



September 26, 2017

John Jordan  
19 Mitchell Wood Drive  
Falmouth, Maine 04105

**Re: City of Portland Site Plan Review Standards-Level I: Minor Residential  
45 George Street, Portland, Maine**

Dear John:

As part of the City of Portland Level I: Minor Residential Site Plan review, the proposed construction of the single-family house at 45 George Street in Portland is required to meet certain sections of the City of Portland Site Plan Ordinance. These sections provide standards in Transportation, Environmental Quality, Public Infrastructure and Community Safety and overall Site Design.

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

Site Access and Circulation- The proposed driveway layout is designed to provide two parking spaces in front of the new house, outside of the front setback. The single-family house will not generate a significant amount of traffic and, as a result, should not create any significant traffic impacts.

Vehicle Parking- The site will provide two parking spaces in the driveway.

**Section 14-526 (b) Environmental Quality Standards**

Preservation of Significant Natural Features- There are no known significant natural features on the site.

Landscaping and Landscape Preservation- The existing lot is primarily lawn with the exception of the two trees along George Street. These trees are not to be removed and should be out of the limits of disturbance associated with the house construction.

Site Landscaping- The property is required to have two street trees planted along the frontage. The species of the proposed street trees are from the City approved list.

Stormwater and Erosion Control- The stormwater management plan includes the construction of a small detention basin at the rear of the site. We designed the basin to control the peak rate of runoff at the rear property line (Study Point SP-2 in the model) during the 25-year storm event to below pre-development conditions. At Study Point SP1, which is the location where the runoff that drains northerly discharges to George Street, there is a slight increase (0.01 cfs) in the peak rate of runoff during the 25-year storm. This runoff drains southeasterly along George Street to a catch basin located at the intersection of George Street and Clifton Street. We do not anticipate that this increase will cause any capacity problems with the downstream catch basin or cause any increase in erosion along the road's gutter line. We have included the stormwater maps

and stormwater modeling software output for your review. Silt fence and a riprap apron are to be installed to provide erosion control during and after construction. The single-family use does not typically pose a risk of groundwater contamination. The proposed lot's sewage disposal needs will be provided by public sewer.

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

Consistency with Master Plan- We are unaware of any master plans this subject parcel is directly a part of. In the current Comprehensive Plan, there is a lot of discussion on providing more housing for the growing population in the City. The architectural design for the new home matches the character of the abutting properties in the neighborhood.

Public Safety and Fire Prevention- The proposed house will be required to be sprinkled and there is a fire hydrant located on the property at the corner of the driveway of the existing house. The existing hydrant has been shown on the submitted Site Plan.

Public Utilities- The utilities for the house will be provided by public water, public sewer, natural gas and underground electric, telephone and cable. It is not anticipated that the single house lot will overburden the utility infrastructure within George Street. The applicant and contractor will be coordinating with public utility companies prior to construction.

**Section 14-526 (d) Site Design Standards**

Historic Resources- There are no known historical sites or districts within the vicinity of the property.

Zoning Related Design Standards- The proposed use and character of the property is in conformance with the surrounding properties on George Street.

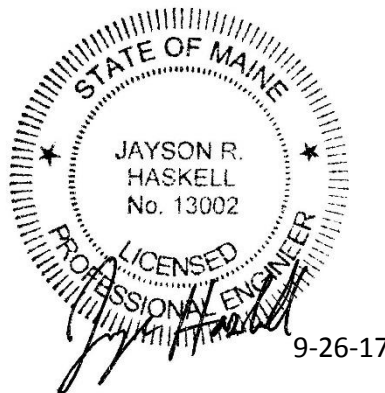
If you have any questions or require any further information, please do not hesitate to contact us.

