization of the existing gravel areas with pavement or landscaping.
- The elimination surface stormwater flows directly to the municipal sewer.
- The installation of catch basins with catch basin hoods to mitigate transport of oil, floating debris, and larger suspended particles into the storm drain piping.
- The installation of catch basins which incorporates a deeper 3-ft (2 ft typ.) sump to store items listed above until routine cleaning is performed.

### **FLOODING STANDARD – WATER QUANTITY**

To review the Section E. Flooding Standard, the proposed development was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, and 25 year storm events were used. The corresponding rainfall amounts for these storms are 3.00”, 4.70”, and 5.50” respectively. Rainfall amounts from the Maine DEP Volume III: BMPs Technical Design Manual Chapter 2 Stormwater Hydrology Table 2-1 Rev. 4/10/92.

Due to the numerous variables, and inherent inaccuracies with the modeling program used to calculate stormwater runoff it is custom at Acorn Engineering, Inc. to round to the nearest whole number. However due to the small size of the project the stormwater runoff shall be rounded to the nearest tenth of a cubic feet per second (cfs). Given the relatively small watershed areas, urban setting, and predominance of impervious area, a 5 minute time of concentration ( $T_c$ ) was applied to each subcatchment for both the pre and post-development conditions.

#### *Pre-development Calculations*



The pre-development condition was modeled as two subcatchments. Subcatchment 1 is tributary to the catch basin at the end of Vernon Place. Subcatchment 2 is tributary to the newly constructed catch basin on Avon Street at the Northeast end of the property line.

- Subcatchment 1, Existing Northwest Subcatchment – Area (337 SF, 0.02 acres) tributary to the existing municipal sewer (POI#1) on Avon Street.
- Subcatchment 2, Existing Northeast Subcatchment – Area (20,856 sf, 0.58 acres) tributary to the existing municipal storm drain catch basin on Avon Street. This storm drain is then tributary to the municipal sewer (POI#1) also located on Avon Street.

The surface flows tributary to the municipal storm sewer are also included below. A Pre-development Watershed Map developed for this project can be viewed in Attachment A, and a copy of the HydroCAD calculations is included within Attachment D of this report. Peak flow rates for the storm events are as follows:

<b>Drainage Area</b>	<b>2 – Year Storm Event (cfs)</b>	<b>10 – Year Storm Event (cfs)</b>	<b>25 – Year Storm Event (cfs)</b>
<b>Subcatchment 1</b>	.1	.1	.1
<b>Subcatchment 2</b>	1.7	2.7	3.1
<b>Point of Interest #1</b>	1.8	2.8	3.3

*Post-development Calculations:*

The post-development condition was modeled as one subcatchment with the same point of interest, as all stormwater is anticipated to leave the site through one location and connect to the recently completed 15" storm drain within Avon. The proposed Grading and Drainage Plan was designed to maintain the historical area tributary to the municipal storm sewer on Avon Street.

- Subcatchment 1 – Area (0.60 acres) tributary to the existing municipal sewer within Avon Street

The post development calculations assumed that there was no land change; all surfaces on the property will remain impervious and therefore did not result in a net stormwater increase. The post-development conditions now convey all stormwater flows to the municipal sewer on Avon Street (POI #1). The following table represents comparison of predevelopment and post-development condition peak runoff rates at the respective point of interest.

<b>Drainage Area</b>	<b>2 – Year Storm Event (cfs)</b>		<b>10 – Year Storm Event (cfs)</b>		<b>25 – Year Storm Event (cfs)</b>	
	<b>Pre</b>	<b>Post</b>	<b>Pre</b>	<b>Post</b>	<b>Pre</b>	<b>Post</b>
<b>POI #1</b>	1.8	1.8	2.8	2.8	3.3	3.3

As shown in Table 2, the post development peak flows shall remain at or below the predevelopment levels. A Post-development Watershed Map developed for this project can be viewed in Attachment B, and a copy of the HydroCAD calculations is included within Attachment D, of this report.

Pipe sizes were generated using the rational method.

## **SOILS**

Onsite soil information includes the following:

- Summit Geoengineering Services – Soil Boring Logs, dated March 31<sup>st</sup>, 2015 and April 15<sup>th</sup>, 2015. A formal Geotechnical Report has also been prepared by Summit Geoengineering Services for the project, dated May 2015.
- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County.

Given the soils information, listed above, and the fact that greater than 50% of the proposed development site is currently developed, it is Acorn Engineering’s professional opinion that a more intense hydric soil boundary delineation is not required because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soils types listed in the table below. The susceptibility of soils to erosion is indicated on a relative “K” scale of values over a range of 0.02 to 0.69. Higher “K” values indicate more erodible soils.

<b>Table 1 - “K” Value</b>		
<b>Soils Type</b>	<b>Subsurface</b>	<b>Substratum</b>
Hinckley	.17	.17

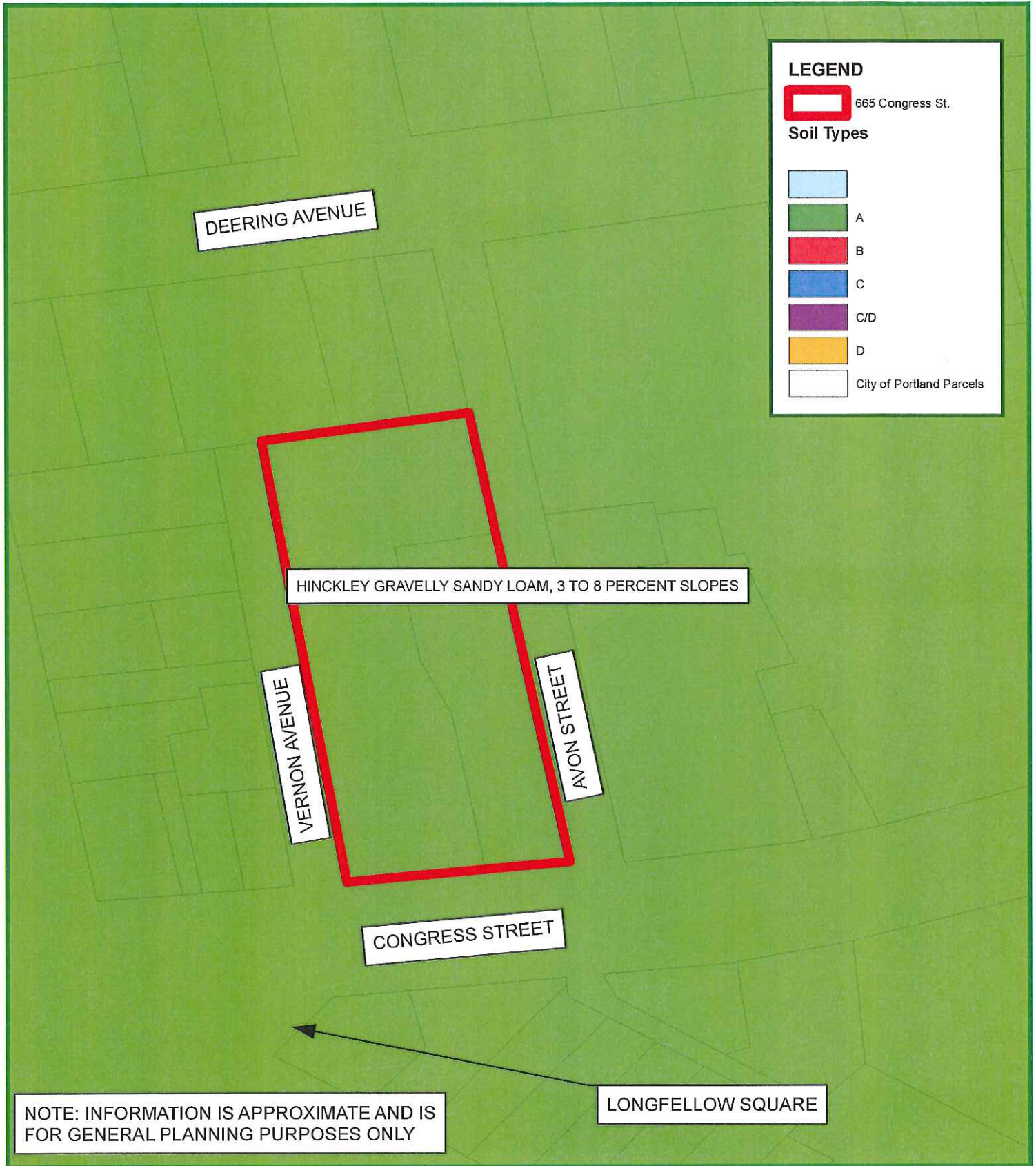
The soil “K” values for the soils, listed above, indicate a low susceptibility to erosion. The site’s susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. The site’s soils map from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County is included as Attachment C.

## **Conclusion**

The proposed development was designed to meet the requirements implemented by the MDEP under the Stormwater Management Statute (38 M.R.S.A. § 420-D) as well as the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. The proposed project as envisioned shall improve upon the existing stormwater management.

## **Attachments**

- Attachment A: Pre Development Watershed Map
- Attachment B: Post Development Watershed Map
- Attachment C: Soils Map
- Attachment D: HydroCAD Calculations
- Attachment E: Summit Geoengineering Services – Soil Boring Logs, dated May 2015

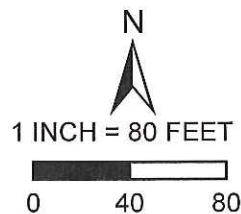


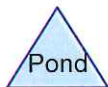
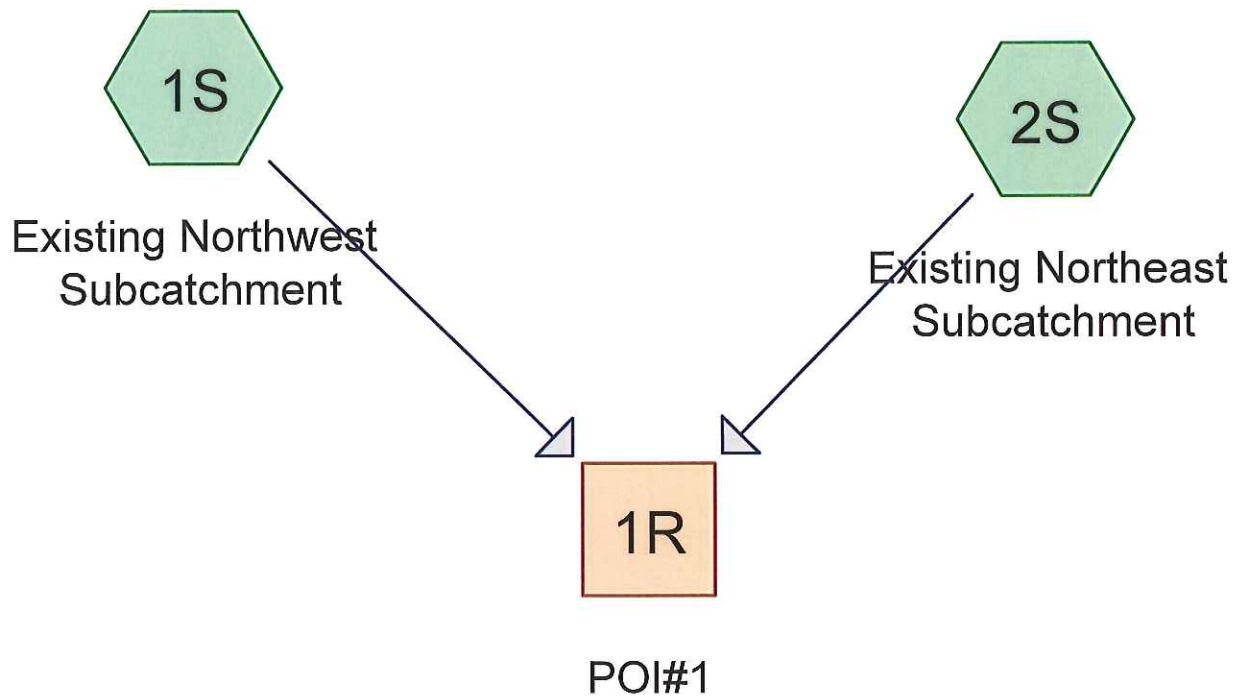
**665 CONGRESS STREET DEVELOPMENT  
SOILS ADJACENT TO DEVELOPMENT**

665 CONGRESS STREET, PORTLAND, MAINE

Data Sources: MEGIS, City of Portland, Acorn Engineering, Inc.

Date: 4/8/2015 by Acorn Engineering, Inc. for Redfern Properties, LLC





## JSH Pre-Development 7-24-15

Prepared by {enter your company name here}

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Printed 7/27/2015

Page 2

### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.028	96	Gravel (1S,2S)
0.084	98	Building (2S)
0.487	98	Pavement (1S,2S)
<b>0.599</b>		<b>TOTAL AREA</b>

**JSH Pre-Development 7-24-15**

Prepared by {enter your company name here}

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Page 3

**Soil Listing (all nodes)**

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
<b>0.599</b>	Other	1S, 2S
0.599		<b>TOTAL AREA</b>

**JSH Pre-Development 7-24-15**

Prepared by {enter your company name here}

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Type III 24-hr 2-year Rainfall=3.00"

Printed 7/27/2015

Page 4

Time span=5.00-20.00 hrs, dt=0.04 hrs, 376 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S: Existing Northwest**

Runoff Area=0.024 ac 33.33% Impervious Runoff Depth>2.50"  
Tc=5.0 min CN=97 Runoff=0.07 cfs 0.005 af

**Subcatchment 2S: Existing Northeast**

Runoff Area=0.575 ac 97.91% Impervious Runoff Depth>2.59"  
Tc=5.0 min CN=98 Runoff=1.71 cfs 0.124 af

**Reach 1R: POI#1**

Inflow=1.78 cfs 0.129 af  
Outflow=1.78 cfs 0.129 af

**Total Runoff Area = 0.599 ac Runoff Volume = 0.129 af Average Runoff Depth = 2.59"**  
**4.67% Pervious = 0.028 ac 95.33% Impervious = 0.571 ac**



**Summary for Subcatchment 1S: Existing Northwest Subcatchment**

Runoff = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af, Depth> 2.50"

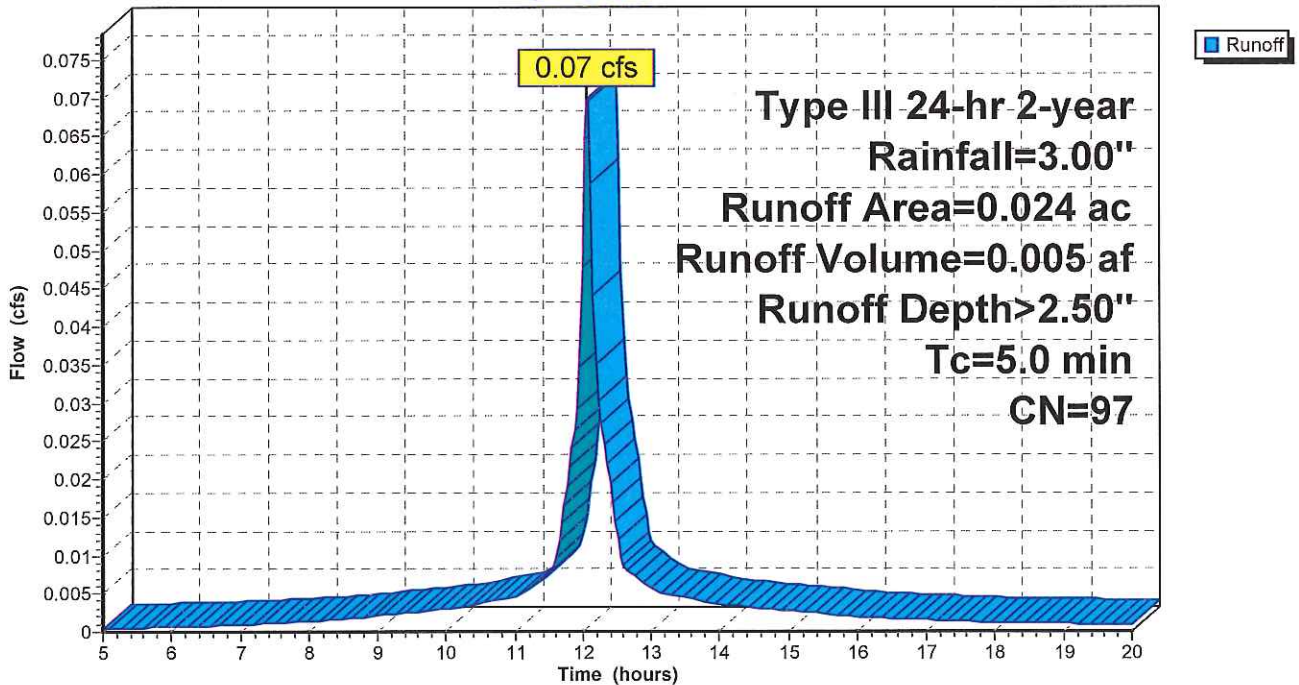
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
* 0.008	98	Pavement
* 0.000	98	Building
* 0.016	96	Gravel
0.024	97	Weighted Average
0.016		Pervious Area
0.008		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Minimum 5

**Subcatchment 1S: Existing Northwest Subcatchment**

Hydrograph



**Summary for Subcatchment 2S: Existing Northeast Subcatchment**

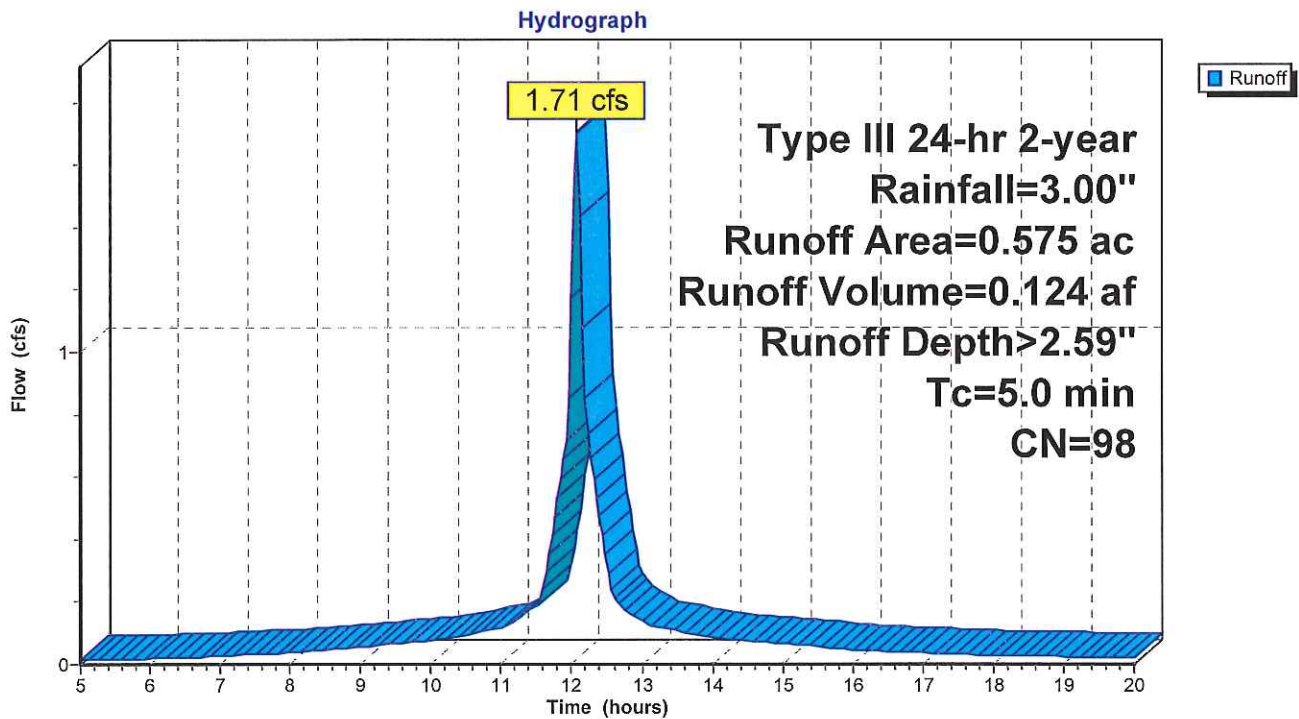
Runoff = 1.71 cfs @ 12.07 hrs, Volume= 0.124 af, Depth> 2.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
* 0.012	96	Gravel
* 0.084	98	Building
* 0.479	98	Pavement
0.575	98	Weighted Average
0.012		Pervious Area
0.563		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Minimum 5

**Subcatchment 2S: Existing Northeast Subcatchment**

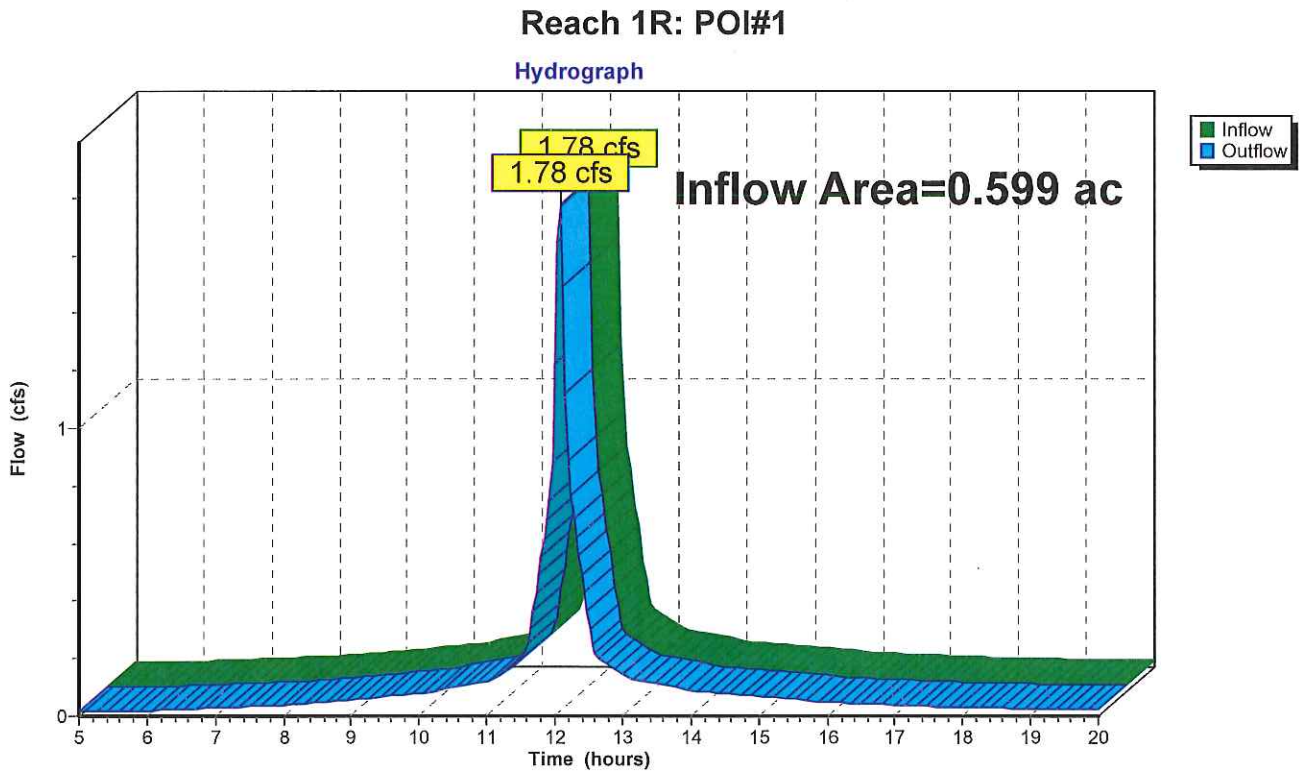


### Summary for Reach 1R: POI#1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.599 ac, 95.33% Impervious, Inflow Depth > 2.59" for 2-year event  
Inflow = 1.78 cfs @ 12.07 hrs, Volume= 0.129 af  
Outflow = 1.78 cfs @ 12.07 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs



**JSH Pre-Development 7-24-15**

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

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Time span=5.00-20.00 hrs, dt=0.04 hrs, 376 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S: Existing Northwest**

Runoff Area=0.024 ac 33.33% Impervious Runoff Depth>4.07"  
Tc=5.0 min CN=97 Runoff=0.11 cfs 0.008 af

**Subcatchment 2S: Existing Northeast**

Runoff Area=0.575 ac 97.91% Impervious Runoff Depth>4.14"  
Tc=5.0 min CN=98 Runoff=2.70 cfs 0.199 af

**Reach 1R: POI#1**

Inflow=2.81 cfs 0.207 af  
Outflow=2.81 cfs 0.207 af

**Total Runoff Area = 0.599 ac Runoff Volume = 0.207 af Average Runoff Depth = 4.14"**  
**4.67% Pervious = 0.028 ac 95.33% Impervious = 0.571 ac**

**Summary for Subcatchment 1S: Existing Northwest Subcatchment**

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.008 af, Depth> 4.07"

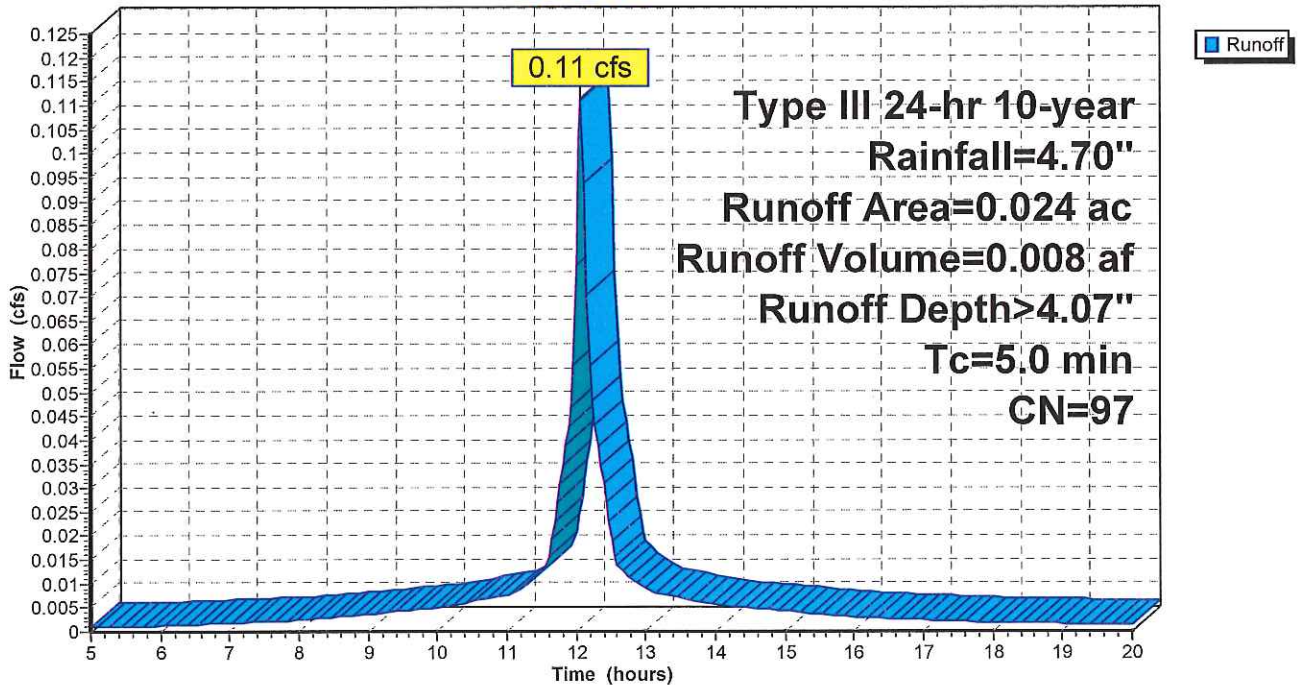
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 10-year Rainfall=4.70"

