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CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT REPORT

For

Jordan Bay Marina Expansion
Raymond, ME

Prepared for:

Port Harbor Holdings , LLC
1 Spring Point Drive
South Portland, ME 04106

Prepared by:

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1. Introduction

This Stormwater Management Plan Report has been prepared to present analyses performed to address the potential impacts associated with the project due to proposed modifications in stormwater runoff characteristics and land cover changes. The stormwater management controls that are outlined in this report have been designed to suit the proposed development and to comply with applicable regulatory requirements.

2. Existing Conditions

The project site currently consists of mostly undeveloped wooded land with an existing single-family home and gravel boat parking located on the northern portion of the lot. The project site is located at 1326 Roosevelt Trail (Route 302) in Raymond, Maine on the western side of Roosevelt Trail. The site is approximately 5.9 acres and is bounded by Roosevelt Trail to the East, Indian Point residential development to the South and the West, and another parcel owned by Port Harbor Holdings, LLC that is a part of Jordan Bay Marina to the North. Slopes on the site range from 1-11%.

The site is tributary to Sebago Lake which is listed as a lake most at risk but not severely blooming in Chapter 502 of the Maine Department of Environmental Protection (MDEP) regulations.

The proposed development area of the site is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the Town of Raymond, Community Panel 2302050015B effective 05/05/1981. A portion of the site is located within zone A1 (268.00 NGVD, 267.39 NAVD).

3. Soils

Soil characteristics were obtained from the USDA Web Soil Survey. The Hydrologic Soil Groups (HSG) of the soils are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Map Symbol	Soil Name	Slope (%)	HSG
Cu	Cut and fill land	0-35	B
DeA	Deerfield loamy fine sand	0-3	A
HiC	Hinckley loamy sand	8-15	A
Sp	Sebago mucky peat	0-1	A/D

Sz	Swanton fine sandy loam	0-3	C/D

Hydrologic Soil Group boundaries are delineated on the Stormwater Management Plans. A copy of the Class D Medium Intensity Soil Survey is included as Appendix 4.

4. Proposed Site Improvements

The proposed development will consist of an approximately 6,000 SF building for retail, approximate 5,600 SF boat storage rack, boat display/storage space, as well as parking, and paved access aisles. The project will result in the creation of approximately 2.19 acres of impervious area and 2.76 acres of developed area.

5. Existing Conditions Model

The existing conditions watershed plan consists of six subcatchments labeled 1S, thru 6S in the HydroCAD model. Three locations were identified as Points of Analysis (POA) for comparing peak runoff rates and all are directly tributary to Sebago Lake.

POA-1 is located along the Westerly boundary of the site where runoff leaves the site through a wetland complex. Subcatchment 2S, and 3S contribute runoff to this point of analysis with an overall runoff area of approximately 6.10 acres. Subcatchment 2S represents the area that drains directly to POA-1, and subcatchment 3S represents the area on site that drains to another wetland centrally located on site that then spills over to the wetland complex that conveys runoff to POA-1. POA-1 and the associated drainage area are directly tributary to Sebago Lake, which is listed by the Maine Department of Environmental Protection as a Lake Most at Risk but not severely blooming within Chapter 502.

POA-2 is located at the Northwestern boundary of the site where runoff leaves the site onto the neighboring property that is also owned by Port Harbor Holdings, LLC. Subcatchments 1S and 6S contribute runoff to this point of analysis with an overall runoff area of approximately 0.28 acres. Subcatchments 1S and 6S represent small grassed and wooded areas that runoff onto the neighboring lot. POA-2 and the associated drainage area are directly tributary to Sebago Lake.

POA-3 is located at the outlet of the existing 18” culvert that runs underneath Indian Point Road. Subcatchments 4S and 5S contribute runoff to this point of analysis with an overall drainage area of roughly 3.38 acres. Subcatchment 4S represents both developed and undeveloped areas on the Eastern side of Roosevelt Trail that is tributary to a culvert that crossed underneath Roosevelt Trail and discharges runoff onto the project site, this runoff is then conveyed within a swale to the 18” culvert that runs underneath Indian Point Road before reaching POA-3. Subcatchment 5S represents the right of way and a small portion of the project site that runs off directly to the swale prior to the 18” culvert that runs

underneath Indian Point Road. POA-3 and the associated drainage area are directly tributary to Sebago Lake.

6. Proposed Conditions Model

The proposed conditions watershed area consists of the same overall area as the existing condition plan, however, the existing condition subcatchments have been broken differently as a result of the proposed development.

POA-1: Proposed subcatchments 2S, 3S, and 6S contribute runoff to this point of analysis. Subcatchment 2S represents the developed land consisting of pavement, roof, and landscaped area that runs off into UDSF-2 for treatment and detention before discharging to reach 11R, and then to POA-1. Subcatchment 3S represents the impervious boat parking area as well as some landscaped area that runs off into UDSF-1 for treatment and detention before discharging to reach 10R, and then to POA-1. Subcatchment 6S represents mostly undeveloped area and some existing landscape area that runs off directly to POA-1. The overall tributary area associated with POA-1 is 6.08 acres.

POA-2: Proposed subcatchment 1S contributes runoff to this point of analysis and represents existing and proposed landscaped area as well as small amounts of proposed impervious area. The overall tributary area associated with POA-2 is 0.25 acres.

POA-3: Proposed subcatchments 4S and 5S contribute runoff to this point of analysis. Subcatchment 4S represents both developed and undeveloped areas on the Eastern side of Roosevelt Trail that is tributary to a culvert that crossed underneath Roosevelt Trail and discharges runoff onto the project site, this runoff is then conveyed within a swale to the 18” culvert that runs underneath Indian Point Road before reaching POA-3. Subcatchment 5S represents the right of way and a small portion of landscaped area on site that runs off directly to the swale prior to the 18” culvert that runs underneath Indian Point Road. The overall tributary area associated with POA-3 is 3.43 acres.

The two Best Management Practices (two underdrained soil filters) have been designed and sized in accordance with MDEP BMP standards contained within Chapter 500 and the BMP Manual. Sizing calculations can be found in Appendix 1.

7. Stormwater Management

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact. We have avoided adverse impacts by providing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 3) to be implemented during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply, which require a project's stormwater management system to include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The General Standards require treatment of no less than 95% of the site's created impervious area and no less than 80% of the site's created developed area (landscaped area and impervious area combined). To mitigate the changes in hydrologic patterns due to the development of this project two underdrained soil filters have been implemented into the stormwater management infrastructure. Filtration BMPs are very effective at removing a wide range of pollutants through the use of organic soil filter media.

BMP sizing and treatment calculations are provided as Appendix 1.

Through the use of the aforementioned BMP's 99.55% of new impervious area and 92.94% of new developed area will be receiving treatment. This meets the requirements for the Maine DEP General Standards.

Phosphorus Standard - Chapter 500, Section 4(D)

Since the proposed project will create less than 3 acres of impervious area and less than 5 acres of developed area in a lake watershed that is not severely booming, the general standards may be used instead of the phosphorus standard.

Flooding Standard - Chapter 500, Section 4(F)

Although the planned project will not create more than three (3) acres of impervious surface MDEP Flooding Standards are required to be met through the Town of Raymond stormwater standards. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10,

25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project. As such, a runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance, and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500: Stormwater Management (effective date August 2015). Rainfall values for Cumberland County are listed in the table below.

Storm Frequency Precipitation (in./24 hr) Cumberland County SE	
2-year	3.1
10-year	4.6
25-year	5.8

The following table presents the results of the peak runoff calculations at the analysis points for the existing and proposed conditions.

Peak Runoff Rate Summary Table			
Analysis Point	**Storm Event**	**Existing Conditions (cfs)**	**Proposed Conditions (cfs)**
POA-1	2-year	0.8	0.5
	10-year	4.4	2.9
	25-year	8.8	5.8
POA-2	2-year	0.1	0.1
	10-year	0.3	0.3
	25-year	0.6	0.6
POA-3	2-year	2.0	2.0
	10-year	3.7	3.8
	25-year	6.3	6.4

The HydroCAD Data output sheets from this analysis are appended to this report (Appendix 2) along with the Stormwater Management Plans (Appendix 5). The model predicts that the peak runoff

rates in the proposed condition at Points of Analysis 1 and 2 are at or below existing condition runoff rates for the 2, 10, and 25-year storm events with the implementation of the proposed stormwater management practices. While the model predicts that the peak runoff rates in the proposed conditions at the Point of Analysis 3 will see a minor increase in runoff rates for the 10 and 25-year storm events.

The unavoidable difficulties to capture the onsite runoff in proposed subcatchment 5S result in minor increases in the peak runoff rates at Point of Analysis 3. The increase in peak runoff rates for the Point of Analysis 3 can be considered insignificant increases due to the nature of the stormwater drainage in the surrounding area. Runoff from all Points of Analysis are immediately tributary to Sebago Lake, and when overall proposed and existing condition runoff rates are analyzed at Sebago Lake the proposed runoff rates are below the existing condition runoff rates. Furthermore, the model predicts that the downstream drainage channel and drainage culvert underneath Indian Point Road have sufficient capacity to handle the minor increase in peak rates. Therefore, there is no anticipated adverse effect on the drainage channel downstream and drainage culvert underneath Indian Point Road and the increases in peak runoff rates at the Point of Analysis 3 can be considered insignificant.

8. Summary

The proposed conditions have been designed to manage stormwater runoff through Best Management Practices approved by MDEP. Stormwater BMP's provide treatment to 99.55% (95% required) of impervious areas, and 92.94% (80% required) of the total developed area. Runoff discharging from the site will be at or below existing conditions for the 2, 10, and 25-year storm events at Point of Analysis 1 and 2, while there is an insignificant increase in the runoff discharging from the site for the 10 and 25-year storm events at Point of Analysis 3. Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping procedures have been outlined to prevent unreasonable impacts on the site and to the surrounding environment.

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RAM

9/13/2022

Appendix 1

Stormwater Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 14265-02 Jordan Bay Marina

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	NEW IMPERVIOUS AREA TREATED (S.F.)	NEW LANDSCAPED AREA TREATED (S.F.)	DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
1S	10,980	2,331	424	6,574	313	737	8,905	NO	0	0	0	
2S	72,217	0	40,519	28,413	3,285	43,804	28,413	YES	40,519	3,285	43,804	UDSF-2
3S	69,790	0	53,068	0	13,516	66,584	0	YES	53,068	13,516	66,584	UDSF-1
4S	109,592	0	0	0	0	0	0	NO	0	0	0	
5S	39,947	0	0	405	2,317	2,317	405	NO	0	0	0	
6S	122,904	0	0	2,822	5,330	5,330	2,822	NO	0	0	0	
TOTAL (S.F.)	**425,430**	**2,331**	**94,011**	**38,214**	**24,761**	**118,772**	**40,545**		**93,587**	**16,801**	**110,388**	

TOTAL NEW IMPERVIOUS AREA (S.F.)	**94,011**	**TOTAL DEVELOPED AREA (S.F.)**	**118,772**
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (S.F.)	**93,587**	**TOTAL AREA RECEIVING TREATMENT (S.F.)**	**110,388**
% OF IMPERVIOUS AREA RECEIVING TREATMENT	**99.55%**	**% OF AREA RECEIVING TREATMENT**	**92.94%**

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JOB
SHEET NO. 1 OF 1
CALCULATED BY DATE 3/2/2017
FILE NAME PRNT DATE 9/13/2022

UNDERDRAINED SOIL FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1
   a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF-1

Landscaped Area	13,516.00	SF			
Impervious Area	53,068.00	SF			

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	13,516.00	SF	Area	270.3	SF
Total Impervious Area	53,068.00	SF	Area	2,653.4	SF
Required Minimum Surface Area				2,923.7	SF
Provided Surface Area				3,000.0	SF

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	13,516.00	SF	Volume	450.5				
Impervious Area	53,068.00	SF	Volume	4,422.3				
Treatment Volume Required				4,872.9	CF	0.112	AF	
Provided Treatment Volume				4,904.0	CF	ELEV 269 TO 269.81		

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded:	53,068.00	SF					
Sediment Volume	67	CF					
Provided	55	CF	6	Inch Deep Forebay	with area of	110	sf

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1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   a. "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.1
   a. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Underdrained Filter: UDSF-2

Landscaped Area	3,285.00	SF			
Impervious Area	40,519.00	SF			

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	3,285.00	SF	Area	65.7	SF
Total Impervious Area	40,519.00	SF	Area	2,026.0	SF
Required Minimum Surface Area				2,091.7	SF
Provided Surface Area				3,000.0	SF