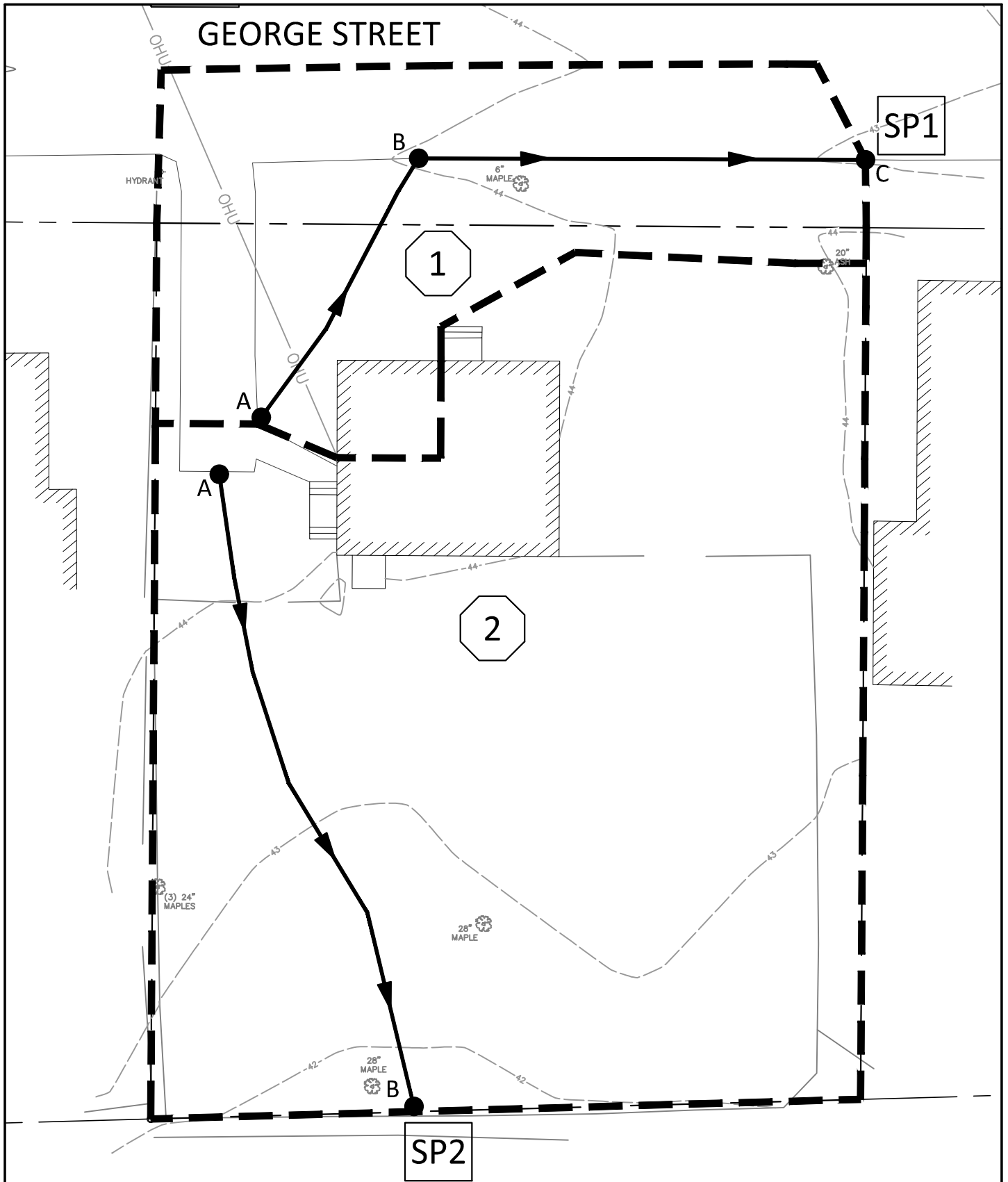
Sincerely,

DM Roma Consulting Engineers



Jayson R. Haskell, P.E.  
Senior Project Manager





**PRE-DEVELOPMENT WATERSHED MAP**

43 & 45 GEORGE STREET  
 PORTLAND, MAINE

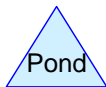
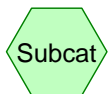
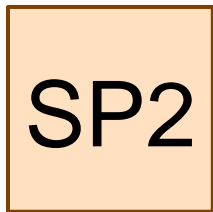
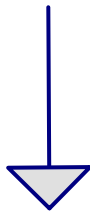
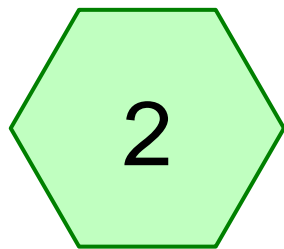
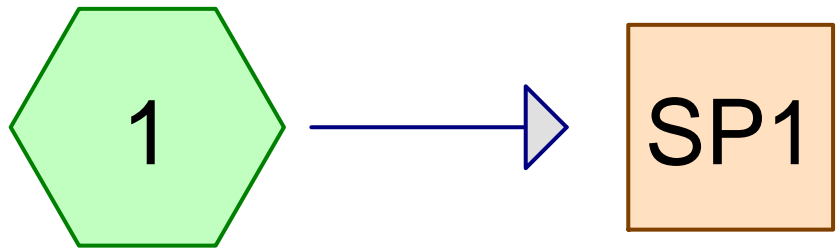
FOR RECORD OWNER:  
 JOHN JORDAN

SCALE: 1"=20'  
 DATE: 09/26/2017  
 JOB NUMBER: 17055

**DM ROMA**

CONSULTING ENGINEERS

59 HARVEST HILL RD  
 WINDHAM, ME 04062  
 (207) 310 - 0506



**17055-PRE**

Type III 24-hr 25-Year Rainfall=5.80"

Prepared by DM Roma Consulting Engineers

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1:**

Runoff Area=4,275 sf 49.01% Impervious Runoff Depth>4.29"  
Flow Length=112' Tc=6.3 min CN=89 Runoff=0.49 cfs 0.035 af

**Subcatchment 2:**

Runoff Area=12,290 sf 7.93% Impervious Runoff Depth>3.47"  
Flow Length=100' Slope=0.0550 '/ Tc=6.6 min CN=81 Runoff=1.18 cfs 0.082 af

**Reach SP1:**

Inflow=0.49 cfs 0.035 af  
Outflow=0.49 cfs 0.035 af

**Reach SP2:**

Inflow=1.18 cfs 0.082 af  