Area (ac)	CN	Description
* 0.008	98	Pavement
* 0.000	98	Building
* 0.016	96	Gravel
0.024	97	Weighted Average
0.016		Pervious Area
0.008		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Minimum 5

**Subcatchment 1S: Existing Northwest Subcatchment**

Hydrograph



**Summary for Subcatchment 2S: Existing Northeast Subcatchment**

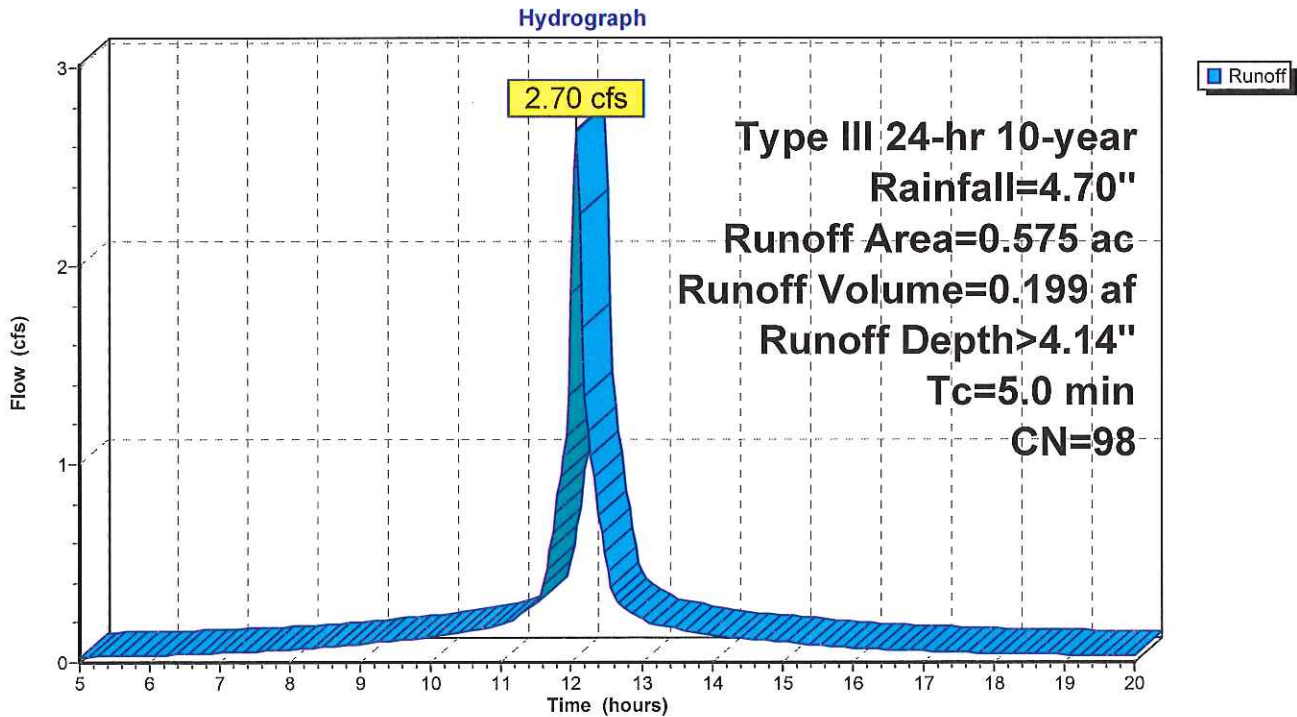
Runoff = 2.70 cfs @ 12.07 hrs, Volume= 0.199 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 10-year Rainfall=4.70"

Area (ac)	CN	Description
* 0.012	96	Gravel
* 0.084	98	Building
* 0.479	98	Pavement
0.575	98	Weighted Average
0.012		Pervious Area
0.563		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Minimum 5

**Subcatchment 2S: Existing Northeast Subcatchment**

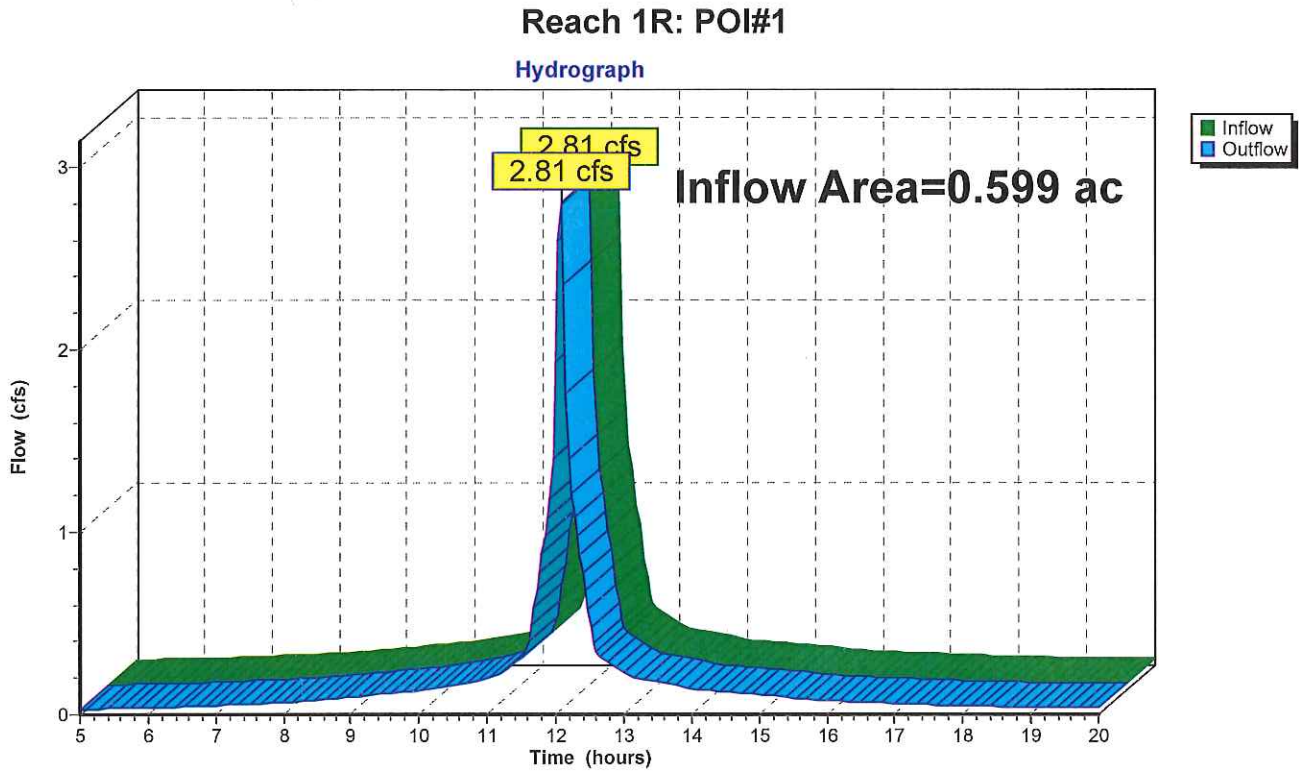


### Summary for Reach 1R: POI#1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.599 ac, 95.33% Impervious, Inflow Depth > 4.14" for 10-year event  
Inflow = 2.81 cfs @ 12.07 hrs, Volume= 0.207 af  
Outflow = 2.81 cfs @ 12.07 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs



**JSH Pre-Development 7-24-15**

Type III 24-hr 25-year Rainfall=5.50"

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Time span=5.00-20.00 hrs, dt=0.04 hrs, 376 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S: Existing Northwest**

Runoff Area=0.024 ac 33.33% Impervious Runoff Depth>4.80"  
Tc=5.0 min CN=97 Runoff=0.13 cfs 0.010 af

**Subcatchment 2S: Existing Northeast**

Runoff Area=0.575 ac 97.91% Impervious Runoff Depth>4.87"  
Tc=5.0 min CN=98 Runoff=3.16 cfs 0.234 af

**Reach 1R: POI#1**

Inflow=3.29 cfs 0.243 af  
Outflow=3.29 cfs 0.243 af

**Total Runoff Area = 0.599 ac Runoff Volume = 0.243 af Average Runoff Depth = 4.87"**  
**4.67% Pervious = 0.028 ac 95.33% Impervious = 0.571 ac**



**Summary for Subcatchment 1S: Existing Northwest Subcatchment**

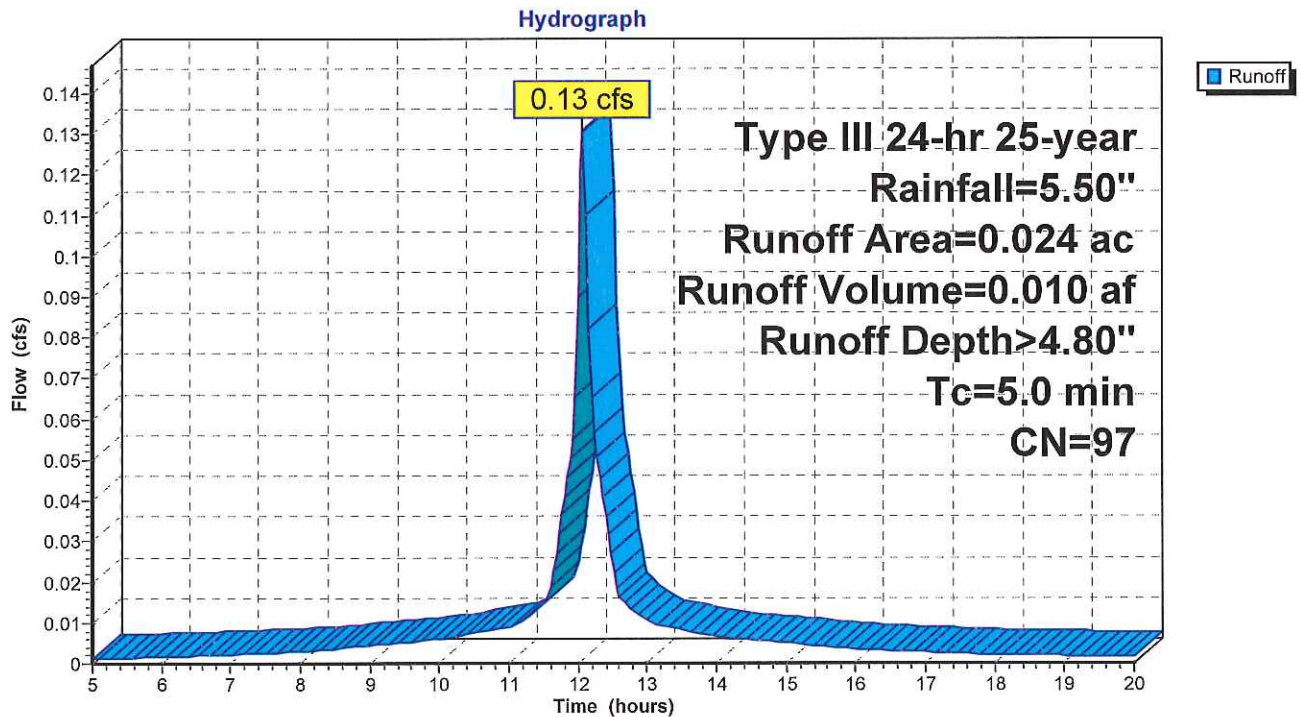
Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.010 af, Depth> 4.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 25-year Rainfall=5.50"

Area (ac)	CN	Description
* 0.008	98	Pavement
* 0.000	98	Building
* 0.016	96	Gravel
0.024	97	Weighted Average
0.016		Pervious Area
0.008		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Minimum 5

**Subcatchment 1S: Existing Northwest Subcatchment**



### Summary for Subcatchment 2S: Existing Northeast Subcatchment

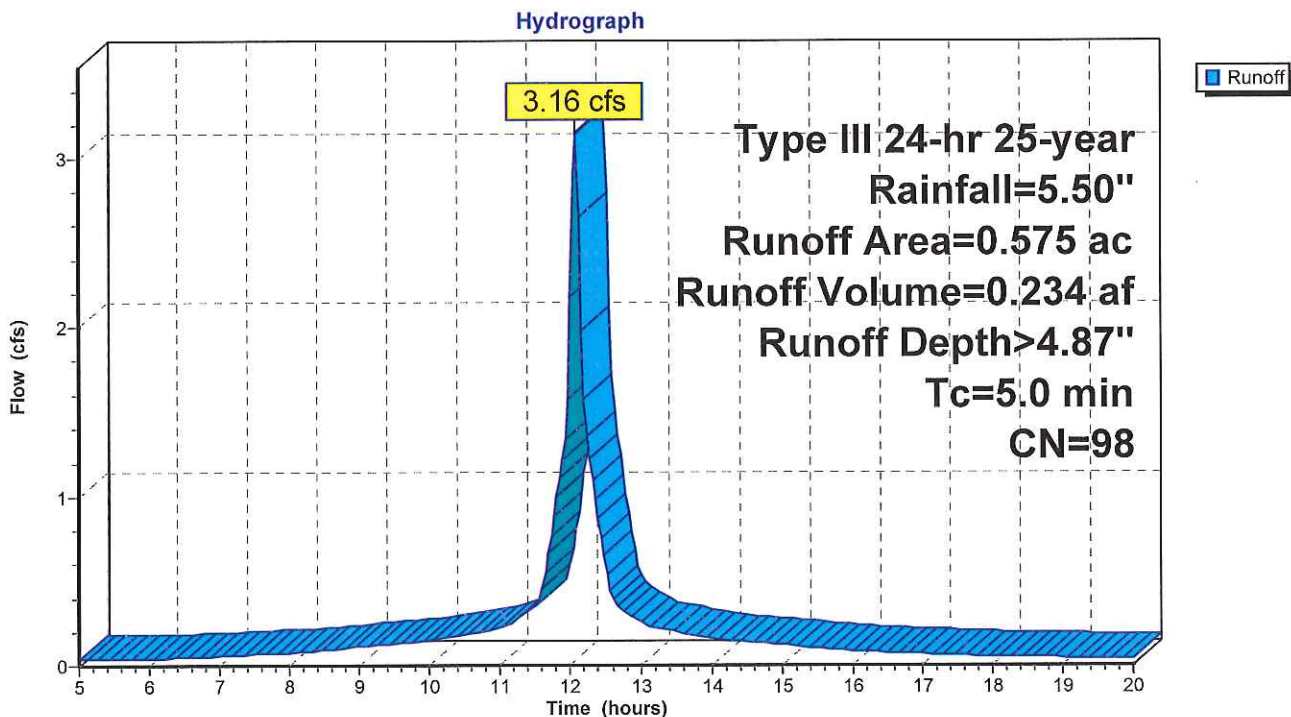
Runoff = 3.16 cfs @ 12.07 hrs, Volume= 0.234 af, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 25-year Rainfall=5.50"

Area (ac)	CN	Description
* 0.012	96	Gravel
* 0.084	98	Building
* 0.479	98	Pavement
0.575	98	Weighted Average
0.012		Pervious Area
0.563		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Minimum 5

### Subcatchment 2S: Existing Northeast Subcatchment

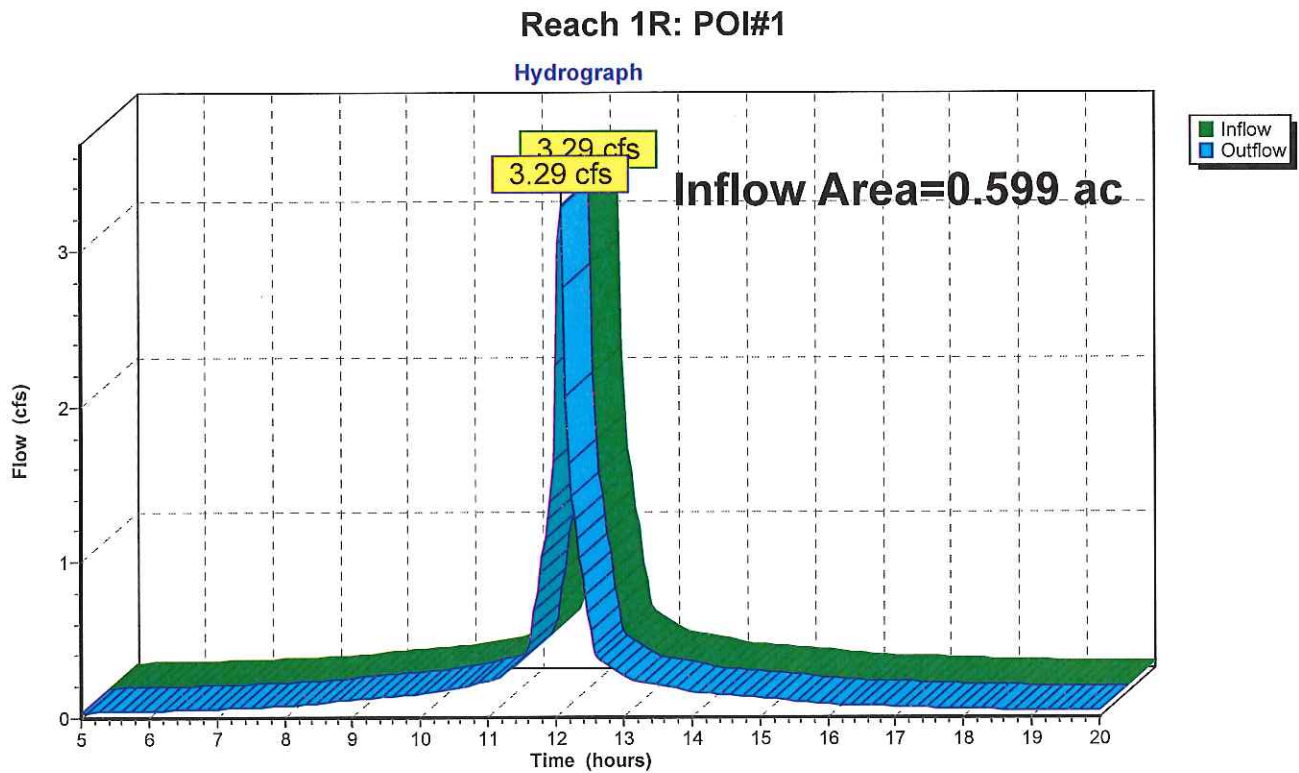


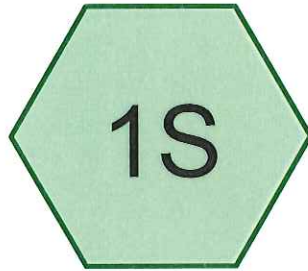
### Summary for Reach 1R: POI#1

[40] Hint: Not Described (Outflow=Inflow)

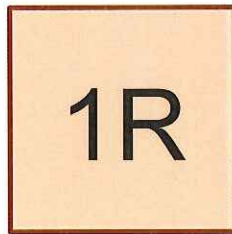
Inflow Area = 0.599 ac, 95.33% Impervious, Inflow Depth > 4.87" for 25-year event  
Inflow = 3.29 cfs @ 12.07 hrs, Volume= 0.243 af  
Outflow = 3.29 cfs @ 12.07 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs

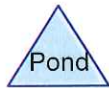




667 Congress Proposed



POI#1



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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
<b>0.599</b>	98	Building & Parking (1S)
0.599		<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
<b>0.599</b>	Other	1S
0.599		<b>TOTAL AREA</b>

**JSH Post-Development 7-24-15**

Type III 24-hr 2-year Rainfall=3.00"

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Time span=5.00-20.00 hrs, dt=0.04 hrs, 376 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S: 667 Congress Proposed** Runoff Area=0.599 ac 100.00% Impervious Runoff Depth>2.59"  
Tc=5.0 min CN=98 Runoff=1.78 cfs 0.129 af

**Reach 1R: POI#1**

Inflow=1.78 cfs 0.129 af

Outflow=1.78 cfs 0.129 af

**Total Runoff Area = 0.599 ac Runoff Volume = 0.129 af Average Runoff Depth = 2.59"**  
**0.00% Pervious = 0.000 ac 100.00% Impervious = 0.599 ac**

**JSH Post-Development 7-24-15**

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Type III 24-hr 2-year Rainfall=3.00"

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**Summary for Subcatchment 1S: 667 Congress Proposed**

Runoff = 1.78 cfs @ 12.07 hrs, Volume= 0.129 af, Depth> 2.59"

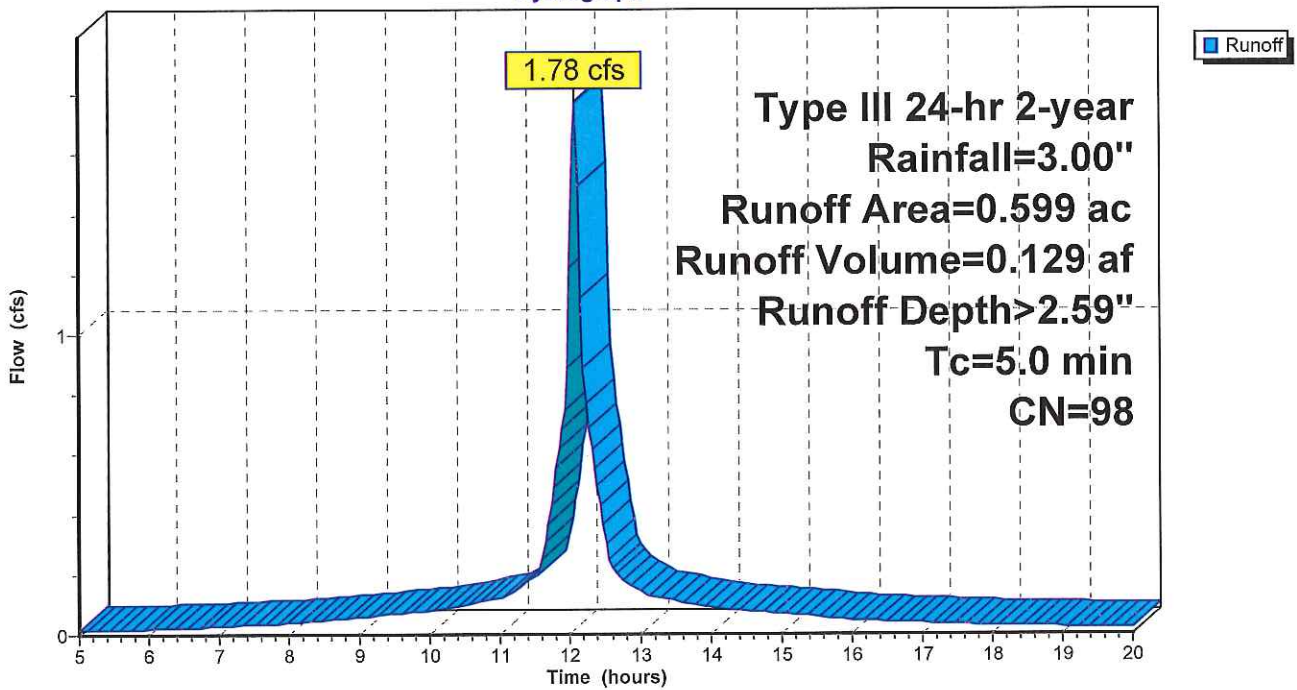
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
* 0.599	98	Building & Parking
0.599		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 1S: 667 Congress Proposed**

Hydrograph



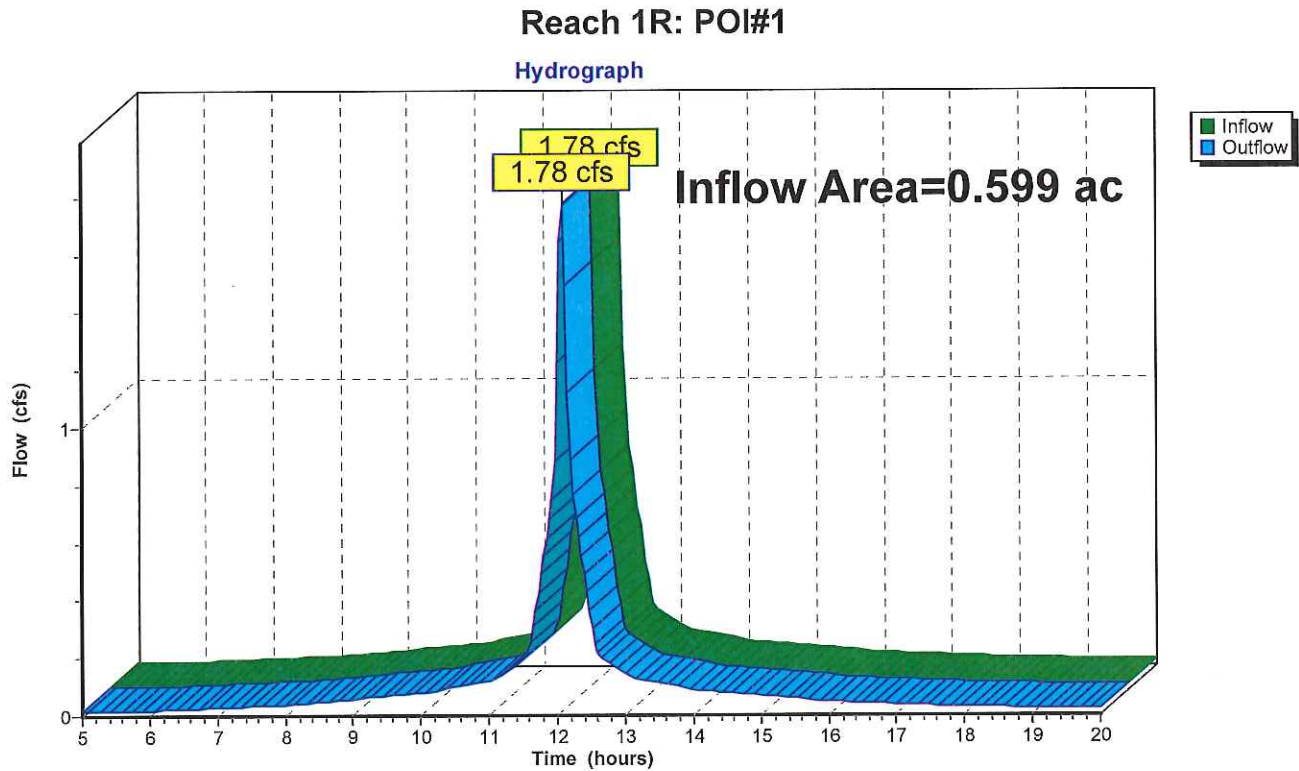


### Summary for Reach 1R: POI#1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.599 ac, 100.00% Impervious, Inflow Depth > 2.59" for 2-year event  
Inflow = 1.78 cfs @ 12.07 hrs, Volume= 0.129 af  
Outflow = 1.78 cfs @ 12.07 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs



