

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

This is to certify that MARK L SMITH & STEPHANIE DU located At 43 CUMBERLAND AVE

Job ID: 2012-08-4749-CH OF USE

CBL: 013- K-062-001

has permission to Add 4th unit, by adding dormers to the 4th floor & demolish & rebuild 3 story.
provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

Fire Prevention Officer

10-30-12
Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
PENALTY FOR REMOVING THIS CARD

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

Footings/Setbacks prior to pouring concrete

Foundation/Rebar

Foundation/Backfill

Close In Elec/Plmb/Frame prior to insulate or gyp

Certificate of Occupancy Inspection

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Director of Planning and Urban Development
Jeff Levine

Job ID: 2012-08-4749-CH OF USE

Located At: 43 CUMBERLAND
AVE

CBL: 013- K-062-001

Conditions of Approval:

Zoning

1. This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
2. With the issuance of the permit and the certificate of occupancy the use of this property shall remain as five dwelling units – 4 units in the main building and 1 unit in the small building. Any change of use shall require a separate permit application for review and approval.
3. The added floor area in the main building is permitted under section 14-436(b). The first floor footprint is 1943 sf. The added floor area is 421.75 sf which is a 21.7% increase in floor area.
4. The existing single family dwelling is being demolished under permit #2012-09-5028.

Building

1. Application approval based upon information provided by the applicant or design professional; including Architectural revisions dated received 10/12/12. Structural plans are in original set of plans. Any deviation from approved plans requires separate review and approval prior to work.
2. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.
3. Handrails are required with ends returned and shall meet the graspability dimensions per Sec. 1012 of the IBC 2009.
4. All penetrations between dwelling units and dwelling units and common areas shall be protected with approved firestop materials, and recessed lighting/vent fixtures shall not reduce the (1 hour) required rating per Sec. 713 of IBC and R317.3.1.2 of the IRC.

Fire

General Fire Conditions

1. All construction shall comply with City Code Chapter 10. The occupancy shall comply with City Code Chapter 10 upon inspection.

2. This permit is being approved on the basis of the plans submitted. Any deviation from the plans would require amendments and approval.
3. Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer. Contact Michelle Sweeney at 874-8682 for further information.

Apartment Building (43 Cumberland Ave.)

1. All outstanding code violations shall be corrected prior to final inspection.
2. The fire alarm system shall comply with the City of Portland Fire Department Rules and Regulations. A signed compliance letter will be required. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.
3. A separate Fire Alarm Permit is required. This review does not include approval of fire alarm system design or installation.
4. Interconnected, hardwired smoke alarms with battery backup are required in each sleeping room, immediately outside each sleeping area, and on each story within each dwelling unit.
5. All smoke detectors and smoke alarms shall be photoelectric.
6. Carbon Monoxide detection is required in accordance with NFPA 720, Standard for Installation of Carbon Monoxide (CO) Detection and Warning Equipment, 2009 edition.
7. The sprinkler system shall be installed in accordance with NFPA 13R. Class I standpipe systems shall be in accordance with NFPA 14. A signed compliance letter will be required.
8. A separate Suppression System Permit is required. This review does not include approval of sprinkler system design or installation.
9. Sprinkler supervisory system shall be provided in accordance with NFPA 101, Life Safety Code, and NFPA 72, National Fire Alarm and Signaling Code.
10. Fire alarm, sprinkler and standpipe systems shall be maintained in accordance with the City of Portland Fire Department Rules and Regulations, NFPA 72, and NFPA 25.
11. Fire department connection type and location shall be approved in writing by fire prevention bureau.
12. System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
13. Installation of a sprinkler or fire alarm system requires a Knox Box to be installed per city ordinance.
14. A firefighter Building Marking Sign is required.
15. Fire extinguishers are required per NFPA 1.
16. All means of egress to remain accessible at all times.
17. Emergency lights and exit signs are required. Emergency lights and exit signs are required to be labeled in relation to the panel and circuit and on the same circuit as the lighting for the area they serve.
18. Any cutting and welding done will require a Hot Work Permit from Fire Department.
19. Walls in structure are to be labeled according to fire resistance rating. IE; 1 hr. / 2 hr. / smoke proof.
20. A single source supplier should be used for all through penetrations.

Single-family Dwelling Unit (45 Cumberland Ave.)

1. All construction shall comply with City Code Chapter 10.
2. A sprinkler system shall be installed in accordance with NFPA 13D.
3. A separate no fee One- or Two-family Fire Sprinkler Permit is required.
4. Interconnected, hardwired smoke alarms with battery backup are required in each sleeping room, immediately outside each sleeping area, and on each story of the dwelling including basements. All smoke alarms shall be photoelectric.
5. Interconnected, hardwired Carbon Monoxide alarms with battery backup are required on each floor.

General Fire Conditions

1. All construction shall comply with City Code Chapter 10. The occupancy shall comply with City Code Chapter 10 upon inspection.
2. This permit is being approved on the basis of the plans submitted. Any deviation from the plans would require amendments and approval.
3. Street addresses shall be marked on the structure and shall be as approved by the City E-911 Addressing Officer. Contact Michelle Sweeney at 874-8682 for further information.

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2. A sprinkler system shall be installed in accordance with NFPA 13D.
3. A separate no fee One- or Two-family Fire Sprinkler Permit is required.
4. Interconnected, hardwired smoke alarms with battery backup are required in each sleeping room, immediately outside each sleeping area, and on each story of the dwelling including basements. All smoke alarms shall be photoelectric.

5. Interconnected, hardwired Carbon Monoxide alarms with battery backup are required on each floor.

City of Portland, Maine.- Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2012-08-4749-CH OF USE	Date Applied: 8/16/2012	CBL: 013- K-062-001 & 013-K-061-001	
Location of Construction: 43 - 45 CUMBERLAND AVE	Owner Name: MARK L SMITH & STEPHANIE DUNN	Owner Address: 471 CUMBERLAND AVE PORTLAND, ME 04101	Phone: 207-877-4965
Business Name:	Contractor Name: TBD	Contractor Address:	Phone:
Lessee/Buyer's Name:	Phone:	Permit Type: BLDG - Building	Zone: R-6
Past Use: 43 Cumberland - three family & 45 Cumberland - 1 family	Proposed Use: Add 4 th unit to 43 Cumberland (main building) by adding dormers to the 4 th floor & demolish & rebuild 3 story, single family (19.5' x 23' & 5' x 15')	Cost of Work: 392000.000000	CEO District:
		Fire Dept: 10/16/12 <input checked="" type="checkbox"/> Approved w/ conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: R-2/R-3 Type: SB MUBEC'09 Signature: JMB 10/15/12
Proposed Project Description: change of use - add 1 unit for total of 5		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Gayle		Zoning Approval	

	Special Zone or Reviews	Zoning Appeal	Historic Preservation
1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.	<input type="checkbox"/> Shoreland <i>N/A</i>	<input type="checkbox"/> Variance	<input checked="" type="checkbox"/> Not in Dist or Landmark
2. Building Permits do not include plumbing, septic or electrical work.	<input type="checkbox"/> Wetlands <i>N/A</i>	<input type="checkbox"/> Miscellaneous	<input type="checkbox"/> Does not Require Review
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.	<input type="checkbox"/> Flood Zone <i>pond 14-zonec</i>	<input type="checkbox"/> Conditional Use	<input type="checkbox"/> Requires Review
	<input type="checkbox"/> Subdivision	<input type="checkbox"/> Interpretation	<input type="checkbox"/> Approved
	<input checked="" type="checkbox"/> Site Plan	<input type="checkbox"/> Approved	<input type="checkbox"/> Approved w/Conditions
	<i>Level I Minor Res.</i>	<input type="checkbox"/> Denied	<input type="checkbox"/> Denied
	<input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM	Date:	Date: <i>JMB</i>
	Date: <i>OK w/ cond. for 9/25/12 JMB</i>		

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

12. Click Permit above

Double click for description

13 Issue

Bold underline Caps for font
add date

Check font to be 11

Put numbers under Fire Review

Print in Color

Re Print
is
needed

Save ~~when~~ after Printed
Back out diagram refresh check
for issued

Jeanie Bourke - 43 Cumberland Avenue, Smith/Dunn project - Building Permit Issuance

From: Philip DiPierro
To: Code Enforcement & Inspections
Date: 10/30/2012 8:30 AM
Subject: 43 Cumberland Avenue, Smith/Dunn project - Building Permit Issuance

Hi all, this project, site plan # 2012-08-4743, the Smith - Dunn single family and level I site plan approval for the project located at 43 Cumberland Avenue, meets minimum DRC site plan requirements for the issuance of the building permit. All conditions prior to the issuance of the building permit have been met.

Feel free to contact me with any questions. Thanks.

Phil

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

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This page contains a detailed description of the Parcel ID you selected. Press the **New Search** button at the bottom of the screen to submit a new query.

Current Owner Information:

Services

Applications

Doing Business

Maps

Tax Relief

Tax Roll

Q & A

CBL 013 K062001
Land Use Type THREE FAMILY
Property Location 43 CUMBERLAND AVE
Owner Information SMITH MARK L & STEPHANIE L DUNN JTS
 PO BOX 575
 KINGFIELD ME 04947
Book and Page 28616/217
Legal Description 13-K-62
 CUMBERLAND AVE 43
Acres 0.0902

Current Assessed Valuation:

browse city services a-z

browse facts and links a-z

TAX ACCT NO. 1588 **OWNER OF RECORD AS OF APRIL 2012**
 SMITH MARK L &
 STEPHANIE L DUNN JTS
 PO BOX 575
 KINGFIELD ME 04947
LAND VALUE \$92,600.00
BUILDING VALUE \$321,900.00
NET TAXABLE - REAL ESTATE \$414,500.00
TAX AMOUNT \$7,800.90

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



Best viewed at 800x600, with Internet Explorer

Building Information:

Building 1
Year Built 1890
Style/Structure Type OLD STYLE
Stories 3
Units 3
Bedrooms 9
Full Baths 3
Total Rooms 21
Attic UNFIN
Basement FULL
Square Feet 5202

[View Sketch](#) [View Map](#) [View Picture](#)



Sales Information:

Sale Date	Type	Price	Book/ Page
3/31/2011	LAND + BUILDING	\$0.00	28616/217
2/26/2009	LAND + BUILDING	\$404,000.00	26662/040
9/1/2002	LAND + BUILDING	\$0.00	18044/16
9/1/2002	LAND + BUILDING	\$275,000.00	18044/17
1/10/2002	LAND + BUILDING	\$129,150.00	17192/5

New Search!

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

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[Q & A](#)

[browse city services a-z](#)

[browse facts and links a-z](#)

CBL 013 K061001
Land Use Type SINGLE FAMILY
Property Location 45 CUMBERLAND AVE
Owner Information SMITH MARK L & STEPHANIE L DUNN JTS
 PO BOX 575
 KINGFIELD ME 04947
Book and Page 28616/217
Legal Description 13-K-61
 CUMBERLAND AVE 45
 2454 SF
Acres 0.0563

Current Assessed Valuation:

TAX ACCT NO.	1586	OWNER OF RECORD AS OF APRIL 2012
		SMITH MARK L & STEPHANIE L DUNN JTS PO BOX 575 KINGFIELD ME 04947
LAND VALUE	\$90,600.00	
BUILDING VALUE	\$60,500.00	
NET TAXABLE - REAL ESTATE	\$151,100.00	
TAX AMOUNT	\$2,843.70	

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



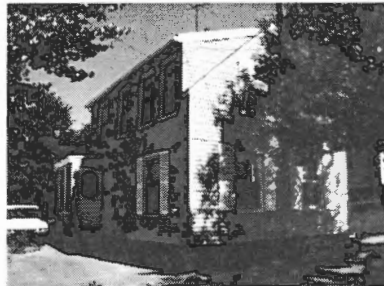
Best viewed at 800x600, with Internet Explorer

Building Information:

Building 1

Year Built 1884
Style/Structure Type OLD STYLE
Stories 1.5
Units 1
Bedrooms 2
Full Baths 1
Total Rooms 5
Attic NONE
Basement FULL
Square Feet 938

[View Sketch](#) [View Map](#) [View Picture](#)



Sales Information:

Sale Date	Type	Price	Book/Page
3/31/2011	LAND + BUILDING	\$0.00	28616/217
3/12/2009	LAND + BUILDING	\$85,000.00	26709/302



202-08-4749

Project Address: 43 Cumberland Ave 013 K016		
Total Square Footage of Proposed Structure/Area: Main Bld'g: 6,587(sf) Studio: 1,046 (sf heated)	Area of lot (total sq. ft.): Garage: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Attached <input checked="" type="checkbox"/> Detached <input type="checkbox"/> Sq. Ft.: 523 (sf)	Number of Stories: 4 3 Number of Bathrooms: 4 1 Number of Bedrooms: 4 1 @ proposed area of new work
Tax Assessor's Chart, Block & Lot(s): <u>Chart#</u> <u>Block #</u> <u>Lot#</u> 013 K062 001		
Current legal use: <u>Multi-family</u>		
Number of Residential Units <u>(4) existing (1) proposed</u>		
If vacant, what was the previous use? _____		
Is property part of a subdivision? <u>no</u> If yes, please name _____		
Project Description: Main Building: Existing 4 story building with 3 residential units. The proposal includes a 4th floor dormer roof expansion, 3rd and 4th floor interior renovations and the addition of a 4th residential living unit. The proposal includes the installation of a fire suppression system per NFPA. No increase in stories & no change of use is proposed. Studio: Construct a free standing living unit per proposed drawings.		
Applicant – must be owner, Lessee or Buyer Name: Mark Smith and Stephanie Dunn Business Name, if applicable: Address: 41 Cumberland Avenue City/State: Portland, ME Zip Code: 04101		Applicant Contact Information Work # Home# Cell # 207-877-4965 e-mail: msmith@chaosunlimited.com
Owner – (if different from Applicant) Name: Address: City/State: Zip Code:		Owner Contact Information Work # Home# Cell # e-mail:
Billing Information Name: same as applicant Address: City/State: Zip Code: Phone Number:		Contact when Building Permit is Ready: Name: Mark Mueller Address: 100 Commercial Street #205 City/State: Portland, ME Zip Code: 04101 Phone Number: 207-774-9057

RECEIVED

AUG 16 2012

Dept. of Building Inspections
City of Portland Maine

DEVELOPMENT REVIEW FEES:

Payment may be made in cash, credit card or check addressed to the City of Portland.

<p>Level I Minor Residential Site Plan</p> <p>1. Application Fee - \$300.00</p> <p>2. Inspection Fee - \$100.00 (for site plan inspection by the Planning Division)</p> <p>3. Certificate of Occupancy Fee - \$75.00</p> <p>4. Building Permit (Cost of Work) \$ 392,000.00</p> <p style="text-align: right;">Total Due:</p>	<p>Fees Paid:</p> <p>\$ 300.00</p> <p>\$ 100.00</p> <p>\$</p> <p>\$ 3,940.00</p> <p>\$ 4,340.00</p>
<p>Building Permit Fee - \$30 for the first \$1,000 construction cost - \$10 every additional \$1,000.</p>	
<p>Performance Guarantee - Exempt except for those projects that complete construction in the winter and the site work is incomplete.</p>	

RECEIVED

AUG 16 2012

Dept. of Building Inspections
City of Portland Maine

Please submit all of the information outlined on the applicable Checklist, shown on Page 4 and 5 of this Application. In addition, a CD or PDF (e-mailed to buildinginspections@portlandmaine.gov) of the entire Application, including all plans, must be submitted with the Application. Failure to do so may result in the automatic denial of your permit.

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), which includes the Subdivision Ordinance (Section 14-491) and the Site Plan Ordinance (Section 14-521). Portland's Land Use Code is on the City's web site: www.portlandmaine.gov Copies of the ordinances may be purchased through the Planning Division. All of the information on the checklist must be submitted for review. The applicant must check off the items contained in the application package to ensure the application is complete.

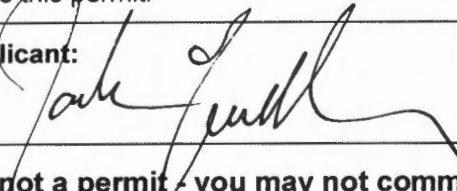
Property Taxes:

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before a permit of any kind is accepted.

Separate Permits:

Separate permits are required for internal and external plumbing, HVAC, and electrical installations.

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.

<p>Signature of Applicant:</p> 	<p>Date:</p> <p>AUGUST 15, 2012</p>
---------------------------------------------------------------------------------------------------------------------------	--------------------------------------------

This is not a permit - you may not commence any work until the permit is issued.

STATE AND/OR FEDERAL PERMITS

The proposed project does not anticipate any state or federal permits.

REQUEST FOR WAIVERS

The applicant is requesting a waiver from ordinance Section-14-526(b)2.b.iii-Street Trees. The section states a waiver may be granted by the following:

“Where the applicant can demonstrate that site constraints prevent the planting of required street trees in the City right of way, the Reviewing Authority may permit the planting of street trees in the front yard, within ten feet of the property line...”

The existing street frontage has an esplanade between the sidewalk and the street. The property line is approximately along the back side of the sidewalk. The esplanade currently has street trees planted per section 4 of the Technical Manual. Therefore, there are no places to place a street tree without conflicting with the requirements of section 4 of the Technical Manual. Therefore, a location has been provided on within 10 feet of the property line as a means to satisfy the requirements of this section.

(A CD or PDF (e-mailed to buildinginspections@portlandmaine.gov) of the entire application, including all plans, must be submitted with the application.)

General Submittal Requirements – Level I Minor Residential

Applicant Checklist	Planner Checklist (internal)	Number of Copies	Submittal Requirement
X		2	Completed application form and check list.
X	✓	1	Application fees.
X	✓	2	Evidence of right, title and interest.
N/A	✓	2	Copies of required state and/or federal permits.
NONE	✓	2	Written Description of existing and proposed easements or other burdens.
X	✓	2	Written requests for waivers from individual site plan and/or technical standards.
SEE ARCH PLANS		2	Written summary of fire safety (referencing NFPA fire code and Section 3 of the City of Portland Technical Manual). Refer to Fire Department Checklist on page 6 of this application.

Site Plans and Boundary Survey Requirements – Level I Minor Residential

Applicant Checklist	Planner Checklist (internal)	Number of Copies	Submittal Requirement
X		3	Boundary survey meeting the requirements of section 13 of the City of Portland Technical Manual with the site plan information listed below shown on the plan, including a north arrow and a scale greater than or equal to 1"=20'. (Photocopies of the plat or hand drawn building footprints will not be accepted.)
X		<ul style="list-style-type: none"> ▪ Zoning district, setbacks and dimensional requirements. Show zone lines and overlay zones that apply to the property, including Shoreland Zone &/or Stream Protection Zone. 	
X		<ul style="list-style-type: none"> ▪ Existing and proposed structures (including location of proposed piers, docks or wharves if in Shoreland Zone). 	
X		<ul style="list-style-type: none"> ▪ Location and dimension of existing and proposed paved areas. 	
X		<ul style="list-style-type: none"> ▪ Proposed ground floor area of building. 	
X		<ul style="list-style-type: none"> ▪ Finish floor elevation (FEE) or sill elevation. 	
X		<ul style="list-style-type: none"> ▪ Exterior building elevations (show all 4 sides). 	
X		<ul style="list-style-type: none"> ▪ Existing and proposed utilities (or septic system, where applicable) 	
X		<ul style="list-style-type: none"> ▪ Existing and proposed grading and contours. 	
X		<ul style="list-style-type: none"> ▪ Proposed stormwater management and erosion controls. 	
X		<ul style="list-style-type: none"> ▪ Total area and limits of proposed land disturbance. 	
X		<ul style="list-style-type: none"> ▪ Proposed protections to or alterations of watercourses. 	
X		<ul style="list-style-type: none"> ▪ Proposed wetland protections or impacts. 	
X		<ul style="list-style-type: none"> ▪ Existing vegetation to be preserved and proposed site landscaping and street trees (2 trees per unit for a single or two-family house). 	

X		▪ Existing and proposed curb and sidewalk, except for a single family home.
X		▪ Existing and proposed easements or public or private rights of way.
X		▪ Show foundation/perimeter drain and outlet.
X		▪ Additional requirements may apply for lots on unimproved streets.