Outflow=1.18 cfs 0.082 af

**17055-PRE**

Type III 24-hr 25-Year Rainfall=5.80"

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**Summary for Subcatchment 1:**

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.035 af, Depth&gt; 4.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 2,095	98	Pavement and Building
2,180	80	>75% Grass cover, Good, HSG D
4,275	89	Weighted Average
2,180		50.99% Pervious Area
2,095		49.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	45	0.0150	0.13		<b>Sheet Flow, A TO B</b> Grass: Short n= 0.150 P2= 3.10"
0.4	67	0.0175	2.69		<b>Shallow Concentrated Flow, B TO C</b> Paved Kv= 20.3 fps
6.3	112	Total			

**Summary for Subcatchment 2:**

Runoff = 1.18 cfs @ 12.10 hrs, Volume= 0.082 af, Depth&gt; 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 975	98	Pavement and Building
11,315	80	>75% Grass cover, Good, HSG D
12,290	81	Weighted Average
11,315		92.07% Pervious Area
975		7.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0550	0.25		<b>Sheet Flow, A TO B</b> Grass: Short n= 0.150 P2= 3.10"

**Summary for Reach SP1:**

Inflow Area = 0.098 ac, 49.01% Impervious, Inflow Depth &gt; 4.29" for 25-Year event