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

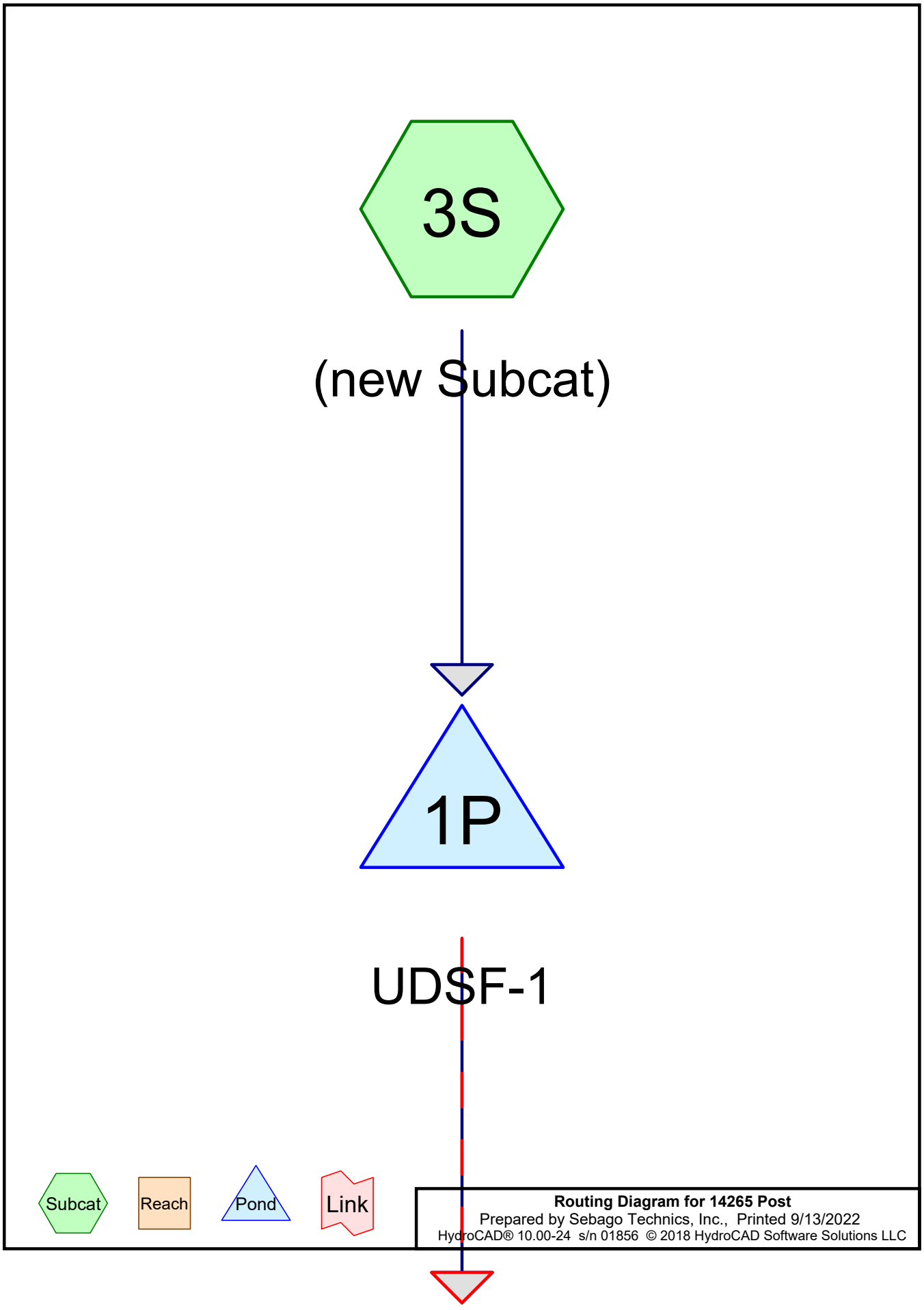
Landscaped Area	3,285.00	SF	Volume	109.5				
Impervious Area	40,519.00	SF	Volume	3,376.6				
Treatment Volume Required				3,486.1	CF	0.080	AF	
Provided Treatment Volume				3,507.0	CF	ELEV 269 TO 269.65		

Sediment Pre-Treatment

Per Reference 2, Chapter 7.1 "Pretreatment devices shall be provided to minimize discharge of sediment to the soil filter"

Annual Sediment Load: 55 cubic feet per acre per year of sanded area

Area to be sanded:	40,519.00	SF					
Sediment Volume	51	CF					
Provided	55	CF	6	Inch Deep Forebay	with area of	110	sf


3S
(new Subcat)
1P
UDSF-1
Subcat
Reach
Pond
Link
Routing Diagram for 14265 Post
Prepared by Sebago Technics, Inc., Printed 9/13/2022
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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
2,128	39	>75% Grass cover, Good, HSG A (3S)
14,594	80	>75% Grass cover, Good, HSG D (3S)
53,068	98	Boat Parking / Drive Aisle (3S)
69,790	**92**	**TOTAL AREA**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment3S: (new Subcat) Runoff Area=69,790 sf 76.04% Impervious Runoff Depth=0.84"
Tc=6.0 min CN=92 Runoff=1.6 cfs 4,904 cf

Pond 1P: UDSF-1 Peak Elev=269.81' Storage=2,865 cf Inflow=1.6 cfs 4,904 cf
Primary=0.1 cfs 4,904 cf Secondary=0.0 cfs 0 cf Outflow=0.1 cfs 4,904 cf

Total Runoff Area = 69,790 sf Runoff Volume = 4,904 cf Average Runoff Depth = 0.84"
23.96% Pervious = 16,722 sf 76.04% Impervious = 53,068 sf

Summary for Subcatchment 3S: (new Subcat)

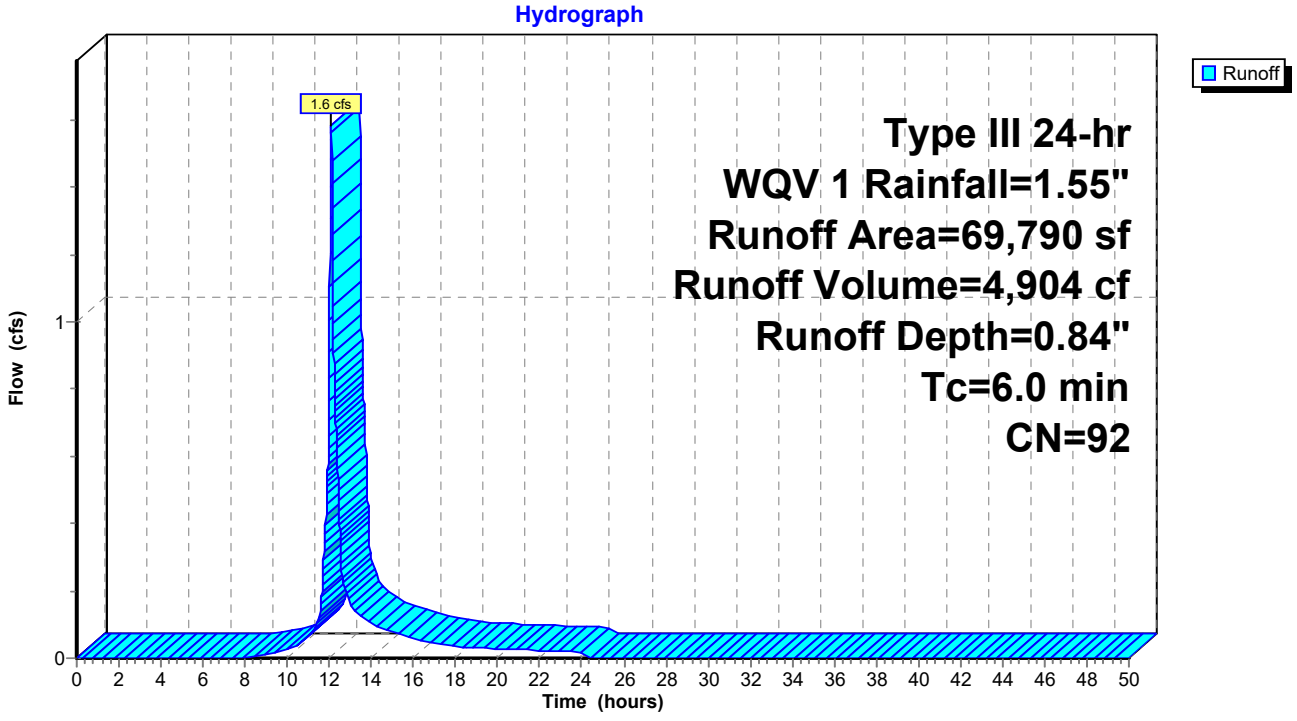
Runoff = 1.6 cfs @ 12.09 hrs, Volume= 4,904 cf, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV 1 Rainfall=1.55"

	Area (sf)	CN	Description
*	53,068	98	Boat Parking / Drive Aisle
	14,594	80	>75% Grass cover, Good, HSG D
	2,128	39	>75% Grass cover, Good, HSG A
	69,790	92	Weighted Average
	16,722		23.96% Pervious Area
	53,068		76.04% Impervious Area

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

Subcatchment 3S: (new Subcat)



Summary for Pond 1P: UDSF-1

Inflow Area = 69,790 sf, 76.04% Impervious, Inflow Depth = 0.84" for WQV 1 event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 4,904 cf
Outflow = 0.1 cfs @ 16.05 hrs, Volume= 4,904 cf, Atten= 97%, Lag= 237.5 min
Primary = 0.1 cfs @ 16.05 hrs, Volume= 4,904 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 269.81' @ 16.05 hrs Surf.Area= 4,021 sf Storage= 2,865 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 538.8 min (1,365.6 - 826.9)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	17,620 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

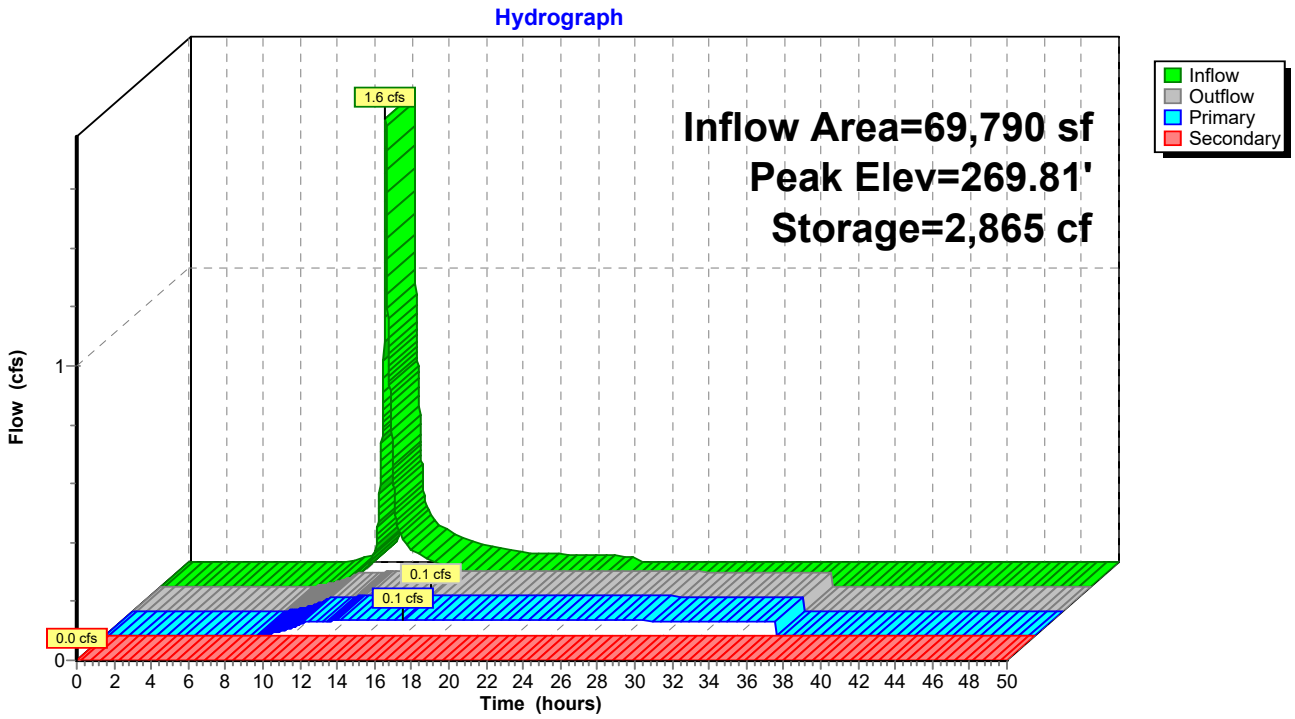
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	4,265	100.0	3,633	3,662
271.00	7,101	100.0	5,683	9,345
272.00	9,449	100.0	8,275	17,620

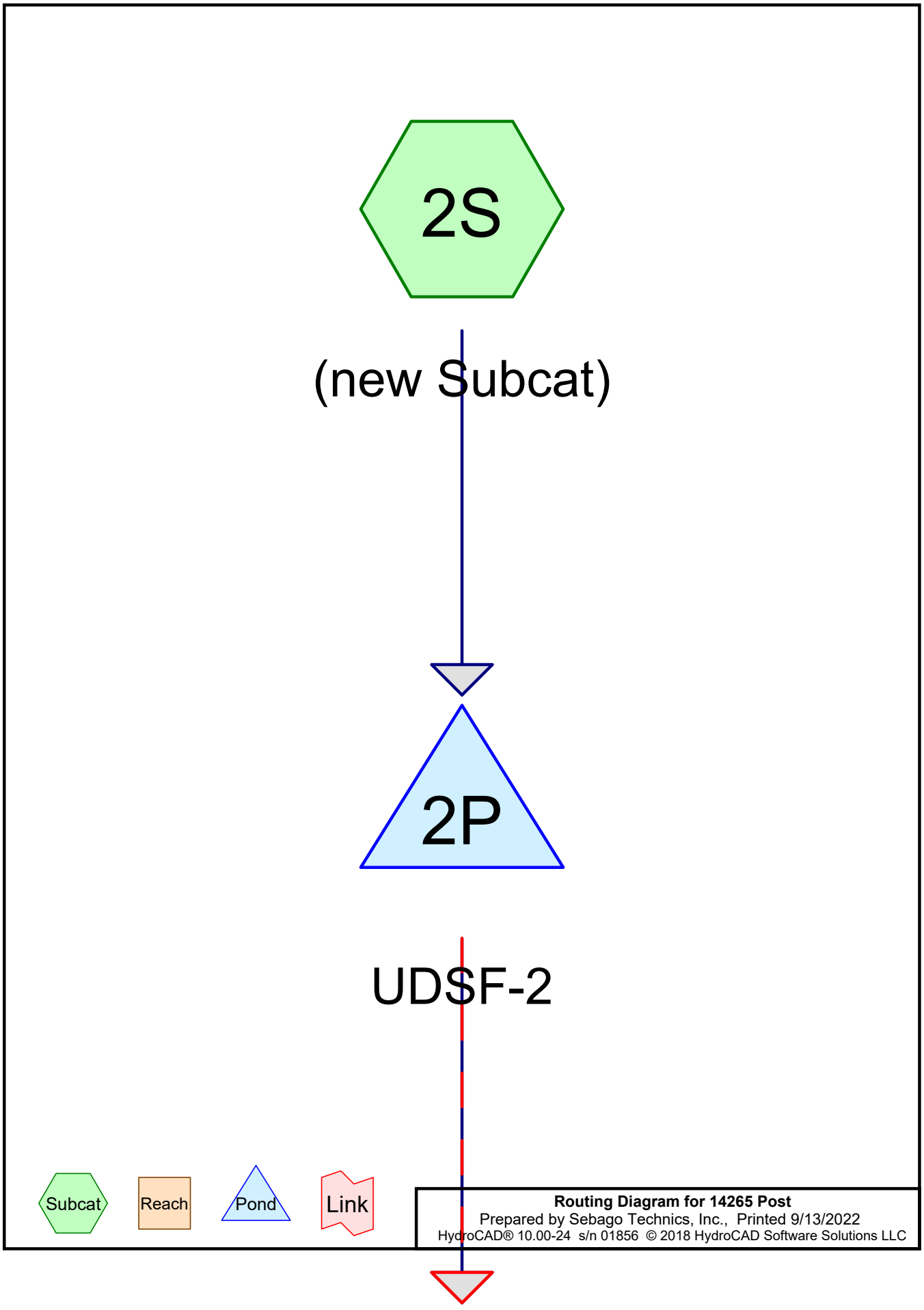
Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.50' S= 0.0036 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.70'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**1.1" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.50'	**20.0' long x 12.2' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.1 cfs @ 16.05 hrs HW=269.81' (Free Discharge)
└**1=Stormdrain** (Passes 0.1 cfs of 2.0 cfs potential flow)
  └**2=Beehive Grate** (Controls 0.0 cfs)
  └**3=Orifice** (Orifice Controls 0.1 cfs @ 8.29 fps)
    └**4=Underdrain** (Passes 0.1 cfs of 0.6 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
└**5=Overflow Spillway** (Controls 0.0 cfs)