Building Permit Submittal Requirements –Level I: Minor Residential Development			
Applicant Checklist	Planner Checklist (internal)	Number of Copies	Submittal Requirement
X		1	One (1) complete set of construction drawings must include:
X			▪ Cross section with framing details
X			▪ Floor plans and elevations to scale
X			▪ Stair details including dimensions of : rise/run, head room, guards/handrails, baluster space
X			▪ Window and door schedules
X			▪ Foundation plans w/required drainage and damp proofing , if applicable
X			▪ Detail egress requirements and fire separation, if applicable
X			▪ Insulation R-factors of walls, ceilings & floors & U-factors of windows per the IECC 2003
X			▪ Deck construction including: pier layout, framing, fastenings, guards, stair dimensions
X			▪ As of September 16, 2010 all new construction of one and two family homes are required to be sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)
X			▪ Reduced plans or electronic files in pdf format are also required if original plans are larger than 11X17"

**** Reminder: ****

- A CD or PDF of the entire application, including all plans, must be submitted with the application.**
- Separate permits are required for internal and external plumbing, HVAC, and electrical installations.
- Please submit all of the information outlined in this application checklist.
- If the application is incomplete, the application may be refused.
- The Planning and Urban Development Department may request additional information prior to the issuance of a permit.

August 14th, 2012

To Whom it May Concern,

We authorize Mark Mueller of Mark Mueller Architects to act as our Agent to sign permitting applications on our behalf for the property we own at 43 and 45 Cumberland Avenue Apartments Project.

Sincerely,

Mark Smith and Stephanie Dunn

 8/14/2012

 8/14/2012

RIGHT, TITLE, AND INTEREST

The applicant has right, title and interest in the proposed project property. The following documents confirm the applicant's right, title and interests:

1. Deed, dated 3-30-2011 (CCRD book 28616, page 217)
2. Deed of Sale by Personal Representative (Interstate), dated 2-23-2009 (CCRD book 26709, page 303)
3. Warranty Deed, dated 2-24-2009 (CCRD book 26662, page 40)

DEED

KNOW ALL PERSONS BY THESE PRESENTS THAT WE, **MARK L. SMITH** and **STEPHANIE L. DUNN**, both of P.O. Box 575, Kingfield, Maine 04947, for consideration paid, do hereby grant to **MARK L. SMITH and STEPHANIE L. DUNN**, both of P.O. Box 575, Kingfield, Maine 04947, as **joint tenants**, land in Portland, Cumberland County, State of Maine, together with the buildings thereon, bounded and described as follows, to wit:-


43 Cumberland Avenue: Being land and buildings at this address further described in a deed from Eva Nilsen to Mark L. Smith and Stephanie L. Dunn dated February 24, 2009 recorded at Book 2662, Page 40.

45 Cumberland Avenue: Being land and buildings at this address further described in a deed from the Personal Representative of the Estate of Annie Frances Carson to Mark L. Smith dated February 23, 2009 recorded at Book 26709, Page 302.

All Book and Page references are to Cumberland Registry of Deeds.

The purpose of this deed is to consolidate or merge these properties into the same ownership so that both properties are held in the same title, being in joint tenancy between the said Mark L. Smith and Stephanie L. Dunn who are also husband and wife.

Witness our hands and seals this 30th day of March, A.D. 2011.

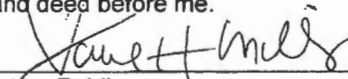

Mark L. Smith


Stephanie L. Dunn

State of Maine
Franklin, SS

March 30, 2011

Personally appeared the above-named Mark L. Smith and Stephanie L. Dunn and acknowledged the foregoing to be their free act and deed before me.


Notary Public

Name:
Comm. Expires



PAUL H. MILLS
Notary Public, State of Maine
My Comm. Expires Nov. 9, 2012

ca.msoffice.winword.deeds.smith.mark.dunn.stephanie.deed

Received
Recorded Register of Deeds
Mar 31, 2011 03:04:01P
Cumberland County
Pamela E. Lovley

**DEED OF SALE BY
PERSONAL REPRESENTATIVE (INTESTATE)
(MAINE STATUTORY SHORT FORM)**

KNOW ALL PERSONS BY THESE PRESENTS, THAT CHARLES CARSON of Belle Fonte, County of Centra, State of Pennsylvania, duly appointed and acting Personal Representative of the Estate of ANNIE FRANCES CARSON, deceased (intestate), as shown by the probate records of Cumberland County (Docket No. 2008-0916), Maine, and having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, by the power conferred by the Probate Code, and every other power, FOR CONSIDERATION PAID, grants to MARK L. SMITH, whose mailing address is P.O. Box 608, New Portland, Maine, 04954, the following described real property located in the City of Portland, the County of Cumberland, and State of Maine.

A certain lot of land, with the buildings thereon, situated in said Portland on the northwesterly side of Cumberland Street and bounded as follows:

Commencing at a stake standing in the northwesterly sideline of said street, and distant one hundred eighty-four (184) feet southwesterly from the westerly corner of North and Cumberland Streets; thence southwesterly by said Cumberland Street, thirty-two and two-thirds (32 2/3) feet to a point; thence northerly on the line of land now or formerly of one Connor, ninety-nine (99) feet to land of Joseph W. Dyer; thence northeasterly by said Dyer's land, eighteen and two-thirds (18 2/3) feet to a stake; thence southeasterly ninety-six (96) feet, more or less, to the bounds begun at on Cumberland Street.

For purposes of reference see deed from Nellie A. Meehan to Francis Jensen, recorded in the Cumberland County Registry of Deeds in Book 1104, Page 50.

For purposes of reference, see deed from Francis Jensen to Charles F. Carson, Jr. and Annie F. Carson dated September 5, 1950 and recorded in the Cumberland County Registry of Deeds at Book 2014, Page 175. Charles F. Carson, Jr. died on April 5, 1986.

MAINE REAL ESTATE TAX PAID

IN WITNESS WHEREOF, CHARLES CARSON, Personal Representative of the Estate of Annie Frances Carson, has executed this instrument this 23 day of February, 2009.

WITNESS

[Handwritten Signature]

Charles V. Carson
Charles Carson, Personal Representative of
the Estate of ANNIE FRANCES CARSON

STATE OF PENNSYLVANIA
County of Centre, SS.

February 23, 2009

Then personally appeared the above named CHARLES CARSON, in his said capacity as Personal Representative for the Estate of Annie Frances Carson, and acknowledged the foregoing instrument to be his free act and deed.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Holly A. Wilson, Notary Public
Bellefonte Boro, Centre County
My Commission Expires Dec. 15, 2012
Member, Pennsylvania Association of Notaries

Before me,

Holly A. Wilson
Notary Public/Attorney at Law
Holly A. Wilson
print name

SEAL

Received
Recorded Register of Deeds
Mar 12, 2009 03:13:37P
Cumberland County
Pamela E. Lovley

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that EVA NILSEN of Cambridge, Massachusetts, for consideration paid, grant to MARK L. SMITH and STEPHANIE L. DUNN whose mailing address is P.O. Box 608, New Portland, Maine 04954, as joint tenants, with WARRANTY COVENANTS, the land in Portland, County of Cumberland and State of Maine, bounded and described as follows:

A certain lot or parcel of land together with the buildings thereon, situated in the City of Portland, County of Cumberland and State of Maine described as follows:

Beginning at the southwesterly corner of a lot of land bonded to William S. Christiansen by Elias Thomas the twenty-second day of January, A.D. 1901 and recorded in the Registry of Deeds for Cumberland County, Book 697, Page 335, and distant from the corner made by the intersection of the southwesterly sideline of North Street and the northwesterly sideline of Cumberland Avenue one hundred forty-two (142') feet; thence southwesterly by said Cumberland Avenue forty-two (42') feet to the division line established between Morse Gould and Horatio N. Jose as per deed dated the eighteenth day of January, A.D. 1865 and recorded in said Registry in Book 331, Page 240 and from these two boundaries extending northwesterly at right angle with said Cumberland Avenue bounded on the northwest by land bonded to said Christiansen on the southwest by said division line established between said Gould and Jose and keeping the width of forty-two (42') feet, ninety (90') feet, more or less to land now or formerly of J.W. Dyer.

Being the same premises conveyed to the Grantor herein by deed from AB NAP, LLC dated September 3, 2002 and recorded in the Cumberland County Registry of Deeds in Book 18044, Page 17.

IN WITNESS WHEREOF, the said Eva Nilsen has set her hand this 24th day of February,

2009.

[Signature]
Witness

[Signature]
Eva Nilsen

STATE OF MAINE
COUNTY OF CUMBERLAND

February 24, 2009

Then personally appeared before me, Eva Nilsen, and acknowledged the foregoing instrument to be her free act and deed.

Before me,

[Signature]
Notary Public

Marjorie Johnston
Printed name of person taking acknowledgment

SEAL

MARJORIE A. JOHNSTON
Notary Public, Maine
My Commission Expires September 30, 2011

Received
Recorded Register of Deeds
Feb 26, 2009 08:34:51A
Cumberland County
Pamela E. Lovley

MAINE REAL ESTATE TAX PAD

WRITTEN ASSESSMENT OF PROPOSED PROJECT'S COMPLIANCE WITH APPLICABLE ZONING REQUIREMENTS

TRANSPORTATION STANDARDS:

1. Impact on surrounding street systems:
 - i. *The provisions for vehicular loading and unloading and parking and for vehicular and pedestrian circulation on the site and onto adjacent public streets and ways;*

The project envisions exceeding the minimum required number of new parking spaces required by the ordinance. The existing site provided 1 non conforming parking space, and the proposed project provides 4 parking spaces. The proposed project does not anticipate having an adverse effect on the existing city sidewalk. The proposed project maintains internal pedestrian ways as well as vehicular access and circulation. The proposed project internal vehicular circulation was analyzed with AutoTURN software, a computer aided traffic design software intended for analyzing the movement of vehicular traffic. The internal circulation is consistent with similar sized developments in the Portland area.

- ii. *And the incremental volume of traffic will not create or aggravate any significant hazard to safety at or to and including intersections in any direction where traffic could be expected to be impacted;*

The proposed project anticipates the overall creation of one additional unit. The project provides additional off-street parking reducing the congestion of on-street parking. Due to the relative insignificant increase in traffic when compared to the surrounding neighborhood, the proposed development does not anticipate creating or aggravating any significant hazard to safety at or to and including intersection in any direction where traffic could be expected to be impacted.

- iii. *and will not cause traffic congestion on any street which reduces the level of service below Level "D" as described in the 1985 Highway Capacity manual published by the Transportation Research Board of the National Research Council, a copy of which manual is on file with the public works authority, or*

substantially increase congestion on any street which is already at a level of service below Level "D":

The proposed project does not anticipate generating enough additional traffic to noticeably affect the level of service on any street immediately surrounding the project.

2. Access and circulation

- i. *The development shall provide safe and reasonable access and internal circulation for the entire site for all users of the site and shall comply with the standards set forth in Sections 1 of the Technical Manual*

The proposed project provides safe and reasonable access and internal circulation for the entire site for all users of the site and complies with the standards set forth in sections 1 of the Technical Manual when applicable.

- ii. *Points of access and egress shall be located to avoid conflicts with existing turning movements and traffic flows.*

The proposed project envisions the continued use of the existing curb cut on Cumberland Avenue. The curb cut is consistent with other curb cuts within the general area. The curb cut is located approximately 220 feet from the nearest intersection (4-way Stop movement).

- iii. *Where drive up features such as gasoline pumps, vacuum cleaners and menu/order boards are permitted, they shall not extend nearer than twenty five (25) feet to the street line. The site must have stacking capacity for vehicles waiting to use these service features without impeding on-site vehicular circulation or creating hazards to vehicular circulation on adjoining streets.*

Not applicable to the proposed project.

3. Parking

- i. Location and Required Number of Vehicle Parking Spaces:

The proposed project envisions the creation of a 4 space parking lot. The existing site included one non-conforming space. The overall project envisions the creation of one new unit. Therefore, the proposed development is required to provide 1 space for the new unit. The proposed project envisions exceeding the required number of parking spaces by more than 10%, however, it does not anticipate exceeding the rate of parking spaces per units recommended by the ordinance. Therefore, by default the number of proposed parking spaces, in excess of the requirement, is appropriate. The parking spaces are anticipated to be no less than 9' wide by 18' long and are accessed by a 12' wide driveway which is greater than the minimum 10' wide driveway required by the Technical Manual.

ii. Location and Required Number of Bicycle Parking Spaces:

The proposed project envisions bicycle parking in the basement of the larger building. At a minimum 2 bicycle parking spaces are anticipated in the basement.

iii. Motorcycle and Scooter Parking:

Motorcycle and scooters shall have access to the proposed project. A motorcycle or scooter can utilize the parking spaces provided.

iv. Snow Storage:

The proposed project envisions the storage of snow to be on the rear of the parcel behind the parking area. The proposed snow storage is located in and around the stormwater depression. The stormwater depression is designed solely for the storage of stormwater. In the unlikely event a 100 year storm impacts the area while significant snow is being stored, the system is anticipated to be functional to the 25 year storm in the event the stormwater depression was to be at a reduced capacity, therefore, the overall proposed stormwater system would not be adversely affected by the storage of snow.

ENVIRONMENTAL QUALITY STANDARDS

4. Preservation of significant natural features:

The applicant is not aware of any significant natural features. The existing project site is fully developed.

5. Landscaping and landscape preservation:

i. Landscape Preservation:

The proposed site is currently developed. Bushy vegetation is located along the rear of the property and is anticipated to remain. The proposed project envision re-utilizing many of the existing site features, such as the curb cut, existing building footprints, and vegetated areas. The parking area was limited in size to allow for functionality and preserve the remaining open space on the site. No sizable trees are anticipated to be removed as a result of this project.

ii. Site Landscaping:

The proposed project envisions the creation of one new residential unit within a multi-family residential property. Therefore, one street tree is required per the Technical Design Standards. One Street Tree has been provided on the Plan within ten feet of the front property line per the Street Tree Waiver requirements of Section-14-526(b)2.b.iii-Street Trees.

6. Water quality, stormwater management and erosion control

Please reference the stormwater plan and an erosion control plan included in this application. The proposed project envisions complying with applicable standards for water quality, stormwater management and erosion control.

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY STANDARDS

7. Consistency with city master plans:

The proposed project appears to be consistent with the city master plans when applicable.

SITE DESIGN STANDARDS:

8. Historic Resources

The proposed project does not appear to be within a historic district. Regarding archaeological sites a letter was obtained from the Maine Historic Preservation Commission stating "there will be no historic properties affected by the proposed undertaking".

9. Exterior Lighting

The proposed project's exterior lighting appears to comply with the requirement of this section.

10. Signage and Wayfinding

There will be no signage or Wayfinding as part of this project, therefore, not applicable.

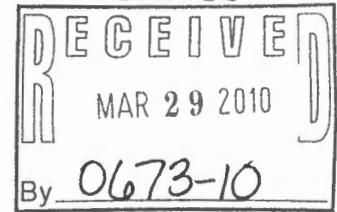
11. Zoning related design standards

The proposed project is within the R6 zone. The project envisions architectural improvements and the rehabilitation of a condemned home. The project does not envision any infill development as part of this project. The project design is consistent with surrounding development.

p: (207) 221-5441
f: (207) 615-0464
149 Hurricane Road
Falmouth, ME 04105
wpbrogan.com

W. P. BROGAN & ASSOCIATES

ENGINEERING AND DESIGN CONSULTANTS



March 26, 2010

Earle G. Shettleworth, Jr.
Maine Historic Preservation Commission
55 Capitol Street, 65 House Station
Augusta, ME 04333-0065

Dear Mr. Shettleworth,

W.P. Brogan & Associates in cooperation with Mark Muller Architects and Anthony Muench Landscape Architect, have been retained by Mark Smith and Stephanie Dunn (the Applicants) to provide design services for a project site located at 43 and 45 Cumberland Avenue in Portland, Maine. Per the requirements of the City's Minor Site Plan application, the applicant is required to provide a narrative describing any unusual natural areas, wildlife and fisheries habitats, or archaeological sites located on or near the project site. Although it appears a review of archaeological sites is only required, I have attached information on all abutting properties that are greater than 50 years old.

Project Description:

The project site consists of two parcels show on the Portland Tax Map 13, Block K, as Lots 61 and 62. The lots are currently developed as a single family home (lot 61) and a 3 unit apartment building (lot 62). The single family home is currently uninhabitable and condemned by the City. The project envisions the demolition of the single family structure to provide necessary space for a 4 space parking lot. The project envisions the creation of a 4th dwelling unit on the fourth floor of the existing 3 unit apartment building. The 4th unit is anticipated to be constructed in existing unused attic space with appropriate architectural improvements (dormers, stair access, etc.) to make the space livable.

Site work anticipated for the site includes the creation of a 4 space parking lot in the approximate location of the proposed demolished single family structure. Impervious area is anticipated to increase by approximately 1,100 square feet. The existing site is developed with building, parking, walkway, and lawn/landscaping area. A parking lot is located to the rear of the project site (north), an apartment building is located to the east of the

project site, and a single family home is located to the west of the project site. Across the street (south) a residence is currently being renovated. Please see attached photographs of all structures.

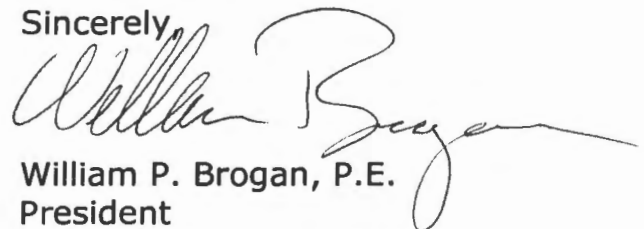
The Project site does not appear to be located in a Historic District per the Historic Districts with Historic Landscapes, Cemeteries & individual Landmarks map provided by the City of Portland.

Attachments:

- Portion of the City of Portland Tax Map with the Project site delineated and keyed photo locations.
- Historic Districts with Historic Landscapes, Cemeteries & Individual Landmarks map
- 8 Survey forms per the submission requirements

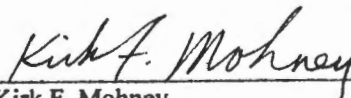
Please do not hesitate to contact me with any questions you may have

Sincerely,



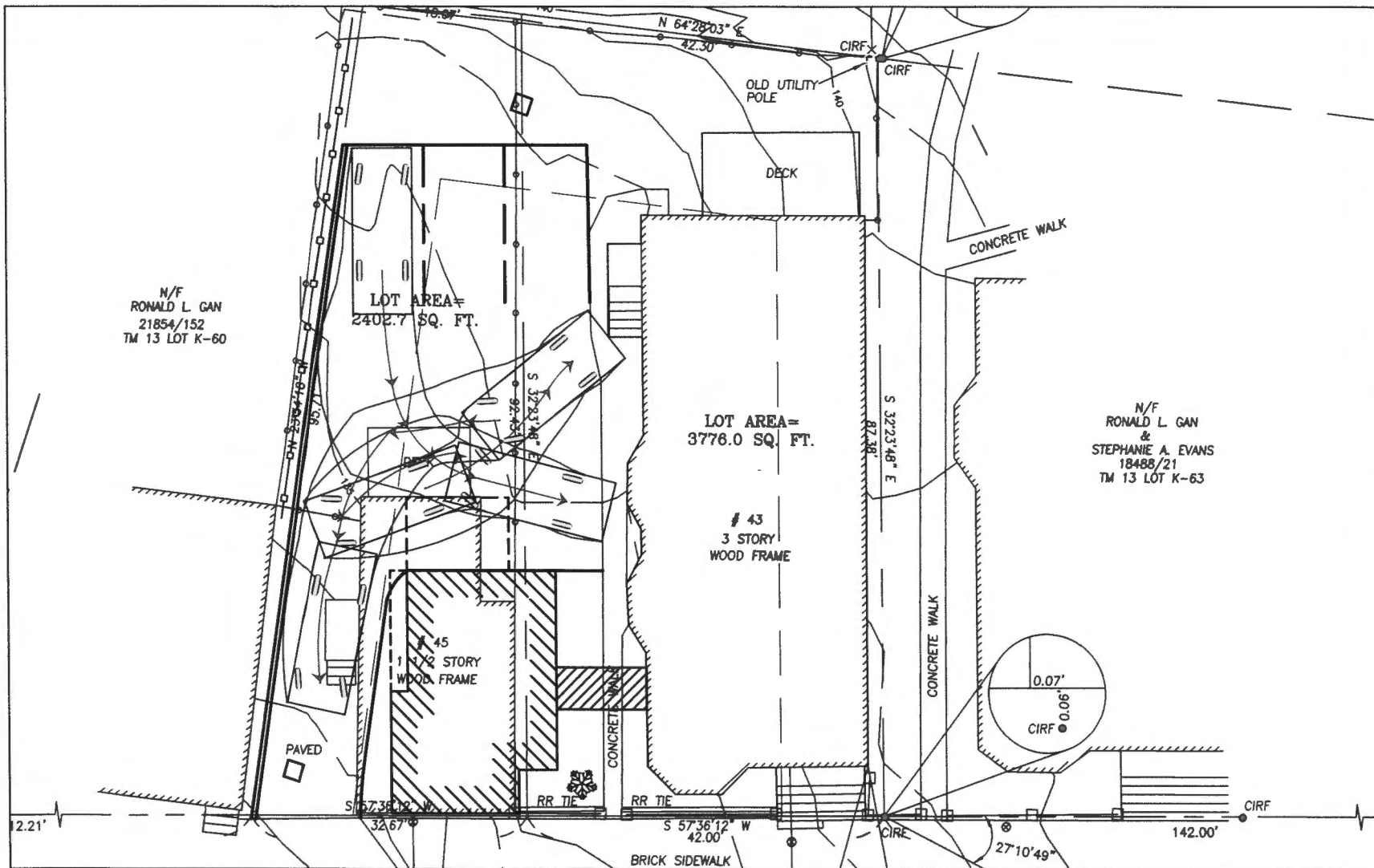
William P. Brogan, P.E.
President
W.P. Brogan & Associates

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.