Inflow = 0.49 cfs @ 12.09 hrs, Volume= 0.035 af

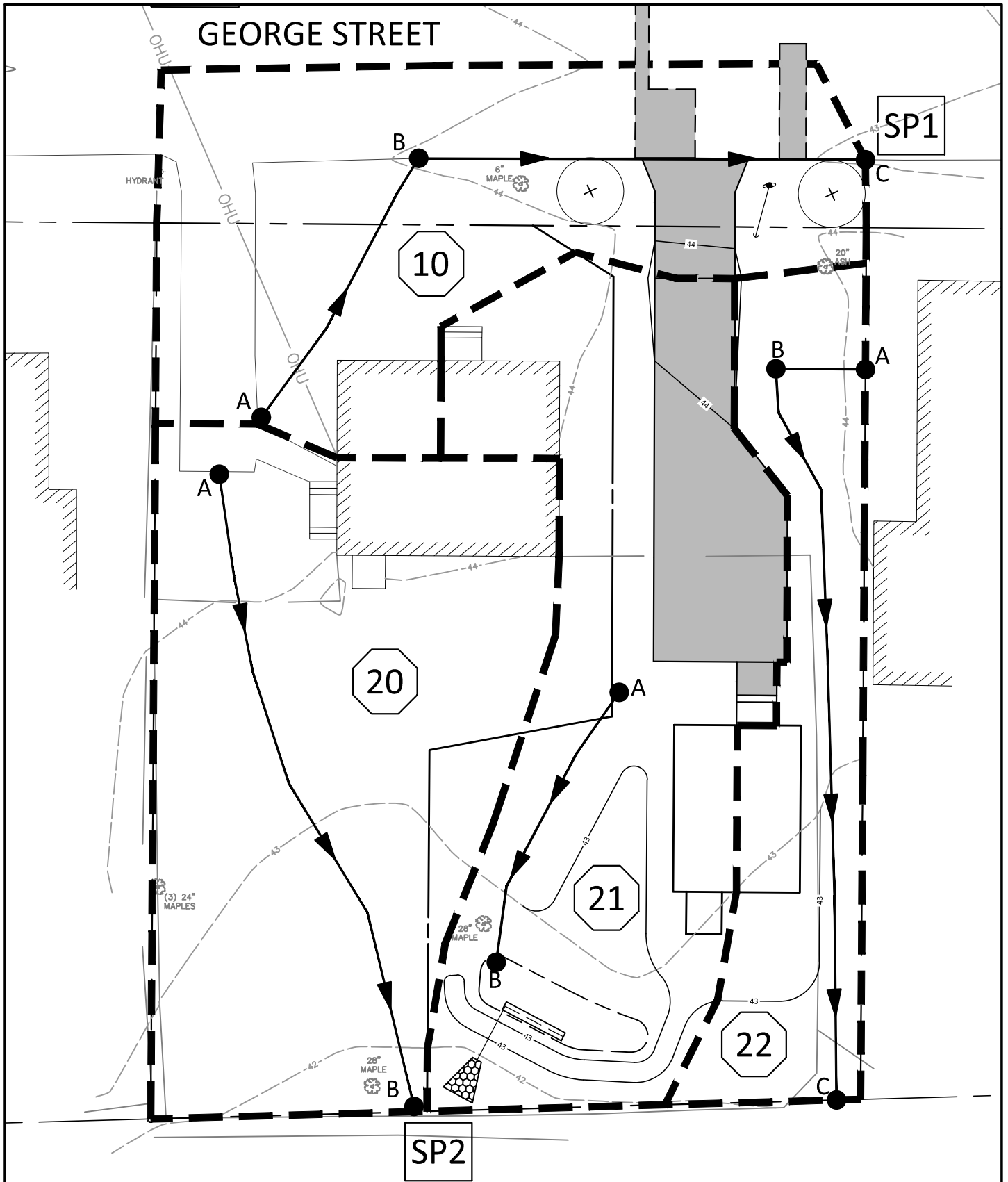
Outflow = 0.49 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach SP2:**

Inflow Area = 0.282 ac, 7.93% Impervious, Inflow Depth > 3.47" for 25-Year event  
Inflow = 1.18 cfs @ 12.10 hrs, Volume= 0.082 af  
Outflow = 1.18 cfs @ 12.10 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**POST DEVELOPMENT WATERSHED MAP**