Pond 1P: UDSF-1




2S
(new Subcat)
2P
UDSF-2
Subcat
Reach
Pond
Link
Routing Diagram for 14265 Post
Prepared by Sebago Technics, Inc., Printed 9/13/2022
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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
23,641	39	>75% Grass cover, Good, HSG A (2S)
8,057	80	>75% Grass cover, Good, HSG D (2S)
1,545	98	Concrete (2S)
3,037	98	Gravel Parking Aisle (2S)
29,860	98	Pavement / Boat Rack (2S)
6,000	98	Proposed Building (2S)
77	98	Retaining Wall (2S)
72,217	**77**	**TOTAL AREA**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment2S: (new Subcat) Runoff Area=72,217 sf 56.11% Impervious Runoff Depth=0.58"
Flow Length=325' Tc=6.0 min CN=77 Runoff=1.0 cfs 3,507 cf

Pond 2P: UDSF-2 Peak Elev=269.65' Storage=2,131 cf Inflow=1.0 cfs 3,507 cf
Primary=0.0 cfs 3,507 cf Secondary=0.0 cfs 0 cf Outflow=0.0 cfs 3,507 cf

Total Runoff Area = 72,217 sf Runoff Volume = 3,507 cf Average Runoff Depth = 0.58"
43.89% Pervious = 31,698 sf 56.11% Impervious = 40,519 sf

Summary for Subcatchment 2S: (new Subcat)

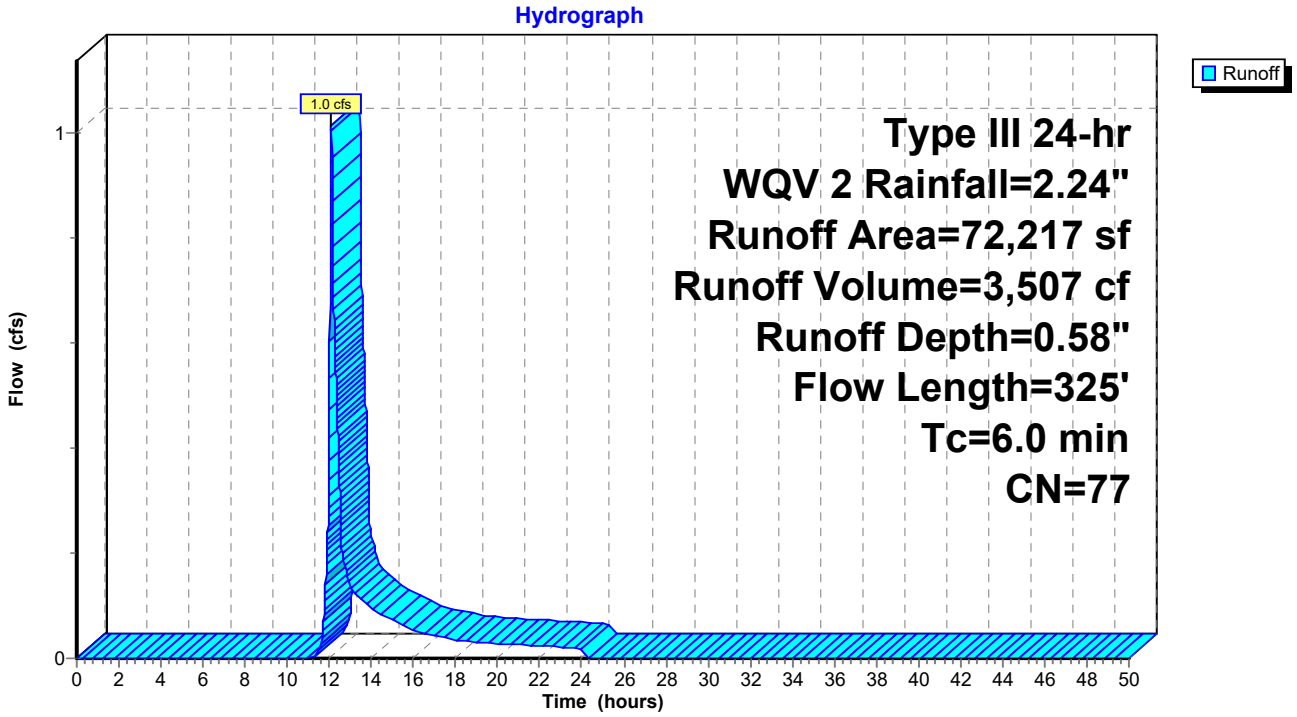
Runoff = 1.0 cfs @ 12.10 hrs, Volume= 3,507 cf, Depth= 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr WQV 2 Rainfall=2.24"

	Area (sf)	CN	Description
*	29,860	98	Pavement / Boat Rack
*	1,545	98	Concrete
*	6,000	98	Proposed Building
*	77	98	Retaining Wall
*	3,037	98	Gravel Parking Aisle
	8,057	80	>75% Grass cover, Good, HSG D
	23,641	39	>75% Grass cover, Good, HSG A
	72,217	77	Weighted Average
	31,698		43.89% Pervious Area
	40,519		56.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	26	0.2307	0.33		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.00"
1.2	89	0.0315	1.24		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	120	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.5	90	0.0194	2.83		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
2.0					**Direct Entry,**
6.0	325	Total			

Subcatchment 2S: (new Subcat)



Summary for Pond 2P: UDSF-2

Inflow Area = 72,217 sf, 56.11% Impervious, Inflow Depth = 0.58" for WQV 2 event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 3,507 cf
Outflow = 0.0 cfs @ 17.84 hrs, Volume= 3,507 cf, Atten= 96%, Lag= 344.1 min
Primary = 0.0 cfs @ 17.84 hrs, Volume= 3,507 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 269.65' @ 17.84 hrs Surf.Area= 3,465 sf Storage= 2,131 cf

Plug-Flow detention time= 656.7 min calculated for 3,507 cf (100% of inflow)
Center-of-Mass det. time= 656.8 min (1,532.2 - 875.4)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	14,953 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

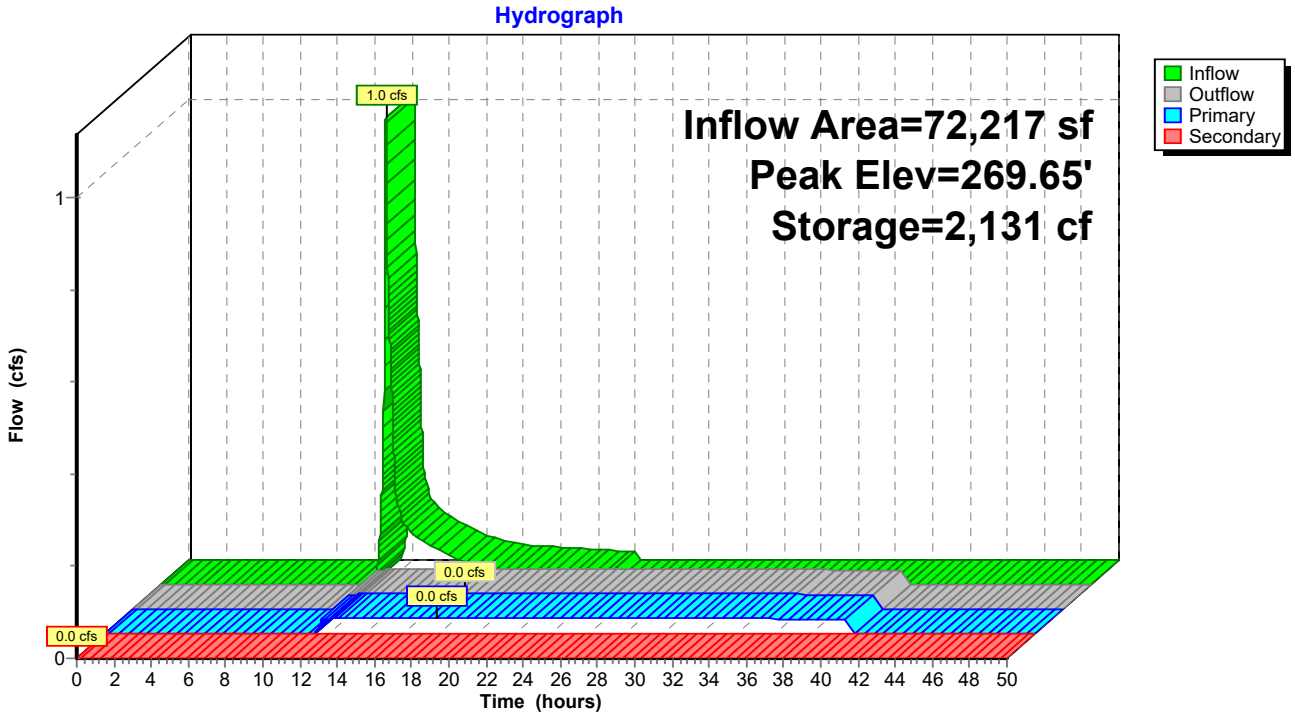
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	3,716	100.0	3,358	3,388
271.00	8,743	100.0	6,230	9,617
271.50	12,600	100.0	5,336	14,953

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain** L= 31.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.20' S= 0.0190 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.85'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**0.9" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.00'	**20.0' long x 12.0' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.0 cfs @ 17.84 hrs HW=269.65' (Free Discharge)
- **1=Stormdrain** (Passes 0.0 cfs of 2.6 cfs potential flow)
  - **2=Beehive Grate** (Controls 0.0 cfs)
  - **3=Orifice** (Orifice Controls 0.0 cfs @ 8.07 fps)
    - **4=Underdrain** (Passes 0.0 cfs of 0.6 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
- **5=Overflow Spillway** (Controls 0.0 cfs)

Pond 2P: UDSF-2



TOP OF BERM = 272.70'

Summary for Pond 1P: UDSF-1 (PLUG FLOW)

Inflow Area = 69,790 sf, 76.04% Impervious, Inflow Depth = 4.87" for 25-yr event
Inflow = 8.6 cfs @ 12.08 hrs, Volume= 28,340 cf
Outflow = 3.5 cfs @ 12.29 hrs, Volume= 15,150 cf, Atten= 59%, Lag= 12.3 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 3.5 cfs @ 12.29 hrs, Volume= 15,150 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 271.67' @ 12.29 hrs Surf.Area= 8,668 sf Storage= 14,607 cf

Plug-Flow detention time= 228.0 min calculated for 15,147 cf (53% of inflow)
Center-of-Mass det. time= 116.5 min (894.7 - 778.2)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	17,620 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	4,265	100.0	3,633	3,662
271.00	7,101	100.0	5,683	9,345
272.00	9,449	100.0	8,275	17,620

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain X 0.00** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.50' S= 0.0036 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.70'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**1.1" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.50'	**20.0' long x 12.2' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
- **1=Stormdrain** (Controls 0.0 cfs)
  - **2=Beehive Grate** (Controls 0.0 cfs)
  - **3=Orifice** (Passes 0.0 cfs of 0.0 cfs potential flow)
    - **4=Underdrain** (Passes 0.0 cfs of 0.0 cfs potential flow)

Secondary OutFlow Max=3.5 cfs @ 12.29 hrs HW=271.67' (Free Discharge)
- **5=Overflow Spillway** (Weir Controls 3.5 cfs @ 1.05 fps)

TOP OF BERM = 272.70'

Summary for Pond 1P: UDSF-1 (PLUG FLOW)

Inflow Area = 69,790 sf, 76.04% Impervious, Inflow Depth = 7.14" for 100-yr event
Inflow = 12.3 cfs @ 12.08 hrs, Volume= 41,540 cf
Outflow = 10.5 cfs @ 12.13 hrs, Volume= 28,350 cf, Atten= 15%, Lag= 3.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 10.5 cfs @ 12.13 hrs, Volume= 28,350 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 271.84' @ 12.13 hrs Surf.Area= 9,080 sf Storage= 16,166 cf

Plug-Flow detention time= 179.0 min calculated for 28,350 cf (68% of inflow)
Center-of-Mass det. time= 84.2 min (852.9 - 768.8)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	17,620 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	4,265	100.0	3,633	3,662
271.00	7,101	100.0	5,683	9,345
272.00	9,449	100.0	8,275	17,620

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain X 0.00** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.50' S= 0.0036 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.70'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**1.1" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.50'	**20.0' long x 12.2' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
└**1=Stormdrain** (Controls 0.0 cfs)
  └**2=Beehive Grate** (Controls 0.0 cfs)
  └**3=Orifice** (Passes 0.0 cfs of 0.0 cfs potential flow)
    └**4=Underdrain** (Passes 0.0 cfs of 0.0 cfs potential flow)

Secondary OutFlow Max=10.5 cfs @ 12.13 hrs HW=271.84' (Free Discharge)
└**5=Overflow Spillway** (Weir Controls 10.5 cfs @ 1.53 fps)

TOP OF BERM = 272.10'

Summary for Pond 2P: UDSF-2 (PLUG FLOW)

Inflow Area = 72,217 sf, 56.11% Impervious, Inflow Depth = 3.31" for 25-yr event
Inflow = 6.4 cfs @ 12.09 hrs, Volume= 19,890 cf
Outflow = 1.3 cfs @ 12.53 hrs, Volume= 10,273 cf, Atten= 80%, Lag= 26.7 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 1.3 cfs @ 12.53 hrs, Volume= 10,273 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 271.09' @ 12.53 hrs Surf.Area= 9,401 sf Storage= 10,392 cf

Plug-Flow detention time= 236.8 min calculated for 10,271 cf (52% of inflow)
Center-of-Mass det. time= 122.9 min (946.0 - 823.1)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	14,953 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	3,716	100.0	3,358	3,388
271.00	8,743	100.0	6,230	9,617
271.50	12,600	100.0	5,336	14,953