**JSH Post-Development 7-24-15**

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

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Time span=5.00-20.00 hrs, dt=0.04 hrs, 376 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S: 667 Congress Proposed** Runoff Area=0.599 ac 100.00% Impervious Runoff Depth>4.14"  
Tc=5.0 min CN=98 Runoff=2.81 cfs 0.207 af

**Reach 1R: POI#1**

Inflow=2.81 cfs 0.207 af

Outflow=2.81 cfs 0.207 af

**Total Runoff Area = 0.599 ac Runoff Volume = 0.207 af Average Runoff Depth = 4.14"**  
**0.00% Pervious = 0.000 ac 100.00% Impervious = 0.599 ac**

**Summary for Subcatchment 1S: 667 Congress Proposed**

Runoff = 2.81 cfs @ 12.07 hrs, Volume= 0.207 af, Depth> 4.14"

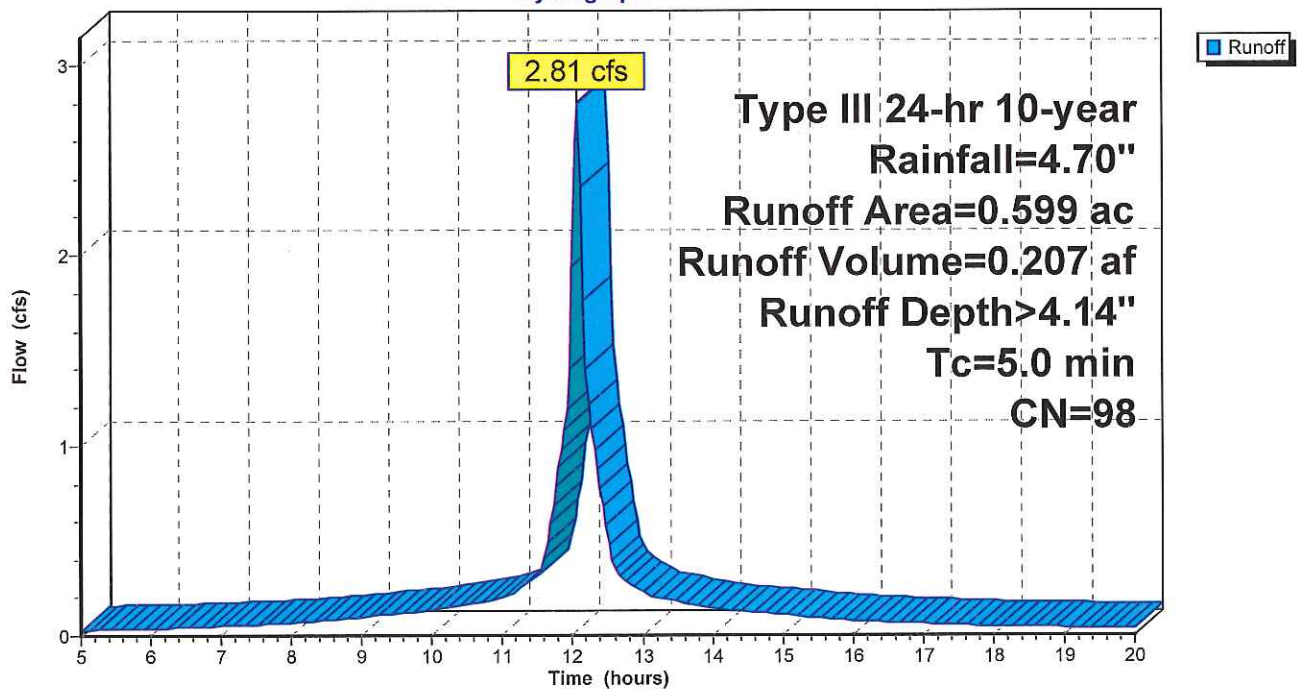
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 10-year Rainfall=4.70"

Area (ac)	CN	Description
* 0.599	98	Building & Parking
0.599		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 1S: 667 Congress Proposed**

Hydrograph

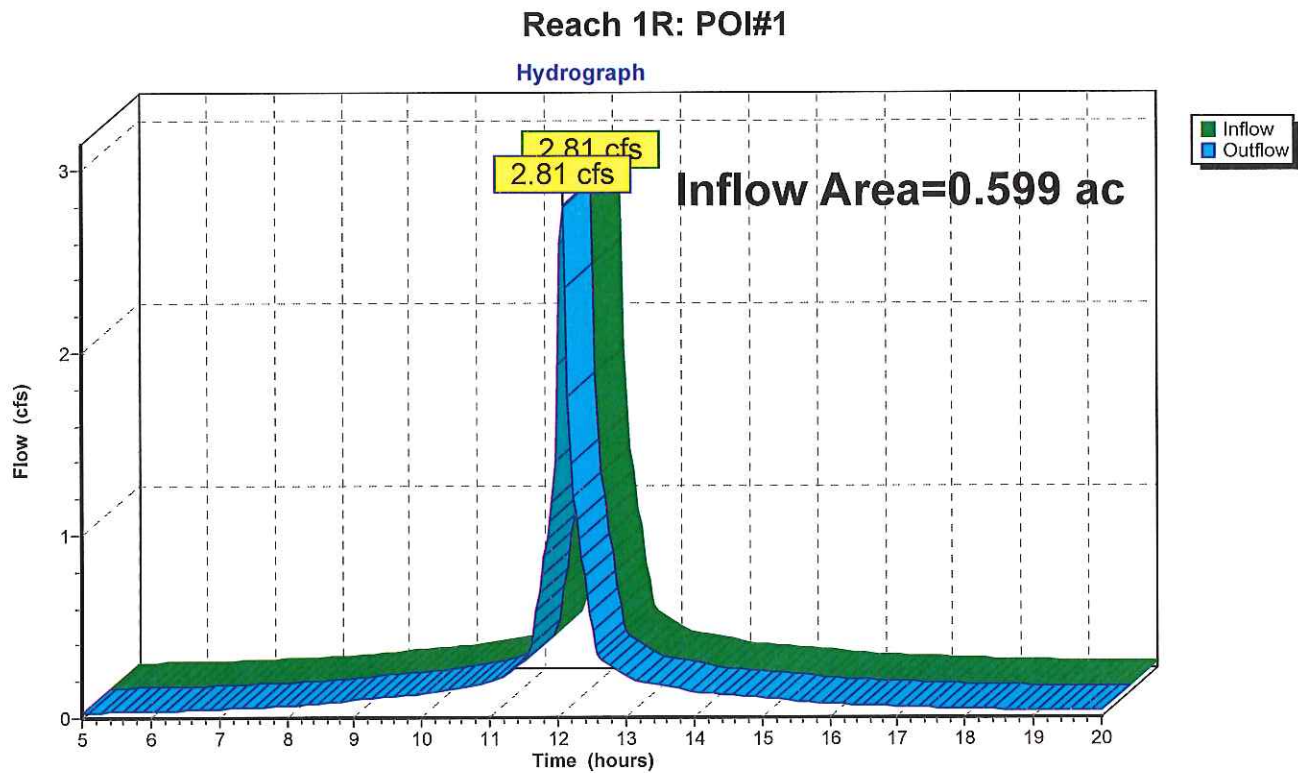


### Summary for Reach 1R: POI#1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.599 ac, 100.00% Impervious, Inflow Depth > 4.14" for 10-year event  
Inflow = 2.81 cfs @ 12.07 hrs, Volume= 0.207 af  
Outflow = 2.81 cfs @ 12.07 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs



**JSH Post-Development 7-24-15**

Type III 24-hr 25-year Rainfall=5.50"

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Time span=5.00-20.00 hrs, dt=0.04 hrs, 376 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S: 667 Congress Proposed** Runoff Area=0.599 ac 100.00% Impervious Runoff Depth>4.87"  
Tc=5.0 min CN=98 Runoff=3.29 cfs 0.243 af

**Reach 1R: POI#1**

Inflow=3.29 cfs 0.243 af

Outflow=3.29 cfs 0.243 af

**Total Runoff Area = 0.599 ac Runoff Volume = 0.243 af Average Runoff Depth = 4.87"**  
**0.00% Pervious = 0.000 ac 100.00% Impervious = 0.599 ac**

**Summary for Subcatchment 1S: 667 Congress Proposed**

Runoff = 3.29 cfs @ 12.07 hrs, Volume= 0.243 af, Depth> 4.87"

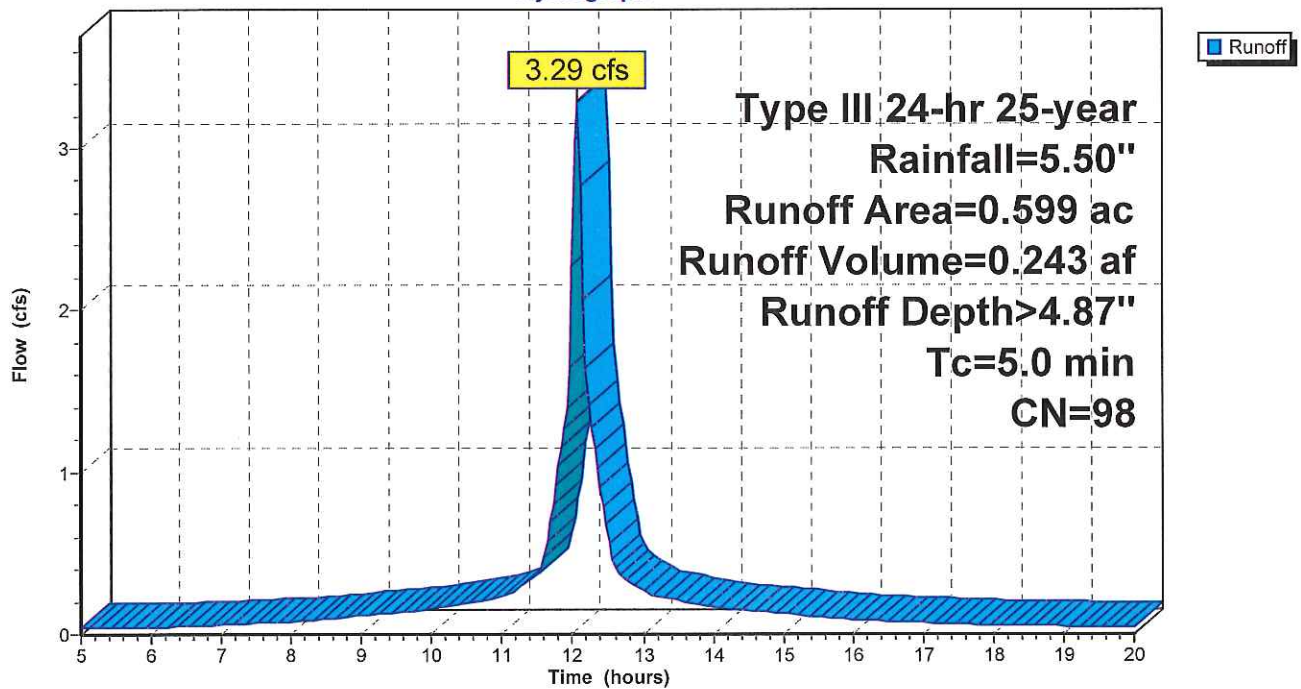
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs  
 Type III 24-hr 25-year Rainfall=5.50"

Area (ac)	CN	Description
* 0.599	98	Building & Parking
0.599		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 1S: 667 Congress Proposed**

Hydrograph

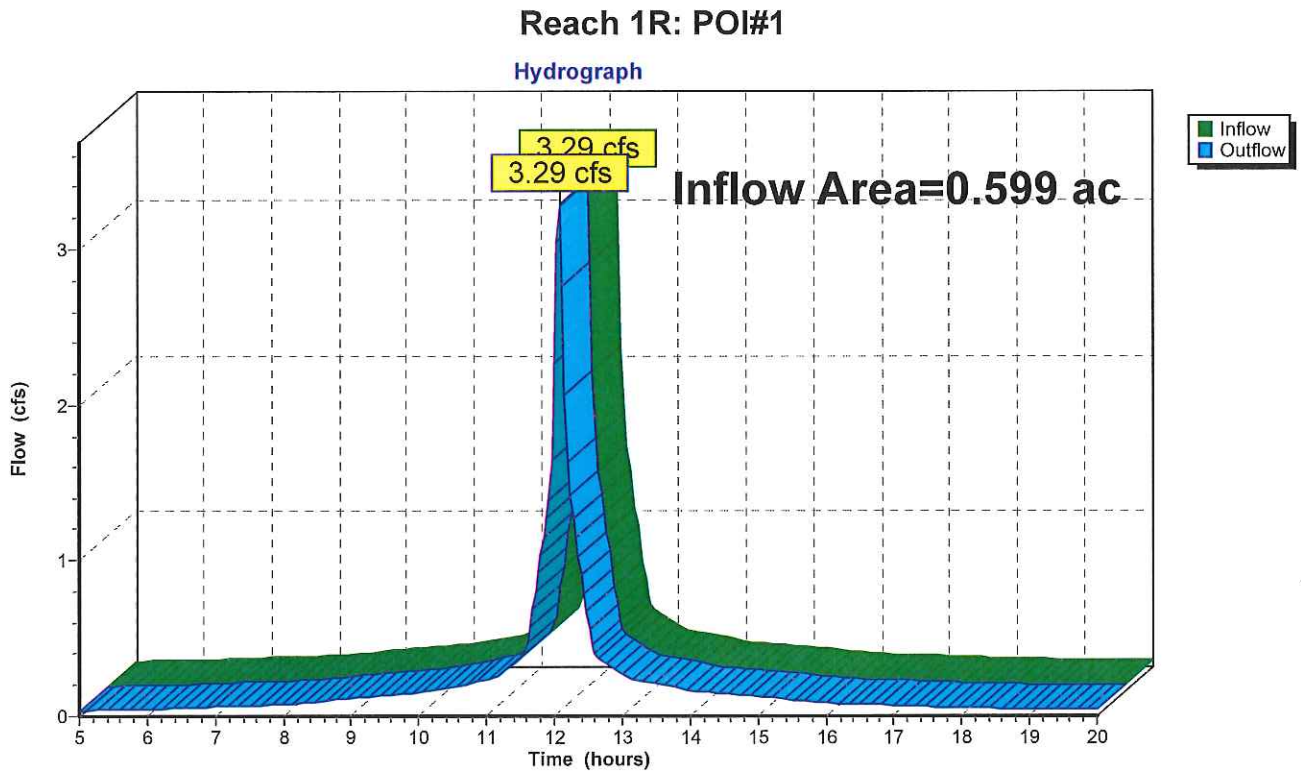


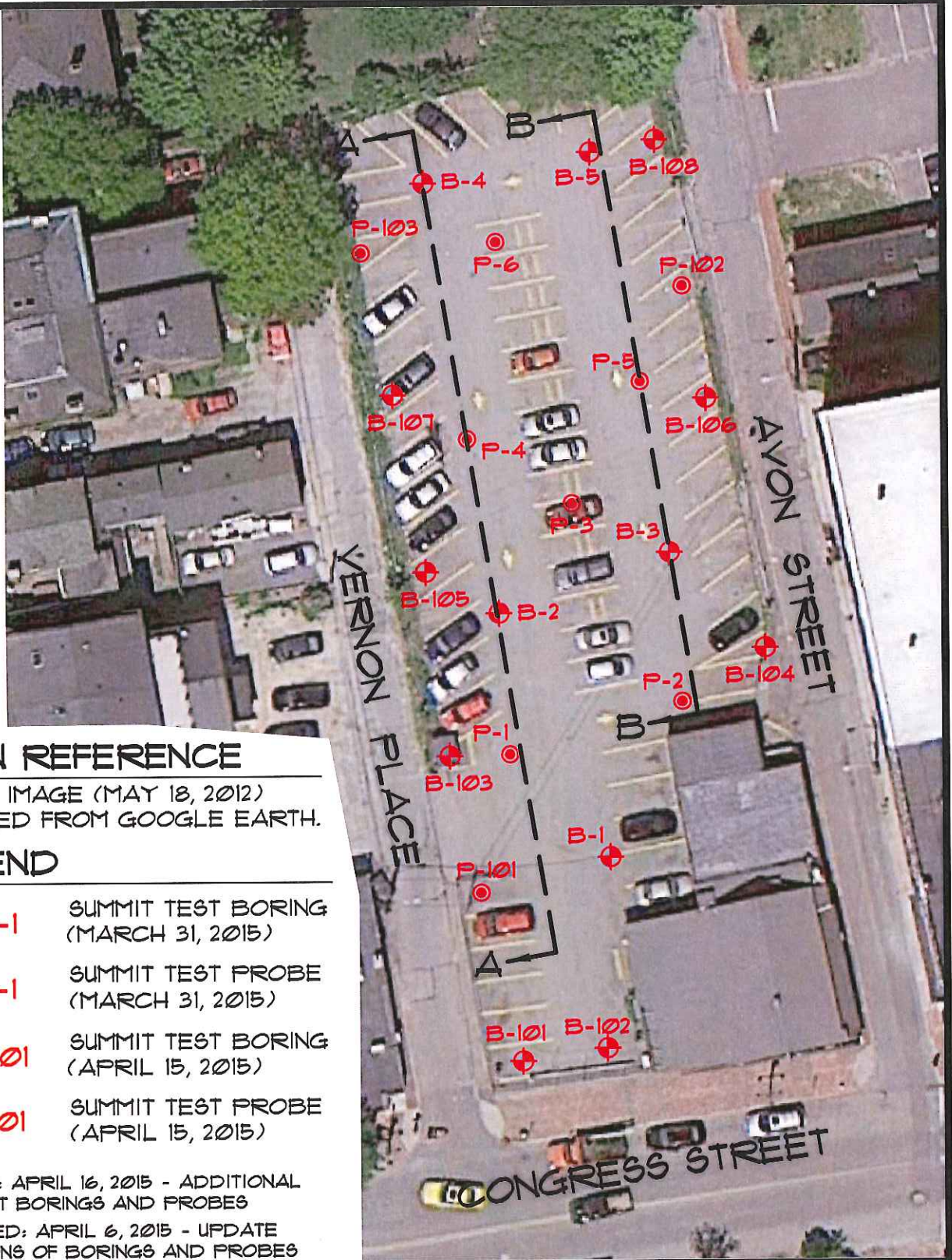
### Summary for Reach 1R: POI#1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.599 ac, 100.00% Impervious, Inflow Depth > 4.87" for 25-year event  
Inflow = 3.29 cfs @ 12.07 hrs, Volume= 0.243 af  
Outflow = 3.29 cfs @ 12.07 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.04 hrs






**PLAN REFERENCE**

AERIAL IMAGE (MAY 18, 2012)  
OBTAINED FROM GOOGLE EARTH.

**LEGEND**

-  **B-1** SUMMIT TEST BORING (MARCH 31, 2015)
-  **P-1** SUMMIT TEST PROBE (MARCH 31, 2015)
-  **B-101** SUMMIT TEST BORING (APRIL 15, 2015)
-  **P-101** SUMMIT TEST PROBE (APRIL 15, 2015)

REVISED: APRIL 16, 2015 - ADDITIONAL TEST BORINGS AND PROBES

REVISED: APRIL 6, 2015 - UPDATE LOCATIONS OF BORINGS AND PROBES

**SUBSURFACE EXPLORATION LOCATION PLAN  
PROPOSED BUILDING SITE**

665 CONGRESS STREET - PORTLAND, MAINE  
PREPARED FOR  
**REDFERN PROPERTIES**

145 LISBON ST. - SUITE 601  
LEWISTON, ME 04240  
Tel.: (207) 576-3313

173 PLEASANT STREET  
ROCKLAND, ME 04841  
Tel.: (207) 318-7761



**GEOENGINEERING SERVICES**  
www.summitgeoeng.com

DATE: 4-1-2015	DRAWN BY: KRF	CHECKED BY: WMP
JOB: 15040	SCALE: 1" = 40'	FILE: 15040 BOR





## EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

### Drilling and Sampling Symbols:

SS = Split Spoon Sample	Hyd = Hydraulic Advancement of Drilling Rods
UT = Thin Wall Shelby Tube	Push = Direct Push of Drilling Rods
SSA = Solid Stem Auger	WOH = Weight of Hammer
HSA = Hollow Stem Auger	WOR = Weight of Rod
RW = Rotary Wash	PI = Plasticity Index
SV = Shear Vane	LL = Liquid Limit
PP = Pocket Penetrometer	W = Natural Water Content
RC = Rock Core Sample	USCS = Unified Soil Classification System

### Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.

### Gradation Description and Terminology:

Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

### Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	Consistency	SPT N-value blows/ft	Relative Density
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		



### SOIL BORING LOG

Boring #: **B-1**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Summit Geoenengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 115.9'  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	3/31/2015	-		None observed		
Method: 2-1/2" H.S.A.	Hammer: 140 lb						
Hammer Style: Auto	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						2" to 2.5" of Pavement		PAVEMENT
1	S-1	24/4	1 to 3	6		Dark tan Gravelly SAND, little Silt, compact, humid, SP-SM * Spoon sampler skewed horizontally, unable to collect blow counts. Likely due to encountered rubble		0.2' FILL
2				11				
3				*				
4						Auger advancement produced no cuttings, likely rubble fill with large voids		2.0'
5								
6	S-2	24/3	5 to 7	WH		Light gray Sandy GRAVEL, cobble pieces, little white Ash trace Silt, very loose, humid, GP		
7				1				
8				3				
9				1				
10						Olive green SILT, little Clay and Sand, trace Gravel, compact, humid, ML	PP = 8,000 to 9,000 psf	9.0' GLACIAL TILL
11	S-3	24/20	10 to 12	6				
12				8				
13				9				
14				12				
15						Same as above, slightly mottled		
16	S-4	24/9	15 to 17	6				
17				50/3"		End of Exploration at 15.8', Auger and Spoon refusal		15.8' BEDROCK
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



**SOIL BORING LOG**

Boring #: **B-2**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Summit Geoenengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 114 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	3/31/2015	-		None observed		
Method: 2-1/2" H.S.A.	Hammer: 140 lb						
Hammer Style: Auto	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						2" to 2.5" of Pavement		PAVEMENT
1	S-1	24/20	1 to 3	3		Dark brown Gravelly SAND, little Silt and black/white Ash, loose to compact, frozen, SP-SM		0.2' FILL
2				6				
3				5				
4				3				
5						Same as above		
6	S-2	24/22	5 to 7	10		Olive green slightly mottled SILT, little Sand, trace Clay and Gravel, compact, damp, ML		5.2' GLACIAL TILL
7				13				
8				13				
9				14				
10						Same as above, heavily mottled seam at 10.8', dense	PP = 4,000 to 7,000 psf	
11	S-3	24/16	10 to 12	8				
12				12				
13				32		End of Exploration at 11.6', Spoon refusal		11.6' BEDROCK
14				50/1"				
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index  <u>Bedrock Joints</u> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



**SOIL BORING LOG**

Boring #: **B-3**  
 Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Drilling Co: Summit Geoenengineering Services Boring Elevation: 112.9 ft  
 Driller: C. Coolidge, P.E. Reference: Site Survey by Titcomb Associates  
 Summit Staff: M. Hardison, E.I. Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	3/31/2015	-		None observed		
Method: 2-1/2" H.S.A.	Hammer: 140 lb						
Hammer Style: Auto	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						3" to 3.5" of Pavement		PAVEMENT
1	S-1	24/12	1 to 3	4		Dark brown SILT, large brick fragment in spoon, small brick fragment in spoon tip, loose, humid, ML  * blow count due to brick fragment	PP = 5,000 psf	0.3' FILL
2				11*				
3				4				
4				2				
5								
6	S-2	24/12	5 to 7	12		Olive green SILT, little Sand, trace Clay and Gravel, compact, humid, ML	PP = 5,000 psf	5' +/- GLACIAL TILL
7				18		End of Exploration at 6.2', Spoon and Auger refusal		6.2' BEDROCK
8				50/3"				
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



**SOIL BORING LOG**

Boring #: **B-4**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Summit Geoenengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 112.5 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: AMS Power Probe	Diameter: 2"OD/1.5"ID	3/31/2015	-		None observed		
Method: 2-1/2" H.S.A.	Hammer: 140 lb						
Hammer Style: Auto	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						2.5" of Pavement		PAVEMENT
1	S-1	24/10	1 to 3	2		Brown Sandy SILT, little fine Gravel and black Ash, loose, humid, ML		0.2' FILL
2				2				
3				3				
4				2		Auger cuttings show increasing ash content with depth and some brick fragments Weathered rock fragments in spoon tip		4.5' WEATHERED ROCK
5	S-2	24/2	4.5 to 6.5	50/5"				
6						Augered through weathered rock to competent refusal		
7						End of Exploration at 7.2', Auger refusal		7.2' BEDROCK
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



### SOIL BORING LOG

Boring #: **B-5**  
 Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Drilling Co: Summit Geoengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 112.5 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	24" SS	Date	Depth	Elevation	Reference
Model:	AMS Power Probe	Diameter:	2"OD/1.5"ID	3/31/2015	-		None observed
Method:	2-1/2" H.S.A.	Hammer:	140 lb				
Hammer Style:	Auto	Method:	ASTM D1586				

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						2.5" of Pavement		PAVEMENT
1	S-1	24/8	1 to 3	15		Dark brown to black Sandy SILT, little Gravel and black and white Ash, ML		0.2' FILL
2				16				
3				6				
4				2				
5	S-2	24/1	4.8 to 6.8	50/3"		Dense drilling at 4.8' Rock in spoon tip		4.8' BEDROCK
6						End of Exploration at 4.8', Spoon and Auger refusal		
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