43 & 45 GEORGE STREET  
 PORTLAND, MAINE

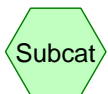
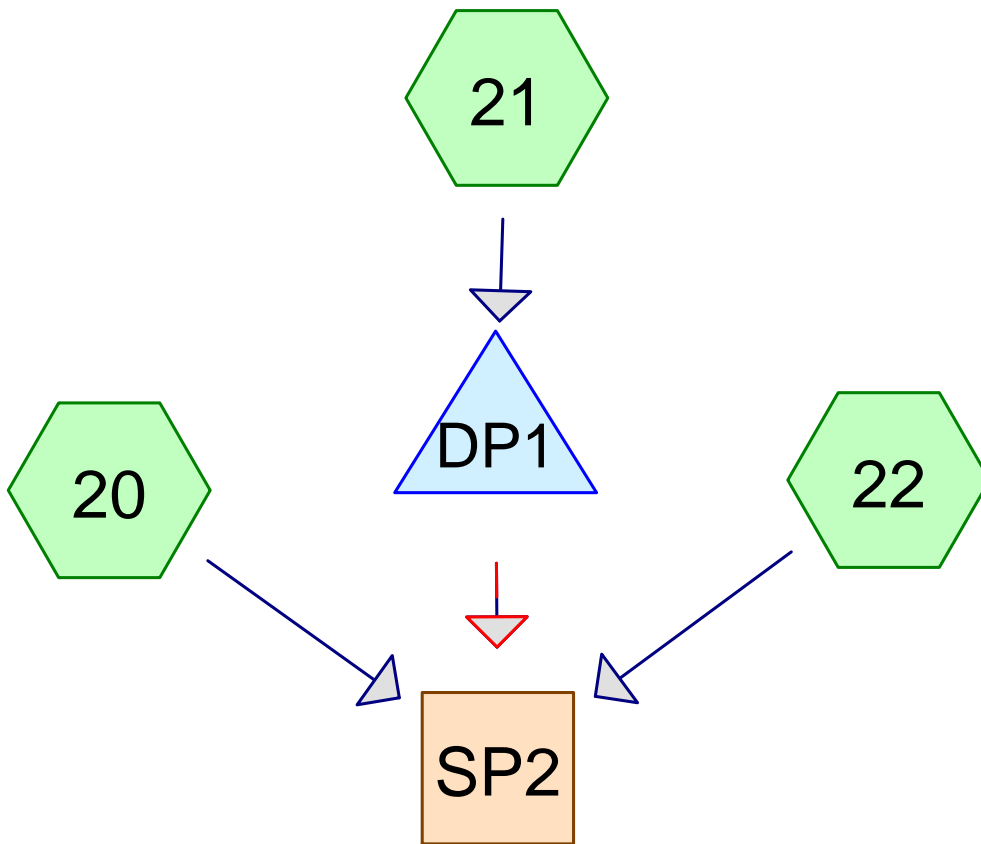
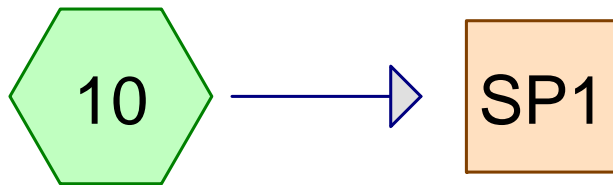
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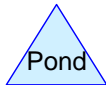




Subcat



Reach



Pond



Link

**Routing Diagram for 17055-POST**

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**17055-POST**

Type III 24-hr 25-Year Rainfall=5.80"

Prepared by DM Roma Consulting Engineers

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 10:** Runoff Area=4,275 sf 53.45% Impervious Runoff Depth>4.40"  
Flow Length=112' Tc=6.3 min CN=90 Runoff=0.50 cfs 0.036 af

**Subcatchment 20:** Runoff Area=5,230 sf 13.10% Impervious Runoff Depth>3.57"  
Flow Length=100' Slope=0.0550 '/ Tc=6.6 min CN=82 Runoff=0.51 cfs 0.036 af

**Subcatchment 21:** Runoff Area=4,975 sf 30.85% Impervious Runoff Depth>3.98"  
Flow Length=45' Slope=0.0200 '/ Tc=6.0 min CN=86 Runoff=0.54 cfs 0.038 af

**Subcatchment 22:** Runoff Area=2,100 sf 13.57% Impervious Runoff Depth>3.57"  
Flow Length=125' Tc=6.0 min CN=82 Runoff=0.21 cfs 0.014 af

**Reach SP1:** Inflow=0.50 cfs 0.036 af  
Outflow=0.50 cfs 0.036 af

**Reach SP2:** Inflow=1.10 cfs 0.088 af  
Outflow=1.10 cfs 0.088 af

**Pond DP1:** Peak Elev=42.81' Storage=94 cf Inflow=0.54 cfs 0.038 af  
Primary=0.27 cfs 0.036 af Secondary=0.20 cfs 0.002 af Outflow=0.47 cfs 0.038 af