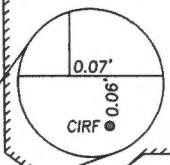
Kirk F. Mohnay,
Deputy State Historic Preservation Officer
Maine Historic Preservation Commission

4/5/10
Date



N/F
RONALD L. GAN
21854/152
TM 13 LOT K-60

N/F
RONALD L. GAN
&
STEPHANIE A. EVANS
18488/21
TM 13 LOT K-63



W. P. BROGAN & ASSOCIATES
ENGINEERING AND DESIGN CONSULTANTS

367 US ROUTE 1
FALMOUTH, ME 04105
P: (207) 221-5441
F: (207) 615-0464
www.wpbrogan.com

43 CUMBERLAND AVE

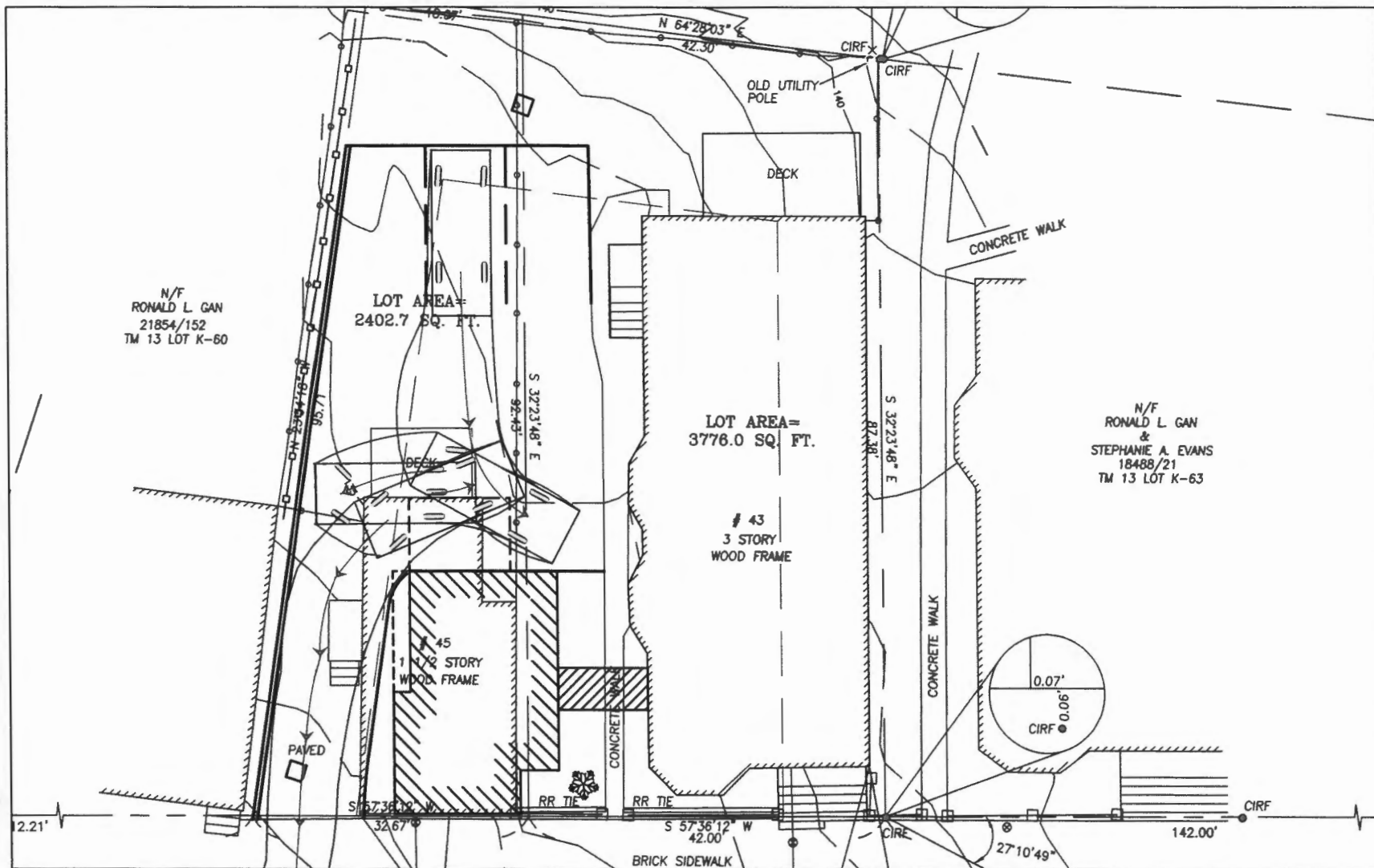
August 13, 2012

REVISIONS

NO.	BY	DATE	DESCRIPTION

Contact: William Brogan, P.E.
 Phone: (207) 221-5441
 Email: bill@wpbrogan.com

SKETCH



W. P. BROGAN & ASSOCIATES
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43 CUMBERLAND AVE

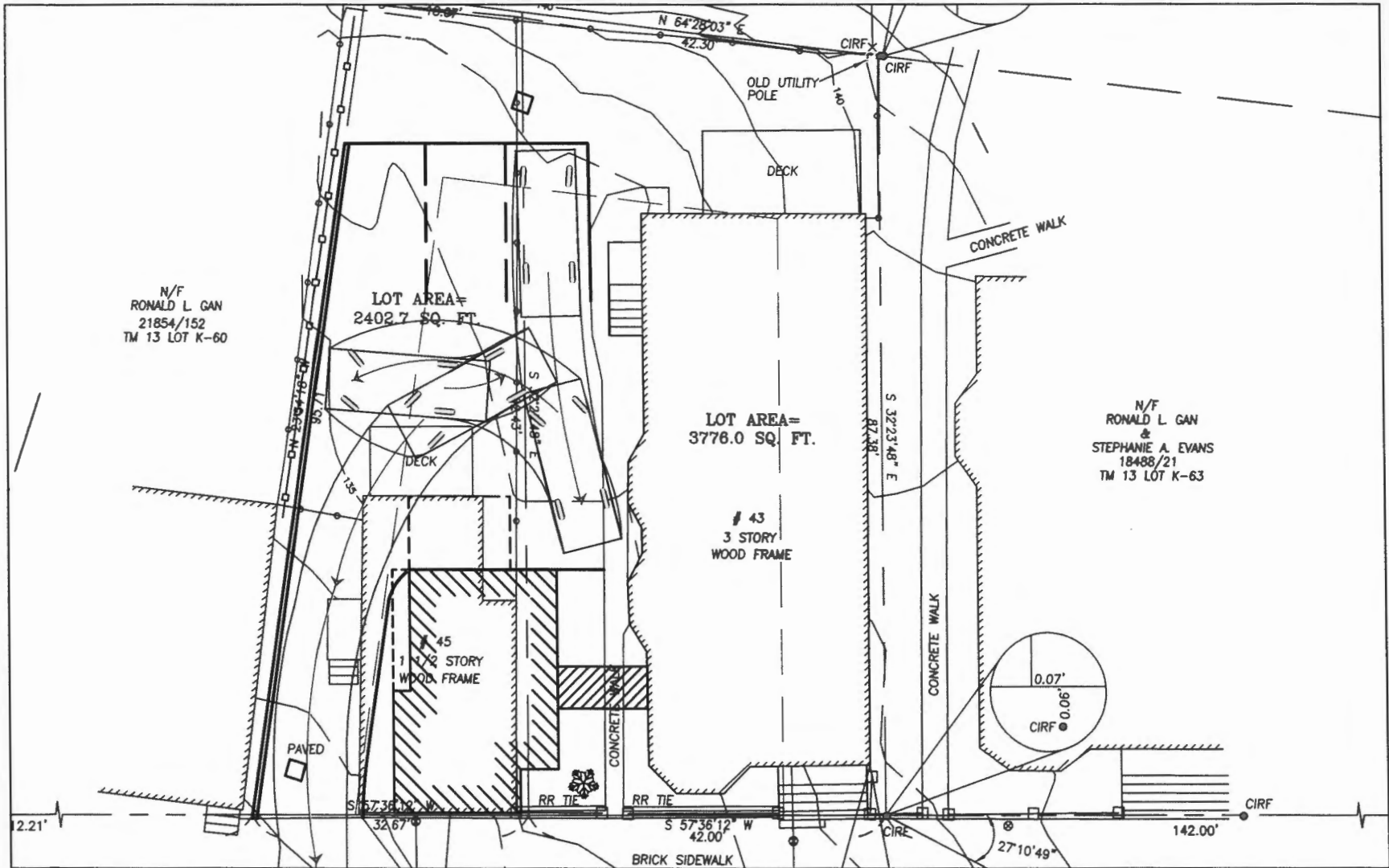
August 13, 2012

REVISIONS

NO.	BY	DATE	DESCRIPTION

Contact: William Brogan, P.E.
Phone: (207) 221-5441
Email: bill@wpbrogan.com

SKETCH



N/F
RONALD L. GAN
21854/152
TM 13 LOT K-60

LOT AREA=
2402.7 SQ. FT.

LOT AREA=
3776.0 SQ. FT.

43
3 STORY
WOOD FRAME

45
1 1/2 STORY
WOOD FRAME

N/F
RONALD L. GAN
&
STEPHANIE A. EVANS
18488/21
TM 13 LOT K-63

W. P. BROGAN & ASSOCIATES
ENGINEERING AND DESIGN CONSULTANTS

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43 CUMBERLAND AVE

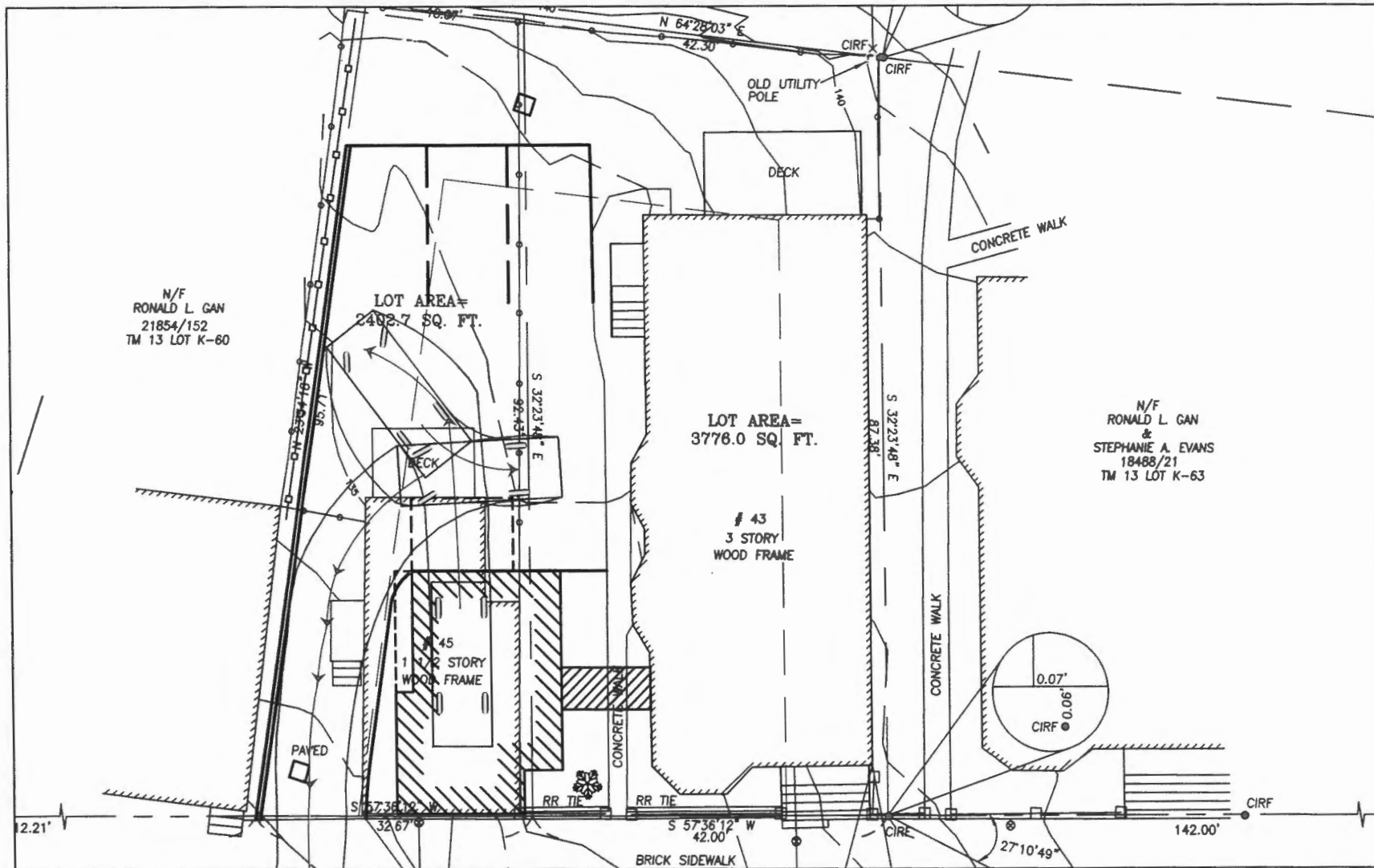
August 13, 2012

REVISIONS

NO.	BY	DATE	DESCRIPTION

Contact: William Brogan, P.E.
Phone: (207) 221-5441
Email: bill@wpbrogan.com

SKETCH



W. P. BROGAN & ASSOCIATES
ENGINEERING AND DESIGN CONSULTANTS

367 US ROUTE 1
FALMOUTH, ME 04105
P: (207) 221-5441
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43 CUMBERLAND AVE

August 13, 2012

REVISIONS

NO.	BY	DATE	DESCRIPTION

Contact: William Brogan, P.E.
Phone: (207) 221-5441
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SKETCH

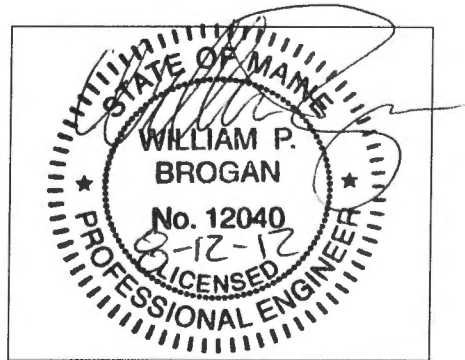
STORMWATER REPORT

Prepared For:

*Mark Smith & Stephanie Dunn
PO Box 608
New Portland, Maine 04954*

Prepared By:

*W.P. Brogan & Associates
149 Hurricane Road
Falmouth, ME 04105*



August 2012



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INTRODUCTION

W.P. Brogan & Associates in cooperation with Mark Mueller Architects and Anthony Muench Landscape Architects, have been retained by Mark Smith and Stephanie Dunn (the Applicants) to provide design services for a project site located at 43 and 45 Cumberland Avenue in Portland, Maine.

The project site consists of two parcels shown on the Portland Tax Map 13, Block K, as Lots 61 and 62. The lots are currently developed as a single family home (lot 61) and a 3 unit apartment building (lot 62). The single family home is currently uninhabitable and condemned by the City. The project envisions the rehabilitation of the single family structure, the creation of a 5th dwelling unit on the fourth floor of the existing 3 unit apartment building, and the creation of a 4 total space parking area. The 5th unit is anticipated to be constructed in existing unused attic space with appropriate architectural improvements (dormers, stair access, etc.) to make the space livable.

PRE-DEVELOPMENT CONDITIONS

The existing property consists of primarily residential development. The site includes 1 single family structure with a footprint of approximately 630 square feet and a 3 unit structure with a footprint of approximately 1,700 square feet. In addition to the single family structure are a driveway, a deck, and entry steps. In addition to the multi family structure is a walkway, a deck, and two entry steps. The existing coverage is described in table 1 below:

Table 1 - Pre-Development Coverage			
Lot #	Impervious Area (sf)	Pervious Area (sf)	Total Area (sf)
61	1,080	1,323	2,403
62	2,245	1,531	3,776
Total:	3,325	2,854	6,179

The stormwater collection system in the area consists of a combined storm-sewer main in Cumberland Avenue. The combined system includes a 12 inch vitrified clay main at the project site frontage. A catch basin is located down grade at the intersection of Cumberland Avenue and Sheridan Street. A site visit concluded that stormwater on site is ultimately tributary to the combined system in Cumberland Avenue. A portion of stormwater is



infiltrated into the ground due to favorable soil conditions for infiltration. Roof drains were noticed on the multi family structure which is assumed to be tributary to the combined storm-sewer system through the sanitary service lateral.

Offsite stormwater that flows onto the site consists of predominately developed area to the northwest of the site (behind the development). The area consists of residential development, access drives, and a parking lot. The access drive and parking lot consists of gravel surfaces. A site visit indicated areas of limited pooling at the lowest point of the parking area directly before stormwater drains on to the project site.

POST-DEVELOPMENT CONDITIONS

The post-development conditions consists of the continued use of the multi family structure (with roof improvements, and no change in foot print), the rehabilitation of the single family structure to include 1 internal parking space, and the construction of a 3 space parking lot with access drive. The project envisions the installation of a subsurface detention/infiltration pipe and trench located in the parking and drive area. The detention/infiltration pipe and trench consists of a 15 inch diameter perforated pipe and a crushed stone matrix to form a detention area and utilizes existing onsite soils to promote infiltration.

An infiltration depression is proposed to the northwest side of the parking area, where stormwater from off site is proposed to enter. The depression is designed to help slow stormwater flow to settle out particulates and promote infiltration. For larger storm events, stormwater volumes that exceed the infiltration depression volume shall continue into the stone parking surface and will infiltrate and/or trickle down to the lower catch basin located at the entrance of the proposed parking area.

On site coverage includes the multi family structure, the proposed rehabilitated single family structure, and parking and walkways totaling approximately 4,688 square feet. The parking and walkway areas are anticipated to be 4" depth of ¾" crushed stone. The stone area is considered impervious for the purposed of this permit application. Table 2 below provides the anticipated post-development coverage for the proposed development.