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain X 0.00** L= 31.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.20' S= 0.0190 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.85'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**0.9" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.00'	**20.0' long x 12.0' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
└**1=Stormdrain** (Controls 0.0 cfs)
  └**2=Beehive Grate** (Controls 0.0 cfs)
  └**3=Orifice** (Passes 0.0 cfs of 0.0 cfs potential flow)
    └**4=Underdrain** (Passes 0.0 cfs of 0.0 cfs potential flow)

Secondary OutFlow Max=1.3 cfs @ 12.53 hrs HW=271.09' (Free Discharge)
└**5=Overflow Spillway** (Weir Controls 1.3 cfs @ 0.75 fps)

TOP OF BERM = 272.10'

Summary for Pond 2P: UDSF-2 (PLUG FLOW)

Inflow Area = 72,217 sf, 56.11% Impervious, Inflow Depth = 5.37" for 100-yr event
Inflow = 10.3 cfs @ 12.09 hrs, Volume= 32,294 cf
Outflow = 6.5 cfs @ 12.18 hrs, Volume= 22,677 cf, Atten= 37%, Lag= 5.8 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 6.5 cfs @ 12.18 hrs, Volume= 22,677 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 271.25' @ 12.18 hrs Surf.Area= 10,684 sf Storage= 12,061 cf

Plug-Flow detention time= 161.7 min calculated for 22,677 cf (70% of inflow)
Center-of-Mass det. time= 68.2 min (877.4 - 809.2)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	14,953 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	3,716	100.0	3,358	3,388
271.00	8,743	100.0	6,230	9,617
271.50	12,600	100.0	5,336	14,953

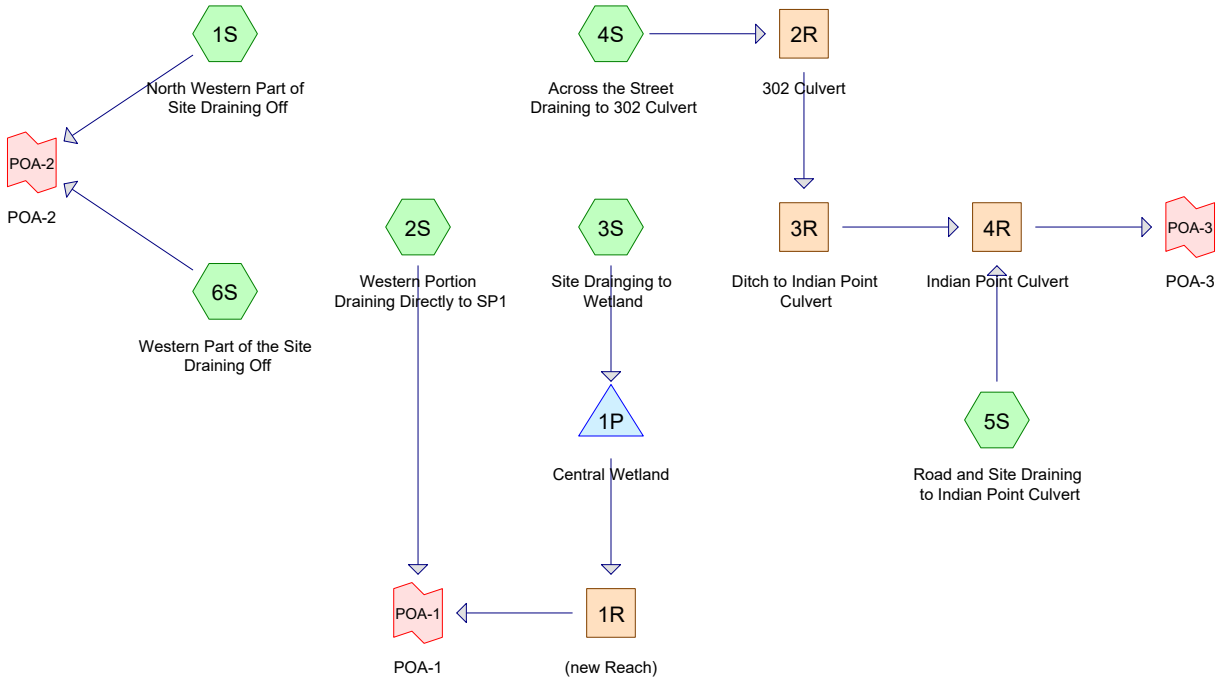
Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain X 0.00** L= 31.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.20' S= 0.0190 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.85'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**0.9" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.00'	**20.0' long x 12.0' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
└**1=Stormdrain** (Controls 0.0 cfs)
  └**2=Beehive Grate** (Controls 0.0 cfs)
  └**3=Orifice** (Passes 0.0 cfs of 0.0 cfs potential flow)
    └**4=Underdrain** (Passes 0.0 cfs of 0.0 cfs potential flow)

Secondary OutFlow Max=6.5 cfs @ 12.18 hrs HW=271.25' (Free Discharge)
└**5=Overflow Spillway** (Weir Controls 6.5 cfs @ 1.30 fps)

Appendix 2A

Existing Conditions HydroCAD Summary



Subcat Reach Pond Link

Routing Diagram for 14265 Pre
Prepared by Sebago Technics, Inc., Printed 9/13/2022

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
700	98	(5S)
66,724	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S)
1,408	61	>75% Grass cover, Good, HSG B (2S)
21,819	80	>75% Grass cover, Good, HSG D (2S, 3S, 4S, 5S, 6S)
9,067	30	Brush, Good, HSG A (2S)
8,890	73	Brush, Good, HSG D (2S)
18,409	98	Gravel Impervious Area (2S)
8,486	98	Impervious (1S, 3S)
3,794	98	Impervious Area (2S)
34,167	98	Impervious area (4S)
23,083	98	Pavement (5S)
89,011	30	Woods, Good, HSG A (2S, 3S, 4S)
31,640	55	Woods, Good, HSG B (2S)
108,232	77	Woods, Good, HSG D (2S, 3S, 5S)
425,430	**63**	**TOTAL AREA**

Summary for Subcatchment 1S: North Western Part of Site Draining Off

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 1,442 cf, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	3,339	98	Impervious
	7,256	39	>75% Grass cover, Good, HSG A
	10,595	58	Weighted Average
	7,256		68.49% Pervious Area
	3,339		31.51% Impervious Area

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

Summary for Subcatchment 2S: Western Portion Draining Directly to SP1

Runoff = 6.2 cfs @ 12.12 hrs, Volume= 21,698 cf, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	3,794	98	Impervious Area
*	18,409	98	Gravel Impervious Area
	9,067	30	Brush, Good, HSG A
	19,511	30	Woods, Good, HSG A
	16,599	39	>75% Grass cover, Good, HSG A
	26,515	77	Woods, Good, HSG D
	8,890	73	Brush, Good, HSG D
	3,187	80	>75% Grass cover, Good, HSG D
	31,640	55	Woods, Good, HSG B
	1,408	61	>75% Grass cover, Good, HSG B
	139,020	61	Weighted Average
	116,817		84.03% Pervious Area
	22,203		15.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	64	0.0391	1.59		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.00"
0.4	54	0.0833	2.02		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0600	4.97		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
1.4	148	0.0642	1.77		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	86	0.0378	3.95		**Shallow Concentrated Flow, E-F** Paved Kv= 20.3 fps
4.7	190	0.0184	0.68		**Shallow Concentrated Flow, F-G** Woodland Kv= 5.0 fps
7.7	567	Total			

Summary for Subcatchment 3S: Site Drainging to Wetland

Runoff = 7.0 cfs @ 12.13 hrs, Volume= 24,107 cf, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	5,147	98	Impervious
	34,514	39	>75% Grass cover, Good, HSG A
	5,130	30	Woods, Good, HSG A
	7,363	80	>75% Grass cover, Good, HSG D
	74,004	77	Woods, Good, HSG D
	126,158	66	Weighted Average
	121,011		95.92% Pervious Area
	5,147		4.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	98	0.0816	0.29		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.00"
0.1	33	0.0758	5.59		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
1.0	108	0.0648	1.78		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
1.7	100	0.0200	0.99		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
8.5	339	Total			

Summary for Subcatchment 4S: Across the Street Draining to 302 Culvert

Runoff = 2.9 cfs @ 12.13 hrs, Volume= 11,482 cf, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
	8,355	39	>75% Grass cover, Good, HSG A
*	34,167	98	Impervious area
	64,370	30	Woods, Good, HSG A
	2,700	80	>75% Grass cover, Good, HSG D
	109,592	53	Weighted Average
	75,425		68.82% Pervious Area
	34,167		31.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	43	0.1860	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.2	96	0.1146	6.87		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.4	98	0.0510	4.58		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.2	51	0.0390	4.01		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
2.8	383	0.0235	2.30		**Shallow Concentrated Flow, E-F** Grassed Waterway Kv= 15.0 fps
8.2	671	Total			

Summary for Subcatchment 5S: Road and Site Draining to Indian Point Culvert

Runoff = 4.2 cfs @ 12.12 hrs, Volume= 15,202 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
	6,816	80	>75% Grass cover, Good, HSG D
*	23,083	98	Pavement
	7,713	77	Woods, Good, HSG D
*	700	98	
	38,312	91	Weighted Average
	14,529		37.92% Pervious Area
	23,783		62.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0420	1.41		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.00"
1.5	300	0.0267	3.32		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.1	24	0.2600	3.57		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
6.9	271	0.0172	0.66		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
8.9	625	Total			

Summary for Subcatchment 6S: Western Part of the Site Draining Off

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 526 cf, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (sf)	CN	Description
1,753	80	>75% Grass cover, Good, HSG D
1,753		100.00% Pervious Area

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

Summary for Reach 1R: (new Reach)

Inflow Area = 126,158 sf, 4.08% Impervious, Inflow Depth = 2.12" for 25-YR event
Inflow = 6.3 cfs @ 12.17 hrs, Volume= 22,236 cf
Outflow = 5.5 cfs @ 12.34 hrs, Volume= 22,236 cf, Atten= 13%, Lag= 10.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.69 fps, Min. Travel Time= 5.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 20.1 min

Peak Storage= 1,863 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 0.50' Flow Area= 22.5 sf, Capacity= 22.9 cfs

20.00' x 0.50' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 70.00'
Length= 234.0' Slope= 0.0137 '/'
Inlet Invert= 268.20', Outlet Invert= 265.00'

‡

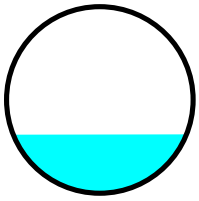
Summary for Reach 2R: 302 Culvert

Inflow Area = 109,592 sf, 31.18% Impervious, Inflow Depth = 1.26" for 25-YR event
Inflow = 2.9 cfs @ 12.13 hrs, Volume= 11,482 cf
Outflow = 2.9 cfs @ 12.14 hrs, Volume= 11,482 cf, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.99 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.59 fps, Avg. Travel Time= 0.5 min

Peak Storage= 34 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 13.3 cfs

18.0" Round Pipe
n= 0.025 Corrugated metal
Length= 71.0' Slope= 0.0592 '/'
Inlet Invert= 274.75', Outlet Invert= 270.55'



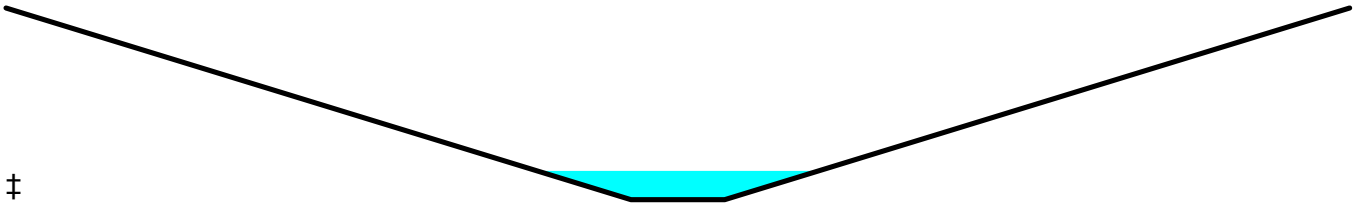
Summary for Reach 3R: Ditch to Indian Point Culvert

Inflow Area = 109,592 sf, 31.18% Impervious, Inflow Depth = 1.26" for 25-YR event
Inflow = 2.9 cfs @ 12.14 hrs, Volume= 11,482 cf
Outflow = 2.7 cfs @ 12.21 hrs, Volume= 11,482 cf, Atten= 4%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.52 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 5.2 min

Peak Storage= 364 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 2.00' Flow Area= 46.0 sf, Capacity= 213.5 cfs

3.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 10.0 '/' Top Width= 43.00'
Length= 202.0' Slope= 0.0110 '/'
Inlet Invert= 270.55', Outlet Invert= 268.33'



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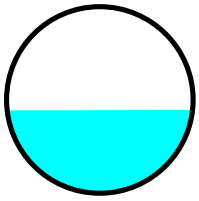
Summary for Reach 4R: Indian Point Culvert

Inflow Area = 147,904 sf, 39.18% Impervious, Inflow Depth = 2.17" for 25-YR event
Inflow = 6.3 cfs @ 12.16 hrs, Volume= 26,685 cf
Outflow = 6.3 cfs @ 12.16 hrs, Volume= 26,685 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.32 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.89 fps, Avg. Travel Time= 0.3 min

Peak Storage= 46 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.67'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.5 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 60.1' Slope= 0.0185 '/'
Inlet Invert= 268.33', Outlet Invert= 267.22'



Summary for Pond 1P: Central Wetland

Inflow Area = 126,158 sf, 4.08% Impervious, Inflow Depth = 2.29" for 25-YR event
Inflow = 7.0 cfs @ 12.13 hrs, Volume= 24,107 cf
Outflow = 6.3 cfs @ 12.17 hrs, Volume= 22,236 cf, Atten= 9%, Lag= 2.8 min
Primary = 6.3 cfs @ 12.17 hrs, Volume= 22,236 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 268.29' @ 12.17 hrs Surf.Area= 18,047 sf Storage= 3,312 cf

Plug-Flow detention time= 59.8 min calculated for 22,236 cf (92% of inflow)
Center-of-Mass det. time= 20.3 min (872.2 - 851.9)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	27,643 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	4,785	0	0
269.00	50,500	27,643	27,643

Device	Routing	Invert	Outlet Devices
#1	Primary	268.20'	**100.0' 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

Primary OutFlow Max=6.3 cfs @ 12.17 hrs HW=268.29' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 6.3 cfs @ 0.70 fps)