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Type III 24-hr 25-Year Rainfall=5.80"

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**Summary for Subcatchment 10:**

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth&gt; 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 2,285	98	Pavement and Building
1,990	80	>75% Grass cover, Good, HSG D
4,275	90	Weighted Average
1,990		46.55% Pervious Area
2,285		53.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	45	0.0150	0.13		<b>Sheet Flow, A TO B</b> Grass: Short n= 0.150 P2= 3.10"
0.4	67	0.0175	2.69		<b>Shallow Concentrated Flow, B TO C</b> Paved Kv= 20.3 fps
6.3	112	Total			

**Summary for Subcatchment 20:**

Runoff = 0.51 cfs @ 12.10 hrs, Volume= 0.036 af, Depth&gt; 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 685	98	Pavement and Building
4,545	80	>75% Grass cover, Good, HSG D
5,230	82	Weighted Average
4,545		86.90% Pervious Area
685		13.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0550	0.25		<b>Sheet Flow, A TO B</b> Grass: Short n= 0.150 P2= 3.10"

**Summary for Subcatchment 21:**

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.038 af, Depth&gt; 3.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=5.80"

**17055-POST**

Type III 24-hr 25-Year Rainfall=5.80"

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Area (sf)	CN	Description
* 1,535	98	Pavement and Building
3,440	80	>75% Grass cover, Good, HSG D
4,975	86	Weighted Average
3,440		69.15% Pervious Area
1,535		30.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	45	0.0200	0.14		<b>Sheet Flow, A TO B</b> Grass: Short n= 0.150 P2= 3.10"
0.7					<b>Direct Entry, 6 MINUTE MIN. TC</b>
6.0	45	Total			

**Summary for Subcatchment 22:**

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.014 af, Depth> 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=5.80"

Area (sf)	CN	Description
* 285	98	Pavement and Building
1,815	80	>75% Grass cover, Good, HSG D
2,100	82	Weighted Average
1,815		86.43% Pervious Area
285		13.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	14	0.0100	0.09		<b>Sheet Flow, A TO B</b> Grass: Short n= 0.150 P2= 3.10"
2.2	111	0.0150	0.86		<b>Shallow Concentrated Flow, B TO C</b> Short Grass Pasture Kv= 7.0 fps
1.1					<b>Direct Entry, 6 MINUTE MIN. TC</b>
6.0	125	Total			

**Summary for Reach SP1:**

Inflow Area = 0.098 ac, 53.45% Impervious, Inflow Depth > 4.40" for 25-Year event  
 Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af  
 Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Reach SP2:**

Inflow Area = 0.282 ac, 20.36% Impervious, Inflow Depth > 3.74" for 25-Year event  
 Inflow = 1.10 cfs @ 12.13 hrs, Volume= 0.088 af  
 Outflow = 1.10 cfs @ 12.13 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond DP1:**

Inflow Area = 0.114 ac, 30.85% Impervious, Inflow Depth > 3.98" for 25-Year event  
 Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.038 af  
 Outflow = 0.47 cfs @ 12.15 hrs, Volume= 0.038 af, Atten= 13%, Lag= 3.9 min  
 Primary = 0.27 cfs @ 12.16 hrs, Volume= 0.036 af  
 Secondary = 0.20 cfs @ 12.15 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 42.81' @ 12.16 hrs Surf.Area= 515 sf Storage= 94 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 1.1 min ( 768.8 - 767.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	218 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	95	0	0
43.00	775	218	218

Device	Routing	Invert	Outlet Devices
#1	Primary	41.40'	<b>3.0" Vert. Orifice/Grate</b> C= 0.600
#2	Secondary	42.75'	<b>6.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

**Primary OutFlow** Max=0.27 cfs @ 12.16 hrs HW=42.81' (Free Discharge)  
 ↑1=Orifice/Grate (Orifice Controls 0.27 cfs @ 5.45 fps)

**Secondary OutFlow** Max=0.19 cfs @ 12.15 hrs HW=42.81' (Free Discharge)  
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.19 cfs @ 0.57 fps)