Table 2 - Post-Development Coverage			
Lot #	Impervious Area (sf)	Pervious Area (sf)	Total Area (sf)
61 & 62	4,688	1,491	6,179

The proposed development anticipates infiltrating stormwater for the 2, 10, 25 and 100 year storms. Included in the infiltration process is offsite stormwater entering the site from the rear property line. The proposed infiltration system anticipates a greater volume of stormwater generated from offsite areas than onsite areas. It is anticipated storms intensities that exceed the 100 year storm event may overflow the parking area and ultimately enter the combined storm-sewer system similarly to the existing conditions.

The Proposed development anticipates an increase in impervious area of approximately 1,363 square feet as shown in table 3. The increase in impervious surface is anticipated to be mitigated by the use of infiltration, a technique approved by the Maine Department of Environmental Protection, Best Management Practice for stormwater quantity and quality control.

Table 3 - Change in Development Coverage			
Lot #	Impervious Area (sf)	Pervious Area (sf)	Total Area (sf)
61 & 62	1,363	-1,363	0

SOILS

Soils on the site are based upon the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. The area of the development is mapped with soils as shown in the table below. The SCS mapping for this project is shown in the plan set on sheet C1 – Site, Grading and Utility plan. The project site and offsite areas consists of Hinckley soils (Hydrologic Soil Group - A).

BEST MANAGEMENT PRACTICES

The selection of BMP's to meet water quality objectives are focused on achieving four major goals: effective pollutant removal, cooling, channel protection, and flood control. The Maine Department of Environmental Protection (MDEP) has simplified the process of selecting BMP's for a project

by providing four BMP's intended for pollutant removal, cooling, and channel protection. The four BMP's are:

- Wet Ponds
- Buffers
- Infiltration BMP's
- Filtration BMP's

To better clarify each BMP, a description for each BMP has been included below:

WET PONDS: Wet ponds are stormwater detention impoundments that have a permanent pool of water and have the capacity to temporarily store stormwater runoff while it is released at a controlled rate. They can be designed to provide flood control as well as water quality treatment. Properly sized and maintained wet ponds can achieve high rates of removal for a number of urban pollutants, including sediment and the pollutants associated with sediment, such as trace metals, hydrocarbons, BOD, nutrients, and pesticides. They also provide some treatment of dissolved nutrients, through biological processes within the pond. The addition of an underdrained gravel trench in the bench area around the permanent pool allows for slow, extended release of stormwater without risk of blockage and effective cooling avoiding thermal impacts. The underdrained gravel trench outlet is required when used to meet the BMP standards discharging to a stream, river or brook. The designer should refer to the referenced material for a more extensive discussion of removal efficiencies and how they compare with other BMP's.

VEGETATED BUFFERS: Buffer strips are natural, undisturbed strips of natural vegetation or planted strips of close-growing vegetation adjacent to and down slope of developed areas. As stormwater runoff travels over the buffer area, vegetation slows the runoff and traps particulate pollutants. They are also effective for phosphorus removal when designed in accordance with the manual. The effectiveness of buffers for pollutant removal depends on the flow path length and slope of the buffer berm length, the soil permeability, the size of drainage area, and the type and density of vegetation. Also critical to the performance of the buffer strips is the distribution of water flowing over it. If water is allowed to concentrate because of poor grading or uneven runoff distribution, the buffer will be short-circuited and have only minimal benefit. The irregular micro topography of undisturbed buffers provides small areas within which runoff can pool, encouraging infiltration and reducing the amount of runoff. Buffers are used to treat runoff from relatively small amounts of impervious area, as typically found in residential developments and small commercial and



industrial sites. This type of BMP requires minimal maintenance and provides an aesthetically pleasing area.

INFILTRATION BMP'S: Infiltration measures control stormwater quantity and quality, by retaining all or part of runoff onsite and discharging it into the ground. Infiltration is designed to occur at the surface, or in subsurface systems. The basic function of an infiltration system is to remove a portion of runoff from the total runoff volume of the site and treatment comes about through absorption, straining, microbial decomposition in the soil and trapping of particulate matter within pretreatment areas. Pretreatment to remove sediments grease and oils is required prior to discharge to the infiltration measure. Possible pretreatment measures include filter strips, swales with check dams, sand filters, sediment traps, grease and oil traps, and sediment basins.

FILTRATION BMP'S: Filtration BMP's, particularly organic soil filter medias, have shown to be very effective at removing a wide range of pollutants from stormwater runoff. They can be constructed in combination with infiltration practices, or with an underdrain filter, where infiltrations not feasible. Soil filters can be designed and constructed using common materials.

STORMWATER MODELING

Stormwater Modeling has been performed utilizing HydroCAD 8.50 computer based stormwater modeling software. The model assumed a type III – 24 hour storm event. Due to the small size of the development, and the intended use of infiltration, the site was modeled for post-development conditions only. Furthermore, the model indicates no discharge into the city storm-sewer system for the 2, 10, 25 and 100 year storm events. By inspection, this is anticipated to be a reduction in stormwater quantity entering the city's combined system. A HydroCAD report modeling the anticipated stormwater system can be found in Attachment 1.

INFILTRATION SIZING

INFILTRATION RATE

Infiltration rates are based upon the Maine Department of Environmental Protection's publication "Maine Erosion and Sediment Control BMP's", Appendix B – Maine Hydrogeologic Soil Groups. The publication indicates the inflow rate for Hinckley soils is 1.00 cubic feet per second per 1,000 square feet of infiltration area. To be conservative, the infiltration area assumes that only the bottom of basins and depressions infiltrate (does not include vertical sides and side slopes).

INFILTRATION DEPRESSION

The project envisions the construction of 1 infiltration depression at the northwest corner of the parking lot. The infiltration depression primarily infiltrates stormwater flow generated from offsite areas. The infiltration depression performs as a preliminary area for stormwater infiltration prior to entering the subsurface system. The intention of the infiltration depression is to reduce stormwater quantity prior to entering the subsurface detention/infiltration trench. Therefore, the infiltration depression reduces the required size of the subsurface infiltration basin while utilizing onsite topography and features to responsibly mitigate offsite stormwater impacts on the site and city infrastructure. The capacity of the infiltration depression is shown in the HydroCAD report in attachment 1 and is summarized in Table 5.

Table 5 - Infiltration Depression Performance			
BMP	Infiltration Area (SF)	Storage Volume (CF)	Discharge Rate (CFS)
Infiltration Depression	315	417	0.24



SUBSURFACE DETENTION/INFILTRATION BASIN

The project envisions the construction of a subsurface detention/infiltration pipe and trench located below the proposed parking area. The subsurface detention/infiltration pipe and trench includes a matrix of crushed stone (assumed 40% porosity) to provide storage and conveyance to maximize infiltration footprint.

The subsurface detention/infiltration system is a dynamic system when determining the size. The infiltration system infiltrates at a rate of 0.36 cubic feet per second when stormwater exists in the system. Based on a type III – 24 hour storm event for Cumberland County, the system was sized to store and infiltrate stormwater for the 2, 10, 25, and 100 year storm events using HydroCAD modeling software. Unreasonable designed storm events (500+ year) or uncommon intensities (multiple inches of rainfall in a short time span) are anticipated to spill over the driveway entrance and into the Cumberland Avenue cutter line.

The capacity of the subsurface detention/infiltration basin is shown in the HydroCAD report found in Attachment 1 of this report. Table 6 below summarizes the anticipated capacity of the subsurface infiltration basin.

Table 6 - Subsurface Infiltration Pipe Performance			
BMP	Infiltration Area (SF)	Storage Volume (CF)	Discharge Rate (CFS)
Subsurface Infiltration Pipe	400	637	0.40

STORMWATER SYSTEM PERFORMANCE

SUBCATCHMENTS

The proposed stormwater system has been modeled in HydroCAD for the post-development conditions. The proposed development has



been evaluated in two subcatchments as shown on sheet C3 of the plan set. Below is a description of each subcatchment:

Subcatchment 1S: Subcatchment 1S includes predominately offsite areas tributary to the project site. Included in this area are an offsite parking lot, offsite buildings, offsite driveways, and a portion of onsite landscaped area. The time of concentration paths, assumptions, and times are indicated on Sheet C3 of the plan set.

Subcatchment 3S: Subcatchment 3S includes the onsite parking area, the tributary portions of the onsite structure roofs, and remaining tributary landscaped area. Please note portions of the roof have not been included in this model. These areas are anticipated to have no change between pre development and post development and are not tributary to the proposed stormwater system. The time of concentration paths, assumptions, and times are indicated on Sheet C3 of the plan set.

"POND" PERFORMANCE

HydroCAD models and/or refers to BMP devices as "ponds". W.P. Brogan & Associates refers to the proposed BMP's as basins or depressions. The HydroCAD report prepared for this application models the proposed infiltration depression as pond 2P, and models the subsurface detention/infiltration basin as pond 4P. The results of the HydroCAD model can be found in Attachment 1. A summary of the infiltration depression (Pond 2P) performance for the 2, 10, 25, and 100 year storm events is shown in Table 7 below.

Table 7 - Pond 2P (Infiltration Depression) Performance 2, 10, 25, 100 Year Storms					
	Max Elevation (ft)	Storage (CF)	Inflow (CFS)	Infiltration Flow (CFS)	Non Infiltration Flow (CFS)
2 Year	136.48	58	0.42	0.24	0.00
10 Year	136.70	123	0.96	0.24	0.71
25 Year	136.72	130	1.24	0.24	0.98
100 Year	136.75	139	1.66	0.24	1.41



A summary of the subsurface detention/infiltration basin (Pond 4P) performance for the 2, 10, 25, and 100 year storm event is shown in Table 8 below.

Table 8 - Pond 4P (Subsurface Infiltration Pipe) Performance 2, 10, 25, 100 Year Storms					
	Max Elevation (ft)	Storage (CF)	Inflow (CFS)	Infiltration Flow (CFS)	Non Infiltration Flow (CFS)
2 Year	127.50	0	0.01	0.01	0
10 Year	128.19	110	0.81	0.40	0
25 Year	129.07	279	1.14	0.40	0
100 Year	130.95	621	1.65	0.40	0

Please note the non-infiltration flow for the infiltration depression in Table 7 are tributary to the subsurface detention/infiltration pipe and trench in Table 8. Table 8 indicates the subsurface detention/infiltration basin has a non-infiltration flow rate of 0.0 cfs for the 2, 10, 25 and 100 year storm events. Therefore, the overall system is anticipated to have 0.0 cfs of discharge into the city combined system for the 2, 10, 25 and 100 year storm events for the areas of the project identified in this model.

CONCLUSION

The proposed stormwater system is anticipated to provide infiltration to reduce stormwater quantity and provide stormwater quality. W.P. Brogan & Associates does not anticipate the proposed system to have an adverse impact on the surrounding development or the city infrastructure.

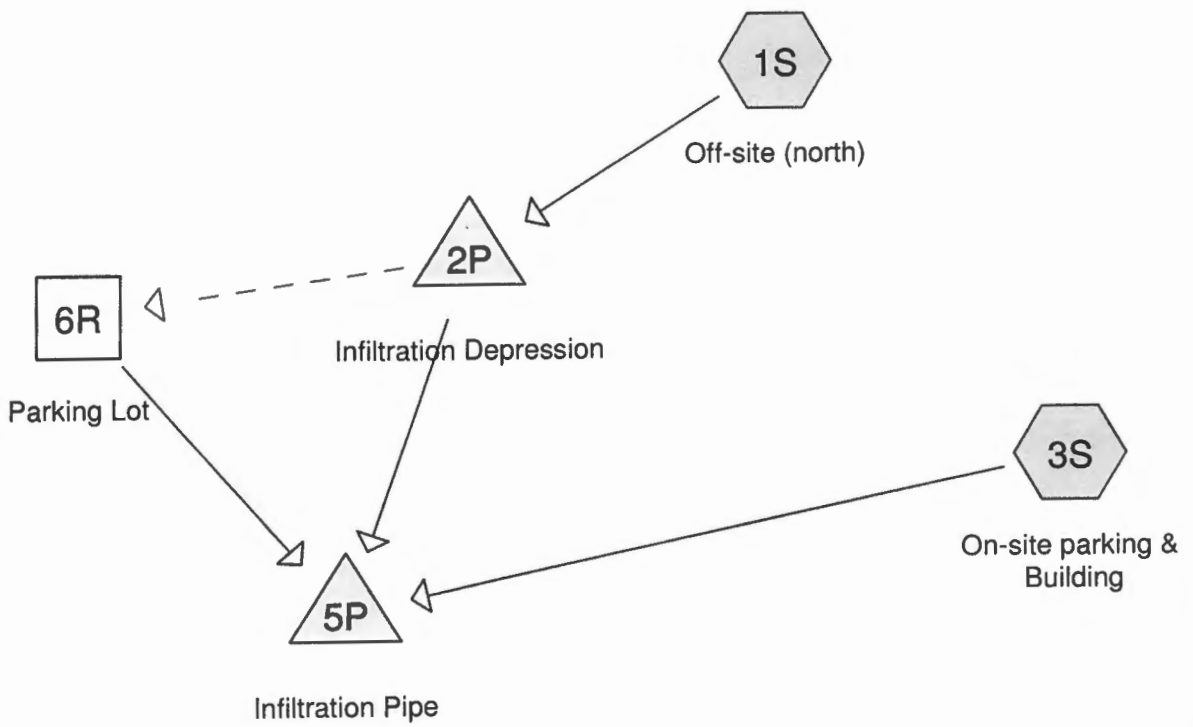
Reference Material: Project plan set sheets: C1, C2, C3

Attachments:

- Attachment 1 – HydroCAD Report
- Attachment 2 – Stormwater Maintenance Plan



ATTACHMENT 1 - HYDROCAD REPORT



Drainage Diagram for 43 Cumberland Ave_may11
 Prepared by W.P. Brogan & Associates, Printed 8/12/2012
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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.106	39	>75% Grass cover, Good, HSG A (1S)
0.058	39	Stone Surface with Hinkley Soil plus Vegetated Area (3S)
0.190	98	Paved parking & roofs (1S)
0.028	98	Sidewalk and Roofs (3S)
0.382		TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.106	HSG A	1S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.276	Other	1S, 3S
0.382		TOTAL AREA

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Type III 24-hr 2yr Rainfall=3.00"

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Time span=0.00-37.00 hrs, dt=0.01 hrs, 3701 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Off-site (north) Runoff Area=12,898 sf 64.07% Impervious Runoff Depth=1.07"
Flow Length=213' Tc=1.6 min CN=77 Runoff=0.42 cfs 0.026 af

Subcatchment 3S: On-site parking & Runoff Area=3,756 sf 32.29% Impervious Runoff Depth=0.27"
Flow Length=76' Slope=0.0600 '/' Tc=0.6 min CN=58 Runoff=0.01 cfs 0.002 af

Reach 6R: Parking Lot Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=20.0' S=0.1250 '/' Capacity=6.57 cfs Outflow=0.00 cfs 0.000 af

Pond 2P: Infiltration Depression Peak Elev=136.48' Storage=58 cf Inflow=0.42 cfs 0.026 af
Discarded=0.24 cfs 0.026 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.026 af

Pond 5P: Infiltration Pipe Peak Elev=127.50' Storage=0 cf Inflow=0.01 cfs 0.002 af
Discarded=0.01 cfs 0.002 af Secondary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.002 af

Total Runoff Area = 0.382 ac Runoff Volume = 0.028 af Average Runoff Depth = 0.89"
43.09% Pervious = 0.165 ac 56.91% Impervious = 0.218 ac

43 Cumberland Ave_may11

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Type III 24-hr 2yr Rainfall=3.00"

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Summary for Subcatchment 1S: Off-site (north)

Runoff = 0.42 cfs @ 12.03 hrs, Volume= 0.026 af, Depth= 1.07"

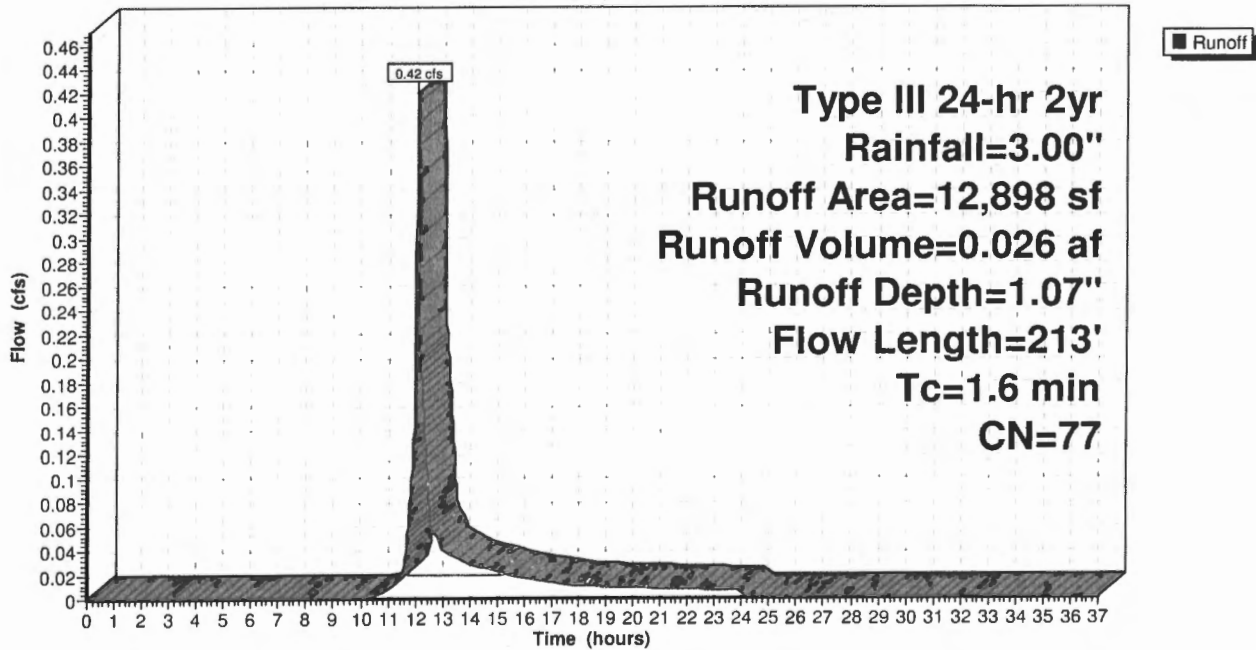
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2yr Rainfall=3.00"

Area (sf)	CN	Description
4,634	39	>75% Grass cover, Good, HSG A
8,264	98	Paved parking & roofs
12,898	77	Weighted Average
4,634		Pervious Area
8,264		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	50	0.0300	1.36		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.00"
0.9	143	0.0300	2.79		Shallow Concentrated Flow, shallow concentrated flow Unpaved Kv= 16.1 fps
0.1	20	0.1400	2.62		Shallow Concentrated Flow, Shallow Concentrated Flow Short Grass Pasture Kv= 7.0 fps
1.6	213	Total			

Subcatchment 1S: Off-site (north)

Hydrograph



Summary for Subcatchment 3S: On-site parking & Building

Runoff = 0.01 cfs @ 12.07 hrs, Volume= 0.002 af, Depth= 0.27"