### SOIL BORING LOG

Boring #: **B-101**  
 Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Drilling Co: Great Works Test Boring  
 Driller: Jeff Lee  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 118.5 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed		
Method: 4" Solid Stem Auger	Hammer: 140 lb						
Hammer Style: R&C	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						3" Pavement		PAVEMENT
1	S-1	24/4	0.5 to 2.5	4		Brown Silty SAND, loose, humid, SM		0.25' FILL
				3				
2				3				
				3				
3								
4						Possible rubble encountered at 4' during drilling		
5								
	S-2	24/4	5 to 7	7		Brown Silty SAND, trace Gravel, compact humid, SM		
6				7				
				7				
7				7				
8								
9								
10								
	S-3	24/12	10 to 12	4		Dark olive green SILT, little Sand and Gravel, trace Clay, dense/very stiff, slightly mottled, humid, ML	PP = *1,000 to *3,000 psf	10.0' +/- GLACIAL TILL
11				8				
				30				
12				50/5		* = Specimen failed via tension crack, low clay content		
13						End of Exploration at 11.9', Auger and Spoon refusal		11.9' BEDROCK
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and > No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



**SOIL BORING LOG**

Boring #: **B-102**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring  
 Driller: Jeff Lee  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 118.7 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed		
Method: 4" Solid Stem Auger	Hammer: 140 lb						
Hammer Style: R&C	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (In)	Depth (ft)	blows/6"	N <sub>60</sub>			
						3" Pavement		PAVEMENT
1	S-1	24/4	0.5 to 2.5	4		Dark brown Silty SAND, little Gravel, Gravel pieces in spoon tip, loose, dry, SM		0.25' FILL
2				5				
3				3				
4						Rubble fill, large voids apparent from open hole inspection		
5						Auger encountered refusal at 4.9' during drilling. Moved over 1' and attempted to drill past, refusal encountered in second hole at 3.2'		
6						End of Exploration at 4.9', Auger refusal on rubble		4.9'
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			





### SOIL BORING LOG

Boring #: **B-103**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring  
 Driller: Jeff Lee  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 115.0 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD	SAMPLER	ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed
Method: 4" Solid Stem Auger	Hammer: 140 lb				
Hammer Style: R&C	Method: ASTM D1586				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum	
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
							PAVEMENT	
1	S-1	24/8	0.5 to 2.5	4			0.25' FILL	
2				6	Brown to dark brown SAND, trace silt, large brick fragment in top 4" of sample, brick fragment in spoon tip, loose, humid, SP			
3				7				
4				9				
5								
6	S-2	24/6	5 to 7	5		same as above, no brick fragment, some white Ash		
7				7				
8				15				
9				15				
10								9.0' +/- GLACIAL TILL
11	S-3	24/20	10 to 12	14	Olive green SILT, little Gravel, Sand, and Clay, cobble pieces fro 10.5 to 11.0', humid, dense/hard, ML	PP = 6,000 to > 9,000 psf		
12				24				
13				20				
14				20				
15					End of Exploration at 14.5', Auger refusal		14.5' BEDROCK	
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	
5-10	Loose	2-4	Soft	5-15% Little		
11-30	Compact	5-8	Firm	15-30% Some		
31-50	Dense	9-15	Stiff	> 30% With		
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



### SOIL BORING LOG

Boring #: **B-104**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring  
 Driller: Jeff Lee  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 113.1 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed		
Method: 4" Solid Stem Auger	Hammer: 140 lb						
Hammer Style: R&C	Method: ASTM D1586						

Depth (ft.)						SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
1						4" Pavement		PAVEMENT
2						Augered to 5', relatively easy drilling (no rubble)		0.3' FILL
3								
4								
5								
6	S-1	24/18	5 to 7	7				
7				17	Olive green SILT, little Gravel, Sand, and Clay, mottled, damp, compact/very stiff, cobble pieces at 6.5', ML	PP = 5,000 to 7,000 psf	5.0' +/- GLACIAL TILL	
8				23				
9								
10								
11					End of Exploration at 9.5', Auger refusal		8.5' WEATHERED ROCK	
12							9.5' BEDROCK	
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



**SOIL BORING LOG**

Boring #: **B-105**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring  
 Driller: Jeff Lee  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 113.8 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed		
Method: 4" Cased Wash	Hammer: 140 lb						
Hammer Style: R&C	Method: ASTM D1586						

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
1							PAVEMENT
2							0.25'
3							
4							
5							
6							
7							
8							
9							
10	ROCK CORE DATA						9.1' +/- WEATHERED ROCK
	RUN	DEPTH	RUN	RECOVERY	RQD		10.0'
11	C-1a	10 to 13.3	40"	70%	0%	Moderately weathered, very thinly spaced vertical joints, very hard, light to medium gray SCHIST	
12							
13	C-1b	13.3 to 15	20"	100%	80%	Same as above, moderately spaced joints	
14							
15						End of Exploration at 15.0', rock core terminated	15.0'
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



**SOIL BORING LOG**

Boring #: **B-106**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring  
 Driller: Jeff Lee  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 112.0 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD	SAMPLER
Vehicle: Tracked	Length: 24" SS
Model: Mobile B-53	Diameter: 2"OD/1.5"ID
Method: 4" Cased Wash	Hammer: 140 lb
Hammer Style: R&C	Method: ASTM D1586

ESTIMATED GROUND WATER DEPTH			
Date	Depth	Elevation	Reference
4/15/2015	-		None observed

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
1							PAVEMENT
2							0.25'
3							
4							
5							
6							
7							
8							
9							
10							
	ROCK CORE DATA						
	RUN	DEPTH	RUN	RECOVERY	RQD		10.0'
11	C-2	10 to 15	60"	66%	33%		
12							
13							
14							
15							
16	C-3	15 to 19	48"	96%	65%		
17							
18							
19							
20							19.0'
21							
22							
23							
24							
25							
26							
27							



Granular Soils	Cohesive Soils		% Composition		NOTES:	Soil Moisture Condition
Blows/ft. Density	Blows/ft.	Consistency	ASTM D2487			
0-4 V. Loose	<2	V. soft			PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index  <b>Bedrock Joints</b> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10 Loose	2-4	Soft	< 5% Trace			
11-30 Compact	5-8	Firm	5-15% Little			
31-50 Dense	9-15	Stiff	15-30% Some			
>50 V. Dense	16-30	V. Stiff	> 30% With			
	>30	Hard				



**SOIL BORING LOG**

Boring #: **B-107**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring Boring Elevation: 112.9 ft  
 Driller: Jeff Lee Reference: Site Survey by Titcomb Associates  
 Summit Staff: M. Hardison, E.I. Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed		
Method: 4" Solid Stem Auger	Hammer: 140 lb						
Hammer Style: R&C	Method: ASTM D1586						

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						4" Pavement		PAVEMENT
1	S-1	24/6	0.5 to 2.5	3		Dark brown Sandy SILT, trace Ash and Brick fragments, loose, dry, ML		0.3' FILL
				4				
2				4				
				3				
3								
4								
5								
	S-2	24/24	5 to 7	7		Olive green SILT, slight mottling, litte fine Sand, trace Gravel and Clay, compact/very stiff, humid, ML		5.0' +/- GLACIAL TILL
6				10				
				14				
7				14				
8								
9								
10						Soft rock encountered during augering, drilled 1.5' into rock to hard refusal		9.0' +/- WEATHERED ROCK
11						End of Exploration at 10.5', Auger refusal		10.5' BEDROCK
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



**SOIL BORING LOG**

Boring #: **B-108**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring

Boring Elevation: 110.2 ft

Driller: Jeff Lee

Reference: Site Survey by Titcomb Associates

Summit Staff: M. Hardison, E.I.

Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle: Tracked	Length: 24" SS	Date	Depth	Elevation	Reference		
Model: Mobile B-53	Diameter: 2"OD/1.5"ID	4/15/2015	-		None observed		
Method: 4" Solid Stem Auger	Hammer: 140 lb						
Hammer Style: R&C	Method: ASTM D1586						

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
1	S-1	24/10		8			PAVEMENT
				9			
2				8			1.1' +/-
				3			FILL
3							
4							
5							
6	S-2	24/4		*50/6"			
7							
8							
9							8.5'
10							BEDROCK
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

Granular Soils		Cohesive Soils		% Composition	NOTES:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		
0-4	V. Loose	<2	V. soft		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees	
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard		Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	



**SOIL PROBE LOG**

Boring #: **P-1**  
 Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Drilling Co: Summit Geoengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 114.9 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	N/A	Date	Depth	Elevation	Reference
Model:	AMS Power Probe	Diameter:	N/A	3/31/2015			
Method:	2-1/2" H.S.A.	Hammer:	N/A				
Hammer Style:	Auto	Method:	N/A				

Depth (ft.)						SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
						2.5" of Pavement		PAVEMENT
1								0.2' FILL
2								
3						Dense drilling at 3', likely rubble		
4						Auger advancement produced no cuttings, large voids apparent from hole inspection, likely rubble fill		
5								
6								
7								
8								
9								
10								9.0' +/- WEATHERED ROCK
						End of Probe at 10.0', Auger Refusal		10.0' BEDROCK
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition	NOTES:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		
0-4	V. Loose	<2	V. soft		PP = Pocket Penetrometer, MC = Moisture Content	Dry: S = 0%
5-10	Loose	2-4	Soft	< 5% Trace	LL = Liquid Limit, PI = Plastic Index	Humid: S = 1 to 25%
11-30	Compact	5-8	Firm	5-15% Little	<u>Bedrock Joints</u>	Damp: S = 26 to 50%
31-50	Dense	9-15	Stiff	15-30% Some	Shallow = 0 to 35 degrees	Moist: S = 51 to 75%
>50	V. Dense	16-30	V. Stiff	> 30% With	Dipping = 35 to 55 degrees	Wet: S = 76 to 99%
		>30	Hard		Steep = 55 to 90 degrees	Saturated: S = 100%

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



**SOIL PROBE LOG**

Boring #: **P-2**

Project: Proposed Apartment Building

Project #: 15040

Location: 665 Congress St.

Sheet: 1 of 1

City, State: Portland, ME

Chkd by:

Drilling Co: Summit Geoengineering Services

Boring Elevation: 113.9 ft

Driller: C. Coolidge, P.E.

Reference: Site Survey by Titcomb Associates

Summit Staff: M. Hardison, E.I.

Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	N/A	Date	Depth	Elevation	Reference
Model:	AMS Power Probe	Diameter:	N/A	3/31/2015			
Method:	2-1/2" H.S.A.	Hammer:	N/A				
Hammer Style:	Auto	Method:	N/A				

Depth (ft.)	SAMPLER					SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
1				PROBE		2.5" of Pavement		PAVEMENT
2						Auger cuttings: tan Sandy SILT, some brick fragments,		0.2' FILL
3								
4								
5								
6								
7								
8								
9								
10				↓				9.0' +/- WEATHERED ROCK
11						End of Probe at 10.0', Auger refusal		10.0' BEDROCK
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	<b>Bedrock Joints</b> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			





**SOIL PROBE LOG**

Boring #: **P-3**  
 Project #: 15040  
 Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 Sheet: 1 of 1  
 City, State: Portland, ME  
 Chkd by:

Drilling Co: Summit Geoengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.  
 Boring Elevation: 112.8 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	N/A	Date	Depth	Elevation	Reference
Model:	AMS Power Probe	Diameter:	N/A	3/31/2015			
Method:	2-1/2" H.S.A.	Hammer:	N/A				
Hammer Style:	Auto	Method:	N/A				

Depth (ft.)						SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>			
1						3.5" of Pavement		PAVEMENT
2						Dense drilling at 8", moved over and started new hole		0.3' FILL
3						Auger cuttings: Dark tan SAND, little Silt and Gravel		
4								
5								
6						Auger cuttings: similar to above, little Clay		5.0' +/- GLACIAL TILL
7								7.0' +/- WEATHERED ROCK
8						Auger cuttings: light tan fine SAND (rock dust)		
9								
10						End of Probe at 9.9', Auger refusal		9.9' BEDROCK
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		
0-4	V. Loose	<2	V. soft		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



### SOIL PROBE LOG

Boring #: **P-4**  
 Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Drilling Co: Summit Geoengineering Services  
 Driller: C. Coolidge, P.E.  
 Summit Staff: M. Hardison, E.I.

Boring Elevation: 112.9 ft  
 Reference: Site Survey by Titcomb Associates  
 Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD	SAMPLER
Vehicle: Tracked	Length: N/A
Model: AMS Power Probe	Diameter: N/A
Method: 2-1/2" H.S.A.	Hammer: N/A
Hammer Style: Auto	Method: N/A

ESTIMATED GROUND WATER DEPTH			
Date	Depth	Elevation	Reference
3/31/2015			

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
				PROBE			PAVEMENT
1							0.3'
2							FILL
3							
4				↓			
5							4.0'
6							RUBBLE
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

Granular Soils	Cohesive Soils		% Composition	NOTES:	Soil Moisture Condition
Blows/ft. Density	Blows/ft.	Consistency	ASTM D2487		
0-4 V. Loose	<2	V. soft		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index  <b>Bedrock Joints</b> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10 Loose	2-4	Soft	< 5% Trace		
11-30 Compact	5-8	Firm	5-15% Little		
31-50 Dense	9-15	Stiff	15-30% Some		
>50 V. Dense	16-30	V. Stiff	> 30% With		
	>30	Hard			



**SOIL PROBE LOG**

Boring #: **P-5**

Project: Proposed Apartment Building

Project #: 15040

Location: 665 Congress St.

Sheet: 1 of 1

City, State: Portland, ME

Chkd by:

Drilling Co: Summit Geoenengineering Services

Boring Elevation: 112.3 ft

Driller: C. Coolidge, P.E.

Reference: Site Survey by Titcomb Associates

Summit Staff: M. Hardison, E.I.

Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	N/A	Date	Depth	Elevation	Reference
Model:	AMS Power Probe	Diameter:	N/A	3/31/2015			
Method:	2-1/2" H.S.A.	Hammer:	N/A				
Hammer Style:	Auto	Method:	N/A				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
1				PROBE		3" of Pavement	PAVEMENT
2				↓		Auger refusal at 9", moved over and started new hole, encountered same refusal. Likely cobble	0.3'
3						End of Probe at 0.8', Auger refusal	0.8'
4							COBBLE
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

Granular Soils		Cohesive Soils		% Composition	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		
0-4	V. Loose	<2	V. soft		<b>Bedrock Joints</b> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	< 5% Trace		
11-30	Compact	5-8	Firm	5-15% Little		
31-50	Dense	9-15	Stiff	15-30% Some		
>50	V. Dense	16-30	V. Stiff	> 30% With		
		>30	Hard			



### SOIL PROBE LOG

Boring #: **P-6**

Project: Proposed Apartment Building

Project #: 15040

Location: 665 Congress St.

Sheet: 1 of 1

City, State: Portland, ME

Chkd by:

Drilling Co: Summit Geoengineering Services

Boring Elevation: 112.3 ft

Driller: C. Coolidge, P.E.

Reference: Site Survey by Titcomb Associates

Summit Staff: M. Hardison, E.I.

Date started: 3/31/2015 Date Completed: 3/31/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	N/A	Date	Depth	Elevation	Reference
Model:	AMS Power Probe	Diameter:	N/A	3/31/2015			
Method:	2-1/2" H.S.A.	Hammer:	N/A				
Hammer Style:	Auto	Method:	N/A				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
1				PROBE		2.5" of Pavement	PAVEMENT
2						Auger cuttings: Black Sandy SILT, frequent brick fragments, little Clay and black Ash	0.2' FILL
3							
4							
5							
6						End of Probe at 5.0', Auger refusal	5.0' BEDROCK
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	<b>Bedrock Joints</b> Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



**SOIL PROBE LOG**

Boring #: **P-101**

Project: Proposed Apartment Building  
 Location: 665 Congress St.  
 City, State: Portland, ME

Project #: 15040  
 Sheet: 1 of 1  
 Chkd by:

Drilling Co: Great Works Test Boring

Boring Elevation: 116.4 ft

Driller: Jeff Lee

Reference: Site Survey by Titcomb Associates

Summit Staff: M. Hardison, E.I.

Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	N/A	Date	Depth	Elevation	Reference
Model:	Mobile B-53	Diameter:	N/A	4/15/2015	-		None observed
Method:	4" Solid Stem Auger	Hammer:	N/A				
Hammer Style:	R&C	Method:	N/A				

Depth (ft.)	SAMPLE DESCRIPTION					Geological/ Test Data	Geological Stratum
	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>		
1				PROBE			PAVEMENT
2							0.25' +/- FILL
3							
4							
5							
6							
7							
8							
9							
10							
11							10.8' BEDROCK
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



**SOIL PROBE LOG**

Boring #: **P-102**

Project: Proposed Apartment Building

Project #: 15040

Location: 665 Congress St.

Sheet: 1 of 1

City, State: Portland, ME

Chkd by:

Drilling Co: Great Works Test Boring

Boring Elevation: 111.9 ft

Driller: Jeff Lee

Reference: Site Survey by Titcomb Associates

Summit Staff: M. Hardison, E.I.

Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	24" SS	Date	Depth	Elevation	Reference
Model:	Mobile B-53	Diameter:	2"OD/1.5"ID	4/15/2015	-		None observed
Method:	4" Solid Stem Auger	Hammer:	140 lb				
Hammer Style:	R&C	Method:	ASTM D1586				

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1						3" Pavement		PAVEMENT
2						Smooth drilling throughout fill layer (no rubble/cobbles)  Increased resistance at 4.8, potential till or soft rock		
3								
4								
5								
6								
7								
8								
9								
10								
11								
12						End of Probe at 12.1', Auger refusal		12.1'
13								BEDROCK
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487		
0-4	V. Loose	<2	V. soft	< 5% Trace	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silty/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft	5-15% Little		
11-30	Compact	5-8	Firm	15-30% Some		
31-50	Dense	9-15	Stiff	> 30% With		
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



### SOIL PROBE LOG

Boring #: **P-103**

Project: Proposed Apartment Building

Project #: 15040

Location: 665 Congress St.

Sheet: 1 of 1

City, State: Portland, ME

Chkd by:

Drilling Co: Great Works Test Boring

Boring Elevation: 112.3 ft

Driller: Jeff Lee

Reference: Site Survey by Titcomb Associates

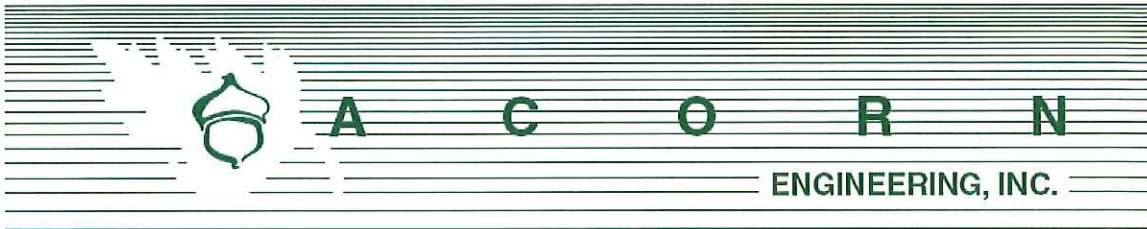
Summit Staff: M. Hardison, E.I.

Date started: 4/15/2015 Date Completed: 4/15/2015

DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH			
Vehicle:	Tracked	Length:	24" SS	Date	Depth	Elevation	Reference
Model:	Mobile B-53	Diameter:	2"OD/1.5"ID	4/15/2015	-		None observed
Method:	4" Solid Stem Auger	Hammer:	140 lb				
Hammer Style:	R&C	Method:	ASTM D1586				

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N <sub>60</sub>	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1						4" Pavement		0.3'
2						Relatively easy drilling, no rubble/cobbles encountered		
3								
4								
5								
6								
7								
8								
9								
10								
10						End of Probe at 9.6', Auger refusal		9.6'
11								BEDROCK
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees  Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30 >30	V. Stiff Hard			



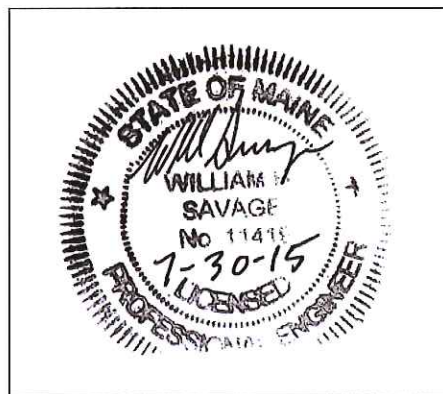
# EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

**Redfern Properties, LLC  
667 Congress Street Redevelopment  
Portland, Maine 04101**

Prepared By:

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



July 2015



## INTRODUCTION

Acorn Engineering, Inc. has been retained by Redfern Properties, LLC to provide civil engineering services for the proposed development of Joe's Variety Store. The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. The existing commercial building and parking lot are to be redeveloped to include:

- 1 Commercial Space on the first floor (approximately 4500 SF).
- 139 Residential Units on the upper seven floors.
- 44 Parking Spaces on the first floor off of Commercial Street and 37 spaces located below in a lower level parking garage.

The following Erosion and Sedimentation Control Report was developed in accordance with the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended January 11, 2015. This narrative also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP's Manual, dated March 2003.

### 1.0 EXISTING CONDITIONS

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which are to be demolished as part of the proposed project.

The City of Portland has rezoned the entire parcel as a B-3 zone due to its proximity to Commercial Street and Downtown Portland.

Abutting Uses:

- |             |  |
|-------------|--|
| ➤ North     | R-6 Zone – Single and Multi-Family Residential     |
| ➤ East      | B-3 Zone – Green Hand Bookshop, Parking Lot        |
| ➤ Southwest | B-3 Zone – Boda/Bangkok Thai                       |
| ➤ Northwest | R-6 Zone – Single and Multi-Family Residential     |
| ➤ South     | B-3 Zone – Video Expo, Empire Theater, Barber Shop |

The existing project area is made up of a single paved and gravel parking area with a single, existing building. The distribution of surfaces is as follows:

- Paved Surface: 81%
- Existing Building: 14%
- Gravel with Limited Overgrowth: 5%

All surfaces are impervious with an existing grade ranging from approximately 0-10%.

## 1.1 Existing Soils

Onsite soil information includes the following:

- Summit Geoenvironmental Services – Soil Boring Logs, dated March 31<sup>st</sup>, 2015 and April 15<sup>th</sup>, 2015. A formal Geotechnical Report has also been prepared by Summit Geoenvironmental Services for the project, dated May 2015.
- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County.

According to Summit Services, the soil at the site generally consists of pavement overlying fill overlying glacial till overlying weathered bedrock overlying bedrock. The pavement at the site was present at the location of all drilled borings and probes and ranged from 2.5” to 4.0” in thickness. The fill layer was encountered below all paved areas and ranged from loose to compact and humid to frozen. The glacial till layer was detected in primarily the Southwest corner and ranged from humid to damp and compact to dense. The weathered bedrock was encountered in the center of the property and was between 1.0 to 2.9 feet thick.

Given the soils information, listed above, and the fact that greater than 50% of the proposed development site is currently developed, it is Acorn Engineering’s professional opinion that a more intense hydric soil boundary delineation is not required because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soils types listed in the table below. The susceptibility of soils to erosion is indicated on a relative “K” scale of values over a range of 0.02 to 0.69. Higher “K” values indicate more erodible soils.

Table 1 - “K” Value		
Soils Type	Subsurface	Substratum
Hinckley	.17	.17

The soil “K” values for the soils, listed above, indicate a low susceptibility to erosion. The site’s susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County.

## 1.2 Existing Erosion Problems

Currently, the site is comprised of a developed paved and gravel parking lot with a single building.

## 1.3 Critical Areas

Critical areas that would require special attention during construction are the areas adjacent to the municipal stormwater system. This includes, but is not limited to, the catch basins located in the Northeast and Northwest corners of the property.

## 1.4 Protected Natural Resource

The client is not aware of the presence of any existing significant natural features located on the site as listed in Section 14-526 (b) 1. of the Land Use Code. The project is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

#### 1.5 Previous Construction Activity (5 years)

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

#### 1.6 Timber Harvesting

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

### 2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

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

#### 2.1 Temporary Erosion Control Measures

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

- 2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:
- Stone size shall be 2-3 inches, or reclaimed or recycled concrete equivalent.
  - The thickness of the entrance stone layer shall be no less than 6 inches.
  - The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
  - Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
  - The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public road ways.
- 2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or



- impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.
- 2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15<sup>th</sup> and November 1<sup>st</sup> on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1<sup>st</sup> and April 15<sup>th</sup> on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.
  - 2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.
  - 2.1.5 Vernon Place, Avon Street, and Congress Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
  - 2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.
  - 2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14 gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.
  - 2.1.8 Stormdrain inlet protection shall be provided to stormdrains through the use of any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached ½ the design height.
  - 2.1.9 Dust control shall be accomplished by the use of any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.
  - 2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.
  - 2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7 day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.
  - 2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.



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

## 2.2 Permanent Erosion Control Measures

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

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

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

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

## 3.0 EROSION AND SEDIMENTATION CONTROL PLAN

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

## 4.0 DETAILS AND SPECIFICATIONS

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

## 5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

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

The following measures shall be implemented during winter construction periods:

### 5.1 Sediment Barriers

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

### 5.2 Mulching



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

### 5.3 Soil Stockpiling

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

### 5.4 Seeding

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

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs/1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

### 5.5 Over winter stabilization of disturbed soils

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

- Stabilize the soil with temporary vegetation – By October 1<sup>st</sup>, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded



soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1<sup>st</sup>, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1<sup>st</sup>. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.
- Stabilize the soil with mulch – By November 15<sup>th</sup>, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

#### 5.6 Over winter stabilization of disturbed slopes

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

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1<sup>st</sup> the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1<sup>st</sup>, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.
- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1<sup>st</sup>. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15<sup>th</sup>. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15<sup>th</sup>. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.



## 6.0 INSPECTION AND MAINTENANCE

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

### 6.1 Sediment Barriers

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

### 6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

### 6.3 Mulched Areas

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

### 6.4 Dust Control

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



## 6.5 Stormwater Appurtenances

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

## 6.6 Erosion and Sedimentation Control Inspections:

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

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

Qualifications:

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

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

## 7.0 IMPLEMENTATION SCHEDULE

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

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Install all other erosion control devices as necessary throughout the remainder of this schedule.
4. Commence installation of drainage infrastructure.
5. Prioritize the downhill retaining and foundation walls to contain runoff within the site while providing an engineered outlet with siltation barrier to the municipal stormwater system within Avon.
6. Commence earthwork operations, wall and foundation installation.
7. Commence installation of utilities.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Complete installation of drainage infrastructure, as well as other utility work.
10. Complete remaining earthwork operations.
11. Install sub-base and base gravels in paved areas.
12. Install paving, curbing and brickwork.
13. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.

14. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete remove all temporary erosion control measures.
15. Touch up areas without a vigorous catch of grass with loam and seed.
16. Complete site signage and striping.
17. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

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

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

## **8.0 CONCLUSION**

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

## **9.0 ATTACHMENTS**

- Temporary Seeding Plan



## TEMPORARY SEEDING PLAN

### Site Preparation

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

### Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O) or equivalent.

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

### Seeding

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

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

### Mulching

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

### Conclusion

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

## Solid Waste Disposal

The owner, Redfern Properties, LLC, or their property management company shall be responsible for contracting with a private hauler for removal of solid waste and recyclable material generated from the 139 residential units and 1 commercial spaces. Acorn Engineering, Inc. has reached out to waste management facilities to obtain potential quotes and feasibility statements from solid waste companies. The proposed solid waste room is as noted on the Site Plan (C-10) and include:

- One 2-cubic yard container serviced 4x weekly (trash)
- One 2-cubic yard containers serviced 4x weekly (recycling)

OR

- Four 2-cubic yard containers serviced 4x weekly (trash only)
- Four 2-cubic yard containers serviced 4x weekly (recycling only)

Pickup will occur as indicated above (or as otherwise necessary) to maintain a clean waste storage area. The solid waste containers will be fully enclosed within the first floor of the development, and screened from the public view.





A C O R N

ENGINEERING, INC.

Central Maine Power Company  
Attn: Jamie Cough  
162 Canco Road  
Portland, Maine 04103

April 22, 2015

Subject: 667 Congress Street Development - Redfern Properties, LLC – Portland  
Re: Ability to Serve

Mr. Cough,

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Central Maine Power's ability to serve the proposed development. 667 Congress Street is a 132-unit vertical urban infill development located near Longfellow Square in Portland. The proposed building is anticipated to be 8 stories tall; the first story will comprise of a retail space and an indoor parking facility; and the second through eighth stories will contain a total of 132 rental units within the building. A basement-level parking lot will also be included in the design.

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which is to be demolished as part of the proposed project. The smoke shop/variety store will be incorporated into the new building.

The developer plans to serve the proposed building with a 3-phase electric service. At this time we have proposed that the new service be established from the existing line within Congress Street, and into the existing CMP manhole within the Vernon Place corridor. We are assuming that Congress Street has 3-phase power. The service would then be routed overhead to the existing utility poles within Vernon Place. From the utility poles, the service would then be redirected underground into a transformer, located at the western property corner. Pull boxes are anticipated to be placed at corners, and conduit is anticipated to be encased in concrete within the City of Portland ROW. Within the building, the secondary distribution line will run within the basement slab at the ground level, up a support column to the first floor ceiling, and finally into the mechanical closet.

Furthermore, overhead wires crossing the proposed development are anticipated to be removed as part of this project. Electric services currently existing within Vernon Place are anticipated to be redirected from the existing CMP manhole within the Vernon Place corridor, onto the utility poles adjacent to the project, and then reconnecting to each existing Vernon Place service. Please see the Utility Plan (attached).

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

1. Any additional information, such as additional utility mapping confirming single and three-phase power locations within Vernon Place, Avon Street and Congress Street.

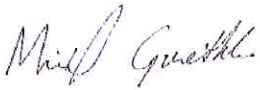


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Voice: 207-775-2655 • Fax: 207-358-7979 • [www.acorn-engineering.com](http://www.acorn-engineering.com)

2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the development to the existing system.
4. CMP's proposed infrastructure improvements within the project vicinity.
5. CMP's ability to serve the project.
6. Any input on the proposed location of the transformer and offsets. If required, other options such as in-ground mounting within the sidewalk location may be explored.
7. Whether CMP allows for secondary distribution line to be run within the basement of the facility, up support columns, and/or within ceiling conduit.
8. Access requirements to the CMP meters.
9. Metering options to reduce the necessary wall space.

I have attached a preliminary utility plan to facilitate your review. The project is anticipated to be three-phase. Electrical loading computations and final metering will be performed by the electrical engineer, at a later date. Please let me know if you have any further questions or comments.

Sincerely,



Michael A. Guethle

Design Engineer  
Acorn Engineering, Inc.

cc: Will Savage – Acorn Engineering, Inc.  
Jonathan Cully – Redfern Properties, LLC  
Ryan Senatore – Ryan Senatore Architecture



4/27/2015

**Michael Guethle, E.I.T.**  
**Engineer**

**Acorn Engineering, Inc**  
**PO Box 3372**  
**Portland, Maine 04104**  
*Sent via email to: mguethle@acorn-engineering.com*

RE: Ability to Serve Letter for 667 Congress Street project, Portland, ME.

Dear Mr. Guethle:

CMP has the ability to serve the proposed project located at 667 Congress Street in Portland, Maine, in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact me.

#### **New Service Milestones**

- Call 1-800-565-3181 to establish a new account and an SAP work order.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
- Submit Load information. Please complete this CMP spreadsheet using load information
- Submit the easement information worksheet. Please complete this CMP form and either email or fax back to us.
- Preliminary meetings with CMP to determine the details of job
- Field planner design appointment to cost out job and develop CMP Invoice.
- Submit invoice for payment.
- Easements signed and payment received.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer delivery, potential substation upgrades, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

162 Canco Road Portland, ME 04103  
Tel (800) 750-4000  
207-842-2367 office  
207-458-0382 cell  
207-626-4082 fax

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



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For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements:

[CMP Handbook of Standard Requirements](#)

(<http://www.cmpco.com/MediaLibrary/3/6/Content%20Management/YourAccount/PDFs%20and%20Docs/handbook.pdf>)

If you have any questions, please contact me.

Regards,

A handwritten signature in black ink that reads "Jamie Cough".

Jamie Cough  
Energy Services Advisor  
Central Maine Power Company  
162 Canco Road  
Portland, ME 04103  
207-842-2367 office  
207-458-0382 cell  
207-626-4082 fax

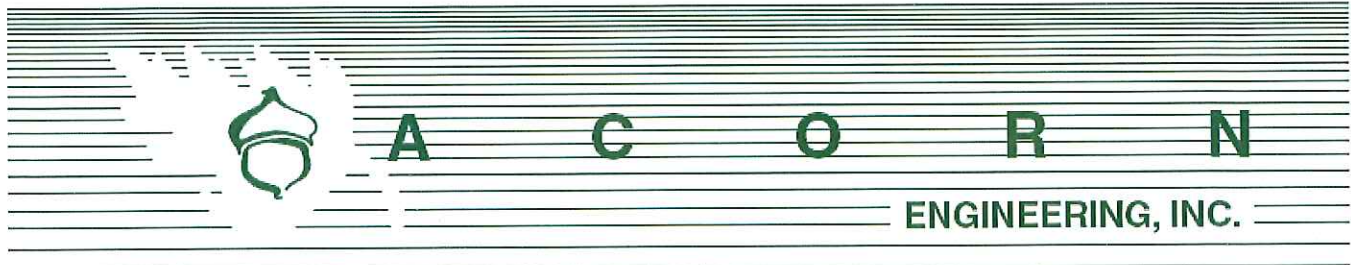
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Department of Public Services  
 Attn: Frank J. Brancely, B.A, M.A.  
 55 Portland Street  
 Portland, Maine 04101

April 22, 2015

Subject: 667 Congress Street Development - Redfern Properties, LLC – Portland  
 Re: Ability to Serve

Dear Mr. Brancely,

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for the Department of Public Services' ability to serve the proposed development. 667 Congress Street is a 132-unit vertical urban infill development located near Longfellow Square in Portland. The proposed building is anticipated to be 8 stories tall; the first story will comprise of a retail space and an indoor parking facility; and the second through eighth stories will contain a total of 132 rental units within the building. A basement-level parking lot will also be included in the design.

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which is to be demolished as part of the proposed project. The smoke shop/variety store will be incorporated into the new building.

Based upon the Section 4 of the Maine Subsurface Water Disposal Rules, the project anticipates the following design flows:

Conservative Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
Restaurant: With Food Prepared	Per Meal Prep	100	1	100
Restaurant: Employees	Per Employee	12	12	144
Proposed flow				
Restaurant: With Food Prepared	Per Meal Prep	150	1	150
Restaurant: Employees	Per Employee	12	12	144
Residential Units	≤2 – Bedroom	132	180	23,760
Net Change				23,810

\*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition



**A C O R N**

**ENGINEERING, INC.**

The proposed project is anticipated to add a net water usage from the development of approximately 24,000 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. The anticipated flow assumes a conservative water usage estimate; a higher food preparation value was used as an estimated flow for the restaurant, and many of the proposed apartments are 1-bedroom apartments or studio apartments. For these reasons, the actual water usage for this location may be lower.

Separate services are proposed for the commercial property and the residential units. For the residential units, the developer has proposed a new 8-inch sewer service for the development that would tie into the existing sewer within Avon Street. The developer is also proposing an individual six-inch service for the commercial property, including a 4-inch service for kitchen waste leading from an internal grease interceptor.

Grease Waste Interceptor Sizing						
Number of Meals/Peak Hour		Waste Flow Rate	Retention Time	Storage Factor	Calculated Size	Manufactured Size
Capacity	Meal Factor	Single Service	Single	10 HRS	(gallons)	(gallons)
15	1.33	2	1.5	1.25	74.8125	100

\*Based on values from Uniform Plumbing Code Formula

\*\*Extrapolating between storage factors for 11A-9P hours

The grease interceptor calculations are based upon coordination with the future owners of the proposed facility.

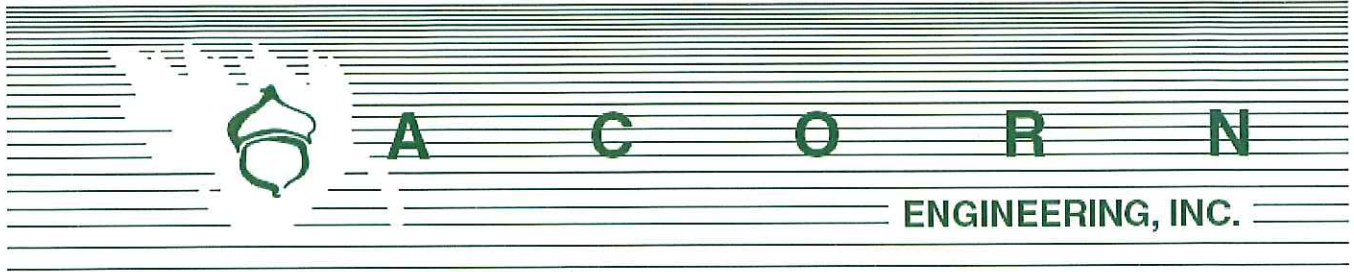
On behalf of the client we are requesting the following information:

1. Any additional information, such as additional utility mapping within the adjacent roadway corridors.
2. Currently, we are proposing a grease interceptor within the kitchen location appurtenant to a sampling manhole within the Congress Street corridor. We are aware that Maine Subsurface Wastewater Disposal Rules does not allow for an industrial external grease interceptor less than 750 gallons. Can DPS please comment on the potential for an internal grease interceptor, as well as the potential to not include a sampling/control manhole?
3. Alternative connection locations from the development to the existing system.
4. DPS's proposed infrastructure improvements including combined sewer separations within the project vicinity.
5. DPS's ability to serve the project.

I have attached a preliminary utility plan to facilitate your review. Please let me know if you have any further questions or comments.



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Voice: 207-775-2655 • Fax: 207-358-7979 • [www.acorn-engineering.com](http://www.acorn-engineering.com)



Sincerely,

A handwritten signature in black ink, which appears to read 'Michael A. Guethle', is written in a cursive style.

Michael A. Guethle

Design Engineer  
Acorn Engineering, Inc.

cc: Will Savage – Acorn Engineering, Inc.  
Jonathan Cully – Redfern Properties, LLC  
Ryan Senatore – Ryan Senatore Architecture

# CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,  
55 Portland Street,  
Portland, Maine 04101-2991



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

Date: 4/22/2015

**1. Please, Submit Utility, Site, and Locus Plans.**

Site Address: 667 Congress Street

Chart Block Lot Number: Refer to Letter

Proposed Use: Commercial, Apartments

Previous Use: Commercial/Retail

Existing Sanitary Flows: 244 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

Refer to the attached plan

Site Category	Commercial ( <i>see part 4 below</i> )	<input checked="" type="checkbox"/>
	Industrial ( <i>complete part 5 below</i> )	<input type="checkbox"/>
	Governmental	<input type="checkbox"/>
	Residential	<input checked="" type="checkbox"/>
	Other ( <i>specify</i> )	<input type="checkbox"/>

***(Clearly, indicate the proposed connections, on the submitted plans)***

**2. Please, Submit Contact Information.**

City Planner's Name: Shukria Wiar Phone: 756-8083

Owner/Developer Name: Jonathan Culley- Redfern Properties, LLC

Owner/Developer Address: P.O. Box 8816, Portland, Maine 04104

Phone: 207-776-9715 Fax: \_\_\_\_\_ E-mail: jonathan@redfernproperties.com

Engineering Consultant Name: Acorn Engineering, Inc.

Engineering Consultant Address: PO Box 3372, Portland, Maine 04104

Phone: 207-775-2655 Fax: \_\_\_\_\_ E-mail: wsavage@acorn-engineering.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: 23,810 GPD

Peaking Factor/ Peak Times: Diurnal Residential Flow Pattern

Specify the source of design guidelines: (*i.e.* "Handbook of Subsurface Wastewater Disposal in Maine,"

"Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)

STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES

***(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:	8
Size of External Grease Interceptor:	100 gallons
Retention Time:	1.5 hours
Peaking Factor/ Peak Times:	1 / 11:00AM-2:00PM, 5:00PM-8:00PM

*(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** N/A

Estimated Industrial Process Wastewater Flows Generated:	_____	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):	<a href="http://www.osha.gov/oshstats/sicser.html">http://www.osha.gov/oshstats/sicser.html</a>	
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

Please refer to the attached letter with calculations, and plan



A C O R N

ENGINEERING, INC.

Fairpoint Communications  
Attn: John Caprio  
5 Davis Farm Road  
Portland, Maine 04103

April 22, 2015

Subject: 667 Congress Street Development - Redfern Properties, LLC – Portland  
Re: Ability to Serve

John Caprio,

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Fairport Communication's ability to serve the proposed development. 667 Congress Street is a 132-unit vertical urban infill development located near Longfellow Square in Portland. The proposed building is anticipated to be 8 stories tall; the first story will comprise of a retail space and an indoor parking facility; and the second through eighth stories will contain a total of 132 rental units within the building. A basement-level parking lot will also be included in the design.

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which is to be demolished as part of the proposed project. The smoke shop/variety store will be incorporated into the new building.

The developer plans to serve the proposed building with an underground landline telephone service. At this time we have proposed that the new service be established from the existing services overhead within Vernon Place. From the utility poles, the service would then be redirected underground into a transformer, located at the western property corner. Pull boxes are anticipated to be placed at corners, and conduit is anticipated to be encased in concrete within the City of Portland ROW. Within the building, the service will run within the basement slab at the ground level, up a support column to the first floor ceiling, and finally into the mechanical closet.

Furthermore, the project anticipates rerouting the existing overhead telephone, electric and communications wires currently crossing the development to the Vernon Place corridor. Communications services currently existing within Vernon Place are anticipated to be redirected from the existing communications line within the Vernon Place corridor, as indicated on the Utility Plan (attached). Overhead wires crossing the proposed development, as well as overhead wires and utility poles within Vernon Place are anticipated to be removed as part of this project.

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

1. Any additional information, such as additional utility mapping within Vernon Place.
2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the development to the existing communication system.
4. Fairpoint's proposed infrastructure improvements within the project vicinity.



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A C O R N

ENGINEERING, INC.

5. Fairpoint's ability to serve the project.
6. Whether Fairpoint allows for service to be run within the basement of the facility, up support columns, and/or within ceiling conduit.

We have attached a preliminary utility plan to facilitate your review. Please let me know if you have any further questions or comments.

Sincerely,

Michael A. Guethle

Design Engineer  
Acorn Engineering, Inc.

cc: Will Savage – Acorn Engineering, Inc.  
Jonathan Cully – Redfern Properties, LLC  
Ryan Senatore – Ryan Senatore Architecture





**A C O R N**

**ENGINEERING, INC.**

Portland Water District  
Attn: MEANS Department  
225 Douglas Street  
Portland, Maine 04104

April 22, 2015

Subject: 667 Congress Street Development - Redfern Properties, LLC – Portland  
Re: Ability to Serve

To whom it may concern:

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Portland Water ability to serve the proposed development. 667 Congress Street is a 132-unit vertical urban infill development located near Longfellow Square in Portland. The proposed building is anticipated to be 8 stories tall; the first story will comprise of a retail space and an indoor parking facility; and the second through eighth stories will contain a total of 132 rental units within the building. A basement-level parking lot will also be included in the design.

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which is to be demolished as part of the proposed project. The smoke shop/variety store will be incorporated into the new building.

Based upon the Section 4 of the Maine Subsurface Water Disposal Rules, the project anticipates the following design flows:

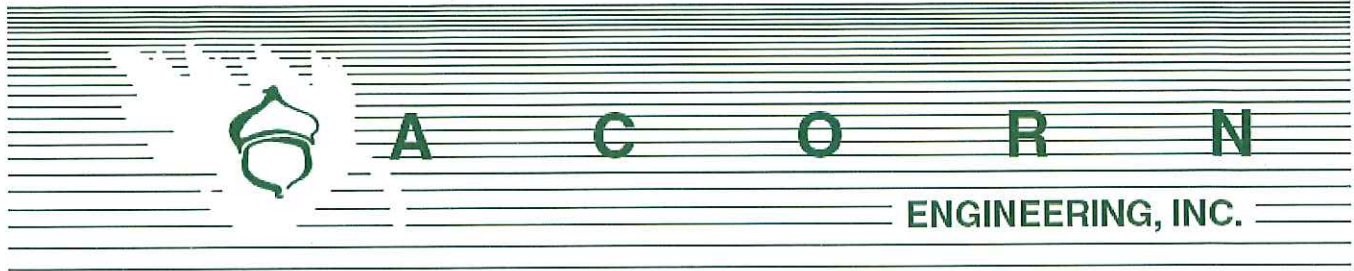
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
Restaurant: With Food Prepared	Per Meal Prep	100	1	100
Restaurant: Employees	Per Employee	12	12	144
Proposed flow				
Restaurant: With Food Prepared	Per Meal Prep	150	1	150
Restaurant: Employees	Per Employee	12	12	144
Residential Units	≤2 – Bedroom	132	180	23,760
<b>Net Change</b>				<b>23,810</b>

\*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition



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**Voice: 207-775-2655 • Fax: 207-358-7979 • www.acorn-engineering.com**





The proposed project is anticipated to add a net water usage from the development of approximately 24,000 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules. The anticipated flow assumes a conservative water usage estimate; a higher food preparation value was used as an estimated flow for the restaurant, and many of the proposed apartments are 1-bedroom apartments or studio apartments. For these reasons, the actual water usage for this location may be lower.

Separate services are proposed for the commercial property and the residential units. For the residential units, the developer has proposed a new 8-inch fire line service for the development that would tie into the existing water main in Congress Street with a redundant connection within Avon Street, as well as a four-inch domestic service in Congress Street. The developer is also proposing an individual one-inch service for the commercial property. I have attached a preliminary utility plan to facilitate your review.

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

1. Any additional information, such as additional utility mapping within Vernon Place.
2. Alternative connection locations from the development to the existing system.
3. PWD's proposed infrastructure improvements within the project vicinity.
4. PWD's ability to serve the project.

Please let me know if you have any further questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael A. Guethle', is written over a light blue horizontal line.

Michael A. Guethle

Design Engineer  
Acorn Engineering, Inc.

cc: Will Savage – Acorn Engineering, Inc.  
Jonathan Cully – Redfern Properties, LLC  
Ryan Senatore – Ryan Senatore Architecture



## Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

June 11, 2015

Acorn Engineering, Inc.  
P. O. Box 3372  
Portland, ME 04104

Attn: Michael Guethle  
Re: 667 Congress Street - Portland  
Ability to Serve with PWD Water

Dear Mr. Guethle:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on April 22, 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:

- If the existing service will no longer be used as a result of the development then it must be retired per PWD standards. This includes shutting the corporation valve and cutting the pipe from the water main.
- As the water mains in Congress Street and Avon Street are more than 50 years old, both fire services and the 4" domestic service will require a tapping valve at the main and a second gate valve at street line.
- A redundant fire protection service has been requested. The Utility Plan indicates an 8-inch fire service on both Congress Street and Avon Street. The connection on Avon Street should be revised to a 6" X 6" tapping sleeve with a 6-inch gate valve, a 2-foot section of 6-inch ductile iron pipe and a 6" X 8" increaser. A testable double check valve assembly will be required at the building entrance on each service and each connection shall be treated as an individual fire service with separate billing accounts.
- 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 currently have existing water service. A 3/4-inch diameter copper water service line, located as shown on the attached water service card, provides water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is a 16-inch diameter cast iron water main on the north side of Congress Street, a 6" cast iron water main on the east side of Vernon Court, a 6" cast iron water main on the west side of Avon Street and a public fire hydrant located at the site.

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

Hydrant Location: Congress Street at Avon Street  
Hydrant Number: POD-HYD00089  
Last Tested: 8/8/2014  
Static Pressure: 66 psi  
Residual Pressure: 64 psi  
Flow: 1,162 GPM

Public Fire Protection

You have not indicated whether 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. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

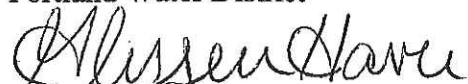
Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Should private fire protection be required, 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



A C O R N

ENGINEERING, INC.

Time Warner Cable  
Attn: Mark Pelletier  
5 Davis Farm Road  
118 Johnson Road  
Portland, Maine 04102

April 22, 2015

Subject: 667 Congress Street Development - Redfern Properties, LLC – Portland  
Re: Ability to Serve

Mark Pelletier,

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Time Warner Cable's ability to serve the proposed development. 667 Congress Street is a 132-unit vertical urban infill development located near Longfellow Square in Portland. The proposed building is anticipated to be 8 stories tall; the first story will comprise of a retail space and an indoor parking facility; and the second through eighth stories will contain a total of 132 rental units within the building. A basement-level parking lot will also be included in the design.

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which is to be demolished as part of the proposed project. The smoke shop/variety store will be incorporated into the new building.

The developer plans to serve the proposed building with an underground communications service. At this time we have proposed that the new service be established from the existing services overhead within Vernon Place. From the utility poles, the service would then be redirected underground into a transformer, located at the western property corner. Pull boxes are anticipated to be placed at corners, and conduit is anticipated to be encased in concrete within the City of Portland ROW. Within the building, the service will run within the basement slab at the ground level, up a support column to the first floor ceiling, and finally into the mechanical closet.

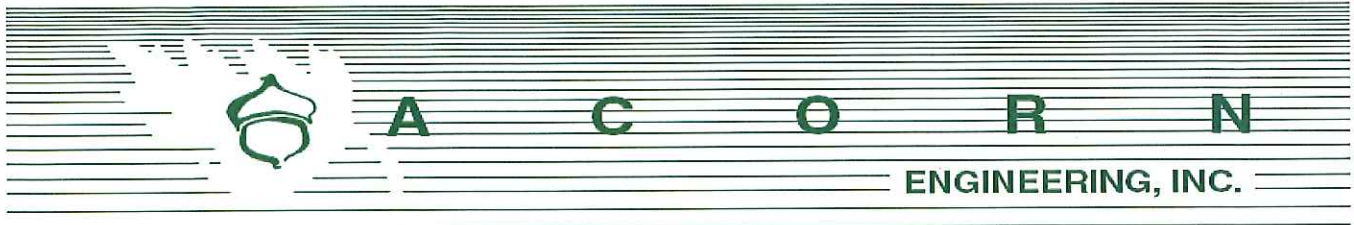
Furthermore, the project anticipates rerouting the existing overhead telephone, electric and communications wires currently crossing the development to the Vernon Place corridor. Communications services currently existing within Vernon Place are anticipated to be redirected from the existing communications line within the Vernon Place corridor, as indicated on the Utility Plan (attached). Overhead wires crossing the proposed development, as well as overhead wires and utility poles within Vernon Place are anticipated to be removed as part of this project.

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

1. Any additional information, such as additional utility mapping within Vernon Place.
2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the development to the existing communication system.
4. Time Warner Cable's proposed infrastructure improvements within the project vicinity.



A C O R N Engineering, Inc. • PO Box 3372 • Portland • Maine • 04104  
Voice: 207-775-2655 • Fax: 207-358-7979 • [www.acorn-engineering.com](http://www.acorn-engineering.com)



5. Time Warner Cable's ability to serve the project.
6. Whether Time Warner allows for service to be run within the basement of the facility, up support columns, and/or within ceiling conduit.

I have attached a preliminary utility plan to facilitate your review. Please let me know if you have any further questions or comments.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Michael A. Guethle', is written in black ink.

Michael A. Guethle

Design Engineer  
Acorn Engineering, Inc.

cc: Will Savage – Acorn Engineering, Inc.  
Jonathan Cully – Redfern Properties, LLC  
Ryan Senatore – Ryan Senatore Architecture



A C O R N

ENGINEERING, INC.

Unitil Service Corp.  
Attn: Kelly Fowler  
P.O. Box 3586  
Portland, Maine 04104

April 22, 2015

Subject: 667 Congress Street Development - Redfern Properties, LLC – Portland  
Re: Ability to Serve

Kelly Fowler,

On behalf of Redfern Properties, LLC, we are pleased to submit the following request for Unitil's ability to serve the proposed development. 667 Congress Street is a 132-unit vertical urban infill development located near Longfellow Square in Portland. The proposed building is anticipated to be 8 stories tall; the first story will comprise of a retail space and an indoor parking facility; and the second through eighth stories will contain a total of 132 rental units within the building. A basement-level parking lot will also be included in the design.

The proposed redevelopment project is located at 667 Congress Street (Map, Book, Lot 46 C020 and C019) bordered by Congress Street, Vernon Place, and Avon Street in Portland, Maine. There is an existing smoke shop/variety store building and parking lot located within the project location which is to be demolished as part of the proposed project. The smoke shop/variety store will be incorporated into the new building.

The developer plans to serve the proposed building with a gas service. At this time we have proposed that the new service be established from the existing underground line within Vernon Place, and into the mechanical closet for the development. I have attached a preliminary utility plan to facilitate your review. Gas loading computations, delivery pressure, total number of meters, and other site information will be performed by the contractor's mechanical engineer, at a later date. Please let me know if you have any further questions or comments.