Summary for Link POA-1: POA-1

Inflow Area = 265,178 sf, 10.31% Impervious, Inflow Depth = 1.99" for 25-YR event
Inflow = 8.8 cfs @ 12.31 hrs, Volume= 43,934 cf
Primary = 8.8 cfs @ 12.31 hrs, Volume= 43,934 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link POA-2: POA-2

Inflow Area = 12,348 sf, 27.04% Impervious, Inflow Depth = 1.91" for 25-YR event
Inflow = 0.6 cfs @ 12.10 hrs, Volume= 1,968 cf
Primary = 0.6 cfs @ 12.10 hrs, Volume= 1,968 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link POA-3: POA-3

Inflow Area = 147,904 sf, 39.18% Impervious, Inflow Depth = 2.17" for 25-YR event
Inflow = 6.3 cfs @ 12.16 hrs, Volume= 26,685 cf
Primary = 6.3 cfs @ 12.16 hrs, Volume= 26,685 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: North Western Part of Runoff Area=10,595 sf 31.51% Impervious Runoff Depth=0.31"
Tc=6.0 min CN=58 Runoff=0.0 cfs 271 cf

Subcatchment2S: Western Portion Runoff Area=139,020 sf 15.97% Impervious Runoff Depth=0.40"
Flow Length=567' Tc=7.7 min CN=61 Runoff=0.8 cfs 4,678 cf

Subcatchment3S: Site Drainging to Runoff Area=126,158 sf 4.08% Impervious Runoff Depth=0.59"
Flow Length=339' Tc=8.5 min CN=66 Runoff=1.4 cfs 6,236 cf

Subcatchment4S: Across the Street Runoff Area=109,592 sf 31.18% Impervious Runoff Depth=0.17"
Flow Length=671' Tc=8.2 min CN=53 Runoff=0.1 cfs 1,576 cf

Subcatchment5S: Road and Site Draining Runoff Area=38,312 sf 62.08% Impervious Runoff Depth=2.16"
Flow Length=625' Tc=8.9 min CN=91 Runoff=2.0 cfs 6,911 cf

Subcatchment6S: Western Part of the Site Runoff Area=1,753 sf 0.00% Impervious Runoff Depth=1.33"
Tc=6.0 min CN=80 Runoff=0.1 cfs 194 cf

Reach 1R: (new Reach) Avg. Flow Depth=0.05' Max Vel=0.27 fps Inflow=0.4 cfs 4,365 cf
n=0.080 L=234.0' S=0.0137 '/' Capacity=22.9 cfs Outflow=0.3 cfs 4,365 cf

Reach 2R: 302 Culvert Avg. Flow Depth=0.10' Max Vel=2.40 fps Inflow=0.1 cfs 1,576 cf
18.0" Round Pipe n=0.025 L=71.0' S=0.0592 '/' Capacity=13.3 cfs Outflow=0.1 cfs 1,576 cf

Reach 3R: Ditch to Indian Point Culvert Avg. Flow Depth=0.06' Max Vel=0.60 fps Inflow=0.1 cfs 1,576 cf
n=0.035 L=202.0' S=0.0110 '/' Capacity=213.5 cfs Outflow=0.1 cfs 1,576 cf

Reach 4R: Indian Point Culvert Avg. Flow Depth=0.36' Max Vel=6.02 fps Inflow=2.0 cfs 8,487 cf
18.0" Round Pipe n=0.012 L=60.1' S=0.0185 '/' Capacity=15.5 cfs Outflow=2.0 cfs 8,487 cf

Pond 1P: Central Wetland Peak Elev=268.21' Storage=2,059 cf Inflow=1.4 cfs 6,236 cf
Outflow=0.4 cfs 4,365 cf

Link POA-1: POA-1 Inflow=0.8 cfs 9,043 cf
Primary=0.8 cfs 9,043 cf

Link POA-2: POA-2 Inflow=0.1 cfs 464 cf
Primary=0.1 cfs 464 cf

Link POA-3: POA-3 Inflow=2.0 cfs 8,487 cf
Primary=2.0 cfs 8,487 cf

Total Runoff Area = 425,430 sf Runoff Volume = 19,866 cf Average Runoff Depth = 0.56"
79.16% Pervious = 336,791 sf 20.84% Impervious = 88,639 sf

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: North Western Part of Runoff Area=10,595 sf 31.51% Impervious Runoff Depth=0.96"
Tc=6.0 min CN=58 Runoff=0.2 cfs 844 cf

Subcatchment2S: Western Portion Runoff Area=139,020 sf 15.97% Impervious Runoff Depth=1.14"
Flow Length=567' Tc=7.7 min CN=61 Runoff=3.5 cfs 13,155 cf

Subcatchment3S: Site Drainging to Runoff Area=126,158 sf 4.08% Impervious Runoff Depth=1.46"
Flow Length=339' Tc=8.5 min CN=66 Runoff=4.3 cfs 15,361 cf

Subcatchment4S: Across the Street Runoff Area=109,592 sf 31.18% Impervious Runoff Depth=0.68"
Flow Length=671' Tc=8.2 min CN=53 Runoff=1.2 cfs 6,239 cf

Subcatchment5S: Road and Site Draining Runoff Area=38,312 sf 62.08% Impervious Runoff Depth=3.59"
Flow Length=625' Tc=8.9 min CN=91 Runoff=3.2 cfs 11,476 cf

Subcatchment6S: Western Part of the Site Runoff Area=1,753 sf 0.00% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=80 Runoff=0.1 cfs 372 cf

Reach 1R: (new Reach) Avg. Flow Depth=0.17' Max Vel=0.56 fps Inflow=3.4 cfs 13,490 cf
n=0.080 L=234.0' S=0.0137 '/' Capacity=22.9 cfs Outflow=2.7 cfs 13,490 cf

Reach 2R: 302 Culvert Avg. Flow Depth=0.31' Max Vel=4.70 fps Inflow=1.2 cfs 6,239 cf
18.0" Round Pipe n=0.025 L=71.0' S=0.0592 '/' Capacity=13.3 cfs Outflow=1.2 cfs 6,239 cf

Reach 3R: Ditch to Indian Point Culvert Avg. Flow Depth=0.19' Max Vel=1.20 fps Inflow=1.2 cfs 6,239 cf
n=0.035 L=202.0' S=0.0110 '/' Capacity=213.5 cfs Outflow=1.2 cfs 6,239 cf

Reach 4R: Indian Point Culvert Avg. Flow Depth=0.50' Max Vel=7.19 fps Inflow=3.7 cfs 17,715 cf
18.0" Round Pipe n=0.012 L=60.1' S=0.0185 '/' Capacity=15.5 cfs Outflow=3.7 cfs 17,715 cf

Pond 1P: Central Wetland Peak Elev=268.26' Storage=2,783 cf Inflow=4.3 cfs 15,361 cf
Outflow=3.4 cfs 13,490 cf

Link POA-1: POA-1 Inflow=4.4 cfs 26,644 cf
Primary=4.4 cfs 26,644 cf

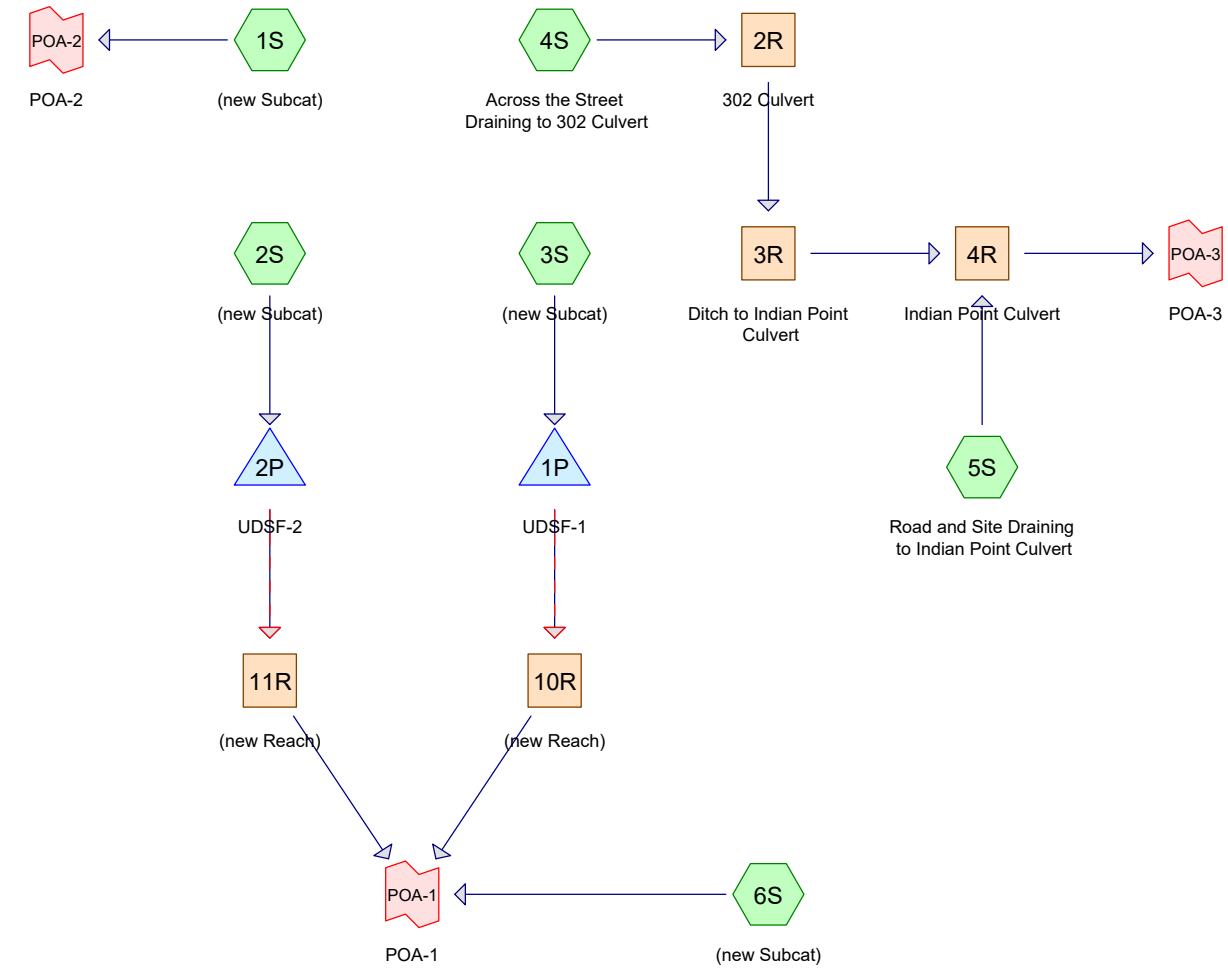
Link POA-2: POA-2 Inflow=0.3 cfs 1,216 cf
Primary=0.3 cfs 1,216 cf

Link POA-3: POA-3 Inflow=3.7 cfs 17,715 cf
Primary=3.7 cfs 17,715 cf

Total Runoff Area = 425,430 sf Runoff Volume = 47,447 cf Average Runoff Depth = 1.34"
79.16% Pervious = 336,791 sf 20.84% Impervious = 88,639 sf

Appendix 2B

Proposed Conditions
HydroCAD Summary



Subcat Reach Pond Link

Routing Diagram for 14265 Post
Prepared by Sebago Technics, Inc., Printed 9/13/2022

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
47,324	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S, 6S)
1,408	61	>75% Grass cover, Good, HSG B (6S)
49,752	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 5S, 6S)
53,068	98	Boat Parking / Drive Aisle (3S)
9,067	30	Brush, Good, HSG A (6S)
8,785	73	Brush, Good, HSG D (6S)
1,562	98	Concrete (1S, 2S)
2,331	98	Existing Pavement (1S)
3,037	98	Gravel Parking Aisle (2S)
34,167	98	Impervious area (4S)
23,608	98	Pavement (5S)
29,860	98	Pavement / Boat Rack (2S)
6,000	98	Proposed Building (2S)
407	98	Proposed Pavement (1S)
77	98	Retaining Wall (2S)
88,044	30	Woods, Good, HSG A (4S, 6S)
32,096	55	Woods, Good, HSG B (6S)
34,837	77	Woods, Good, HSG D (1S, 5S, 6S)
425,430	**68**	**TOTAL AREA**

Summary for Subcatchment 1S: (new Subcat)

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 1,865 cf, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

	Area (sf)	CN	Description
*	2,331	98	Existing Pavement
*	17	98	Concrete
*	407	98	Proposed Pavement
	1,109	80	>75% Grass cover, Good, HSG D
	1,338	77	Woods, Good, HSG D
	5,778	39	>75% Grass cover, Good, HSG A
	10,980	63	Weighted Average
	8,225		74.91% Pervious Area
	2,755		25.09% Impervious Area

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

Summary for Subcatchment 2S: (new Subcat)

Runoff = 6.4 cfs @ 12.09 hrs, Volume= 19,890 cf, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

	Area (sf)	CN	Description
*	29,860	98	Pavement / Boat Rack
*	1,545	98	Concrete
*	6,000	98	Proposed Building
*	77	98	Retaining Wall
*	3,037	98	Gravel Parking Aisle
	8,057	80	>75% Grass cover, Good, HSG D
	23,641	39	>75% Grass cover, Good, HSG A
	72,217	77	Weighted Average
	31,698		43.89% Pervious Area
	40,519		56.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	26	0.2307	0.33		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.00"
1.2	89	0.0315	1.24		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	120	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.5	90	0.0194	2.83		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
2.0					**Direct Entry,**
6.0	325	Total			

Summary for Subcatchment 3S: (new Subcat)

Runoff = 8.6 cfs @ 12.08 hrs, Volume= 28,340 cf, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

	Area (sf)	CN	Description
*	53,068	98	Boat Parking / Drive Aisle
	14,594	80	>75% Grass cover, Good, HSG D
	2,128	39	>75% Grass cover, Good, HSG A
	69,790	92	Weighted Average
	16,722		23.96% Pervious Area
	53,068		76.04% Impervious Area

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

Summary for Subcatchment 4S: Across the Street Draining to 302 Culvert

Runoff = 2.9 cfs @ 12.13 hrs, Volume= 11,482 cf, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

	Area (sf)	CN	Description
	8,355	39	>75% Grass cover, Good, HSG A
*	34,167	98	Impervious area
	64,370	30	Woods, Good, HSG A
	2,700	80	>75% Grass cover, Good, HSG D
	109,592	53	Weighted Average
	75,425		68.82% Pervious Area
	34,167		31.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	43	0.1860	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.00"
0.2	96	0.1146	6.87		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.4	98	0.0510	4.58		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
0.2	51	0.0390	4.01		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
2.8	383	0.0235	2.30		**Shallow Concentrated Flow, E-F** Grassed Waterway Kv= 15.0 fps
8.2	671	Total			