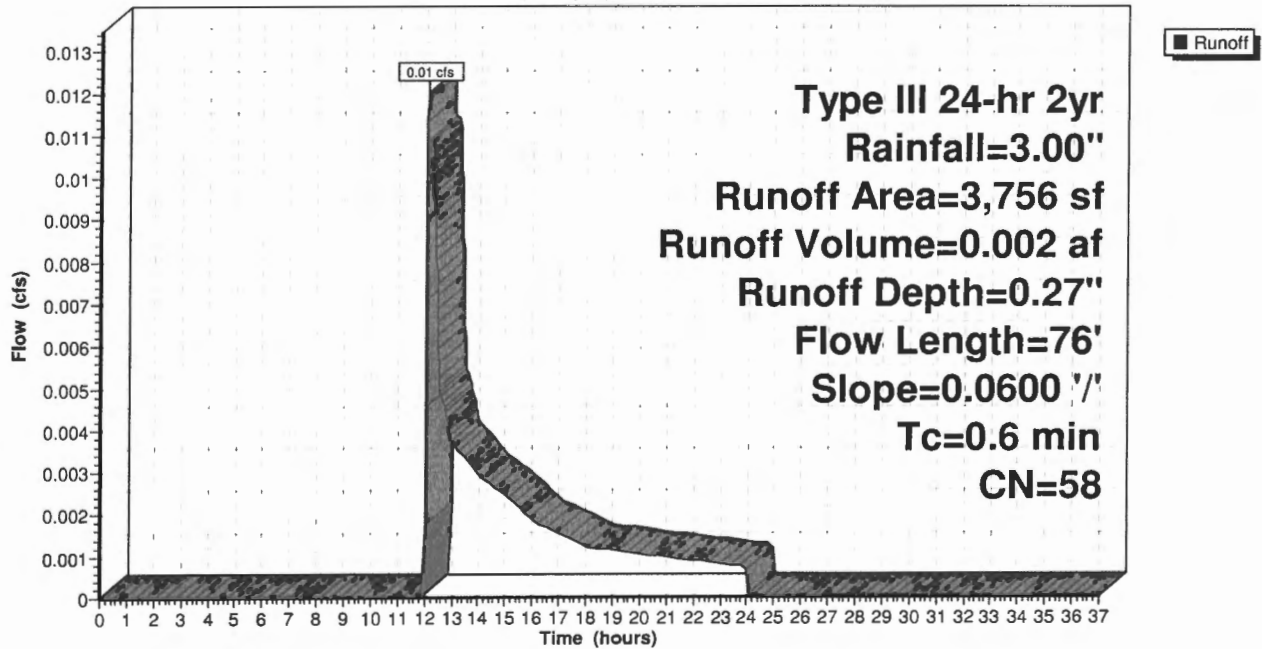
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (sf)	CN	Description
*	2,543	39	Stone Surface with Hinkley Soil plus Vegetated Area
*	1,213	98	Sidewalk and Roofs
	3,756	58	Weighted Average
	2,543		Pervious Area
	1,213		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	76	0.0600	1.96		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 3S: On-site parking & Building

Hydrograph



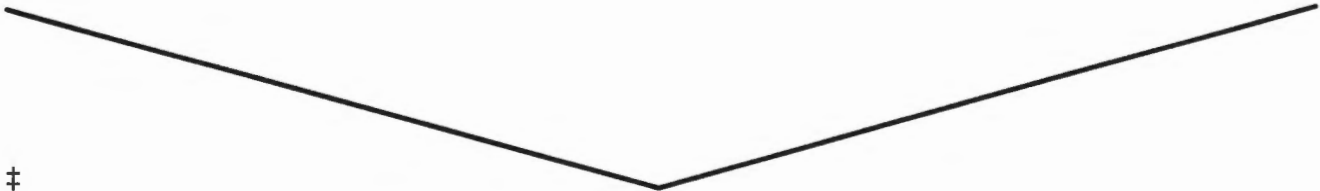
Summary for Reach 6R: Parking Lot

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.25', Capacity at Bank-Full= 6.57 cfs

Custom cross-section, Length= 20.0' Slope= 0.1250 '/'
 Constant n= 0.050 Stone, clean & dense
 Inlet Invert= 135.00', Outlet Invert= 132.50'

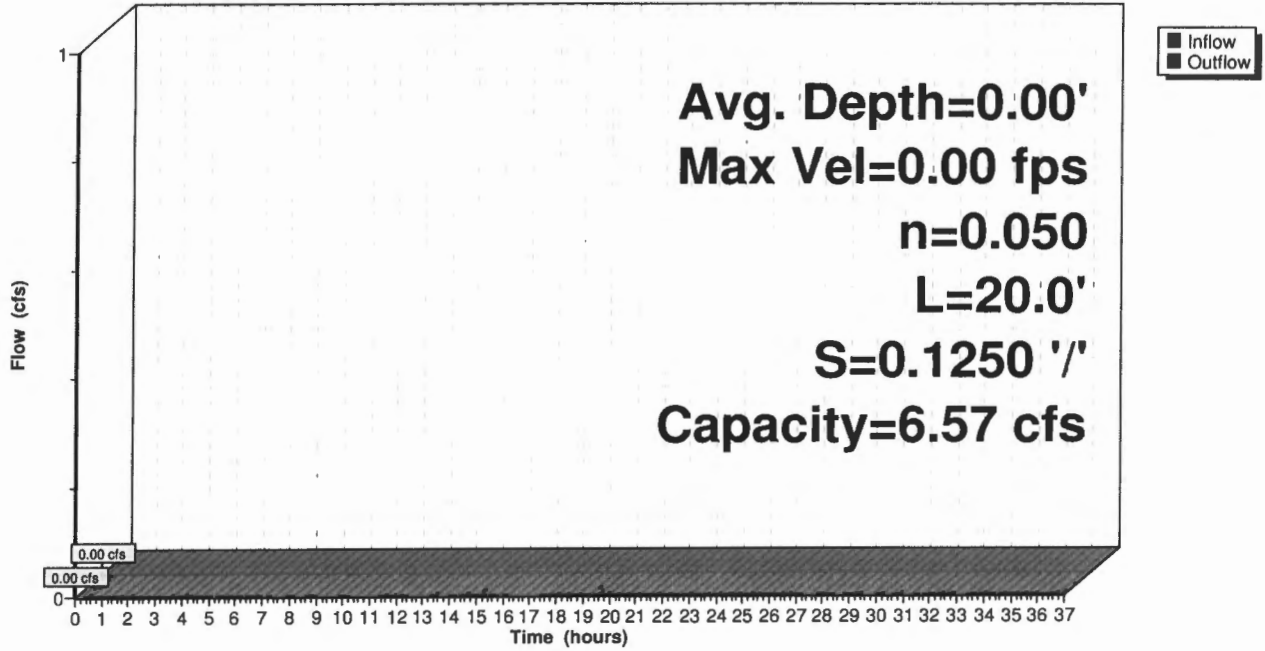


Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	135.25	0.00
10.00	135.00	0.25
20.00	135.25	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
0.25	2.5	20.0	50	6.57

Reach 6R: Parking Lot

Hydrograph



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Type III 24-hr 2yr Rainfall=3.00"

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Summary for Pond 2P: Infiltration Depression

Inflow Area = 0.296 ac, 64.07% Impervious, Inflow Depth = 1.07" for 2yr event
 Inflow = 0.42 cfs @ 12.03 hrs, Volume= 0.026 af
 Outflow = 0.24 cfs @ 11.97 hrs, Volume= 0.026 af, Atten= 43%, Lag= 0.0 min
 Discarded = 0.24 cfs @ 11.97 hrs, Volume= 0.026 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Peak Elev= 136.48' @ 12.11 hrs Surf.Area= 273 sf Storage= 58 cf

Plug-Flow detention time= 0.8 min calculated for 0.026 af (100% of inflow)
 Center-of-Mass det. time= 0.8 min (852.9 - 852.0)

Volume	Invert	Avail.Storage	Storage Description
#1	136.25'	417 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.25	239	0	0
136.75	315	139	139
137.53	400	279	417

Device	Routing	Invert	Outlet Devices
#1	Discarded	136.25'	0.24 cfs Exfiltration at all elevations
#2	Secondary	136.75'	3.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Primary	136.61'	2.00' x 2.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

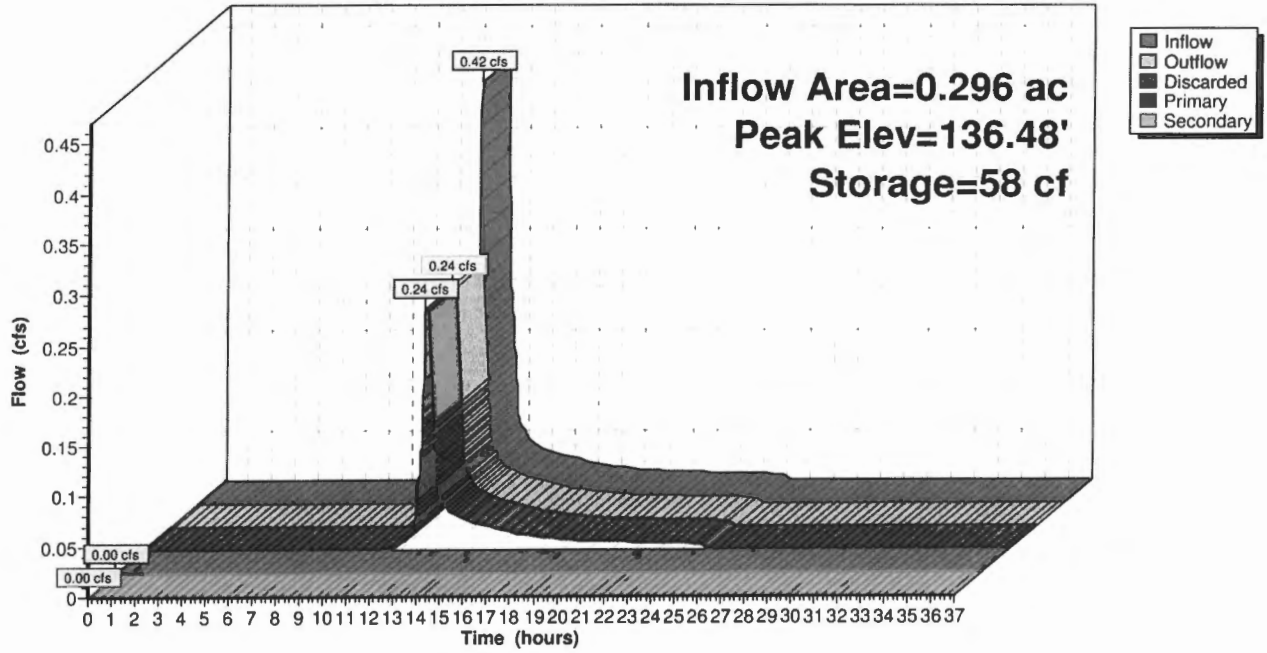
Discarded OutFlow Max=0.24 cfs @ 11.97 hrs HW=136.26' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=136.25' (Free Discharge)
 ↳3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=136.25' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 2P: Infiltration Depression

Hydrograph



Summary for Pond 5P: Infiltration Pipe

Inflow Area = 0.382 ac, 56.91% Impervious, Inflow Depth = 0.06" for 2yr event
 Inflow = 0.01 cfs @ 12.07 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.08 hrs, Volume= 0.002 af, Atten= 1%, Lag= 0.4 min
 Discarded = 0.01 cfs @ 12.08 hrs, Volume= 0.002 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Peak Elev= 127.50' @ 12.08 hrs Surf.Area= 400 sf Storage= 0 cf

Plug-Flow detention time= 0.4 min calculated for 0.002 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (939.4 - 939.0)

Volume	Invert	Avail.Storage	Storage Description
#1	127.50'	521 cf	5.00'W x 80.00'L x 3.50'H Stone Trench 1,400 cf Overall - 98 cf Embedded = 1,302 cf x 40.0% Voids
#2	128.50'	98 cf	15.0"D x 80.00'L 15" Pipe Inside #1
#3	128.50'	18 cf	2.00'W x 2.00'L x 4.50'H Catch Basin
		637 cf	Total Available Storage

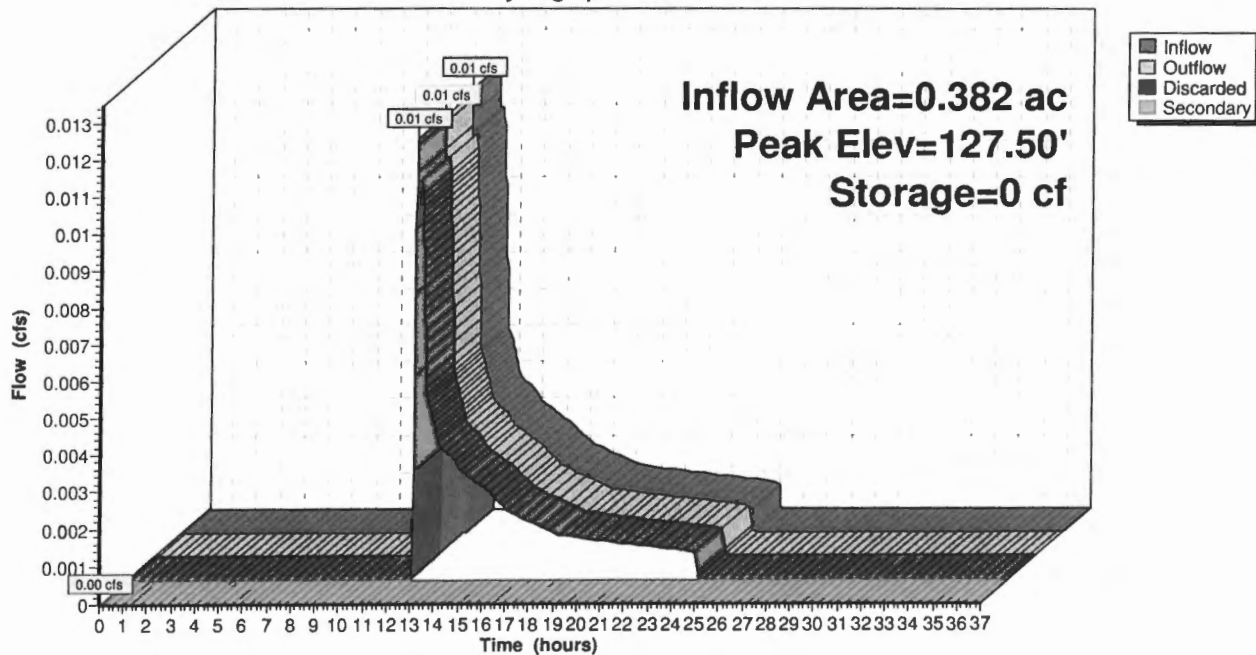
Device	Routing	Invert	Outlet Devices
#1	Discarded	127.50'	0.40 cfs Exfiltration at all elevations
#2	Secondary	132.50'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.40 cfs @ 12.08 hrs HW=127.50' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.40 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=127.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 5P: Infiltration Pipe

Hydrograph



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Type III 24-hr 10yr Rainfall=4.70"

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Time span=0.00-37.00 hrs, dt=0.01 hrs, 3701 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Off-site (north) Runoff Area=12,898 sf 64.07% Impervious Runoff Depth=2.37"
Flow Length=213' Tc=1.6 min CN=77 Runoff=0.96 cfs 0.059 af

Subcatchment 3S: On-site parking & Runoff Area=3,756 sf 32.29% Impervious Runoff Depth=1.01"
Flow Length=76' Slope=0.0600 '/' Tc=0.6 min CN=58 Runoff=0.10 cfs 0.007 af

Reach 6R: Parking Lot Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=20.0' S=0.1250 '/' Capacity=6.57 cfs Outflow=0.00 cfs 0.000 af

Pond 2P: Infiltration Depression Peak Elev=136.70' Storage=123 cf Inflow=0.96 cfs 0.059 af
Discarded=0.24 cfs 0.050 af Primary=0.71 cfs 0.008 af Secondary=0.00 cfs 0.000 af Outflow=0.95 cfs 0.059 af

Pond 5P: Infiltration Pipe Peak Elev=128.19' Storage=110 cf Inflow=0.81 cfs 0.016 af
Discarded=0.40 cfs 0.016 af Secondary=0.00 cfs 0.000 af Outflow=0.40 cfs 0.016 af

Total Runoff Area = 0.382 ac Runoff Volume = 0.066 af Average Runoff Depth = 2.07"
43.09% Pervious = 0.165 ac 56.91% Impervious = 0.218 ac

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Type III 24-hr 10yr Rainfall=4.70"

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Summary for Subcatchment 1S: Off-site (north)

Runoff = 0.96 cfs @ 12.03 hrs, Volume= 0.059 af, Depth= 2.37"

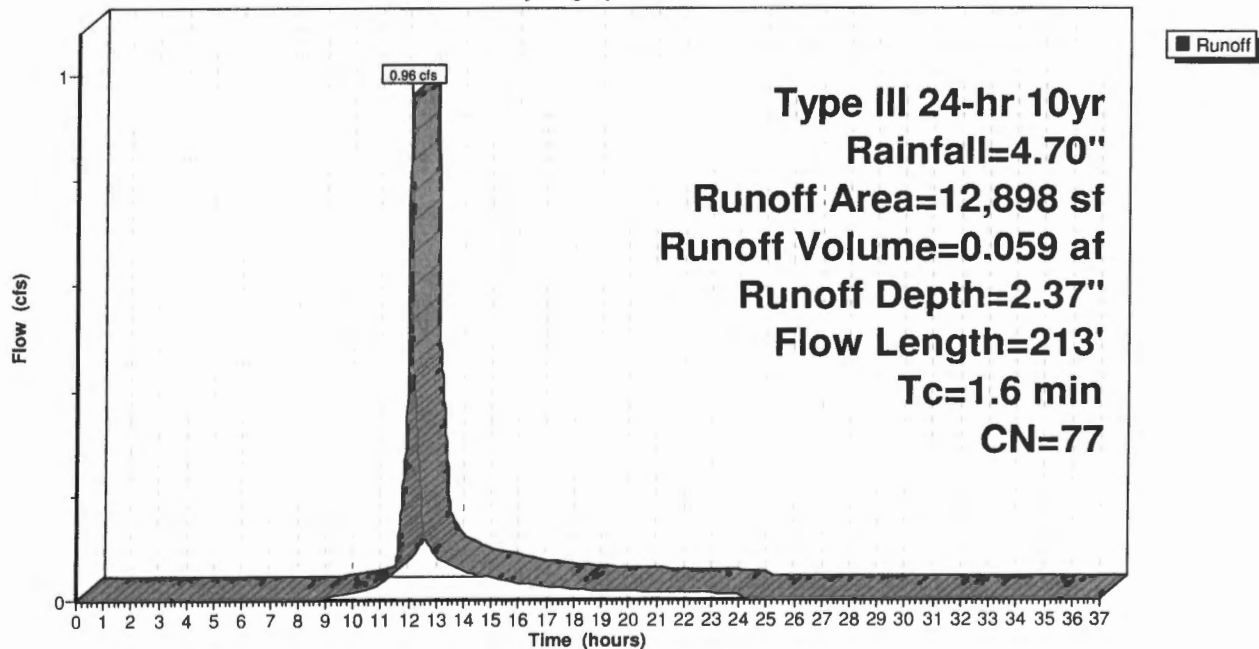
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
4,634	39	>75% Grass cover, Good, HSG A
8,264	98	Paved parking & roofs
12,898	77	Weighted Average
4,634		Pervious Area
8,264		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	50	0.0300	1.36		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.00"
0.9	143	0.0300	2.79		Shallow Concentrated Flow, shallow concentrated flow Unpaved Kv= 16.1 fps
0.1	20	0.1400	2.62		Shallow Concentrated Flow, Shallow Concentrated Flow Short Grass Pasture Kv= 7.0 fps
1.6	213	Total			

Subcatchment 1S: Off-site (north)

Hydrograph



Summary for Subcatchment 3S: On-site parking & Building

Runoff = 0.10 cfs @ 12.02 hrs, Volume= 0.007 af, Depth= 1.01"