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

1. Any additional information, such as additional utility mapping within Vernon Place.
2. Alternative connection locations from the development to the existing system.
3. Unitil's proposed infrastructure improvements within the project vicinity.
4. Unitil's ability to serve the project.



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Voice: 207-775-2655 • Fax: 207-358-7979 • [www.acorn-engineering.com](http://www.acorn-engineering.com)



A C O R N

ENGINEERING, INC.

Sincerely,

Michael A. Guethle

Design Engineer  
Acorn Engineering, Inc.

cc: Will Savage – Acorn Engineering, Inc.  
Jonathan Cully – Redfern Properties, LLC  
Ryan Senatore – Ryan Senatore Architecture





April 28, 2015

Michael A. Guethle  
PO Box 3372  
Portland, ME 04101

Re: Ability to Serve 667 Congress Street Development – Redfern Properties, LLC - Portland

Dear Mr. Guethle:

Thank you for your interest in using natural gas for the above referenced project.

Unitil has natural gas infrastructure in the vicinity of this project to provide gas service. There is a 2" low pressure main on Vernon Place, a 4" low pressure main on Avon Street and an 8" low pressure main on Congress Street. The evaluation to complete the design, determine which main to provide service from, estimate the costs to serve and determine what the customer contribution may be, if any, can be completed once Unitil receives the completed design, gas load information, and other project information. Unitil welcomes the opportunity for further discussions regarding this project.

If you have any further questions or require additional information, please contact me directly at (207) 541-2505 or at [fowler@unitil.com](mailto:fowler@unitil.com).

Sincerely,

A handwritten signature in blue ink that reads "Kelly Fowler". The signature is written in a cursive, flowing style.

Kelly Fowler  
Sr. Business Development Representative  
Unitil Corporation  
(o) 207-541-2505 (f) 207-541-2565

---

ME GAS CUSTOMER ENERGY SOLUTIONS  
1075 Forest Avenue  
Portland, ME 04103-3586

T 207-541-2508 [www.unitil.com](http://www.unitil.com)





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

September 14, 2015

## Parking Assessment Proposed 667 Congress Street Apartments Portland, Maine

### INTRODUCTION

Redfern Properties, LLC is proposing construction of an eight-story apartment building at 667 Congress Street on a parcel of property bordered by Congress Street, Avon Street, and Vernon Place. The subject property is located on the peninsula within the Downtown Business Zone (B-3). Joe's Smoke Shop, a 3,673 square foot neighborhood variety store, presently occupies the Congress Street/Avon Street corner of the proposed site and the remainder of the site is a paved parking lot with a total of 63 spaces.

The proposed project will provide a total of 139 apartment units that will include 34 efficiency units, 97 one-bedroom units, and 8 two-bedroom units. The proposed building design provides a total of 81 parking spaces with 37 of the spaces located in the basement level of the building and the remaining 44 spaces on the first floor of the building. Three of the 81 total spaces are reserved for Joe's Smoke Shop resulting in a total of 78 spaces reserved for tenants of the building. In addition, secured covered space is reserved for bicycle parking (total space for 56 bicycles), a U-Share vehicle parking space, and two to four motorcycle parking spaces.

The City's Zoning Ordinance presently requires one parking space for each proposed residential unit on the peninsula (Sec. 14-332.1 (k)). This requirement conflicts with if a development resides within the B-3 Zone then there is no off-street parking requirement for changes of use (14-332.1(e)). A number of recent parking assessments and evaluations completed for similar Portland Peninsular development projects have concluded that parking demand rates significantly less are far more appropriate. As defined in Section 14-332 of the City's ordinance, "*the planning board may establish a parking requirement that is less than the normally required number of spaces upon a finding of unique conditions that result in a lesser parking demand*".

This document provides a summary review of recent parking utilization information assimilated for other recent peninsular development projects and augments that information with current peak parking data gathered at two apartment complexes on the Portland Peninsular. The data sources are summarized and a per unit parking demand rate is recommended for the proposed 139-unit apartment project.

## PARKING DEMAND

A January 16, 2015 memorandum from Planning Staff to Members of the Planning Board proposing text amendments to the R-6 Residential Zone cites information presented in a housing study conducted by the Greater Portland Council of Governments that the percentage of households on the peninsular with 0 to 1 vehicle is 77% greater than the national average of 44%. The documents further states that, "*current trends can be found in several recent assessments for specific development proposals which have assessed the average need of the peninsular to be 0.48 spaces per apartment unit. Though parking space demand will vary across households, this assessment has been affirmed, and peer reviewed, in several recent studies that have accompanied development proposals to the Planning board*".

One study referenced in the noted memorandum is a March 26, 2014 study conducted by Gorrill-Palmer Consulting Engineers for the proposed 134 Washington Avenue Efficiencies project, where the study concluded based upon the collection of detailed parking occupancy counts, the appropriateness of a 0.48 parking space per apartment unit. The data presented in the report is repeated as follows:

53 Danforth Street: 43 total units ÷ 29 spaces occupied	= 0.67 spaces/unit
645 Congress Street: 56 units ÷ 28 spaces occupied	= 0.50 spaces/unit
Walker Terrace: 40 units ÷ 20 spaces occupied	= 0.50 spaces/unit
Oak Street Lofts: 37 units ÷ 16 spaces occupied	= 0.43 spaces/unit
Franklin Towers: 200 units ÷ 58 spaces occupied	= <u>0.29 spaces/unit</u>
AVERAGE:	= 0.48 spaces/unit

A second study dated June 2013 completed by Gorrill-Palmer, Inc. (GPI) for the 409 Cumberland Avenue Avesta Housing apartment project presented the results of their prior study findings as highlighted above and included additional parking occupancy data collected at the Island View Apartments, a 70-unit apartment complex located at the intersection of North and Walnut Streets. The apartment site contains a total of 84 parking spaces, with 29 of those spaces designated visitor parking. The supplemental parking information presented in the GPI study showed an average parking demand at this facility of 0.70 spaces/unit.

The combined findings of both parking study assessments would suggest the appropriateness of an average parking demand rate of 0.52 spaces  $[0.67 + 0.50 + 0.50 + 0.43 + 0.29 + 0.70 \div 6] = \underline{0.52 \text{ spaces/unit}}$ .

Parking occupancy data was recently collected at two Portland Peninsular apartment complexes, with one of the sites previously included in the GPI studies, to both validate and augment the earlier parking data. Parking occupancy counts were collected during both the early evening and early morning hours of the week of September 6, 2015 for time periods spanning three days. The two properties surveyed included: 1) 53 Danforth Street and 2) 409 Cumberland Avenue. Specific information related to the number and mix of apartment units are presented for each property as follows:

- 53 Danforth Street, located on Danforth Street near the intersection of High Street, is a 43 single and two-bedroom apartment complex that provides both covered and open parking lot spaces for the tenants of the building.
- 409 Cumberland Avenue, located on the corner of Cumberland Avenue and Forest Avenue, is a 57 unit apartment complex with a mix of efficiency, one, and two-bedroom units serviced with a limited number of both covered and open lot parking spaces for building tenants.

The following table 1 presents the results of the parking occupancy study:

**Table 1**  
**Parking Occupancy Study Summary**

<u>Apartment Site Location</u>	<u>Number of Units</u>	<u>September 10 Occupancy Data</u>	<u>September 11 Occupancy Data</u>		<u>September 12 Occupancy Data</u>	<u>Average Hourly Vehicles Parked</u>	<u>Average Parking Demand Rate</u>
		<u>7:00 PM to 8:00 PM</u>	<u>3:00 AM to 4:00 AM</u>	<u>7:00 PM to 8:00 PM</u>	<u>4:00 AM to 5:00 AM</u>		
409 Cumberland Avenue	57	13	15	11	15	13.5	0.24 spaces
53 Danforth Street	43	17	22	27	21	21.75	0.51 spaces

The average parking occupancy rates (highlighted in red in the above table) determined from the results of the most recent parking study were combined with the data previously collected by GPI and a revised parking rate was calculated based upon the expanded data. The expanded parking data results in a slightly lower average parking demand rate of 0.48 spaces per unit or the same parking rate calculated by GPI in their March 26, 2014 parking assessment report.

The majority of the local parking survey data was collected generally during time periods that are considered representative of peak parking demand time periods. However, to conservatively estimate the peak parking demand requirements of the proposed 667 Congress Apartment project, the calculated average parking demand rate 0.48 spaces per unit was increased by an additional 20% to a peak parking rate of 0.58 spaces per unit.

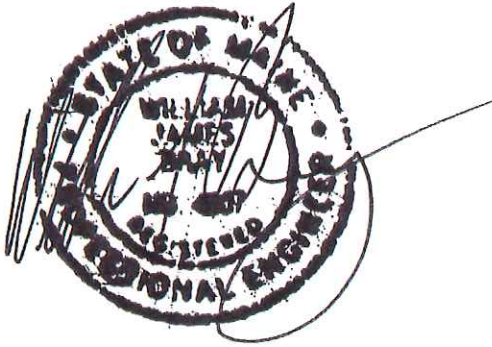
Accordingly, the proposed 667 Congress Street project generates a peak parking demand of 81 parking spaces [0.58 x 139 = 81 spaces].

**SUMMARY**

- The City in a January 2015 report to the Planning Board suggested the appropriateness of a reduced parking demand rate for peninsular apartment projects. The report references a recent study completed by the Greater Portland Council of Governments, which cites that United States census data shows that a very high percentage (approximately 77%) of households on the Portland Peninsular with 0-1 automobiles is considerably greater than the national average of 44%. Further, the report references several recent development parking assessments that determined the average parking demand requirement is likely near 0.48 spaces per unit.
- Gorrill-Palmer, Inc. prepared detailed parking assessment and evaluation reports for two recent apartment projects on the peninsular with the results showing a peak parking demand of 0.52 spaces per unit.
- Parking data recently collected at two apartment buildings on the Portland Peninsular during the month of September, when combined with the earlier GPI data, shows an average parking rate per unit of 0.48 spaces is reasonable for apartment projects located on the Portland Peninsular. The earlier parking studies conducted by GPI generally apartment projects that have a much greater number of 1 and 2 bedroom units than the proposed 667 Congress Street project. Approximately 20% (34 units) of the total number of units

proposed are efficiency units and it is fully anticipated that tenants in these units will likely use public transportation and/or other modes of transportation.

- The referenced PARKING GENERATION publication concludes that, generally, peak parking demand for a high rise apartment building occurs between midnight and 5:00 AM. The majority of the parking survey data was collected during time periods prior to the early morning hours; therefore, to conservatively estimate the peak parking requirements of the proposed 139 unit apartment building the calculated per unit parking rate of 0.48 spaces was increased by roughly 20% to 0.58 spaces.
- Accordingly, the peak parking demand of the proposed apartment project is estimated at 81 spaces. A total of 78 parking spaces are provided on-site or three spaces less than the calculated parking demand of the project. The proposed apartment building design includes a U-Share parking space on the first floor of the proposed parking garage, which based upon Section 14.332 Parking paragraph a.3.b.a of the City's Zoning Ordinance grants a parking space credit equal to eight parking spaces. As a result, the proposed on-site parking supply exceeds the calculated parking demand of the 139 unit apartment project.
- The existing private leases within the existing parking lot will be discontinued with the sale of the property. The Project Team is not aware of any existing parking lease agreements required as a condition for a development or business permit with the City.



TRANSPORTATION DEMAND  
MANAGEMENT PLAN

FOR

PROPOSED

**“667 Congress Street Apartments”**

Prepared For: Redfern Properties, LLC  
Prepared By: William J. Bray, P.E.

September, 2015

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A detailed parking study completed in support of the proposed project and submitted under separate cover, clearly documents that the peak parking demand rate for an apartment building with a "high" percentage of efficiency and 1-bedroom units is considerably less than the one space requirement. The detailed parking study concluded that a per unit parking demand rate of 0.58 spaces per unit was appropriate.

Accordingly, the peak parking demand of the proposed apartment project is estimated at 81 spaces. A total of 78 parking spaces are provided on-site or three spaces less than the calculated parking demand of the project. The proposed apartment building design includes a private auto share service with a preferred parking space location close to the elevator on the first floor of the proposed parking garage; Section 14.332 Parking paragraph a.3.b.a of the City's Zoning Ordinance grants a parking space credit equal to eight parking spaces for an on-site shared vehicle program. As a result, the calculated peak parking demand of the proposed 667 Congress Street Apartments is met and exceeded by a total of five parking spaces.

### **Parking Description**

The proposed building design provides a total of 81 parking spaces with 37 of the spaces located in the basement level of the building and the remaining 44 spaces on the first floor of the building. Three of the 81 total spaces are reserved for Joe's Smoke Shop resulting in a total of 78 spaces reserved for tenants of the building. In addition, secured covered space is reserved for bicycle parking (total space for 52 bicycles), 4 exterior bicycle parking along Congress Street, a private auto share service, and a minimum of three scooter/motorcycle parking spaces. A total of (22) 2-hour metered parking spaces exist on Congress Street between Longfellow and Congress Squares with operational hours of 9AM to 6:00PM, additionally, (10) 30-minute commercial loading zone spaces and (4) 15-minute loading parking spaces are found curbside within the same designated section of Congress Street.

### **Parking and Trip Reduction Strategies**

Unbundling Rent and Parking Fees: Studies have shown that simply charging tenants separately for rent and parking significantly reduces parking demand. When presented with the cost/benefit decision, tenants often choose not to buy parking, opting for less convenient and less costly parking options or choosing to go carless.

Bicycle Facilities: A total of 56 bicycle spaces are provided in the building design conforming to the City's Site Plan requirements. The 52 enclosed bicycle racks will be located on the basement level within a secure room. The bicycle racks will be wall or floor mounted and be manufactured by Dero (or approved equivalent). Four (4) additional bicycle spaces will be provided along Congress Street for residents and the general public. Local and regional bicycle route and facility information will be available to tenants at the proposed building transportation services "kiosk" located in the building entry area.

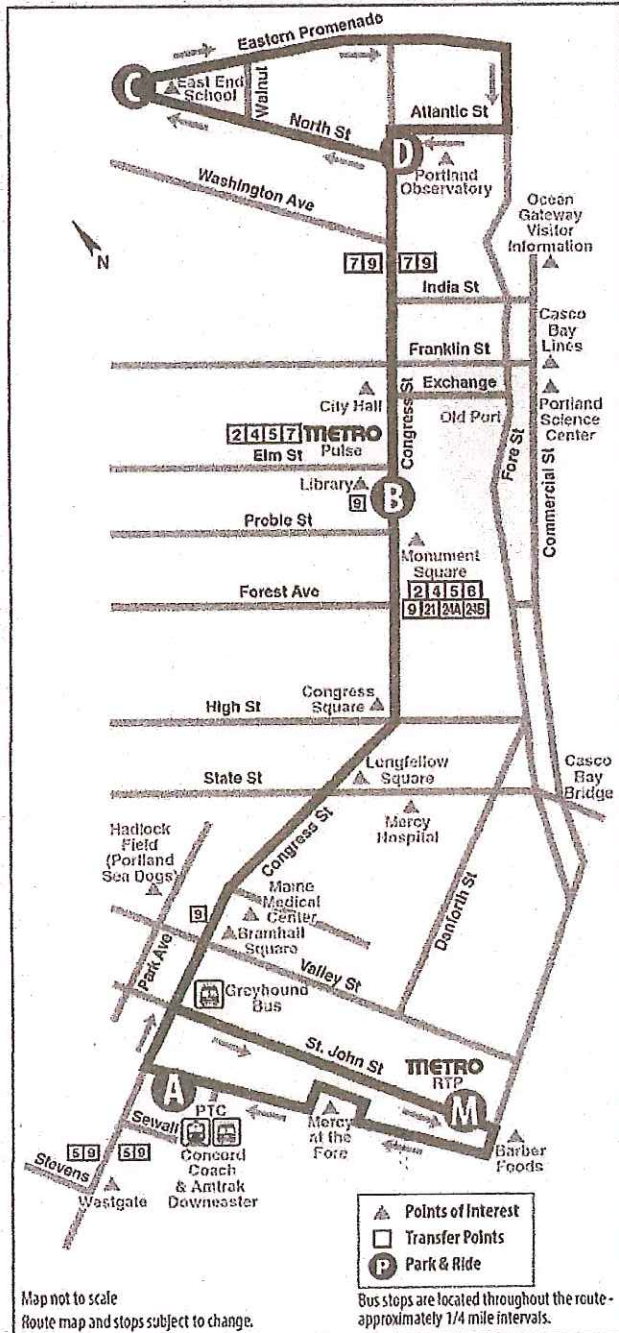
METRO Bus Service: Each building tenant will receive, in their tenant packet, a ten-ride METRO bus pass and a copy of METRO's bus route schedule information. METRO bus service information will be strategically posted throughout the building and located on the transportation service "kiosk" in the building entry areas. Redfern Properties is currently working with METRO to develop a bulk purchasing transit pass program for tenants of the building.

Private Auto Share Service: The proposed 667 Congress Street Apartments site will provide a private auto share service on the first floor of the proposed parking garage. This will be a preferred parking space near the elevator, pedestrian and vehicular entrance. Redfern Properties will purchase an electric car for the shared use of tenants. This program will follow the model of other apartment communities and should be self-sustaining.

Scooter/Motorcycle Parking: At least three spaces are provided within the proposed parking garage for designated scooter and motorcycle parking. Additional space opportunities are possible if needed based upon tenant use.

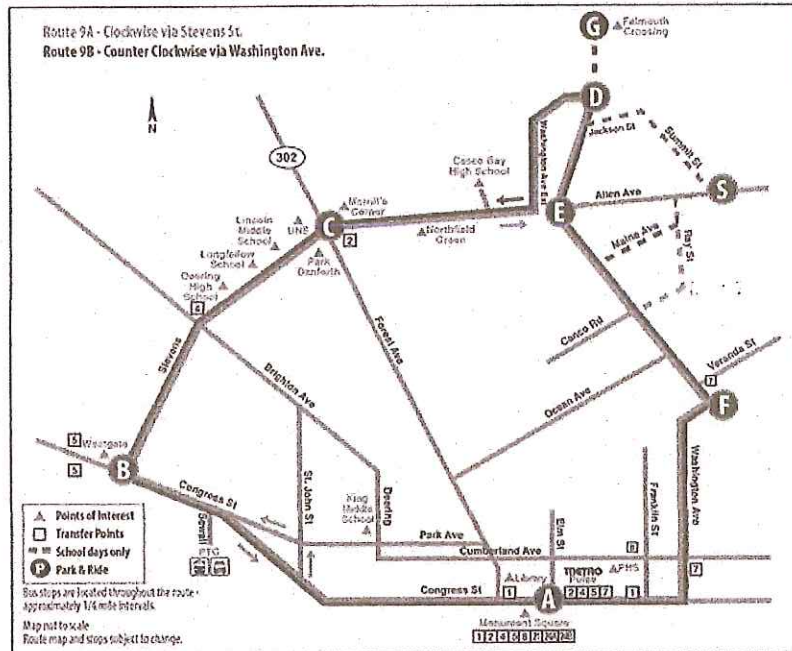
Pedestrian Facilities: The TDM Coordinator will work with building tenants in promoting walkability to "key" places of significance including: Casco Bay Transit, Cross Insurance Arena, Portland Public Library, Public

# METRO ROUTE 1 Congress Street



# METRO ROUTE 9A

# METRO ROUTE 9B



## MONDAY THROUGH FRIDAY CROSSTOWN LOOP VIA STEVENS AVENUE

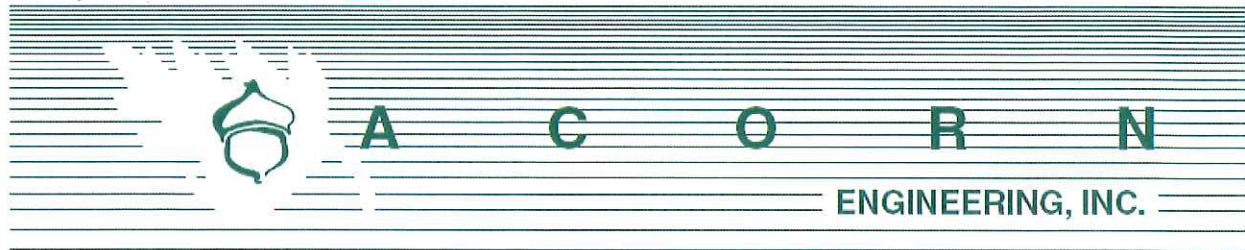
Library A	Westgate B	Morrill's Corner C	Washington Auburn D	Summit St/ Allen Ave S	Allen's Corner E	Washington Veranda F	Library A
5:35	5:50	6:00	6:10		6:13	6:23	6:35
6:05	6:20	6:30	6:40	6:55*	6:43	6:53	7:05
6:15*	6:30*	6:40*	6:50*		7:05*	7:25*	7:25*
6:35	6:50	7:00	7:10		7:13	7:23	7:35
6:45*	7:00*	7:10*	7:20*	7:25*	7:33*	7:43*	7:55*
7:05	7:20	7:30	7:40		7:43	7:53	8:05
7:25*	7:40*	7:50*	8:00*		8:03*	8:13*	8:35*
7:35	7:50	8:00	8:10		8:13	8:23	8:35
8:05	8:20	8:30	8:40		8:43	8:53	9:05
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9:35	9:50	10:00	10:10		10:13	10:23	10:35
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7:35	7:50	8:00	8:10		8:13	8:23	8:35
8:35	8:50	9:00	9:10		9:13	9:23	9:35
9:35	9:50	10:00	10:10		10:13	10:23	10:35

\*Trips operate on school days only. On early release days, trips will operate one hour earlier.

## SATURDAY CROSSTOWN LOOP VIA STEVENS AVENUE

Library A	Westgate B	Morrill's Corner C	Washington Auburn D	Allen's Corner S	Washington Veranda F	Library A
7:35	7:50	8:00	8:10	8:13	8:23	8:35
8:35	8:50	9:00	9:10	9:13	9:23	9:35
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8:35	8:50	9:00	9:10	9:13	9:23	9:35
9:35	9:50	10:00	10:10	10:13	10:23	10:35





Shukria Wiar - Planner  
Planning Division, City of Portland  
389 Congress Street  
Portland, ME 04101

September 15, 2015

Subject: 667 Congress Street Redevelopment  
Comment Response Letter

On behalf of Redfern Properties, LLC we are pleased to respond to the comments provided by multiple reviewers.

To facilitate the review comments are provided below in italics followed by Acorn Engineering, Inc.'s response.

***Shukria Wiar – 8/24/2015 E-mail***

**Comment** – *Subdivision Plat needs shall be submitted for the final review. This is a requirement of the Subdivision Standards. The plat will need to show all existing and proposed easements.*

**Response** – Acorn Engineering is developing the Subdivision Plat in collaboration with Titcomb Associates. The Plat will be submitted to the City once it's at an acceptable level for review. The Final Subdivision Plat will be signed and sealed by a Professional Land Surveyor and include existing and proposed permanent easements.

**Comment** – *A financial letter will have to be submitted.*

**Response** – It is our understanding Redfern Properties has subsequently provided a financial letter to the Planning Authority.

**Comment** – *Photometric Plan with catalogue cuts to be submitted for a completer application.*

**Response** – A Photometric Plan developed by Apex Lighting Solutions dated 9/10/15. An exterior Photometric Plan will be submitted separately, once received. The exterior wall sconce manufacture catalogue cut sheets reviewed and approved by the Historic Board is included as an attachment.

**Comment** – *TDM needs to be submitted for review.*

**Response** – Bill Bray – Traffic Solutions is currently completing the TDM. It is anticipated the TDM will be completed by September 18<sup>th</sup>, 2015 and submitted to the Planning Authority for review.

**Comment** – *What is the number of parking spaces being proposed? The Zoning information states 88 spaces and there are 81 spaces being shown on the site plan. In the zone, it is one to one ratio.*

**Response** – With the current parking plan, there are 81 physical parking spaces in the internal parking garage with one of those spaces acting as a shared vehicle.

**Comment** – *A parking demand ratio has not been determined by the applicant. The number shows that, as proposed, the parking demand ratio is 0.58 (81 parking spaces/139 units).*

**Response** – Please refer to the attached Parking Assessment Study by Traffic Solutions.

**Comment** – *There are waivers being requested. The landscaping and street trees waivers do not make sense. For street trees, we require one tree/unit, therefore 139 streets of which three are being proposed. Jeff Tarling, City Arborist, is reviewing the plans and may require that street trees be planted elsewhere on the site, there remaining can be waived and a contribution to the City's Tree Fund can be made. This will need to be requested by the applicant.*

**Response** – On September 9<sup>th</sup>, 2015 representatives of Acorn Engineering met with Jeff Tarling, City Arborist onsite to discuss the opportunities and limitation of the proposed development. We will continue to coordinate with Jeff Tarling to develop a site appropriate urban Landscape Plan.

**Comment** – *Who is currently leasing the parking spaces?*

**Response** – Based upon Redfern's discussion the property owners the existing leases within the parking lot are private and the agreements will be discontinued with the sale of the property. The property owner and project team is not aware of any existing parking lease agreements required as a condition for a nearby development or business permit.

Per Section 14-218 5.c within the B-3 Zone, "No surface parking spaces shall be encumbered by lease or other use commitment exceeding twenty-four (24) month term." As such the existing spaces could not have been used by another development to meet their parking requirements through the use of a long term 5-year parking lease.

**Comment** – *Will the sidewalks be replaced on Congress and Avon Streets? The sidewalks on Vernon Place will need to be shown along the frontage or a waiver be requested for sidewalk and curbing.*

**Response** –

- **Congress Street** - The sidewalk and ADA ramps along Congress Street will be rebuilt and replaced in accordance with the City Technical and ADA standards.
- **Avon Street** - The existing substandard sidewalk adjacent to the project on Avon Street will be eliminated. In place of the sidewalk the existing roadway width will be increase from 14 ft. to 16 ft. (Per Captain Gautreau 8/21/15 Request) and assorted plantings will be added along the building edge. The existing sidewalk adjacent to

Trelawny will remain. A waiver will be requested for the sidewalk with curbing to remain. Please refer to the attached site plans for additional details.

- **Vernon** – The existing street does not include a sidewalk adjacent to the project. Given the limited existing street width and low traffic volumes we are proposing a shared vehicle and pedestrian space immediately adjacent to the building. The shared space is delineated by a stamped and flush pavement walkway from the main building entrance to the Vernon St. first floor garage entrance. The list of waivers has been updated to include a waiver for the sidewalk and curbing.

**Comment** – *The applicant will need grant an easement to the City for the sidewalks on Congress and Avon Streets.*

**Response** – The applicant will provide the City with a pedestrian easement for those areas of the sidewalk that reside within the development property bounds. This will be depicted within the Subdivision Plat.