Summary for Subcatchment 5S: Road and Site Draining to Indian Point Culvert

Runoff = 4.3 cfs @ 12.12 hrs, Volume= 15,484 cf, Depth= 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

	Area (sf)	CN	Description
	6,816	80	>75% Grass cover, Good, HSG D
*	23,608	98	Pavement
	7,713	77	Woods, Good, HSG D
	1,810	80	>75% Grass cover, Good, HSG D
	39,947	90	Weighted Average
	16,339		40.90% Pervious Area
	23,608		59.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	30	0.0500	1.51		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.00"
1.5	308	0.0267	3.32		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
0.1	28	0.2600	3.57		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
6.9	271	0.0172	0.66		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
8.8	637	Total			

Summary for Subcatchment 6S: (new Subcat)

Runoff = 2.2 cfs @ 12.61 hrs, Volume= 15,153 cf, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

Area (sf)	CN	Description
7,422	39	>75% Grass cover, Good, HSG A
9,067	30	Brush, Good, HSG A
23,674	30	Woods, Good, HSG A
14,666	80	>75% Grass cover, Good, HSG D
8,785	73	Brush, Good, HSG D
25,786	77	Woods, Good, HSG D
32,096	55	Woods, Good, HSG B
1,408	61	>75% Grass cover, Good, HSG B
122,904	56	Weighted Average
122,904		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	50	0.0080	0.05		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.00"
2.8	75	0.0080	0.45		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
6.6	158	0.0063	0.40		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
10.8	316	0.0095	0.49		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
38.6	599	Total			

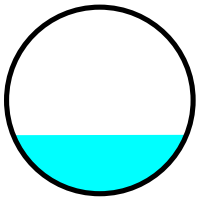
Summary for Reach 2R: 302 Culvert

Inflow Area = 109,592 sf, 31.18% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 2.9 cfs @ 12.13 hrs, Volume= 11,482 cf
Outflow = 2.9 cfs @ 12.14 hrs, Volume= 11,482 cf, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.99 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.59 fps, Avg. Travel Time= 0.5 min

Peak Storage= 34 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 13.3 cfs

18.0" Round Pipe
n= 0.025 Corrugated metal
Length= 71.0' Slope= 0.0592 '/'
Inlet Invert= 274.75', Outlet Invert= 270.55'



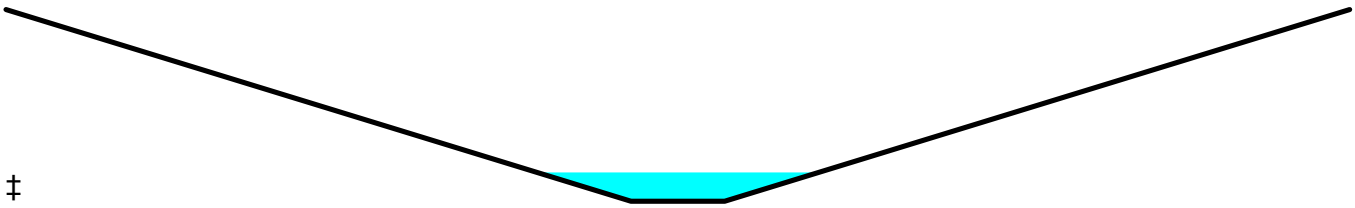
Summary for Reach 3R: Ditch to Indian Point Culvert

Inflow Area = 109,592 sf, 31.18% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 2.9 cfs @ 12.14 hrs, Volume= 11,482 cf
Outflow = 2.7 cfs @ 12.21 hrs, Volume= 11,482 cf, Atten= 4%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.52 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 5.2 min

Peak Storage= 364 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 2.00' Flow Area= 46.0 sf, Capacity= 213.5 cfs

3.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 10.0 '/' Top Width= 43.00'
Length= 202.0' Slope= 0.0110 '/'
Inlet Invert= 270.55', Outlet Invert= 268.33'



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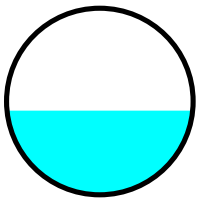
Summary for Reach 4R: Indian Point Culvert

Inflow Area = 149,539 sf, 38.64% Impervious, Inflow Depth = 2.16" for 25-yr event
Inflow = 6.4 cfs @ 12.16 hrs, Volume= 26,966 cf
Outflow = 6.4 cfs @ 12.16 hrs, Volume= 26,966 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.35 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.92 fps, Avg. Travel Time= 0.3 min

Peak Storage= 46 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.67'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.5 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 60.1' Slope= 0.0185 '/'
Inlet Invert= 268.33', Outlet Invert= 267.22'



Summary for Reach 10R: (new Reach)

Inflow Area = 69,790 sf, 76.04% Impervious, Inflow Depth > 4.54" for 25-yr event
Inflow = 2.5 cfs @ 12.42 hrs, Volume= 26,381 cf
Outflow = 2.4 cfs @ 12.54 hrs, Volume= 26,328 cf, Atten= 0%, Lag= 7.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.49 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 10.7 min

Peak Storage= 581 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 13.3 cfs

10.00' x 0.50' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 60.00'
Length= 116.0' Slope= 0.0086 '/'
Inlet Invert= 266.00', Outlet Invert= 265.00'

‡

Summary for Reach 11R: (new Reach)

Inflow Area = 72,217 sf, 56.11% Impervious, Inflow Depth > 2.55" for 25-yr event
Inflow = 1.2 cfs @ 12.56 hrs, Volume= 15,348 cf
Outflow = 1.1 cfs @ 12.60 hrs, Volume= 15,335 cf, Atten= 0%, Lag= 2.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.55 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 0.22 fps, Avg. Travel Time= 3.5 min

Peak Storage= 98 cf @ 12.58 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 0.50' Flow Area= 17.5 sf, Capacity= 20.9 cfs

10.00' x 0.50' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 60.00'
Length= 47.0' Slope= 0.0213 '/'
Inlet Invert= 266.00', Outlet Invert= 265.00'

‡

Summary for Pond 1P: UDSF-1

Inflow Area = 69,790 sf, 76.04% Impervious, Inflow Depth = 4.87" for 25-yr event
Inflow = 8.6 cfs @ 12.08 hrs, Volume= 28,340 cf
Outflow = 2.5 cfs @ 12.42 hrs, Volume= 26,381 cf, Atten= 71%, Lag= 20.1 min
Primary = 2.5 cfs @ 12.42 hrs, Volume= 26,381 cf
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 271.44' @ 12.42 hrs Surf.Area= 8,140 sf Storage= 12,716 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 342.5 min (1,120.6 - 778.2)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	17,620 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	4,265	100.0	3,633	3,662
271.00	7,101	100.0	5,683	9,345
272.00	9,449	100.0	8,275	17,620

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.50' S= 0.0036 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.70'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**1.1" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.50'	**20.0' long x 12.2' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=2.5 cfs @ 12.42 hrs HW=271.44' (Free Discharge)
- **1=Stormdrain** (Passes 2.5 cfs of 2.5 cfs potential flow)
  - **2=Beehive Grate** (Orifice Controls 2.4 cfs @ 4.15 fps)
  - **3=Orifice** (Orifice Controls 0.1 cfs @ 10.32 fps)
    - **4=Underdrain** (Passes 0.1 cfs of 0.8 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=266.83' (Free Discharge)
- **5=Overflow Spillway** (Controls 0.0 cfs)

Summary for Pond 2P: UDSF-2

Inflow Area = 72,217 sf, 56.11% Impervious, Inflow Depth = 3.31" for 25-yr event
Inflow = 6.4 cfs @ 12.09 hrs, Volume= 19,890 cf
Outflow = 1.2 cfs @ 12.56 hrs, Volume= 15,348 cf, Atten= 82%, Lag= 28.2 min
Primary = 1.1 cfs @ 12.56 hrs, Volume= 15,341 cf
Secondary = 0.0 cfs @ 12.56 hrs, Volume= 7 cf

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 271.00' @ 12.56 hrs Surf.Area= 8,765 sf Storage= 9,642 cf

Plug-Flow detention time= 499.9 min calculated for 15,345 cf (77% of inflow)
Center-of-Mass det. time= 416.6 min (1,239.7 - 823.1)

Volume	Invert	Avail.Storage	Storage Description
#1	266.83'	14,953 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.83	3,000	0.0	0	0
266.84	3,000	0.0	0	0
268.99	3,000	0.0	0	0
269.00	3,000	100.0	30	30
270.00	3,716	100.0	3,358	3,388
271.00	8,743	100.0	6,230	9,617
271.50	12,600	100.0	5,336	14,953

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**8.0" Round Stormdrain** L= 31.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.20' S= 0.0190 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	270.85'	**1.3" x 1.3" Horiz. Beehive Grate X 7.00 columns** X 7 rows C= 0.600 Limited to weir flow at low heads
#3	Device 1	266.80'	**0.9" Vert. Orifice** C= 0.600
#4	Device 3	266.80'	**4.0" Round Underdrain** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.80' / 266.80' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#5	Secondary	271.00'	**20.0' long x 12.0' breadth Overflow Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=1.1 cfs @ 12.56 hrs HW=271.00' (Free Discharge)
└**1=Stormdrain** (Passes 1.1 cfs of 3.2 cfs potential flow)
  └**2=Beehive Grate** (Orifice Controls 1.1 cfs @ 1.88 fps)
  └**3=Orifice** (Orifice Controls 0.0 cfs @ 9.83 fps)
    └**4=Underdrain** (Passes 0.0 cfs of 0.8 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 12.56 hrs HW=271.00' (Free Discharge)
└**5=Overflow Spillway** (Weir Controls 0.0 cfs @ 0.14 fps)

Summary for Link POA-1: POA-1

Inflow Area = 264,911 sf, 35.33% Impervious, Inflow Depth > 2.57" for 25-yr event
Inflow = 5.8 cfs @ 12.59 hrs, Volume= 56,816 cf
Primary = 5.8 cfs @ 12.59 hrs, Volume= 56,816 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link POA-2: POA-2

Inflow Area = 10,980 sf, 25.09% Impervious, Inflow Depth = 2.04" for 25-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 1,865 cf
Primary = 0.6 cfs @ 12.09 hrs, Volume= 1,865 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link POA-3: POA-3

Inflow Area = 149,539 sf, 38.64% Impervious, Inflow Depth = 2.16" for 25-yr event
Inflow = 6.4 cfs @ 12.16 hrs, Volume= 26,966 cf
Primary = 6.4 cfs @ 12.16 hrs, Volume= 26,966 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: (new Subcat) Runoff Area=10,980 sf 25.09% Impervious Runoff Depth=0.48"
Tc=6.0 min CN=63 Runoff=0.1 cfs 435 cf

Subcatchment2S: (new Subcat) Runoff Area=72,217 sf 56.11% Impervious Runoff Depth=1.14"
Flow Length=325' Tc=6.0 min CN=77 Runoff=2.1 cfs 6,866 cf

Subcatchment3S: (new Subcat) Runoff Area=69,790 sf 76.04% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=92 Runoff=4.1 cfs 13,119 cf

Subcatchment4S: Across the Street Runoff Area=109,592 sf 31.18% Impervious Runoff Depth=0.17"
Flow Length=671' Tc=8.2 min CN=53 Runoff=0.1 cfs 1,576 cf

Subcatchment5S: Road and Site Draining Runoff Area=39,947 sf 59.10% Impervious Runoff Depth=2.08"
Flow Length=637' Tc=8.8 min CN=90 Runoff=2.0 cfs 6,911 cf

Subcatchment6S: (new Subcat) Runoff Area=122,904 sf 0.00% Impervious Runoff Depth=0.25"
Flow Length=599' Tc=38.6 min CN=56 Runoff=0.2 cfs 2,550 cf

Reach 2R: 302 Culvert Avg. Flow Depth=0.10' Max Vel=2.40 fps Inflow=0.1 cfs 1,576 cf
18.0" Round Pipe n=0.025 L=71.0' S=0.0592 '/' Capacity=13.3 cfs Outflow=0.1 cfs 1,576 cf

Reach 3R: Ditch to Indian Point Culvert Avg. Flow Depth=0.06' Max Vel=0.60 fps Inflow=0.1 cfs 1,576 cf
n=0.035 L=202.0' S=0.0110 '/' Capacity=213.5 cfs Outflow=0.1 cfs 1,576 cf

Reach 4R: Indian Point Culvert Avg. Flow Depth=0.37' Max Vel=6.04 fps Inflow=2.0 cfs 8,488 cf
18.0" Round Pipe n=0.012 L=60.1' S=0.0185 '/' Capacity=15.5 cfs Outflow=2.0 cfs 8,488 cf

Reach 10R: (new Reach) Avg. Flow Depth=0.09' Max Vel=0.28 fps Inflow=0.4 cfs 11,311 cf
n=0.080 L=116.0' S=0.0086 '/' Capacity=13.3 cfs Outflow=0.3 cfs 11,250 cf

Reach 11R: (new Reach) Avg. Flow Depth=0.02' Max Vel=0.19 fps Inflow=0.0 cfs 5,360 cf
n=0.080 L=47.0' S=0.0213 '/' Capacity=20.9 cfs Outflow=0.0 cfs 5,342 cf

Pond 1P: UDSF-1 Peak Elev=270.73' Storage=7,520 cf Inflow=4.1 cfs 13,119 cf
Primary=0.4 cfs 11,311 cf Secondary=0.0 cfs 0 cf Outflow=0.4 cfs 11,311 cf

Pond 2P: UDSF-2 Peak Elev=270.36' Storage=5,029 cf Inflow=2.1 cfs 6,866 cf
Primary=0.0 cfs 5,360 cf Secondary=0.0 cfs 0 cf Outflow=0.0 cfs 5,360 cf

Link POA-1: POA-1 Inflow=0.5 cfs 19,142 cf
Primary=0.5 cfs 19,142 cf

Link POA-2: POA-2 Inflow=0.1 cfs 435 cf
Primary=0.1 cfs 435 cf

Link POA-3: POA-3 Inflow=2.0 cfs 8,488 cf
Primary=2.0 cfs 8,488 cf

Total Runoff Area = 425,430 sf Runoff Volume = 31,457 cf Average Runoff Depth = 0.89"
63.77% Pervious = 271,313 sf 36.23% Impervious = 154,117 sf

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: (new Subcat) Runoff Area=10,980 sf 25.09% Impervious Runoff Depth=1.26"
Tc=6.0 min CN=63 Runoff=0.3 cfs 1,155 cf