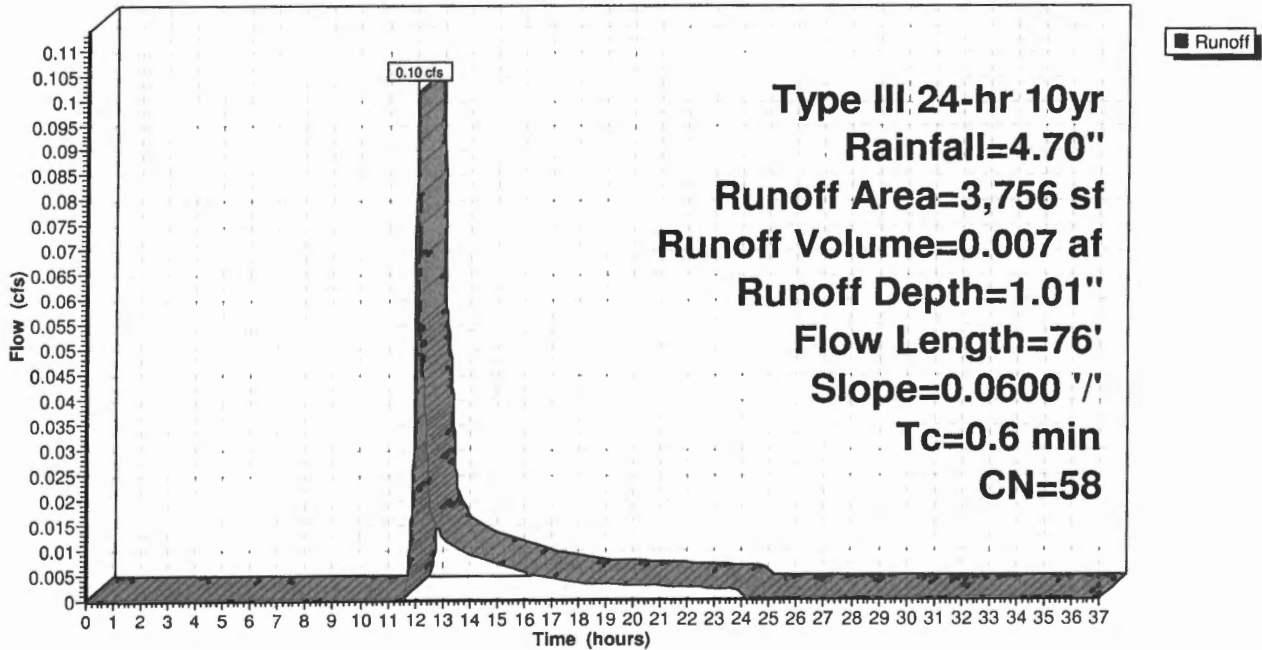
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10yr Rainfall=4.70"

Area (sf)	CN	Description
* 2,543	39	Stone Surface with Hinkley Soil plus Vegetated Area
* 1,213	98	Sidewalk and Roofs
3,756	58	Weighted Average
2,543		Pervious Area
1,213		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	76	0.0600	1.96		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 3S: On-site parking & Building

Hydrograph



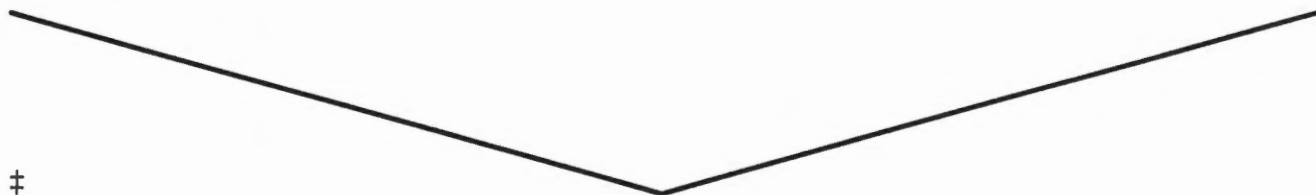
Summary for Reach 6R: Parking Lot

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.25', Capacity at Bank-Full= 6.57 cfs

Custom cross-section, Length= 20.0' Slope= 0.1250 '/'
 Constant n= 0.050 Stone, clean & dense
 Inlet Invert= 135.00', Outlet Invert= 132.50'



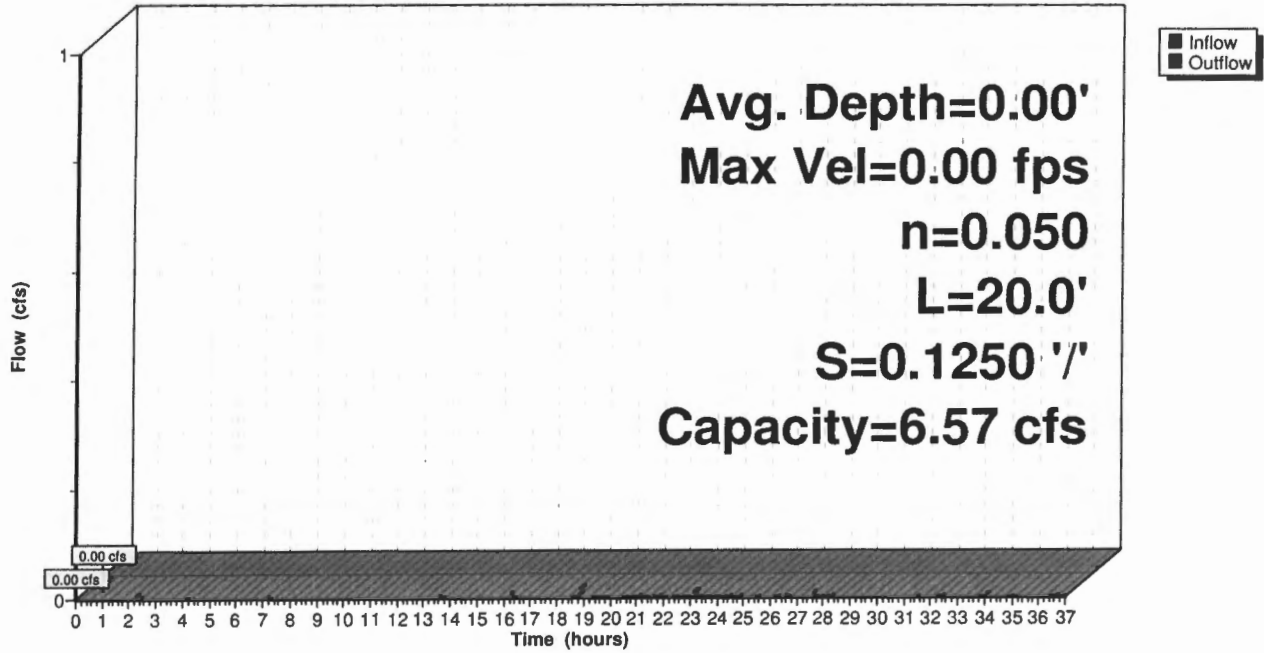
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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	135.25	0.00
10.00	135.00	0.25
20.00	135.25	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
0.25	2.5	20.0	50	6.57

Reach 6R: Parking Lot

Hydrograph



Summary for Pond 2P: Infiltration Depression

Inflow Area = 0.296 ac, 64.07% Impervious, Inflow Depth = 2.37" for 10yr event
 Inflow = 0.96 cfs @ 12.03 hrs, Volume= 0.059 af
 Outflow = 0.95 cfs @ 12.03 hrs, Volume= 0.059 af, Atten= 1%, Lag= 0.5 min
 Discarded = 0.24 cfs @ 11.81 hrs, Volume= 0.050 af
 Primary = 0.71 cfs @ 12.03 hrs, Volume= 0.008 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Peak Elev= 136.70' @ 12.03 hrs Surf.Area= 307 sf Storage= 123 cf

Plug-Flow detention time= 1.7 min calculated for 0.059 af (100% of inflow)
 Center-of-Mass det. time= 1.7 min (830.2 - 828.5)

Volume	Invert	Avail.Storage	Storage Description
#1	136.25'	417 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.25	239	0	0
136.75	315	139	139
137.53	400	279	417

Device	Routing	Invert	Outlet Devices
#1	Discarded	136.25'	0.24 cfs Exfiltration at all elevations
#2	Secondary	136.75'	3.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Primary	136.61'	2.00' x 2.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

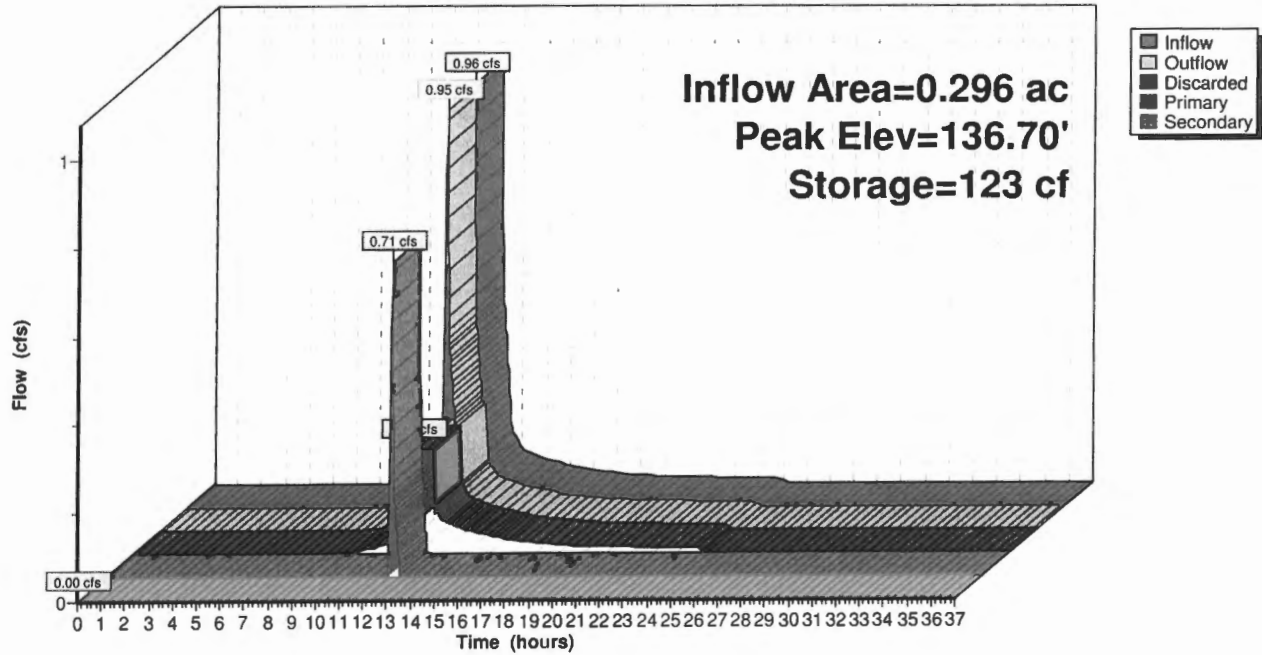
Discarded OutFlow Max=0.24 cfs @ 11.81 hrs HW=136.26' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.71 cfs @ 12.03 hrs HW=136.70' (Free Discharge)
 ↳3=Orifice/Grate (Weir Controls 0.71 cfs @ 0.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=136.25' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 2P: Infiltration Depression

Hydrograph



Summary for Pond 5P: Infiltration Pipe

Inflow Area = 0.382 ac, 56.91% Impervious, Inflow Depth = 0.49" for 10yr event
 Inflow = 0.81 cfs @ 12.03 hrs, Volume= 0.016 af
 Outflow = 0.40 cfs @ 12.01 hrs, Volume= 0.016 af, Atten= 51%, Lag= 0.0 min
 Discarded = 0.40 cfs @ 12.01 hrs, Volume= 0.016 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Peak Elev= 128.19' @ 12.11 hrs Surf.Area= 400 sf Storage= 110 cf

Plug-Flow detention time= 1.8 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 1.8 min (800.5 - 798.7)

Volume	Invert	Avail.Storage	Storage Description
#1	127.50'	521 cf	5.00'W x 80.00'L x 3.50'H Stone Trench 1,400 cf Overall - 98 cf Embedded = 1,302 cf x 40.0% Voids
#2	128.50'	98 cf	15.0"D x 80.00'L 15" Pipe Inside #1
#3	128.50'	18 cf	2.00'W x 2.00'L x 4.50'H Catch Basin
		637 cf	Total Available Storage

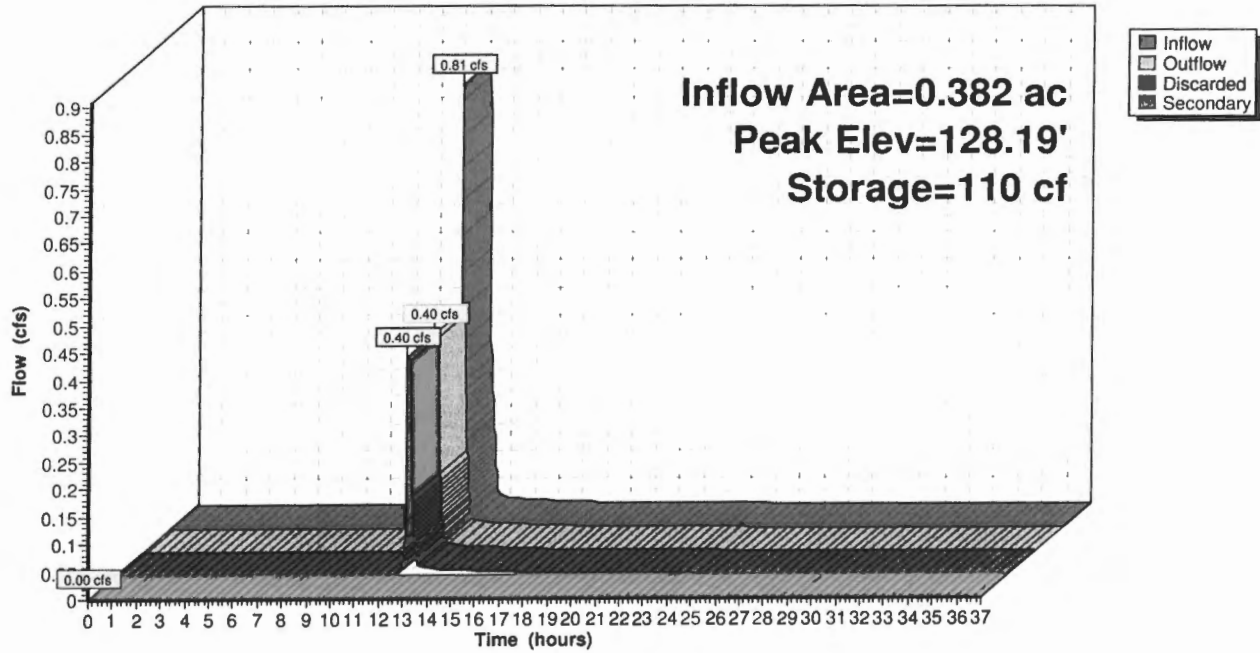
Device	Routing	Invert	Outlet Devices
#1	Discarded	127.50'	0.40 cfs Exfiltration at all elevations
#2	Secondary	132.50'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.40 cfs @ 12.01 hrs HW=127.59' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.40 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=127.50' (Free Discharge)
 ↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: Infiltration Pipe

Hydrograph



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Type III 24-hr 25yr Rainfall=5.50"

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Time span=0.00-37.00 hrs, dt=0.01 hrs, 3701 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Off-site (north)

Runoff Area=12,898 sf 64.07% Impervious Runoff Depth=3.05"
Flow Length=213' Tc=1.6 min CN=77 Runoff=1.24 cfs 0.075 af

Subcatchment 3S: On-site parking &

Runoff Area=3,756 sf 32.29% Impervious Runoff Depth=1.45"
Flow Length=76' Slope=0.0600 '/' Tc=0.6 min CN=58 Runoff=0.16 cfs 0.010 af

Reach 6R: Parking Lot

Avg. Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=20.0' S=0.1250 '/' Capacity=6.57 cfs Outflow=0.00 cfs 0.000 af

Pond 2P: Infiltration Depression

Peak Elev=136.72' Storage=130 cf Inflow=1.24 cfs 0.075 af
Discarded=0.24 cfs 0.060 af Primary=0.99 cfs 0.015 af Secondary=0.00 cfs 0.000 af Outflow=1.23 cfs 0.075 af

Pond 5P: Infiltration Pipe

Peak Elev=129.07' Storage=279 cf Inflow=1.14 cfs 0.025 af
Discarded=0.40 cfs 0.025 af Secondary=0.00 cfs 0.000 af Outflow=0.40 cfs 0.025 af

Total Runoff Area = 0.382 ac Runoff Volume = 0.086 af Average Runoff Depth = 2.69"
43.09% Pervious = 0.165 ac 56.91% Impervious = 0.218 ac

Summary for Subcatchment 1S: Off-site (north)

Runoff = 1.24 cfs @ 12.03 hrs, Volume= 0.075 af, Depth= 3.05"

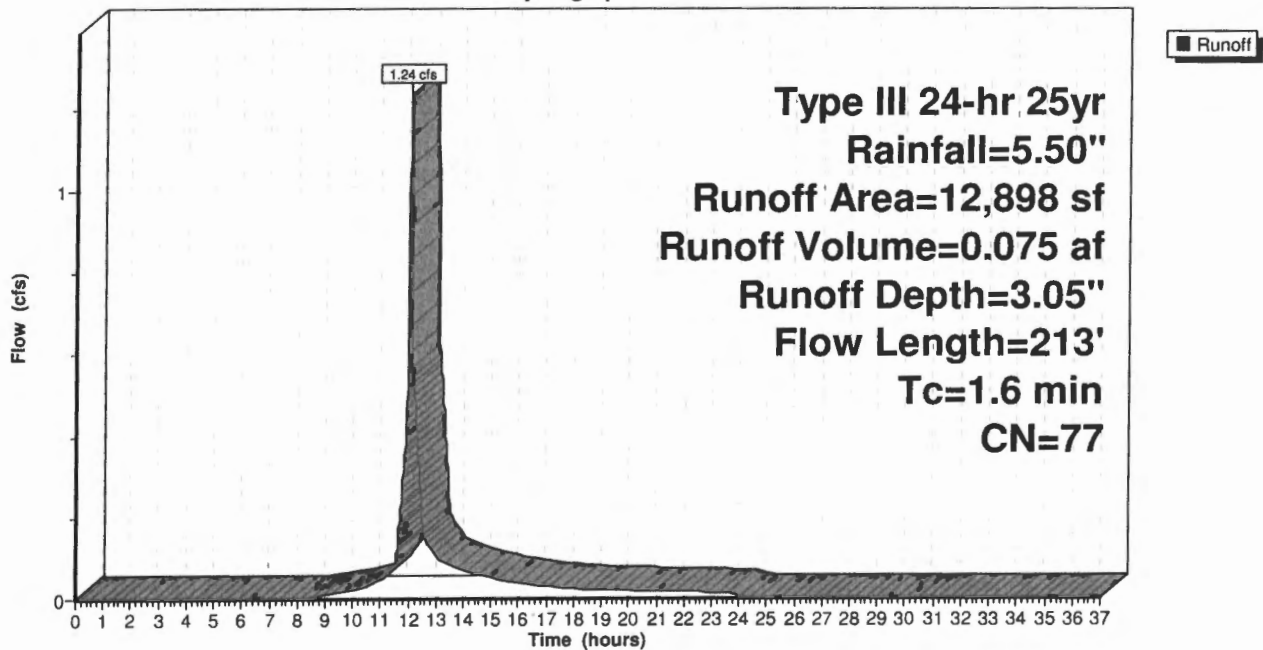
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25yr Rainfall=5.50"

Area (sf)	CN	Description
4,634	39	>75% Grass cover, Good, HSG A
8,264	98	Paved parking & roofs
12,898	77	Weighted Average
4,634		Pervious Area
8,264		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	50	0.0300	1.36		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.00"
0.9	143	0.0300	2.79		Shallow Concentrated Flow, shallow concentrated flow Unpaved Kv= 16.1 fps
0.1	20	0.1400	2.62		Shallow Concentrated Flow, Shallow Concentrated Flow Short Grass Pasture Kv= 7.0 fps
1.6	213	Total			

Subcatchment 1S: Off-site (north)

Hydrograph



Summary for Subcatchment 3S: On-site parking & Building

Runoff = 0.16 cfs @ 12.01 hrs, Volume= 0.010 af, Depth= 1.45"