**Comment** – *Easements and Licenses will be needs for any encroachments onto City's right-of-way. Please mention if there are any.*

**Response** – At this time the only proposed encroachments within the City ROW will be for seasonal urban planters along Congress, raised urban platers along Avon and at-grade shrubs planted along Vernon St. An external subsurface grease trap is longer required to meet the project needs.

**Comment** – *In the Zoning section on the site plan, the minimum street frontage should be on Congress Street.*

**Response** – As outlined in the 'Space and Bulk Standards' table on Sheet C-10, the minimum allowable street frontage is 15 ft for B-3 zones and that is being met with the proposed frontage of 87 ft.

**Comment** – *Problems with Premise 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.*
- *The number should be in Arabic numerals rather than spelled out (for example, "130" instead of "One Hundred and Thirty").*
- *Addresses should be in a color that contrasts with the background and whenever possible, should be illuminated.*

**Response** – All aspects of premise identification will be identified and handled by the architect, Ryan Senatore Architecture, in direct collaboration with Redfern Properties.

**Keith Gautreau – 8/24/2015 E-mail**

**Comment** – 2009 NFPA 1 18.4 Fire Flow Requirements for Buildings may require installation of fire hydrant to meet fire flow requirements.

**Response** – Fire Risk Management has reviewed the 2009 NFPA 1 18.4 Fire Flow Requirements. Please refer to the attached memo.

**Comment** – *Construction Management Plan:*

- Streets must maintain a 20' width for Fire Department access at all times.
- Fire Hydrants shall not be blocked or enclosed by fencing. A 3' foot clearance must be kept at all times around the fire hydrant.
- If gates are locked, a Portland Fire Department Knox padlock must be purchased by the applicant to allow access for the Fire Department.
- The Construction Company' emergency contact information shall be posted on the property in case of an afterhour's emergency.
- All construction shall comply with 2009 NFPA 1 Chapter 16 Safeguards during Building Construction, Alteration, and Demolition Operations.
- Any cutting and welding done will require a Hot Work Permit from Fire Department.

**Response** – PC Construction has revised the Construction Management Plan to incorporate the above comments. PC Construction intends to temporarily close Vernon and Avon Street during peak construction to vehicular traffic while providing Fire Department access at all times.

**Comment** – *At submitter's expense all building permits and fire protection systems design must be approved by the 3<sup>rd</sup> party fire protection engineer prior to submission for the required permits and is part of the required 3<sup>rd</sup> party review of the entire building. That would be a complete review with a stamped letter from the 3<sup>rd</sup> party fire protection engineer stating that the design has been reviewed for compliance with the pertinent codes, standards, and regulations, and submitted with an electronic copy of the approved plans and documents for permitting.*

**Response** – The Fire Risk Management group will manage all required fire permits including corresponding with a third party for review.

**Comment** – *In addition we're asking for the 3<sup>rd</sup> party fire protection engineer to be present when the installing contractors perform the final commissioning (testing) of the fire protection systems and issue a second stamped letter that they observed the final commissioning of the systems and the systems are installed and function as required by the pertinent codes, standards, and regulations. Fire protection systems include, but are not limited to: fire alarm, sprinkler, standpipe systems and other suppression system equipment.*

**Response** – The Fire Risk Management group will ensure that the correct fire protection systems are in place and arrange for a third party fire protection engineer to be onsite during construction.

**Comment** – 2009 NFPA 1 18.3 Water Supplies and Fire Hydrants Fire Department Connections shall not be located where large diameter hose may block egress.

**Response** – Fire Risk Management has reviewed the 2009 NFPA 1 18.3 Water Supplies and Fire Hydrants Fire Department Connections. Please refer to the attached memo.

**Comment** – *The proposed width on Avon Street of 14' is a major concern for Emergency Access. The minimum width is 16' in accordance with the Technical Standard.*

**Response** – After extensive discussion with our Fire Professional – Fire Risk Management and Traffic Engineer – Traffic Solutions the project team is proposing that the existing roadway width be increased from 14 ft. to 16 ft. by eliminating the existing substandard sidewalk adjacent to the project. Please refer to the attached memo from Fire Risk Management for additional information.

Assorted plantings will be added along the building edge and the existing sidewalk adjacent to Trelawny will remain.

**David Margolis-Pineo (Engineering DPS) – E-mail 8/24/15**

**Comment** – *It is unclear on Sheet C-10 the width of sidewalk on Avon St. Please clarify by showing dimensions. A statement is made that the contractor shall construct sidewalk varying in width from 3 to 5 feet. This issue needs to be discussed and clarified.*

**Response** – At the request of Captain Gautreau the project team is proposing to increase the existing Avon Street width from 14 ft. to 16 ft. by eliminating the existing substandard sidewalk adjacent to the project. A waiver will be requested for the sidewalk. Assorted plantings will be added along the building edge and the existing sidewalk adjacent to Trelawny will remain.

**Comment** – *The proposed 14' (Sheet C-10) width of Avon St. may cause access issue for Public Safety. Please review with Public Safety. Sheet C-11 shows a width of 14.47'. Again, clarification will be required here.*

**Response** – The project team is proposing to increase the existing Avon Street width from 14 ft. to 16 ft. by eliminating the existing substandard sidewalk adjacent to the project.

**Comment** – *The design of all corner sidewalk ramps will require approval of the City's Bike/Ped Coordinator, Bruce Hyman. The current shown ramp alignment does not appear acceptable.*

**Response** – The proposed corner sidewalks have been revised; refer to the attached Site Plans.

**Comment** – *It is my understanding that a sidewalk with vertical granite curbing will be required for the full length on Vernon St. If not, a waiver request must be submitted. Please show sidewalk and street widths on Vernon St.*

**Response** – Given the limited existing street width and low traffic volumes we are proposing a shared vehicle and pedestrian space immediately adjacent to the building. The shared space is delineated by a stamped and flush pavement walkway from the main building entrance to



the Vernon St. first floor garage entrance. The list of waivers has been updated to include a waiver for the sidewalk and curbing.

**Comment** – *The applicant shall install proposed sanitary manhole (smh #1) with PVC SDR-35 and Fernco connectors to adapt from PVC to VC pipe in Avon St. A dog house manhole is not allowed in this case. Please eliminate proposed smh #2 since both the proposed 4” and 6” piping can be tied directly into the sanitary sewer without a manhole. Add note stating, “All work within the City street right of way shall meet City of Portland Technical Manual standards.”*

**Response** – The doghouse manhole has been removed and a new connection to the existing sewer manhole is being proposed instead; the existing structure will be altered to accept the new sewer flow in compliance with the City of Portland’s Technical Manual. The new connection to the existing manhole on Avon Street (labeled ‘SMH 2’) is further detailed in the attached site plans.

The proposed manhole on Congress has been eliminated and the 6” sanitary pipe is to be connected to the existing line via an Inserta Tee; the contractor will perform a test pit onsite to define the appropriate inlet elevation.

**Comment** – *The current Wastewater Capacity Application is not acceptable as submitted. Please provide breakdown on how the total estimated volume in gallon per day (gpd) was calculated.*

**Response** – After reviewing the most recent ‘State of Maine: Subsurface Wastewater Disposal Rules’ dated August 3<sup>rd</sup>, 2015, the anticipated design flow has been reduced to 15,770 gpd. This flow still assumes that Joe’s will increase meal production while maintaining 12 employees but the proposed flow per residential unit has be split between single and double bedrooms.

The Department of Public Services has been notified of the changes and a revised Wastewater Capacity Application was submitted on September 3<sup>rd</sup>, 2015 and is under review.

**Comment** – *Although not stated on the plans, it is expected that the entire sidewalk on Congress St will need to be replaced once the foundation is completed. Please indicate that the brick sidewalk will be replaced or provide assurances that the sidewalk will be protected.*

**Response** – As abovementioned, the sidewalk along Congress Street is to be replaced and has been more clearly called out in the attached site plan.

**Comment** – *Grease Interceptor/Trap Removal Unit: This issue will require more discussion prior to authorization by Water Resources Division. Please contact Ben Pearson (874-8843) for sizing requirements and approval.*

**Response** – The grease trap will be designed by the MEP, Allied Engineering, Inc., and the project engineer is in contact with the Department of Public Services to coordinate an appropriate design.

**Comment** – *Proposed parking area Oil\Water Separator shall discharge to the City’s sanitary sewer and not the stormwater system.*



**Response** – The Oil/Water Separator has been edited to discharge into the sanitary sewer instead of the stormwater system; the discharge is to be connected via an existing 10” sewer line that outlets to the manhole, ‘SMH 1’ on Avon Street. It is our understanding this manhole will be constructed in the 2015 season as part of Woodard & Curran’s Deering Street Reconstruction Plan, dated 3/23/15. Acorn Engineering is using their construction plans as a basis for manhole elevations. The contractor is to confirm the final elevations with these plans before construction.

**Comment** – *It appears that the proposed building foundation and underdrain system may be encroaching the street right of way. If so an easement/license will be required from the City and shown on the Recording Plat.*

**Response** – All associated easements will be outlined in the final Subdivision Plat.

**Comment** – *A 12” drain line is shown crossing the rear of the property conveying drainage from Vernon Place to Avon Street. Since this line will be under the proposed building it shall be replaced with ductile iron pipe of the appropriate size to convey the intended drainage.*

**Response** – The replacement of the municipal drain line has been updated to modify the material to ductile iron in the attached Grading and Drainage Plan. Titcomb Surveying research did not find a record of an existing drainage easement, a formal easement will be provided with the Subdivision Plat.

**Comment** – *All power and communication lines to the proposed development must be extended to the site underground from the street right of way.*

**Response** – Existing overhead wire is to be relocated by the contractor and rerouted subsurface to the north end of the property. It is proposed that the conduit for Time Warner be rerouted to extend underground from the existing utility pole on Vernon Place to the existing pole along Avon Street. Refer to the attached utility plan for additional details. The existing utility poles serving adjacent properties are to remain.

**Comment** – *Any underground or overhead utilities which feed adjacent infrastructure which cross but are not related to this development shall have easements recorded and shown on the Recording Plat.*

**Response** – All related easements including those required for utilities will be included in the final Subdivision Plat.

**Comment** – *Catchbasin detail shown on Sheet C-44 shall be modified to show a three foot sump.*

**Response** – The detail has been edited to show a deeper sump and can be located in the detailed drawing C-44.

**Comment** – *A stamped Recording Plat is required with plan set.*

**Response** – Acorn Engineering is developing the Subdivision Plat in concert with Titcomb Associates. The Plat will be submitted to the City once it's at an acceptable level for review. The Final Subdivision Plat will be signed and sealed by a Professional Land Surveyor and include existing and proposed permanent easements.

**Comment** – *A 10" VCP is shown entering a manhole on Avon St. If this line is to be abandoned the manhole penetration shall be sealed and the manhole channel/shelf area modified accordingly. The remaining pipe in the road right of way shall be either grout filled or removed. Please state what is intended for this existing pipe.*

**Response** – The existing line is to be demolished and plugged by the contractor in accordance with the City of Portland's technical standards; a callout outlining this detail has been added to the current site plans (see attached).

**Comment** – *Assurances and construction easements need to be provided to protect the interest of the abutting property owner to the rear.*

**Response** – Should PC Construction require a construction easement to build the infrastructure to the rear a construction easement will be obtained.

**Tom Errico – 8/24/2015 E-mail**

**Comment** – *The parking layout on the first floor is extremely tight and the applicant needs to provide auto-turn templates for most parking spaces.*

**Response** – An auto-turn analysis has been completed and is included as an attachment.

**Comment** – *The parking layout on the basement level appears less constrained, but some tight spaces are proposed where columns are complicating maneuvering and therefore requires an auto-turn analysis.*

**Response** – An auto-turn analysis has been completed and is included as an attachment. Furthermore the parking spaces adjacent to Vernon Place have been increased from 9'X15' to 9'X18'.

**Comment** – *The plans note that the sidewalk on Vernon Place will not have curbing. I will review this with DPS staff.*

**Response** – The list of waivers has been updated to include the reduction in required sidewalk improvements along Vernon Place.

**Comment** – *The alignment of the sidewalk ramps on Congress Street will need to direct pedestrians to the appropriate path of travel from an ADA perspective. Adjustments will need to be incorporated.*

**Response** – The alignment of the sidewalk ramps on Congress have been adjusted.



**Comment** – *The applicant is requesting a waiver for driveway width. 18 feet is being proposed. My initial review indicates I would be supportive of a waiver given the characteristics of Vernon Place and Avon Street.*

**Response** – Thank you for your review. We are in agreement that the driveway width of 18-feet will be acceptable and a compromise to minimize the visual impact to the streetscape.

**Comment** – *I have reviewed the traffic impact study prepared by Traffic Solutions and while I continue to review details, I generally find the conclusions to be acceptable.*

**Response** – Thank you for your review.

**Comment** – *The applicant has noted that an on-going parking study of similar developments is proceeding and the results of the parking study will be provided in the future.*

**Response** – Bill Bray – Traffic Solutions is currently completing a Parking Demand Study. It is anticipated the Parking Demand Study will be completed by September 18<sup>th</sup>, 2015 and submitted to the Planning Authority for review.

**Comment** – *The applicant shall provide documentation on current users of the existing parking lot.*

**Response** – Based upon Redfern's discussion the property owners the existing leases within the parking lot are private and the agreements will be discontinued with the sale of the property. The property owner and project team is not aware of any existing parking lease agreements required as a condition for a nearby development or business permit.

**Comment** – *The width of the sidewalk along Avon Street abutting the property is noted as between 3 and 5 feet wide. I need to review specific details regarding this sidewalk to ensure appropriate accessibility is provided.*

**Response** – At the request of Captain Gautreau the project team is proposing to increase the existing Avon Street width from 14 ft. to 16 ft. by eliminating the existing substandard sidewalk adjacent to the project; a waiver is being requested for the sidewalk. Urban landscape planters will added along the building edge and the existing sidewalk adjacent to Trelawny will remain.

**Comment** – *The applicant shall formally request a waiver for a sidewalk along Vernon Place.*

**Response** – The list of waivers has been updated to include this request.

**David Senus (Civil Engineering) – E-mail on 8/24/15**

**Comment** – *The Application is Preliminary. We anticipate that additional information will be provided and reviewed as part of the overall development review process, including a Construction Management Plan.*

*The Applicant has submitted correspondence requesting ability to serve the proposed utility demands for the development. They have received confirmation of ability to serve the*

development from CMP, Unitil, and PWD, and are awaiting confirmation from the City DPS office for ability to serve wastewater. It also appears that the Applicant has engaged Time Warner Cable and Fairpoint during this design and review phase. As is common for all development projects, additional correspondence and coordination will be necessary with all utilities as the design progresses. For the purposes of the City's Site Plan review procedures, the Applicant should forward confirmation of ability to serve wastewater from the City DPS office once received; we anticipate that coordination and review of ability to serve wastewater will occur as part of DPS' review of the Site Plan application.

**Response** – Acorn Engineering recognizes the need for the ability to serve requirement from the City DPS and is actively coordinating with the appropriate representatives to create a final plan.

**Comment** – In accordance with Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. We offer the following comments:

- *Basic Standard: Plans, notes, and details 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.*
- *General Standards: The project will not result in an increase in impervious area. As such, the project is not required to include any specific stormwater management features for stormwater quality control. We encourage the Applicant to review the City's Stormwater Service Charge Credit Manual (available online) to evaluate whether they may want to incorporate stormwater quality treatment measures that qualify for a future Stormwater Service Charge credit.*
- *Flooding Standard: The project will not result in an increase in impervious area. As such, the project is not required to include any specific stormwater management features to control the rate or quantity of stormwater runoff from the site.*

**Response** – Thank you for your review and we have incorporated plans to address erosion and sediment control, inspection and maintenance requirements, and good housekeeping within the detailed drawing plan set and the Stormwater and Erosion Control reports.

**Comment** – The City of Portland has hired a contractor to perform a sewer separation and roadway reconstruction project on Deering Street; the work is beginning at this time. As part of that work, a new, separated storm drain and sewer system will be installed in Avon Street, up to the location of the proposed storm drain connections for this project. It appears that the design is well coordinated with those plans; we encourage the Applicant and their engineering and construction team to work closely with the City DPS Office and their Contractor during the construction phase to ensure that the timing of this work and the associated pipe connections can be properly coordinated with the Deering Street work which will occur over the coming months.

**Response** – As noted before, we are encouraging the contractor to coordinate with the Woodard & Curran project and to verify all elevations before being construction.



Please let me know if you have any additional questions or comments.

Sincerely,



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

Attachments:

1. Fire Risk Management – Response to City of Portland Review Comments, dated 9/11/15.
2. Traffic Solutions
  - a. Parking Assessment Study, dated 9/14/15
  - b. *TDM – to be submitted on 9/18/15*
3. PC Construction
  - a. Rev. Construction Management Plan, dated 9/11/15
  - b. Rev. Site Logistics Narrative, dated 9/11/15
4. Photometric Plan
  - a. Apex Lighting Solutions, dated 9/10/15
  - b. Lighting Cut Sheet, “Urban Outdoor Wall Sconce” approved by Historic.
5. Updated – Written Request for Waivers, dated 9/15/15
6. Acorn Engineering – Plan Set, Issued For “Comment/Response” and dated 9/15/15
7. Supplemental Plans – Issued For “Comment/Response” and dated 9/15/15
  - a. Circulation Plan First Floor (SK-1)
  - b. Circulation Plan Basement Floor (SK-2)





## **FIRE RISK MANAGEMENT, INC**

1 Front St., Bath, ME 04530  
207/442-7200 [221-1295 (fax)]  
www.fireriskmgt.com

Date: 11 September, 2015

# **Memo Report**

**From:** W. Mark Cummings, P.E.

**To:** Mr. Will Savage; Acorn Engineering  
Mr. Ryan Senator; Ryan Senator Architecture

**Subject: Response to City of Portland Plan Review Comments; ICW 667 Congress St.**

As requested, Fire Risk Management, Inc. (FRM) has reviewed the set of comments received from the City of Portland regarding the plans for the building to be constructed at 667 Congress St. The focus for this specific response are two of the comments provided by Chief Keith Gautreau of the Fire Prevention Bureau; specifically dealing with the fire water flow requirements and some concern over the width of Avon St.; which runs adjacent to the east side of the building

### Background

The proposed design for the new construction at 667 Congress St. consists of a high rise (8-story) building that will primarily consist of apartments (Residential, R2 occupancy); albeit some office and retail spaces are to be located on the lower floor levels, along with an open parking garage. The building will be constructed to meet the requirements for classification as Type IB (per IBC) construction; or Type II (222), per NFPA.

In his comments, Chief Gautreau requests verification that the City's water supply system, along with the installed hydrant locations will be sufficient to support the fire water flow requirements of this new building. Additionally, he points out the fact that Avon St., which runs parallel to the east side of the building is only about 14 ft. in width; smaller than minimum width allowed by NFPA 1, the *Fire Code*<sup>®</sup>, for a fire access lane or that which is allowed by the City's Technical Manual [20 ft. minimum for NFPA and 16 ft. minimum per the City's Technical Manual].

### Discussion

Chapter 18 of NFPA 1 is used to determine the required fire flow that will be needed to support manual firefighting efforts within a building; based on the building's size and construction type. The base requirement for this building's size (area of all floors) and construction type, a fire flow of 2500 gpm for a minimum duration of 2 hours would be required. Due to its construction type, only the area of the three (3) largest contiguous floors are used to determine the total fire flow requirement. However, since the building is to be protected throughout, this requirement can be further reduced to only 1000 gpm for 2 hours. If quick response (QR) sprinklers are to be specified, the minimum flow requirement can then be further reduced to 650 gpm. Although an existing fire hydrant is located immediately adjacent to the building, at the corner of Avon and Congress Streets, due to its close proximity, within the minimum of 40 ft. that is typically allowed by NFPA 1, it was not specifically considered for use in supporting manual firefighting operations involving this building. However, a number of other hydrants are located nearby, which appear to be within 250 ft. of the proposed building location. These include hydrants at the corners of Congress and Park Streets, Congress and State Streets, and Deering and Avon Streets. This, coupled with the hydraulic data regarding the City's water supply system for this area, it is felt that the existing water supply system, including hydrant locations, should be more than adequate to provide sufficient water to meet the required fire flow demands of this building.

Chief Gautreau is correct in his concern regarding the width of Avon St. and its potential use as a fire access lane. However, based on a review of the site plan, coupled with the requirements contained in NFPA 1 for Fire Department access, Avon St. would not be required for use as a fire access lane for this building to be in compliance with all NFPA 1 requirements. The primary access requirements outlined within NFPA 1 that impact the locations and proximity of fire access lanes to a building include the maximum distance to an exterior door and the maximum distance from any portion of the building's exterior wall. A fire access lane must be within 50 ft. of an exterior door and, due to the fact that the building is fully protected by an automatic fire sprinkler system, can be no more than 450 ft. from any portion of the building's exterior walls. Both these metrics can be accommodated by access along Congress St. alone. Equally, the corner of Deering and Avon Streets is within 450 ft. of much of the building as well; at least its north, east, and south sides. As such, it is not necessary to designate Avon St. as a fire access lane for this building to be in compliance with the NFPA 1 requirements for Fire Department access.

Summary and Recommendations

Based on my review, the City's water supply system, including existing hydrant locations, should be more than adequate to support the fire flow requirements for the new building. Equally, the Fire Department access requirements of NFPA 1 can readily be accommodated for this building through the use of only Congress St. as the fire access lane; albeit use of Deering St. to support access to some portions of the building would also be within these requirements. However, depending on the other requirements for the building, if it is possible to increase the width of Avon St. to at least 16 ft., it is certainly something that should be strongly considered. Anytime Fire Department access to a structure can be improved, this does nothing more than improve the overall fire safety of the building and that of the life safety for the building's occupants. Increasing the width of this street would not be "required" to comply with code requirements, but is encouraged for consideration.

If you have any questions regarding what has been outlined above, please don't hesitate to contact me.

  
W. Mark Cummings, P.E.  
Principal Fire Protection Engineer



**CONSTRUCTION**

AT PC WE GO ABOVE AND BEYOND ON EVERY JOB, PERIOD.

9.11.15

## **667 Congress Street Apartments** **Site Logistic Narrative** **Portland, ME**

Reference the attached 667 Congress Site Logistic Plan dated 9/11/15 for an overview of the 667 Congress Street project.

The construction approach for the 667 Congress Street project will be to start work on south end of the site along Congress St. and move north towards Deering St. The construction fence will extend to close both lanes of Avon Street and Vernon Place, the sidewalk along Congress Street, and north of the property line along the north end of the site. Temporary lane closures on Congress St will be required for utility tie-ins. Flagging and traffic control will be provided during all temporary lane closures. Safety and directional signage will be provided as necessary for pedestrian traffic. The gates shown at Avon St and Vernon Place are not intended to be secure, if so a Portland Fire Department Knox padlock will be used to allow access for the Fire Department. A Hot Work Permit from the Fire Department will be obtained for all cutting and welding operations.

The construction trailers will be located in a nearby off-site location and all PC Construction emergency contact information will be posted on-site. The closed lanes along Avon Street will be used as a staging area and delivery lane for materials and equipment. The project dumpsters will be located on the northeast corner of the project to allow for easy access to the delivery lane and the material and passenger hoists. The crane will be located in Vernon Place and the closed lanes will be used as laydown and staging space. All construction will comply 2009 NFPA 1 Chapter 16 Safeguards during Building Construction, Alteration, and Demolition Operations. There will be no on-site parking available for subcontractors, all subcontractors will be expected to use carpools/vans to the site and/or park in legal street parking spaces.

Key issues to be addressed include:

- Public Safety
- Coordination with City of Portland, Neighbors, and Utilities
- Coordination with FAA Requirements
- Ground Water Control/Treatment
- Waste Management and Site Clean-up
- Traffic and Pedestrian Management
- Coordination of Material Deliveries
- Laydown of Material Storage and Office Trailers
- Dust Control
- Clean Streets Surrounding the Project

# TEKDEK™ BASE

## Luminaires for Parking Garages

### TD17B SERIES

#### PROJECT INFORMATION

Job Name \_\_\_\_\_

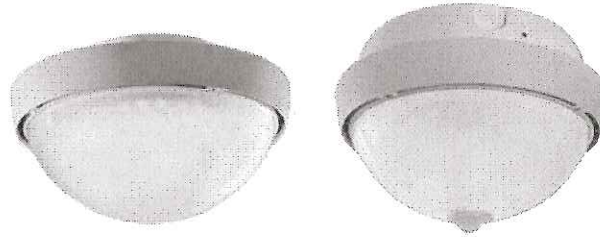
Fixture Type \_\_\_\_\_

Catalog Number \_\_\_\_\_

Approved by \_\_\_\_\_

#### PRODUCT FEATURES:

- » Textured tertiary lens for glare reduction and up-light feature to eliminate "cave-effect"
- » Optical patterns designed for covered parking structures
- » Outputs ranging from 4,394 lm to 10,258 lm
- » Compatible with TekLink™ lighting control technology
- » Patented thermal management, and Optical Patents pending
- » 10 Year limited product warranty



#### SPECIFICATIONS

**HOUSING:** Marine-grade die-cast aluminum and UV-stabilized polycarbonate construction. Standard TGIC polyester power coat finish on aluminum components with five-step pre-treatment to withstand 1,000 hour salt spray test per ASTM B117. See Ordering Information for available finishes. Closed-cell silicone gasketing seals all housing component interfaces. Die-cut closed-cell neoprene self-adhesive gasket seals housing to mounting surface (DTS).

**MOUNTING:** Direct-to-surface (DTS) mounting over recessed junction box, Trunnion Mount (TK) or pendant-mounted (PM) via 3/4" rigid sealed conduit. See Ordering Information for selection. Housing access secured via tamper-resistant Torx™ fasteners.

**OPTICAL:** Type II, V-Narrow and V-Square roadway distributions available. UV-stabilized, high-impact resistant injection-molded clear textured 100% DR acrylic or polycarbonate tertiary lens.

**ELECTRICAL:** Serviceable high-brightness LED array. See Ordering Information for color temperature and CRI options. 70 CRI minimum. 120-277 VAC, 347VAC and 480VAC 50/60Hz single-phase input; constant-current dimming driver; <20% THD, >0.90 PF. Minimum 90% electrical efficiency. 0-10V dimming protocol with 10-100% range, 2mA source current. Replaceable surge suppressor rated to 20kA/kV per IEEE/ANSI C62.41 Cat. A. EMC compliant with FCC 47 CFR Part 15, Class B.

**PHOTOMETRICS:** Photometry tested to the IESNA LM-79-08 standard by an ILAC/ISO17025 accredited laboratory. For photometric data, please go to [www.kenall.com](http://www.kenall.com).