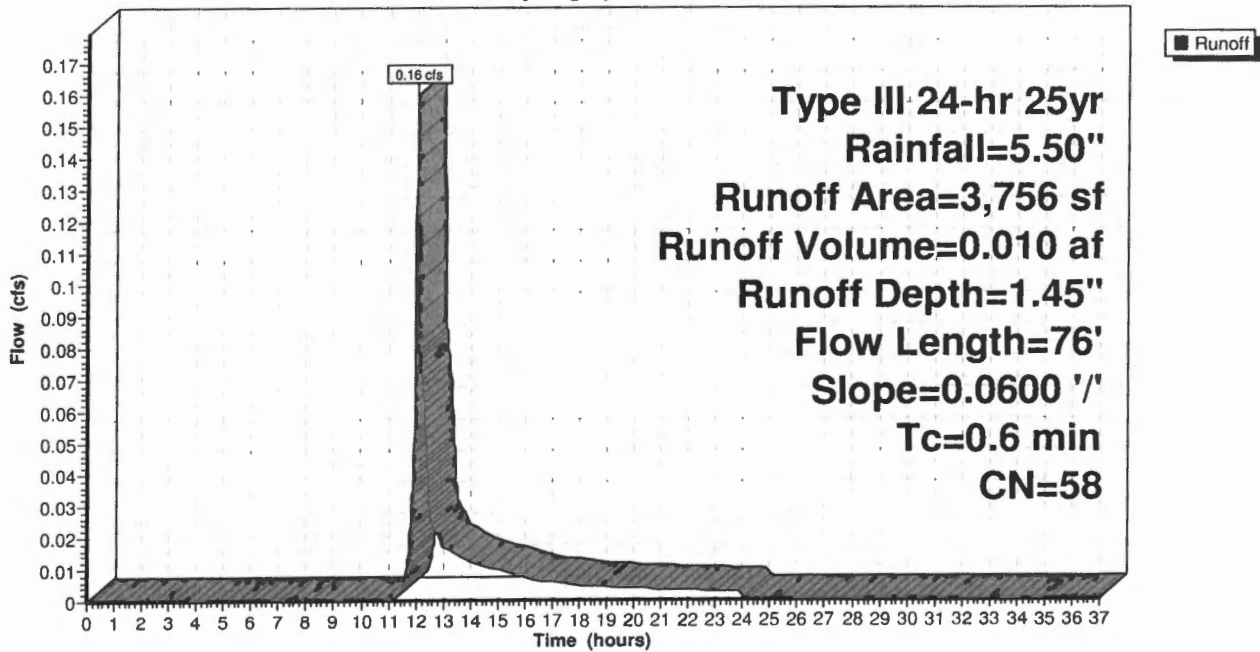
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25yr Rainfall=5.50"

Area (sf)	CN	Description
* 2,543	39	Stone Surface with Hinkley Soil plus Vegetated Area
* 1,213	98	Sidewalk and Roofs
3,756	58	Weighted Average
2,543		Pervious Area
1,213		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	76	0.0600	1.96		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 3.00"

Subcatchment 3S: On-site parking & Building

Hydrograph



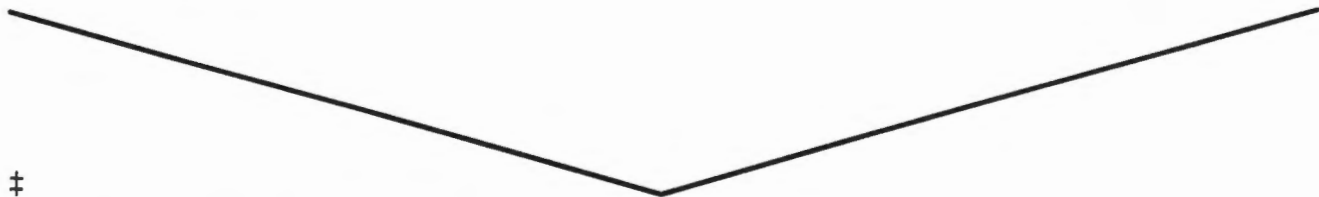
Summary for Reach 6R: Parking Lot

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 0.25', Capacity at Bank-Full= 6.57 cfs

Custom cross-section, Length= 20.0' Slope= 0.1250 '/'
 Constant n= 0.050 Stone, clean & dense
 Inlet Invert= 135.00', Outlet Invert= 132.50'



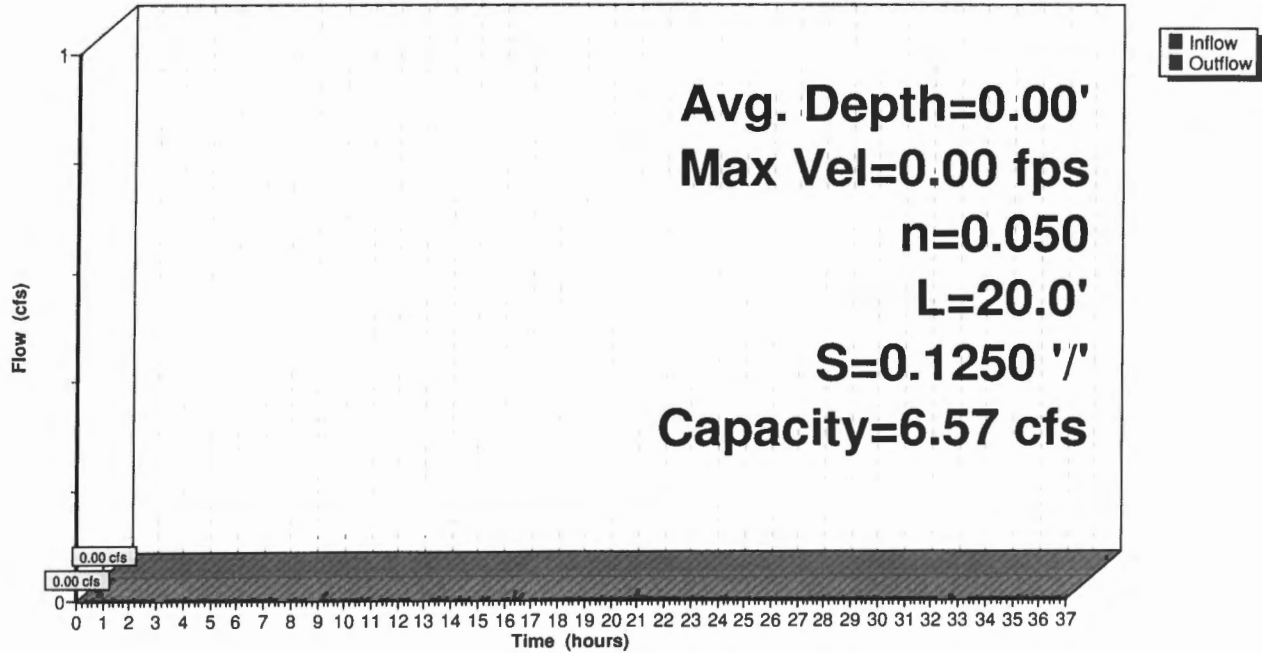
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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	135.25	0.00
10.00	135.00	0.25
20.00	135.25	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
0.25	2.5	20.0	50	6.57

Reach 6R: Parking Lot

Hydrograph



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Type III 24-hr 25yr Rainfall=5.50"

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Summary for Pond 2P: Infiltration Depression

Inflow Area = 0.296 ac, 64.07% Impervious, Inflow Depth = 3.05" for 25yr event
 Inflow = 1.24 cfs @ 12.03 hrs, Volume= 0.075 af
 Outflow = 1.23 cfs @ 12.03 hrs, Volume= 0.075 af, Atten= 1%, Lag= 0.4 min
 Discarded = 0.24 cfs @ 11.73 hrs, Volume= 0.060 af
 Primary = 0.99 cfs @ 12.03 hrs, Volume= 0.015 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Peak Elev= 136.72' @ 12.03 hrs Surf.Area= 311 sf Storage= 130 cf

Plug-Flow detention time= 1.6 min calculated for 0.075 af (100% of inflow)
 Center-of-Mass det. time= 1.6 min (822.9 - 821.3)

Volume	Invert	Avail.Storage	Storage Description
#1	136.25'	417 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.25	239	0	0
136.75	315	139	139
137.53	400	279	417

Device	Routing	Invert	Outlet Devices
#1	Discarded	136.25'	0.24 cfs Exfiltration at all elevations
#2	Secondary	136.75'	3.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Primary	136.61'	2.00' x 2.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

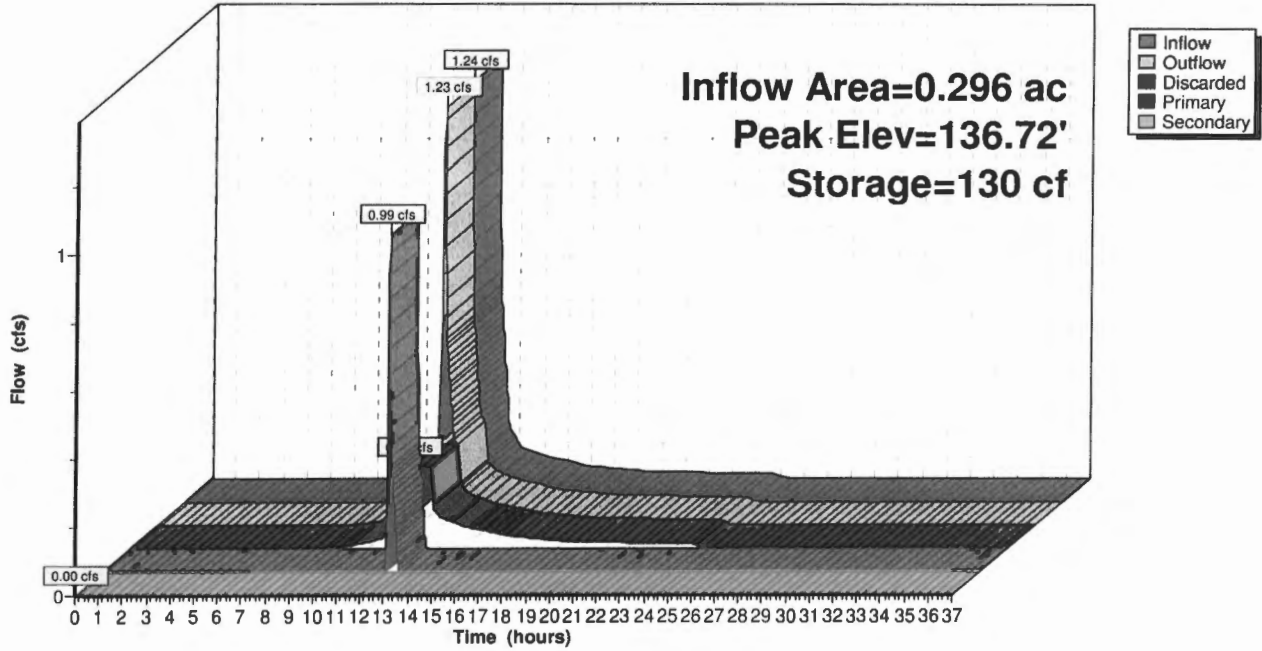
Discarded OutFlow Max=0.24 cfs @ 11.73 hrs HW=136.26' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.98 cfs @ 12.03 hrs HW=136.72' (Free Discharge)
 ↳3=Orifice/Grate (Weir Controls 0.98 cfs @ 1.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=136.25' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

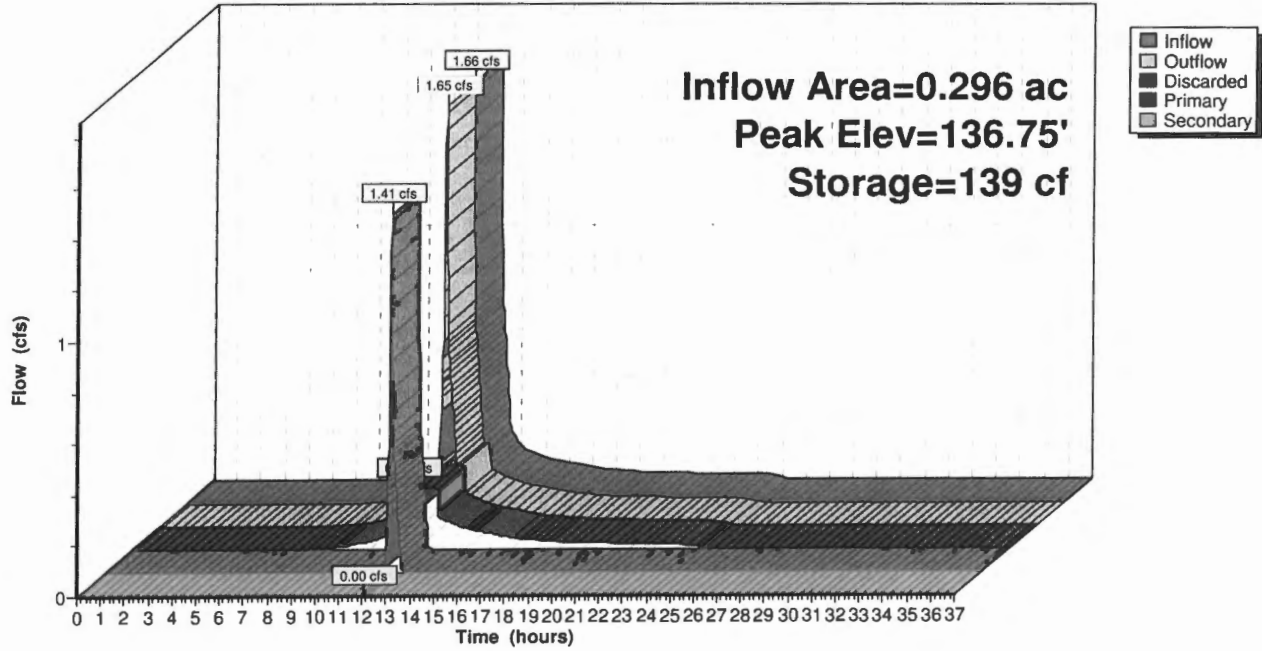
Pond 2P: Infiltration Depression

Hydrograph



Pond 2P: Infiltration Depression

Hydrograph



43 Cumberland Ave_may11

Type III 24-hr 100yr Rainfall=6.70"

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Summary for Pond 5P: Infiltration Pipe

Inflow Area = 0.382 ac, 56.91% Impervious, Inflow Depth = 1.32" for 100yr event
 Inflow = 1.65 cfs @ 12.03 hrs, Volume= 0.042 af
 Outflow = 0.40 cfs @ 11.90 hrs, Volume= 0.042 af, Atten= 76%, Lag= 0.0 min
 Discarded = 0.40 cfs @ 11.90 hrs, Volume= 0.042 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-37.00 hrs, dt= 0.01 hrs
 Peak Elev= 130.95' @ 12.28 hrs Surf.Area= 404 sf Storage= 621 cf

Plug-Flow detention time= 12.0 min calculated for 0.042 af (100% of inflow)
 Center-of-Mass det. time= 12.0 min (786.7 - 774.7)

Volume	Invert	Avail.Storage	Storage Description
#1	127.50'	521 cf	5.00'W x 80.00'L x 3.50'H Stone Trench 1,400 cf Overall - 98 cf Embedded = 1,302 cf x 40.0% Voids
#2	128.50'	98 cf	15.0"D x 80.00'L 15" Pipe Inside #1
#3	128.50'	18 cf	2.00'W x 2.00'L x 4.50'H Catch Basin
		637 cf	Total Available Storage

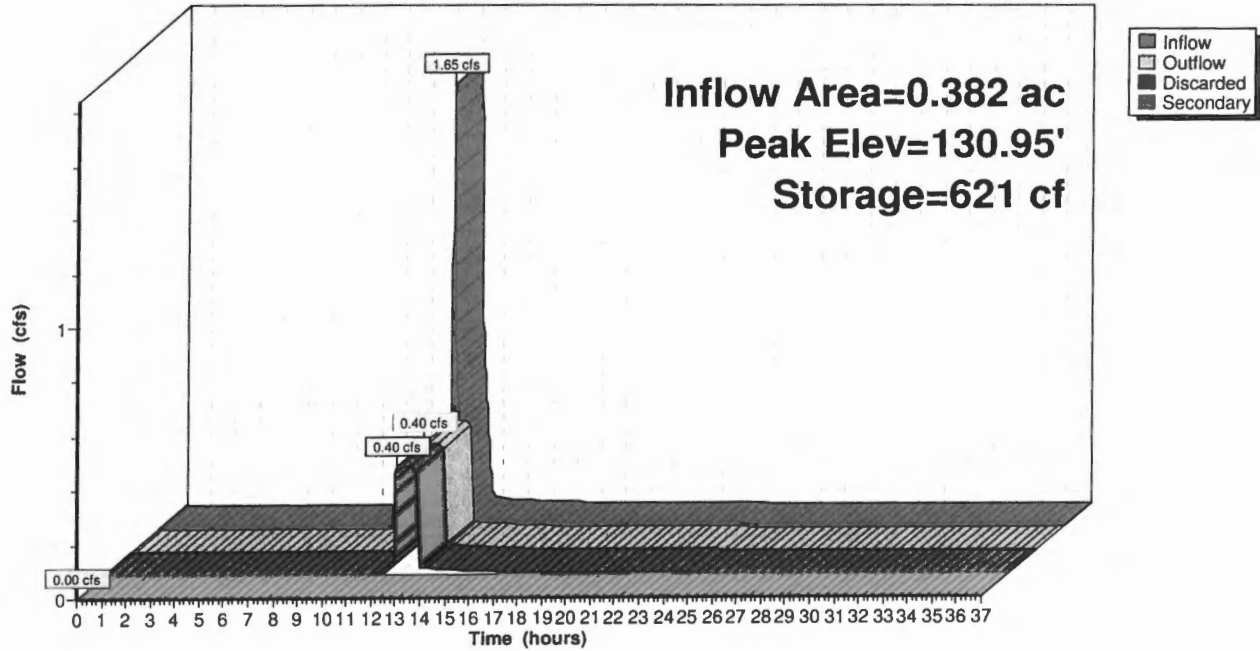
Device	Routing	Invert	Outlet Devices
#1	Discarded	127.50'	0.40 cfs Exfiltration at all elevations
#2	Secondary	132.50'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.40 cfs @ 11.90 hrs HW=127.56' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.40 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=127.50' (Free Discharge)
 ↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: Infiltration Pipe

Hydrograph



STORMWATER MAINTENANCE PLAN

FOR: #45 CUMBERLAND AVENUE, PORTLAND, MAINE

This plan is intended to provide long term maintenance requirements for stormwater infrastructure located at #43 Cumberland Avenue in Portland, Maine. Stormwater infrastructure shall include the site's infiltration depression, the subsurface detention/infiltration Pipe, and the paved/grassed surfaces. Periodic inspection and maintenance of the stormwater infrastructure is necessary for system performance and longevity. Deviations or changes to this plan shall be done under the supervision of a Licensed Professional Engineer.

Infiltration Depression:

The designed stormwater infiltration depression is located at the northwest corner of the parking area. The depression is approximately 6" deep and 150 square feet in area. The infiltration depression shall be vegetated with routinely mowed grass. Snow storage is allowable in in this area.

INSPECTION FREQUENCY: The infiltration depression shall be inspected on annual basis in the spring. The infiltration depression shall be inspected between 24 and 72 hours after a major storm event (greater than 2" of rain in a 24 hour period) on an annual basis to ensure the depression is infiltrating. Inspections shall be recorded and kept in the owner's records.

MAINTENANCE: The infiltration depression shall be cleaned of sand and debris by hand on an annual basis (spring) when present. If the infiltration basin is not draining within 48 hours, replace the top 6" of loam and reestablish vegetation.

Subsurface Detention/Infiltration Pipe:

The designed stormwater subsurface detention/infiltration Pipe is located under the proposed parking lot. Due to the location and material fill of the infiltration pipe, no access is feasible to the base of the basin. Inspection shall include visual inspection at the two catch basins located at each end of the stormwater infiltration pipe. Seepage from the crushed stone surface at the lowest point of the parking area or water flowing out of the lower catch basin frame may indicate problems with infiltration and further investigation should be taken by a Licensed Professional Engineer.

INSPECTION FREQUENCY: The subsurface detention/infiltration pipe shall be inspected on an annual basis in the spring. The basin shall be inspected between 24 and 72 hours after a major storm event (greater than 2" of rain in a 24 hour period) on an annual basis to ensure the basin is infiltrating properly. Inspections shall be recorded and kept in the owner's records.

MAINTENANCE: When significant sediment is evident within the infiltration pipe (over 1/4 full), a vacuum truck shall clean the catch basins and pipe of all sediment. If significant seepage is monitored from the lowest point of the parking area, the owner shall contact a licensed Professional Engineer to evaluate the system.

Paved/Grassed Areas:

The project site includes a 4 space parking area located to the southwesterly side of #43 Cumberland Avenue building. The parking area includes crushed stone surfaces and a paved/brick drive entrance. The project site includes grassed areas to the rear of the site as well as various other locations.

INSPECTION FREQUENCY: Paved areas shall be inspected on an annual basis (spring) to ensure the surface is clean of sediment and debris. Grassed areas shall be inspected on an annual basis (spring) to ensure the surfaces are stabilized and are clean of sediment and debris.

MAINTENANCE: Paved areas shall be swept and cleaned of sediment annually in the spring. Grassed areas shall be kept clear of debris and mowed on a regular basis.

ATTACHMENTS:

- Inspection and Maintenance Form

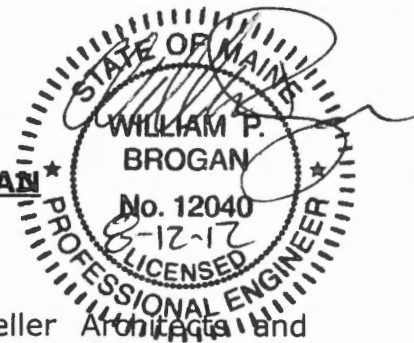
INSPECTION AND MAINTENANCE FORM

Date: <input type="checkbox"/> Check this box if all BMP's are in compliance with the Inspection and Maintenance Plan (only for inspection)	Work Completed <input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	BMP's Checked/Maintained <input type="checkbox"/> Infiltration Depression <input type="checkbox"/> Subsurface Pipe <input type="checkbox"/> Paved/Grassed Area
Description of Work Completed:		

Date: <input type="checkbox"/> Check this box if all BMP's are in compliance with the Inspection and Maintenance Plan (only for inspection)	Work Completed <input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	BMP's Checked/Maintained <input type="checkbox"/> Infiltration Depression <input type="checkbox"/> Subsurface Pipe <input type="checkbox"/> Paved/Grassed Area
Description of Work Completed:		

Date: <input type="checkbox"/> Check this box if all BMP's are in compliance with the Inspection and Maintenance Plan (only for inspection)	Work Completed <input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	BMP's Checked/Maintained <input type="checkbox"/> Infiltration Depression <input type="checkbox"/> Subsurface Pipe <input type="checkbox"/> Paved/Grassed Area
Description of Work Completed:		

EROSION AND SEDIMENTATION CONTROL PLAN



1.0 Introduction

W.P. Brogan & Associates in cooperation with Mark Mueller Architects and Anthony Muench Landscape Architects, have been retained by Mark Smith and Stephanie Dunn (the Applicants) to provide design services for a project site located at 43 and 45 Cumberland Avenue in Portland, Maine.

The project site consists of two parcels shown on the Portland Tax Map 13, Block K, as Lots 61 and 62. The lots are currently developed as a single family home (lot 61) and a 3 unit apartment building (lot 62). The single family home is currently uninhabitable and condemned by the City. The project envisions the rehabilitation of the single family structure, the creation of a 5th dwelling unit on the fourth floor of the existing 3 unit apartment building, and the creation of a 4 total space parking area. The 5th unit is anticipated to be constructed in existing unused attic space with appropriate architectural improvements (dormers, stair access, etc.) to make the space livable.

2.0 Existing Conditions

The existing property consists of primarily residential development. The site includes 1 single family structure with a footprint of approximately 630 square feet and a 3 unit structure with a footprint of approximately 1,700 square feet. In addition to the single family structure are a driveway, a deck, and entry steps. In addition to the multi family structure is a walkway, a deck, and two entry steps.

Offsite stormwater that flows onto the site consists of predominately developed area to the northwest of the site (behind the development). The area consists of residential development, access drives, and a parking lot. The access drive and parking lot consists of gravel surfaces. A site visit indicated areas of limited pooling at the lowest point of the parking area directly before stormwater drains on to the project site.

Soils onsite are Hinckley Soils based on the Soil conservation Service Medium Intensity Soil Survey for Cumberland County. These soils are hydrologic soil group A.

2.1 Existing Erosion Problems

W.P. Brogan & Associates. is not aware of any erosion problems on site.

2.2 Critical Areas

Critical areas that would require special attention during construction would be the areas of construction abutting the south westerly property line. These areas are on the down slope of the project development.

2.3 Protected Natural Resource

The project site does not appear to have any protected natural resources.

2.4 Previous Construction Activity (5 years)

It does not appear any construction has occurred in the last 5 years.

2.5 Timber Harvesting

It does not appear any timber harvesting has occurred on the project site.

3.0 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.

3.1 Temporary Erosion Control Measures

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

3.1.1 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 3/4 inches, or reclaimed or recycled concrete equivalent.
- The thickness of the entrance shall be no less than 6 inches.
- The entrance shall not be less than 10 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. Piping for surface water drainage shall be provided under the entrance; however a mountable berm with 5:1 slopes shall be permitted.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public road ways.

3.1.2 Siltation fence shall be installed downstream of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence 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. If there are signs of undercutting at the center or the edges, or

impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam.

- 3.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Erosion control blankets and mats shall be used on disturbed areas within 100' of lakes, streams, and wetlands, regardless of the upstream slope. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.
- 3.1.4 All disturbed areas within 100 feet of a wetland and are not a proposed impervious area such as a parking lot, driveway, building footprint, shall receive mulch or erosion control blankets / mats within 7 days of disturbance of soil. Regardless of the 7 day time period to stabilize a disturbed area after initial disturbance; all areas within 100 feet of an undisturbed wetland shall be mulched. In other areas, the time period may be extended to 21 days.
- 3.1.5 All slopes greater than 2:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal.
- 3.1.6 All surrounding roads shall be swept to control mud and dust as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
- 3.1.7 During clearing and grubbing operations stone check dams shall be installed at any areas of concentrated flow. The tributary area to a ditch or swale shall not exceed 10 acres in size. 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.
- 3.1.8 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.
- 3.1.9 Stormdrain inlet protection shall be provided 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.
- 3.1.10 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.
- 3.1.11 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.

3.1.12 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. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats.

3.1.13 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.

3.2 Permanent Erosion Control Measures

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

3.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall be loamed, limed, fertilized, seeded, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

3.2.2 All culvert inlet and outlets shall have riprap aprons. Riprap aprons shall be installed prior to receiving stormwater.

3.2.3 All stormdrain outlets shall have riprap aprons or stabilized swales as depicted on the plans.

3.2.4 All stormwater devices shall be installed and stabilized prior receiving stormwater.

3.2.5 Catch Basins shall be constructed with sediment sumps as well as inlet hoods for all outlet pipes that are 18" in diameter or less. Inlet hoods shall be installed prior to the removal of any temporary erosion control devices implemented for catch basin inlet protection.

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

4.0 Erosion and Sedimentation Control Plan

4.1 Erosion and Sedimentation Control Plans are included in the plan set.

5.0 Details and Specifications

5.1 Erosion Control Details and Specification are included in the plan set.

6.0 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.

A project shall not open more than 1 acre of the site without stabilization at any one time. The contractor shall limit the work area to areas that work will occur in the following 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:

6.1 Natural Resource Protection

Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with an erosion control cover. During winter construction, a double row of sediment barriers, (i.e. silt fence backed with hay bales or erosion control mix) will be placed between any natural resource and the disturbed area. Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.

6.2 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.

6.3 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 will be removed down to a one-inch depth or less prior to application. After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched 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, asphalt emulsion chemical, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

6.4 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. Any soil stockpile will not be placed (even covered with mulched) within 100 feet from any natural resource.

6.5 Seeding

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

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4' of loam and seed at an application rate of 5lbs/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.

6.6 Overwinter stabilization of ditches and channels

All stone-lined ditches and channels shall be constructed and stabilized by November 15th. All grass-lined ditches and channels shall be constructed and stabilized by September 1st. If a ditch or channel is not grass-lined by September 1st, then one of the following actions shall be taken to stabilize the ditch for late fall and winter.

- Install a sod lining in the ditch – A ditch shall be lined with properly installed sod by October 1st. Proper installation includes: pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and the underlying soil, watering the sod to promote root growth into the disturbed soil, and anchoring sod at the base of the ditch with jute or plastic mesh to prevent the sod from sloughing during flow conditions.
- Install a stone lining in the ditch – A ditch shall be lined with stone riprap by November 15th. A registered professional engineer shall be hired to determine the stone size and lining thickness needed to withstand the anticipated flow velocities and flow depths within the ditch. If necessary, the contractor will regrade the ditch prior to placing

the stone lining so to prevent the stone lining from reducing the ditch's cross-sectional area.

6.7 Over winter stabilization of disturbed soils

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

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.
- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.
- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

6.8 Over winter stabilization of disturbed slopes

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

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.9 Inspection and Maintenance

After each rainfall, snow storm or period of thawing and runoff, the site contractor shall perform a visual inspection of all installed erosion control measures and perform repairs as needed to insure their continuous function. Following the temporary and/or final seeding and mulching, the contractor shall, in the spring, inspect and repair any damages and/or bare spots. An established vegetative cover means a minimum of 85 to 90% of areas vegetated with vigorous growth.

7.0 Implementation Schedule

The following implementation schedule is intended to maximize the effectiveness of the above described erosion control measures. Contractors should be cautious of over exposing disturbed areas to limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site. Particularly, at intersections with public rights of way.
2. Install perimeter silt fence or wood waste berm.
3. Install all other erosion control devices as necessary throughout the remainder of this schedule
4. Commence clearing and grubbing operations
5. Commence earthwork operations
6. Commence installation of drainage infrastructure
7. Commence installation of utility infrastructure
8. Continue earthwork and grading to subgrade as necessary for construction
9. Complete installation of drainage and utility infrastructure

10. Complete remaining earthwork operations.
11. Install stone surface in parking lot.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized and 90% catch of vegetation has been obtained, remove all temporary erosion control measures.
14. Touch up loam and seed.

The above implementation schedule should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. A 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 area to those areas in which work is expected to be undertaken during the preceding 30 days.

The contractor shall revegetate 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. Ditches shall be lined or vegetated as soon as their installation is complete.

8.0 Conclusion

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

9.0 Attachments

- Temporary Seeding Plan
- Permanent Seeding Plan



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Receipts Details:

Tender Information: Check , BusinessName: Mueller Architects, LLC, Check Number: 2824
Tender Amount: 75.00

Receipt Header:

Cashier Id: gguertin
Receipt Date: 8/21/2012
Receipt Number: 47313

Receipt Details:

Referance ID:	7703	Fee Type:	BP-C of O
Receipt Number:	0	Payment Date:	
Transaction Amount:	75.00	Charge Amount:	75.00
Job ID: Job ID: 2012-08-4749-CH OF USE - change of use: 4 units / add 1 new unit			
Additional Comments: 43 Cumberland, Mueller Architects, LLC			

Thank You for your Payment!



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Receipts Details:

Tender Information: Check , BusinessName: Mueller architiects, LLC, Check Number: 2820
Tender Amount: 4340.00

Receipt Header:

Cashier Id: gguertin
Receipt Date: 8/21/2012
Receipt Number: 47314

Receipt Details:

Referance ID:	7721	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	3940.00	Charge Amount:	3940.00
Job ID: Job ID: 2012-08-4749-CH OF USE - change of use: 4 units / add 1 new unit			
Additional Comments:			

Referance ID:	7722	Fee Type:	BP-INSP
Receipt Number:	0	Payment Date:	
Transaction Amount:	100.00	Charge Amount:	100.00
Job ID: Job ID: 2012-08-4749-CH OF USE - change of use: 4 units / add 1 new unit			

Additional Comments:

Referance ID:	7723	Fee Type:	BP-MSFSR
Receipt Number:	0	Payment Date:	
Transaction Amount:	300.00	Charge Amount:	300.00

Job ID: Job ID: 2012-08-4749-CH OF USE - change of use: 4 units / add 1 new unit

Additional Comments:

Thank You for your Payment!

Applicant: Mark Smith & Stephanie Dun

Date: 8/24/12

Address: 43 & 45 Cumberland Ave

C-B-L: 13-k-61 & 62

Permit # 2012-08-4749

CHECK-LIST AGAINST ZONING ORDINANCE

Date - 43 Cumberland Ave - built 1890
45 Cumberland Ave - built 1884
Zone Location - R-6.

Interior or corner lot -

Proposed Use/Work - demolish existing single family! build new one
- remove both ~~ends~~ sides of 4th floor and add 4th dwelling unit to building

Savage Disposal - city

Lot Street Frontage - 40' min. - 74.67' given

Front Yard - 10' or average front yards. - single family - front setback average @ 0' (ok)

Rear Yard - 20' min. - 55' scaled from deck for single family

Side Yard - up to 3 sides - 10' - 14.25 on left for single family

Projections -

Width of Lot - 40' min. - ~~74.67~~ 61' scaled for new single family

Height - 45' - 43 Cumberland - scales @ 44.75 - 43' 8" given (ok)

- 28' for new single family (ok)
Lot Area - 4500 sq ft min. - 6178.7 sq ft given

Lot Coverage/Impervious Surface - 50% lot coverage = 3089.35 sq ft
open space ratio 20% -

(45) existing work - 1943 sq ft (ok)
new " - 625.5 42%
2568.5

Area per Family - 1000 sq ft - need 5,000 sq ft (ok)

* Off-street Parking - 1 space per unit - need 5 spaces. - 1 in new single family

Loading Bays - N/A. 3 in rear - no

Site Plan - Land I Minor Residential.

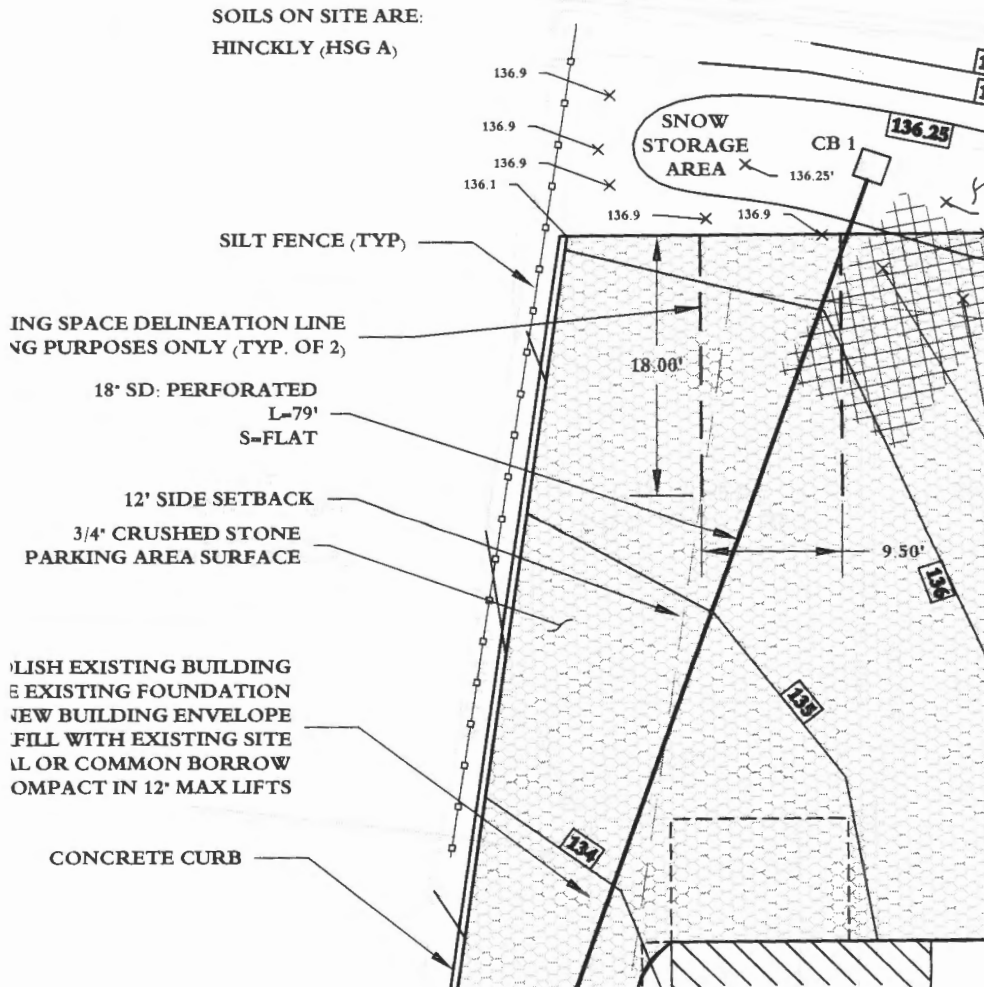
Shoreland Zoning/Stream Protection - N/A

Flood Plains - panel 14 - zone C

BULK AND SPACE STANDARDS

	REQUIRED	PROVIDED
PARCEL ACREAGE: 0.14 AC (6,179 SF)		
ZONE: R6		
MIN LOT SIZE	4,500 SF	6,179 SF
MIN AREA PER DWELLING UNIT	1,000 SF 1,000 SF*	>1,000 SF >1,000 SF
MIN STREET FRONTAGE	40 FT	75 FT +/-
SET BACKS		
FRONT YARD	10 FT OR AVE**	0.00 FT
SIDE YARD	12 FT***	8.77 FT
REAR YARD	20 FT	1.81 FT
MAX LOT COVERAGE	50%	40%
MIN LOT WIDTH	40 FT	61 FT +/-
MAX HEIGHT	45 FT	44.5 FT
PARKING		
MIN SPACE	1 / NEW UNIT	4
MIN DRIVEWAY WIDTH	10 FT	12 FT
OPEN SPACE	20% MIN	24%

* MIN AREA PER DWELLING UNIT FOR ALL NEW UNITS UNDER 3
 **FRONT YARD SETBACK EQUAL TO THE AVERAGE OF ABUTTING PROPERTIES
 ***SIDE YARD SETBACK FOR 4 STORY BUILDINGS



GAN RONALD L
4646 N HERMITAGE AVE
CHICAGO , IL 60640

GAN RONALD L &
STEPHANIE A EVANS JTS
4646 N HERMITAGE
CHICAGO , IL 60640

HELMICK GILBERT VN VET &
ANI HELMICK JTS
39 CUMBERLAND AVE
PORTLAND, ME 04101

LARSDOTTER GUNNEL &
RICHARD K REED JTS
726 SEASHORE AVE
PEAKS ISLAND, ME 04108

MALIA CAROL A
48 CUMBERLAND AVE
PORTLAND, ME 04101

REED RICHARD K & GUNNEL
LARSDOTTER &
CHRISTOPHER J ROBERTS &
30 PLEASANT AVE
PORTLAND, ME 04101

ROBERTS CHRISOPHER J &
MERRIAM T ROBERTS JTS
44 CUMBERLAND AVE
PORTLAND, ME 04101

SMITH MARK L &
STEPHANIE L DUNN JTS
PO BOX 575
KINGFIELD, ME 04947

SMITH MARK L &
STEPHANIE L DUNN JTS
PO BOX 575
KINGFIELD, ME 04947

Labels Requested For CBL:

013 K049

013 K060

013 K061

013 K062

013 K063

013 L007

013 L008

013 L023

IMPORTANT NOTICE FROM CITY OF PORTLAND

To residents and property owners: A Level I Minor Residential Development application was submitted to the Portland Inspections Division by Mark L. Smith & Stephanie Dunn to add a fourth unit in the multi family building at 43 Cumberland Ave. and to demolish the single family at 45 Cumberland Ave. and to build a new single family close to the existing foot print..

In accordance with the Portland Land Use Ordinance, notices of receipt of a Level I Minor Residential Development application must be sent to neighbors. This application will be reviewed administratively by City Staff.

Plans are available in the Portland Inspections Division, Room 315, City Hall. If you have any questions or wish to submit comments, contact Ann Machado, Zoning Specialist at 874-8709 or email amachado@portlandmaine.gov

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Gayle Guertin - 43-45 Cumberland Ave. (abutters notices)

From: Gayle Guertin
To: Ann Machado; Marge Schmuckal
Date: 8/28/2012 2:27 PM
Subject: 43-45 Cumberland Ave. (abutters notices)
CC: Gayle Guertin

Mailed out the abutters notices for 43-45 Cumberland Ave. as of 8-28-12.
Gayle