**WARRANTY:** Limited ten (10) year warranty. Peace of Mind Guarantee™ when ordered and installed with direct-to-surface (DTS) mounting and polycarbonate lens (TP).

**LISTINGS:** Luminaire is certified to UL Standards by Intertek Testing Laboratory for Wet Location. IP65 rating per IEC 60598. Suitable for installation into -30°C to 40°C ambient environments, unless otherwise noted. Product listed on DesignLights Consortium® Qualified Product List. Check the latest version [here](#) for listed configuration details.



#### ORDERING INFORMATION (Ex: TD17B-PM-5N-TP-DB-52L-40K8-DCC-DV)

Model	Mounting	Dist. Type	Lens Type	Finish	Lamp Power	Lamp Color	Driver Type	Voltage	Options	Accessories	TekLink	Controls Kit
<b>TD17B</b>							<b>DCC</b>					< >

#### Mounting

DTS*	Direct-to-Surface
PM	Pendant Mount
TK	Trunnion Kit
QM	Quick Mount System

#### Lamp Power

52L	52W LED
79L	79W LED
112L	112W LED

#### Voltage

DV	120-277 Volts (50/60Hz)
347	347 Volts (60Hz)
480•	480 Volts (60Hz)

#### Accessories

DS	Debris Shield
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#### Distribution Type

2	Type II
2HSS	Type II, House-side shield
5N	Type V – Narrow Round
5S	Type V – Wide Square

#### Lamp Color

30K8	3000K/80CRI min
35K8	3500K/80CRI min
40K8	4000K/80CRI min
40K7	4000K/70CRI min
50K7	5000K/70CRI min
57K7	5700K/70CRI min

#### Options

LEL+•†	Emergency Battery Pack (0°C minimum ambient)
GTD•	Generator Transfer Device
BG	Bird Guard ( <a href="#">click here for details</a> )
FS	Single Fuse & Holder
PH	Phillips Fasteners
A1•‡	A1 Construction Override

#### TekLink

TL50§†	TL50 Control System
TL1000¶	TL1000 Wired Control System
TL2000¶	TL2000 Wireless Control System

Please consult Kenall Applications when ordering Controls

#### Controls Kit

< >	Factory Assigned Internal Code
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#### Lens Type

TP*	Textured Polycarbonate
TA	Textured Acrylic

#### Driver Type

DCC	0-10V Dimming Constant Current
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#### Finish

DB	Dark Bronze
FG	Forest Green
GW	Reflectance White
LG	Light Gray
MB	Matte Black
MW	Matte White
SL	Silver
CC	Custom Color (Consult factory)

\* Required for Peace of Mind Guarantee®

‡ Available only with 52L lamp

• A1 Construction (See page 3)

¶ A2 Construction (see page 3)

§ A3 Construction (see page 3)

† A2 Construction when LEL option and TL50 ordered together (see page 3)

▪ For surface conduit option or matching other fixtures on schedule that have options with A1 construction



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10200 55th Street Kenosha, Wisconsin 53144

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TD17B-052715

# TEKDEK™ BASE Luminaires for Parking Garages

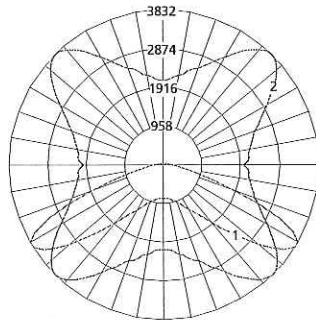
## TD17B SERIES

### PERFORMANCE

Lamp Code	Initial Delivered Lumens, By Optic Type (lm)						Efficacy (lm/W)	Input Power (W)	Estd. L70 LED Life (Hrs)
	2-TA	2-TP	5S-TA	5S-TP	5N-TA	5N-TP			
52L-57K7	5,196	5,088	5,810	5,690	6,261	6,132	86 - 106	59	90,000
52L-50K7	5,196	5,088	5,810	5,690	6,261	6,132	86 - 106	59	90,000
52L-40K7	5,196	5,088	5,810	5,690	6,261	6,132	86 - 106	59	90,000
52L-40K8	4,724	4,625	5,282	5,172	5,691	5,574	78 - 96	59	90,000
52L-35K8	4,487	4,394	5,018	4,914	5,407	5,296	74 - 92	59	90,000
52L-30K8	4,487	4,394	5,018	4,914	5,407	5,296	74 - 92	59	90,000
79L-57K7	7,371	7,218	8,311	8,139	8,956	8,772	80 - 100	90	75,000
79L-50K7	7,371	7,218	8,311	8,139	8,956	8,772	80 - 100	90	75,000
79L-40K7	7,371	7,218	8,311	8,139	8,956	8,772	80 - 100	90	75,000
79L-40K8	6,701	6,562	7,556	7,399	8,142	7,975	73 - 90	90	75,000
79L-35K8	6,366	6,234	7,178	7,029	7,735	7,576	69 - 86	90	75,000
79L-30K8	6,366	6,234	7,178	7,029	7,735	7,576	69 - 86	90	75,000
112L-57K7	8,396	8,223	9,519	9,322	10,258	10,047	67 - 84	122	60,000
112L-50K7	8,396	8,223	9,519	9,322	10,258	10,047	67 - 84	122	60,000
112L-40K7	8,396	8,223	9,519	9,322	10,258	10,047	67 - 84	122	60,000
112L-40K8	7,633	7,476	8,654	8,475	9,325	9,133	61 - 76	122	60,000
112L-35K8	7,252	7,102	8,221	8,051	8,859	8,677	58 - 73	122	60,000
112L-30K8	7,252	7,102	8,221	8,051	8,859	8,677	58 - 73	122	60,000

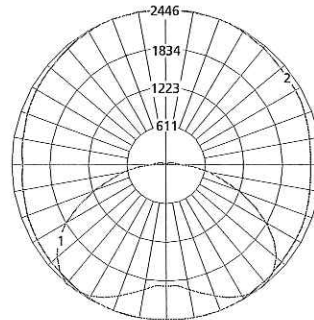
Displayed information is for selected luminaires only. Information subject to change without notice. Visit [www.kenall.com](http://www.kenall.com) for .ies files and additional information.

Model: TD17B-XX-5S-TA-GW-112L-40K7-DCC-DV



Max Candela = 3832 Located At Horizontal Angle = 45, Vertical Angle = 60  
 1 - Vertical Plane Through Horizontal Angles (45 - 225) (Through Max. Cd.)  
 2 - Horizontal Cone Through Vertical Angle (60) (Through Max. Cd.)

Model: TD17B-XX-5N-TA-GW-112L-40K7-DCC-DV



Max Candela = 2446 Located At Horizontal Angle = 70, Vertical Angle = 40  
 1 - Vertical Plane Through Horizontal Angles (70 - 250) (Through Max. Cd.)  
 2 - Horizontal Cone Through Vertical Angle (40) (Through Max. Cd.)

### LUMEN AMBIENT TEMPERATURE (LAT) FACTORS

Avg. Ambient Temperature	10°C	15°C	20°C	25°C	30°C	35°C	40°C
Lumen Output Factor	1.03	1.02	1.01	1	0.99	0.98	0.97



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TD17B-052715



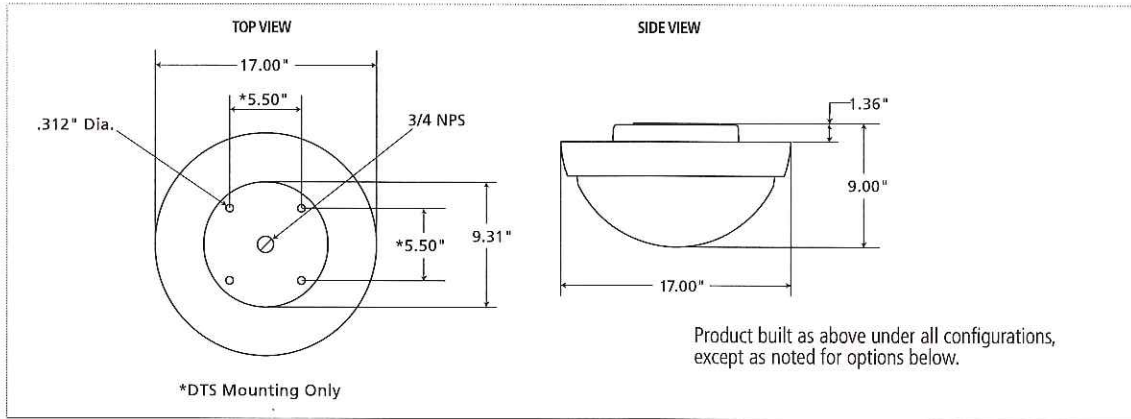
# TEKDEK™ BASE

## Luminaires for Parking Garages

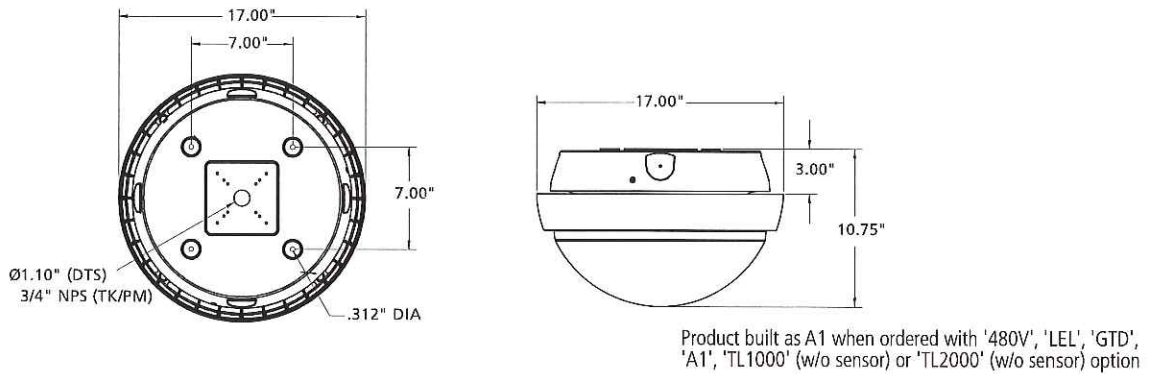
For additional photometry, go to [www.kenall.com](http://www.kenall.com)

### DIMENSIONAL DATA

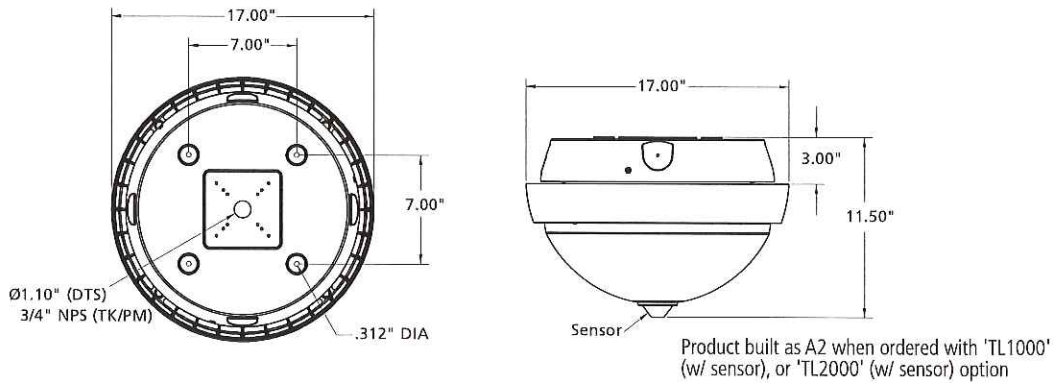
#### FIXTURE DIMENSIONS



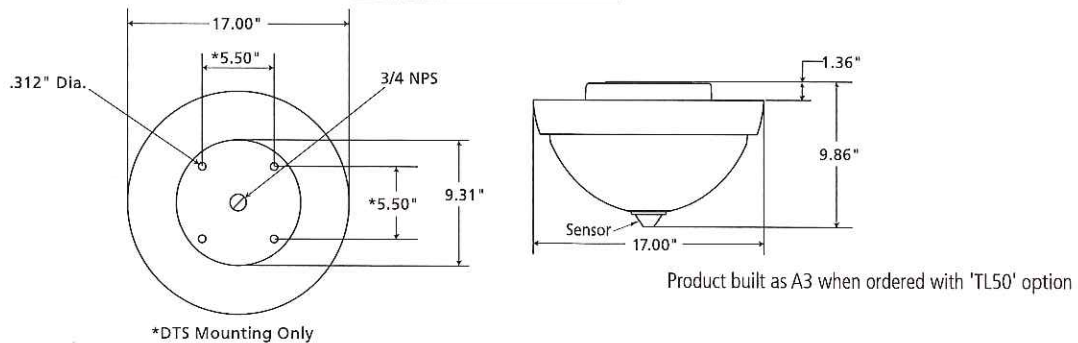
#### CONSTRUCTION 'A1' DIMENSIONS



#### CONSTRUCTION 'A2' DIMENSIONS



#### CONSTRUCTION 'A3' DIMENSIONS



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TD17B-052715

Urban Outdoor Wall Sconce



Description:

Urban Outdoor Wall Sconce is available in a Black, White, Graphite or Bronze finish. Available as a small, medium or large. 12/16/20 watt, 120 volt, 3000K LED lamp is included. Small: 7 inch width x 10 inch height x 2 inch depth. Medium: 7 inch width x 16 inch height x 2 inch depth. Large: 8 inch width x 22 inch height x 2 inch depth. ADA compliant, low profile design. Wet location listed and Dark Sky friendly.

Shown In: Bronze

List Price: \$311.25  
 Our Price: \$249.00

Shade Color: N/A  
 Body Finish: ~~Bronze~~  
 Lamp: 1 x LED/16W/120V  
 Wattage: 16W  
 Dimmer: Low Voltage Electronic  
 Dimensions: ~~16"H x 7"W x 2"D~~

Fax: (773) 883-6131

Phone: 866-954-4489

Address: 1718 W. Fullerton Ave. Chicago IL 60614

www.Lightology.com

Product Number: <b>MFR202088</b>			
Company:		Fixture Type:	Date: Jul 22, 2015
Project:		Approved By:	

#1343WC-URBAN-007L1-BZDS

## Written Request for Waivers

The existing commercial building and parking lot on 667 Congress St (Map, Book, Lot 46 C020 and C019) are to be redeveloped into a 139-unit residential and single unit commercial building with covered parking on the basement and first floors (81 total parking spaces). The existing business, Joe's Variety Store, will remain on the first floor with the upper seven floors consisting of studio, single bedroom, and double bedroom apartments for rent.

The following is a list of known project related waivers.

1. **City Standard Parking Size** – The applicant is requesting a waiver to increase the number of Compact Parking Spaces per Standard Parking Spaces (9' X 18'). Of the proposed 81 spaces, 64% are Standard spaces (52 spaces) and 36% may be defined as Compact Parking (29 spaces). According to the Technical Standards the maximum allowable Compact spaces for this space is 16. However, in order to adhere to the required parking spaces for residential units, there must be more compact parking within the covered lots.

Circulation of vehicles within the site has been performed using AutoTurn, a vehicle circulation CAD accessory. The produced simulations show circulation to be possible; refer to the attached drawings of the simulations for additional information.

2. **City Minimum Driveway Width** – The applicant is requesting a waiver for the required 20' wide driveway; the proposed driveway is 18' wide at the overhead door but is otherwise 20' wide after entering the building.
3. **Parking Lot Landscaping** – The applicant is requesting a waiver to the parking lot landscaping requirements to not include the suggested 33 trees for the 81 parking spaces; due to the covered nature of the parking lots in both the basement and first floor (too limited of open air on first floor for tree or shrub growth), it is not feasible to landscape these features. However, after onsite discussions with Jeff Tarling, City Arborist, green walls are proposed along the exterior walls of the parking garage on Avon Street and Vernon Place.



After continued discussions with Jeff Tarling, the applicant is prepared to contribute an amount proportionate to the cost of required parking lot trees minus that already spent on green spaces to the City of Portland Tree Fund.

4. **Street Trees** – The applicant is seeking a waiver to the street trees requirements for multi-family residential properties. Due to the large proposed building footprint and limited sidewalk space along the Avon Street and Vernon Place street fronts, it is not feasible to place the required 139 trees for every residential unit on-site. Instead, there will be three trees spaced approximately thirty feet apart along the Congress Street frontage (refer to site plans); this represents the maximum amount of trees able to fit on the property. In all, the design decreases the total required street trees from 139 to 3. However, this is an increase in total trees on the property from the original one.

Like abovementioned, there is additional proposed landscaping including shrubs along Vernon Place and the rear property line, plantings along Avon Street, and raised urban planters along Congress Street in addition to the parking garage green walls. The exact location of landscaped areas is outlined in the attached Landscaping Plan.

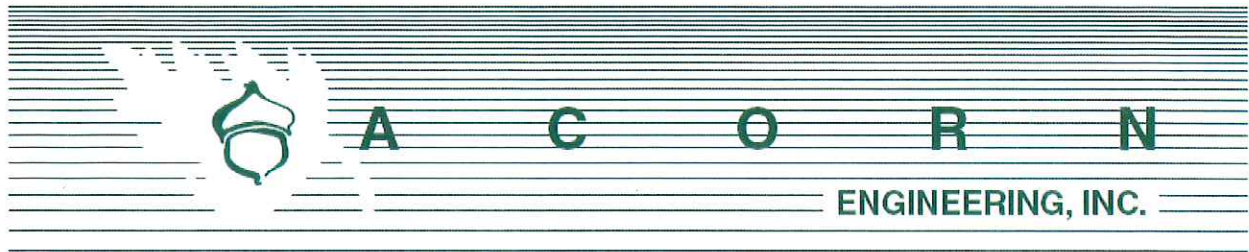
5. **Minimum Requirements for Street Improvements** – The applicant is seeking a waiver for the required curb and sidewalk improvements along Vernon Place and Avon Street; the city requires new sidewalk with granite curbing for the entirety of the existing unimproved street.

Along Vernon Place, the current plans propose sidewalk improvements such as construction of a brick sidewalk with granite curbing that tips down to a flush, stamped pavement sidewalk continuing to the first floor garage entrance allowing for an alternative to Congress Street for Joe's vendor drop-offs. The remaining building edge along Vernon Place will be landscaped in most areas of existing grass. Although a sidewalk will be not be constructed along its entirety, Vernon Place is a dead-end street with limited foot traffic and, under the proposed plans, will be improved significantly given the current conditions.



It is proposed that Avon Street be widened from the existing 14' to 16' per request (Captain Gauteau 8/21/15) in place of an improved sidewalk along both sides of the street; the remaining space between the building edge and new/reset granite curb will be replaced with assorted plantings. The existing sidewalk along the Trelawny building is planned to remain.





Shukria Wiar - Planner  
Planning Division, City of Portland  
389 Congress Street  
Portland, ME 04101

October 13, 2015

Subject: 667 Congress Street Redevelopment  
Comment Response Letter: Final Application

On behalf of Redfern Properties, LLC, Acorn Engineering, Inc. (Acorn) is pleased to respond to the comments to the 667 Congress Street Redevelopment Final Application that have been provided by multiple reviewers.

It is our opinion that many of the comments that were provided are of such nature that they either do not require a response, or have been adequately addressed at the 9/29/15 Planning Board Meeting or in a prior submission. The responses to any such comments have been omitted from this letter.

To facilitate the review, comments are provided below in italics followed by Acorn Engineering, Inc.'s response.

**Tom Errico – 9/23/2015 E-mail**

**Comment** – *The plans note that the sidewalk on Vernon Place will not have curbing. I will review this with DPS staff. Status: I continue to review design treatments for Vernon Place given its unique function. As noted below, the applicant shall complete the formal waiver process for curb and sidewalk. The City needs to be comfortable with the design and function of Vernon Place with the added project traffic (traffic volumes will increase substantially from current conditions). Specifically accommodating pedestrians safely, vehicle movements, DPS maintenance equipment and their ability to turn around safely, landscaping, drainage, and access/egress movements into and out of the garage and the driveways on the west side of the street.*

**Response** – In recognition of comments received at our 9/28/15 Meeting with Planning Staff, Fire Department and Traffic Peer Review Engineer, Acorn has added a 4' wide sidewalk with vertical curb within Vernon Place. The sidewalk will extend between the pedestrian entrance to the First Floor Parking facility and Congress Street in order to provide separation between the vehicular traffic and pedestrian traffic. The overall existing roadway width in areas with a proposed sidewalk was increased from 14.18' to 16.8'. Further to the North on Vernon Place the roadway width will be increased from 14.95' to 18.5'. This additional width will improve upon the existing circulation and access/egress into the driveways along the west side of Vernon Place.

**Comment** – *The alignment of the sidewalk ramps on Congress Street will need to direct pedestrians to the appropriate path of travel from an ADA perspective. Adjustments will need to be incorporated. Status: The ramp at corner of the Avon Street is unacceptable and alignment for walking parallel to Congress Street shall be provided. I would also note that the ramp at Vernon Place may need to change following the final configuration of the street.*

**Response** – Acorn has provided a revised design for pedestrian ramps at these locations. The ramps are designed to be parallel to the ROW line at the proposed development along Congress Street and have been relocated for the current proposed roadway configuration.

**Comment** – *The width of the sidewalk along Avon Street abutting the property is noted as between 3 and 5 feet wide. I need to review specific details regarding this sidewalk to ensure appropriate accessibility is provided. Status: Given the narrow width of the street and sidewalk, I recommend that a fully shared street be considered (curbs to be removed or relocated to buildings on both sides of the street with special surface pavement treatment). This would allow for improved or desired emergency access, easier maintenance, and would allow for a multi-modal street that would provide for all users in a safe and calmed environment.*

**Response** – We have further refined and revised the Avon Street corridor. The project team is now proposing a number of traffic calming measures including raised pedestrian crosswalk with curb extension located half-way along Avon Street, outside of the proposed side tenant entrance. A curb extension is also proposed at the Congress Street crosswalk with Avon. In recognition of the Captain Gautreau's concerns and following discussions from our 9/28/15 Meeting with Planning Staff, Fire Department and Traffic Peer Review Engineer the street width adjacent to the Trelawny building has been increased by approx. 25%, from 14' to 18' width. Elsewhere the roadway width was increased from 14' to 16' width. Furthermore the applicant is proposing to increase the aerial clear width between buildings by removing the two existing utility poles with street lights and relocate the utilities subsurface with lighting mounted to the applicant's building.

**Comment** – *The applicant should identify any parking circulation aisle waiver requirements.*

**Response** – Because the majority of parking need is residential, the proposed lot is defined as a low turnover lot and can therefore support a more compact layout than a typical public parking lot. The proposed layout includes for a 75-degree angle at parking spaces, with the recommended one-way drive aisle width of 17.83'. The City's Technical Manual does not have a standard aisle width associated with a 75 degree parking space; this being the case, the parking lot layout was designed using criteria published by Carl Walker, Inc., an engineering firm that specializes in parking structure design. With this being the case, the applicant is requesting this flexibility in the form of a waiver for a 17.83'-wide one-way drive aisle width.

**Comment** – *The applicant should provide information on how the tandem parking spaces will be managed.*

**Response** – Tandem parking spaces will be coordinated by the Building Management Company retained by Redfern Properties and serve as the Transportation Demand Management (TDM) coordinator in accordance with Traffic Solutions' TDM Plan, dated September 2015.



**Comment** – *The applicant should confirm that one handicapped parking space meets ADA or other required standards.*

**Response** – ADA parking spaces have been increased to a total of 4 ADA parking spaces with preferred locations adjacent to ADA accessible points of entry.

**David Margolis-Pineo – 9/22/2015 E-mail**

**Comment** – *The design of all corner sidewalk ramps will require approval of the City's Bike/Ped Coordinator, Bruce Hyman. The current shown ramp alignment does not appear acceptable.*

**Response** – Please see previous comment regarding sidewalk ramps.

**Comment** – *It appears that the proposed building foundation and underdrain system may be encroaching the street right of way. If so an easement/license will be required from the City and shown on the Recording Plat.*

**Response** – The building foundation and underdrain system as presently designed will not encroach upon the street right of way. The applicant is proposing to grant three easements to the City including:

- Roadway easement to the City
- Pedestrian easement to the City
- Drainage easement to the City

One easement will be requested from the City for the construction of a wall anchor system (also referred to as a soil nail wall). Wall anchors are routinely used in high-density structures in Boston, and a similar temporary soil nail system was installed at Maine Medical Center along Charles Street. The system provides temporary shoring until the basement wall structure is built, but will remain in place after project completion. Whereas the soils nails are only needed temporarily during construction, future excavation for utility work in the location of the soil nails would not hinder the building walls. This ability to remove the wall anchors after construction for future utility work is included within the Subdivision Plat. Please refer to the included Subdivision Plat for additional information.

**Comment** – *Any underground or overhead utilities which feed adjacent infrastructure which cross but are not related to this development shall have easements recorded and shown on the Recording Plat.*

**Response** – A Subdivision Plat has been provided as part of this submission that indicates existing and proposed easements for the development, which includes easements for utilities.

**Comment** – *A stamped Recording Plat is required with plan set.*

**Response** – A Subdivision Plat stamped by a Professional Land Surveyor has been provided as part of this submission.



**Comment** – *The existing sewer on Congress St is a combined sewer. Therefore a backflow preventer on the proposed 6" sewer lateral is required.*

**Response** – Per Note 5 on Sheet C-20 regarding sewer utilities, a backflow preventer is to be placed by M.E.P. (Mechanical/Electrical/Plumbing Engineer) within the building at this and all other sewer connections.

**David Senus (Civil Engineering) – E-mail on 9/18/15**

**Comment** – *Based on comments received from the City Department of Public Services, the Applicant has revised the outlet from the Oil/Water Separator to connect to the sanitary sewer in Avon Street. The flow into the Oil/Water Separator is intended to solely include drainage from the floor drains from the two covered parking deck areas; however, on Sheet C30 it appears that an underdrain connection is proposed into the floor drain system. All underdrains should be connected into the separated storm drain system.*

**Response** – Roof drains and foundation drains have been revised to connect into the separate storm drain system.

**Comment** – *Sheet C31 shows the floor drain locations for the upper parking deck. These locations are reflected on Sheet C30 as "first floor downspouts". Are these downspouts discharging to the surface of the lower parking deck or connecting directly into the lower parking area floor drain system? If connecting directly, this should be depicted on C30.*

**Response** – The First Floor downspouts are proposed to connect into the lower parking area floor drain system; this is now clearly reflected within Sheet C-30.

Thank you very much for your detailed review of the proposed development. Please let me know if you have any additional questions or comments.

Sincerely,



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

Attachments:

1. Updated – Written Request for Waivers, dated 10/13/15
2. Acorn Engineering – Plan Set, Issued For "Final Application" and dated 10/13/15