Subcatchment2S: (new Subcat) Runoff Area=72,217 sf 56.11% Impervious Runoff Depth=2.29"
Flow Length=325' Tc=6.0 min CN=77 Runoff=4.4 cfs 13,794 cf

Subcatchment3S: (new Subcat) Runoff Area=69,790 sf 76.04% Impervious Runoff Depth=3.70"
Tc=6.0 min CN=92 Runoff=6.6 cfs 21,515 cf

Subcatchment4S: Across the Street Runoff Area=109,592 sf 31.18% Impervious Runoff Depth=0.68"
Flow Length=671' Tc=8.2 min CN=53 Runoff=1.2 cfs 6,239 cf

Subcatchment5S: Road and Site Draining Runoff Area=39,947 sf 59.10% Impervious Runoff Depth=3.49"
Flow Length=637' Tc=8.8 min CN=90 Runoff=3.3 cfs 11,623 cf

Subcatchment6S: (new Subcat) Runoff Area=122,904 sf 0.00% Impervious Runoff Depth=0.84"
Flow Length=599' Tc=38.6 min CN=56 Runoff=1.1 cfs 8,630 cf

Reach 2R: 302 Culvert Avg. Flow Depth=0.31' Max Vel=4.70 fps Inflow=1.2 cfs 6,239 cf
18.0" Round Pipe n=0.025 L=71.0' S=0.0592 '/' Capacity=13.3 cfs Outflow=1.2 cfs 6,239 cf

Reach 3R: Ditch to Indian Point Culvert Avg. Flow Depth=0.19' Max Vel=1.20 fps Inflow=1.2 cfs 6,239 cf
n=0.035 L=202.0' S=0.0110 '/' Capacity=213.5 cfs Outflow=1.2 cfs 6,239 cf

Reach 4R: Indian Point Culvert Avg. Flow Depth=0.50' Max Vel=7.22 fps Inflow=3.8 cfs 17,862 cf
18.0" Round Pipe n=0.012 L=60.1' S=0.0185 '/' Capacity=15.5 cfs Outflow=3.8 cfs 17,862 cf

Reach 10R: (new Reach) Avg. Flow Depth=0.20' Max Vel=0.45 fps Inflow=1.8 cfs 19,568 cf
n=0.080 L=116.0' S=0.0086 '/' Capacity=13.3 cfs Outflow=1.8 cfs 19,514 cf

Reach 11R: (new Reach) Avg. Flow Depth=0.06' Max Vel=0.37 fps Inflow=0.3 cfs 9,259 cf
n=0.080 L=47.0' S=0.0213 '/' Capacity=20.9 cfs Outflow=0.3 cfs 9,244 cf

Pond 1P: UDSF-1 Peak Elev=271.08' Storage=9,944 cf Inflow=6.6 cfs 21,515 cf
Primary=1.8 cfs 19,568 cf Secondary=0.0 cfs 0 cf Outflow=1.8 cfs 19,568 cf

Pond 2P: UDSF-2 Peak Elev=270.87' Storage=8,523 cf Inflow=4.4 cfs 13,794 cf
Primary=0.3 cfs 9,259 cf Secondary=0.0 cfs 0 cf Outflow=0.3 cfs 9,259 cf

Link POA-1: POA-1 Inflow=2.9 cfs 37,389 cf
Primary=2.9 cfs 37,389 cf

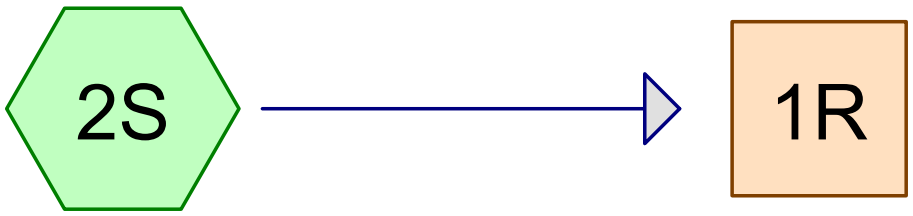
Link POA-2: POA-2 Inflow=0.3 cfs 1,155 cf
Primary=0.3 cfs 1,155 cf

Link POA-3: POA-3 Inflow=3.8 cfs 17,862 cf
Primary=3.8 cfs 17,862 cf

Total Runoff Area = 425,430 sf Runoff Volume = 62,955 cf Average Runoff Depth = 1.78"
63.77% Pervious = 271,313 sf 36.23% Impervious = 154,117 sf

Appendix 2C

Proposed Conditions
Indian Point Culvert 100-year Storm Event



Drainage Area to Culvert

Indian Point Culvert

Subcat Reach Pond Link

Routing Diagram for 14265 Pre
Prepared by Sebago Technics, Inc., Printed 7/13/2022

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.568	39	>75% Grass cover, Good, HSG A (2S)
1.450	98	Impervious area (Pavement, buildings, gravel) (2S)
1.370	30	Woods, Good, HSG A (2S)
3.387	**61**	**TOTAL AREA**

Summary for Subcatchment 2S: Drainage Area to Culvert

Runoff = 5.97 cfs @ 12.10 hrs, Volume= 0.456 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

	Area (sf)	CN	Description
	24,724	39	>75% Grass cover, Good, HSG A
*	63,156	98	Impervious area (Pavement, buildings, gravel)
	59,661	30	Woods, Good, HSG A
	147,541	61	Weighted Average
	84,385		57.19% Pervious Area
	63,156		42.81% Impervious Area

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

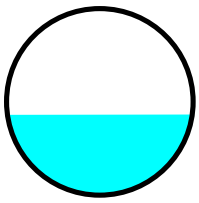
Summary for Reach 1R: Indian Point Culvert

Inflow Area = 3.387 ac, 42.81% Impervious, Inflow Depth = 1.62" for 25-YR event
Inflow = 5.97 cfs @ 12.10 hrs, Volume= 0.456 af
Outflow = 5.97 cfs @ 12.10 hrs, Volume= 0.456 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.19 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.28 fps, Avg. Travel Time= 0.3 min

Peak Storage= 44 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.65'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.47 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 60.1' Slope= 0.0185 '/'
Inlet Invert= 268.33', Outlet Invert= 267.22'



Summary for Subcatchment 2S: Drainage Area to Culvert

Runoff = 8.44 cfs @ 12.09 hrs, Volume= 0.623 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-YR Rainfall=6.30"

	Area (sf)	CN	Description
	24,724	39	>75% Grass cover, Good, HSG A
*	63,156	98	Impervious area (Pavement, buildings, gravel)
	59,661	30	Woods, Good, HSG A
	147,541	61	Weighted Average
	84,385		57.19% Pervious Area
	63,156		42.81% Impervious Area

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

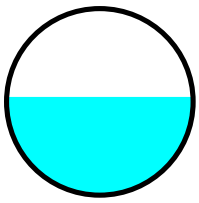
Summary for Reach 1R: Indian Point Culvert

Inflow Area = 3.387 ac, 42.81% Impervious, Inflow Depth = 2.21" for 50-YR event
Inflow = 8.44 cfs @ 12.09 hrs, Volume= 0.623 af
Outflow = 8.42 cfs @ 12.10 hrs, Volume= 0.623 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.94 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.53 fps, Avg. Travel Time= 0.3 min

Peak Storage= 57 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.79'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.47 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 60.1' Slope= 0.0185 '/'
Inlet Invert= 268.33', Outlet Invert= 267.22'



Summary for Subcatchment 2S: Drainage Area to Culvert

Runoff = 11.98 cfs @ 12.09 hrs, Volume= 0.866 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=7.50"

	Area (sf)	CN	Description
	24,724	39	>75% Grass cover, Good, HSG A
*	63,156	98	Impervious area (Pavement, buildings, gravel)
	59,661	30	Woods, Good, HSG A
	147,541	61	Weighted Average
	84,385		57.19% Pervious Area
	63,156		42.81% Impervious Area

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

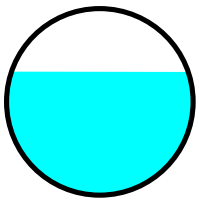
Summary for Reach 1R: Indian Point Culvert

Inflow Area = 3.387 ac, 42.81% Impervious, Inflow Depth = 3.07" for 100-YR event
Inflow = 11.98 cfs @ 12.09 hrs, Volume= 0.866 af
Outflow = 11.96 cfs @ 12.10 hrs, Volume= 0.866 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.66 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.79 fps, Avg. Travel Time= 0.3 min

Peak Storage= 74 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.99'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.47 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 60.1' Slope= 0.0185 '/'
Inlet Invert= 268.33', Outlet Invert= 267.22'



Appendix 3

Inspection, Maintenance and Housekeeping Plan

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

For:
Jordan Bay Marina
Port Harbor Holdings , LLC.
1 Spring Point Drive
South Portland, Maine 04106

By:
Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the erosion and sedimentation control measures as well as stormwater management facilities for the project. This plan also outlines several housekeeping requirements that shall be followed during and after construction. These procedures shall be followed in order to ensure the intended function of the designed measures and to prevent unreasonably adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event (0.5" of rainfall), and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within 7 calendar days and prior to any storm event (0.5" of rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access

points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Sediment Barriers:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event (0.5" of rainfall). They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.
- Temporary erosion control measures installed during construction shall be removed after final stabilization of the project.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

D. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with

the collected soil material. The entrance should then be reconstructed.

- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).
- Temporary erosion control measures installed during construction shall be removed after final stabilization of the project.

E. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

F. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive sediment and dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and other materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or foundation dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the owner or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. The owner shall inspect and maintain the BMPs, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction. If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action(s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action(s) to the local municipality in the annual report.

   A. Vegetated Areas:

   - Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains (>0.5”) to identify active or potential erosion problems.
   - Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. Ditches, Swales and Other Open Channels:

   - Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
   - Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
   - Any woody vegetation growing through riprap linings must also be removed.

Repair any slumping side slopes as soon as practicable.

- If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

C. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains (>0.5") to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

D. Removal of Winter Sand:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- Accumulations on pavement may be removed by pavement sweeping.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

E. Underdrain Soil Filter:

- Following storms that fill the system and overflow is observed, the soil filter should drain in no less than 36 to 60 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.
- Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. Removed sediments should be disposed of in an acceptable manner.
- Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.
- Mowing: If mowing is desired, only handheld string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.
- Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.
- Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary.
- Snow storage is prohibited within the underdrained soil filter areas.
- See inspection log within Attachment 1 of this document for the inspection requirements of this BMP.

3. **Documentation:**

   A. The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, as required by the local municipality, provide a completed and signed certification on a form provided by the local municipality, certifying that the person has inspected the BMP(s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they required maintenance or repair, including the record of the deficiency and corrective action(s) taken.

   B. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 1 of this Inspection, Maintenance, and Housekeeping Plan.

4. **Duration of Maintenance:** Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

ATTACHMENT 1 – STORMWATER INSPECTION AND MAINTENANCE LOG

Jordan Bay Marina
1326 Roosevelt Trail
Raymond, Maine

This log is intended to accompany the Inspection, Maintenance, and Housekeeping Plan for the commercial development project at 1326 Roosevelt Trail in Raymond, Maine. The following items shall be checked, cleaned, and maintained on a regular basis as specified in the Maintenance Plan and as described in the sections below. This log shall be kept on file for a minimum of five (5) years and shall be available for review by the Town of Raymond and the Maine DEP. Qualified personnel familiar with the drainage systems and soils shall perform all inspections. A copy of the construction and post-construction maintenance logs are provided.

INSPECTION MAINTENANCE AND HOUSEKEEPING FORM			
General Information			
Project Name:		**Inspection Date:**	
Project Location:		**Current Weather:**	
		Date / Amount Last Precip:	
BMP Owner:		**Company conducting inspection:**	
Owner Mailing Address:		**Company Mailing Address**	
Owner Phone #:		**Company Phone #:**	
Owner Email:		**Inspector Name:**	
		Inspector Email:	

Site Element	Suggested Maintenance (recm'd frequency)	Observations	Inspection Notes/Recommended Action
Vegetated Areas	Inspect Slopes/Embankments for erosion (annually)		
	Replant bare areas or areas of sparse growth (annually)		
Ditches/Swales	Remove obstructions/debris/sediment (monthly)		
	Inspect for erosion/repair as needed (annually)		
	Remove woody vegetation (annually)		
	Mow vegetated ditches (annually)		
Catch Basins	Remove sediment/debris from sump (annually)		
	Remove accumulated debris from inlet grate		
Culverts	Remove sediment/debris from inlet/outlet aprons (annually)		
	Inspect inlet/outlet aprons for erosion, repair as needed (annually)		
	Inspect, repair as needed, riprap aprons for dislodged/sparse coverage (annually)		
Pipe Outlets	Remove sediment/debris from outlet aprons (annually)		
	Inspect outlet aprons for erosion, repair as needed (annually)		
	Inspect, repair as needed, riprap aprons for dislodged/sparse coverage (annually)		

Additional Notes/Observations:

Underdrain Soil Filter

INSPECTION MAINTENANCE AND HOUSEKEEPING FORM			
General Information			
Project Name:		**Inspection Date:**	
Project Location:		**Current Weather:**	
		Date / Amount Last Precip:	
BMP Owner:		**Company conducting inspection:**	
Owner Mailing Address:		**Company Mailing Address**	
Owner Phone #:		**Company Phone #:**	
Owner Email:		**Inspector Name:**	
		Inspector Email:	

BMP Element	Suggested Maintenance (recm'd frequency)	Observations	Inspection Notes/Recommended Action
Forebay/Pretreatment	Sediment/Debris Removal (Annually)		
	Inspect for bare areas or rill erosion (Annually)		
Outlet Control Structure	Sediment Depth (Annually)		
	Floatables/Debris (Annually)		
Discharge Pipe	Ground Stabilized (>1" rain, Annually)		
Emergency Spillway	Review for signs of erosion (Twice Annually)		
	Review for signs of discharge (>1" rain, twice annually)		
Embankments	Review for signs of erosion (Twice Annually)		
Filter Bed	Trim overgrown vegetation with string trimmer (annually)		
	Review basin for evidence of vehicular traffic or storage of snow within footprint (annually)		
	Confirm pond drains in 24-48 hours for water quality volume (annually)		

Additional Notes/Observations:

Appendix 4

Subsurface Investigations

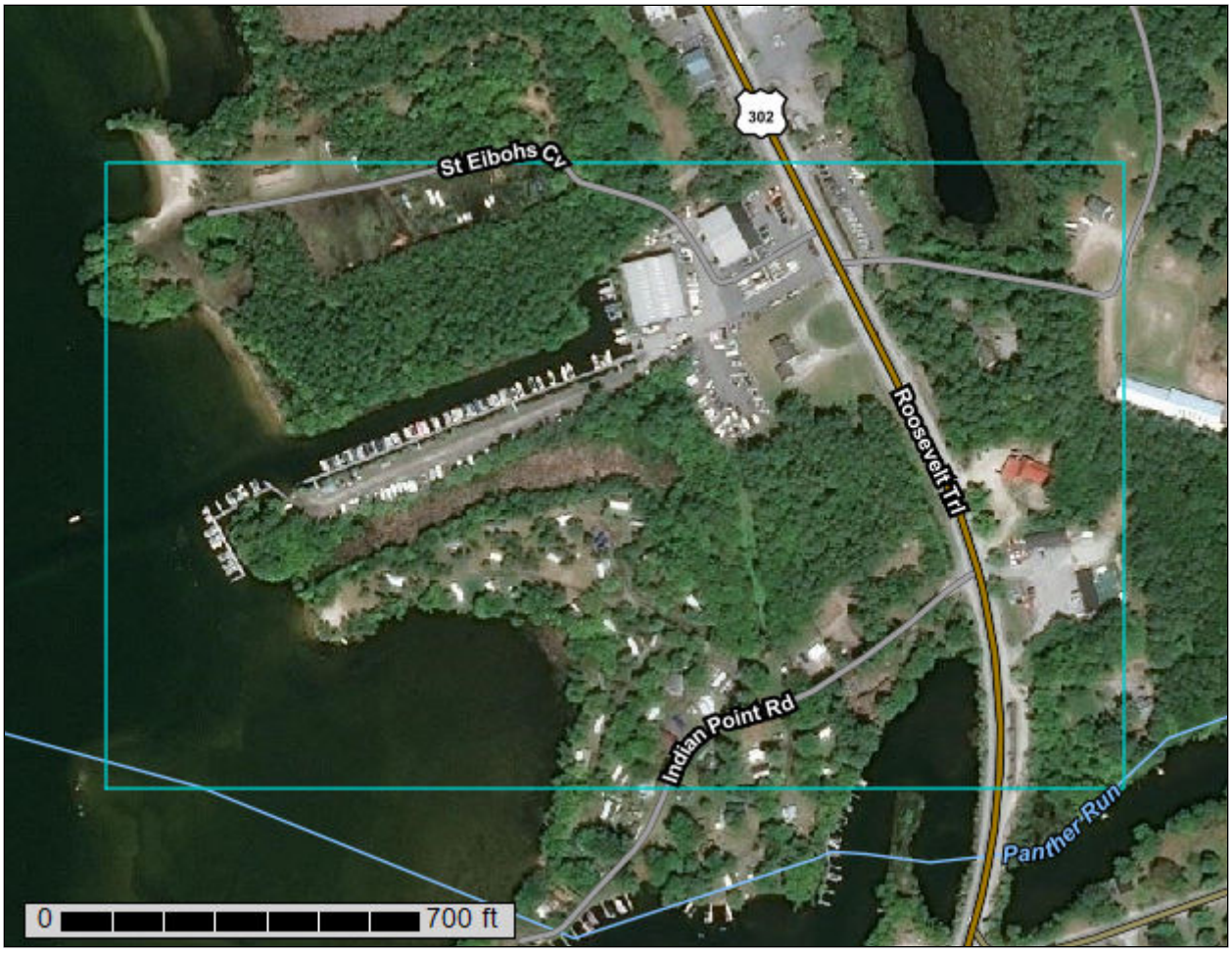
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

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



October 13, 2021

Contents

Soil Map

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

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 18, Aug 31, 2021

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

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cu	Cut and fill land	6.8	12.2%
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	8.6	15.3%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	1.3	2.4%
HlB	Hinckley loamy sand, 3 to 8 percent slopes	0.3	0.6%
HlC	Hinckley loamy sand, 8 to 15 percent slopes	8.3	14.9%
Sp	Sebago mucky peat	11.7	20.9%
Sz	Swanton fine sandy loam	4.7	8.3%
W	Water	14.1	25.2%
Wa	Walpole fine sandy loam	0.0	0.0%
Totals for Area of Interest		**55.8**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit

descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

Cu—Cut and fill land

Map Unit Composition

Cut and fill land: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cut And Fill Land

Typical profile

H1 - 0 to 65 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 35 percent
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: About 24 to 42 inches
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

ASSUMPTION HSGS Soil Group: B

DeA—Deerfield loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xfg8
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Deerfield

Setting

Landform: Kame terraces, outwash plains, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

DeB—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Deerfield

Setting

Landform: Kame terraces, outwash plains, outwash terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

HlB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Hinckley and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting
Landform: Outwash plains, eskers, moraines, kame terraces, kames, outwash terraces, outwash deltas
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile
Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

HIC—Hinckley loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svm9
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Hinckley

Setting

Landform: Kame terraces, outwash plains, kames, eskers, moraines, outwash terraces, outwash deltas
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand

Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Sp—Sebago mucky peat

Map Unit Setting

National map unit symbol: blk0
Elevation: 10 to 2,100 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 80 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Sebago

Setting

Landform: Bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material

Typical profile

Oe - 0 to 36 inches: mucky peat
Oi - 36 to 65 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 18.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: A/D
Ecological site: F144BY230ME - Acidic Peat Wetland Complex
Hydric soil rating: Yes

Sz—Swanton fine sandy loam

Map Unit Setting

National map unit symbol: blk4
Elevation: 10 to 900 feet
Mean annual precipitation: 36 to 48 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Swanton

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 32 inches: fine sandy loam
H3 - 32 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Lakes

Wa—Walpole fine sandy loam

Map Unit Setting

National map unit symbol: blk7
Elevation: 0 to 540 feet
Mean annual precipitation: 48 to 49 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 145 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Walpole

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 20 inches: fine sandy loam
H3 - 20 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144BY303ME - Acidic Swamp
Hydric soil rating: Yes

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FORM F 14265

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
PORT HARBOR MARINE	PORT HARBOR MARINE	RAYMOND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-1** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistence	Color	Redox
0				
1				
2	SANDY	FRIABLE	10YR 3/2	
3	LOAM		VERY DARK	
4			GRAYISH	
5			BROWN	
6				
7				
8				
9				
10				
12				
14	LOAMY	CEMENTED	10YR 5/6	
16	SAND		YELLOWISH	
17			BROWN	COMMON, MEDIUM,
20				AND DISTINCT
24				
26				
	LOAMY	FIRM	5Y 6/2	MANY, COARSE,
30	FINE		LIGHT	AND PROMINENT
	SAND		OLIVE	
			GRAY	
44				
	COARSE	FRIABLE	2.5Y 5/1	
	SAND		GRAY	
52				
	SILT	FIRM	5Y 5/2	
60	LOAM		GRAYISH BROWN	

LIMIT OF EXCAVATION = 60"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	10"	☐	■	☐

L.S.S. Soil Series / phase name: **NAUMBURG** | SPD (Drainage Class) | D (Hydrologic Group)

L.S.E. Soil Classification: 3 (Profile) | D (Drainage Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-2** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistence	Color	Redox
0				
1				
2	LOAMY	FRIABLE	10YR 3/3	NONE
3	SAND		DARK	OBSERVED
4	FILL		BROWN	
5				
6				
7				
8				
9				
10				
12				
14				
16				
18				
20				
	SANDY	FRIABLE	10YR 2/1	
	LOAM		BLACK	COMMON, MEDIUM,
26				& DISTINCT
30	MEDIUM		2.5Y 6/1	
	SAND		GRAY	
34				
	VERY FINE	FIRM	2.5Y 5/2	
	SANDY		GRAYISH	
40	LOAM		BROWN	
48				

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	0"	■	☐	☐

L.S.S. Soil Series / phase name: **SWANTON** | MWD (Drainage Class) | D (Hydrologic Group)

L.S.E. Soil Classification: 7 (12) (Profile) | E (Drainage Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-3** ■ Test Pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistence	Color	Redox
0				
1				
2	SANDY	FRIABLE	10YR 3/2	NONE
3	LOAM		VERY DARK	OBSERVED
4	FILL		GRAYISH BROWN	
5				
6				
7				
8				
9	LOAMY		10YR 5/6	
10	SAND	FRIABLE	YELLOWISH	
12			BROWN	
14				
16				
18				
20	MEDIUM		10YR 7/2	
	SAND		LIGHT	
			GRAY	
30				
40				
54				
			10YR 5/3	COMMON, MEDIUM,
60			BROWN	AND DISTINCT

LIMIT OF EXCAVATION = 60"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	54"	■	☐	☐

L.S.S. Soil Series / phase name: **ADAMS** | SED (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | B (Drainage Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: **TP-4** ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistence	Color	Redox
0				
1				
2	SANDY	FRIABLE	10YR 3/1	
3	LOAM		VERY	
4			DARK	
5			GRAY	
6				
7				
8				
9				
10				
12				
14				
16				
18				
20				
22	FINE		10YR 7/1	
24	SAND		LIGHT GRAY	COMMON, MEDIUM,
	LOAMY		7.5YR 4/3	AND DISTINCT
	FINE SAND		BROWN	
30				
32				
	FINE		2.5Y 5/2	
	SAND		GRAYISH	
			BROWN	
40				
60				
			2.5Y 7/1	
72			LIGHT GRAY	

LIMIT OF EXCAVATION = 72"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	0-3	22"	■	☐	☐

L.S.S. Soil Series / phase name: **CROGHAN** | MWD (Drainage Class) | A (Hydrologic Group)

L.S.E. Soil Classification: 5 (Profile) | C (Drainage Condition)

Professional Endorsements *(as applicable)*

L.S.S. signature:		Date: 7/27/22
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 7/27/22
name printed/typed:	Gary M. Fullerton	Lic.#: 355

affix professional seal

FORM F 14265

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
PORT HARBOR MARINE	PORT HARBOR MARINE	RAYMOND

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-5 ■ Test Pit ☐ Boring

0-1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistence	Color	Redox
SANDY LOAM	FRIABLE	10YR 3/2 VERY DARK GRAYISH BROWN	
GRAVELLY LOAMY COARSE SAND		10YR 4/6 DARK YELLOWISH BROWN 2.5Y 5/4 LIGHT OLIVE BROWN	
SILT LOAM	FIRM	5Y 5/2 OLIVE GRAY	
SILTY CLAY LOAM WITH VERY FINE SAND VARVES		5Y 4/2 OLIVE GRAY	COMMON, MEDIUM, AND DISTINCT

LIMIT OF EXCAVATION = 54"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	21"	☐	■	☐

L.S.S. Soil Series / phase name: ELMWOOD — Drainage Class: MWD — Hydrologic Group: B

L.S.E. Soil Classification: Profile: 7 — Drainage Condition: C

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-6 ■ Test Pit ☐ Boring

1-2 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistence	Color	Redox
SANDY LOAM	FRIABLE	10YR 3/3 DARK BROWN	
LOAMY FINE SAND		10YR 5/6 YELLOWISH BROWN	
GRAVELLY LOAMY SAND		10YR 6/4 LIGHT YELLOWISH BROWN	
VERY FINE SANDY LOAM	FIRM	2.5Y 5/3 LIGHT OLIVE BROWN	
SILTY CLAY LOAM		5Y 4/2 OLIVE GRAY	COMMON, MEDIUM, AND DISTINCT

LIMIT OF EXCAVATION = 48"

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	■	3-8	28"	☐	■	☐

L.S.S. Soil Series / phase name: ELMWOOD — Drainage Class: MWD — Hydrologic Group: B

L.S.E. Soil Classification: Profile: 7 — Drainage Condition: C

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistence	Color	Redox

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	☐			☐	☐	☐

L.S.S. Soil Series / phase name: _____ — Drainage Class: _____ — Hydrologic Group: _____

L.S.E. Soil Classification: Profile: _____ — Drainage Condition: _____

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistence	Color	Redox

hydric	non-hydric	Slope %	Limiting factor	ground water	restrictive layer	bedrock
☐	☐			☐	☐	☐

L.S.S. Soil Series / phase name: _____ — Drainage Class: _____ — Hydrologic Group: _____

L.S.E. Soil Classification: Profile: _____ — Drainage Condition: _____

Professional Endorsements *(as applicable)*

L.S.S. signature:		Date: 7/27/22
name printed/typed:	Gary M. Fullerton	Lic.#: 462
L.S.E. signature:		Date: 7/27/22
name printed/typed:	Gary M. Fullerton	Lic.#: 355

STATE OF MAINE GARY M. FULLERTON NO. 462 LICENSED SOIL SCIENTIST

affix professional seal

Appendix 5

Stormwater Management Plans

14265-02 SWP.dwg, TAB:PRE

ROBERT A. McSORLEY, PE 8588

SHEET 1 OF 2

PROJECT	14265-02
SCALE	1" = 30'
DATE	09/22/22
CHECKED	RAM
DRAWN	DAB
DESIGNED	JSH

EXISTING CONDITIONS - SWP
OF:
JORDAN BAY MARINA
1328 ROOSEVELT TRAIL
RAYMOND, ME
FOR:
PORT HARBOR MARINE
1 SPRING POINT DRIVE
SOUTH PORTLAND, ME 04106

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

REV:	BY:	DATE:	STATUS:
A	RAM	08/10/22	SUBMISSIONS TO TOWN OF RAYMOND, MDEP, MDOT & PWD

STATE OF MAINE
ROBERT McSORLEY
8588
LICENSED
PROFESSIONAL ENGINEER

REV:	BY:	DATE:	STATUS:
E	MWE	9/14/22	REVISED PER TOWN OF RAYMOND COMMENTS
D	MWE	8/10/22	SUBMISSION TO THE TOWN
C	MWE	8/13/21	REVISED PIPELINE EASEMENT BASED UPON STAKES SET BY THE PIPELINE
B	MWE	7/12/21	REVISED PER REVIEW COMMENTS
A	MWE	6/29/21	RELEASED FOR CLIENT REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

ROBERT A. McSORLEY, PE 8588

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

PROPOSED CONDITIONS - SWP

OF:
JORDAN BAY MARINA
1328 ROOSEVELT TRAIL
RAYMOND, ME

FOR:
PORT HARBOR MARINE
1 SPRING POINT DRIVE
SOUTH PORTLAND, ME 04106

DESIGNED	JSH
DRAWN	DAB
CHECKED	RAM
DATE	06/22/22
SCALE	1" = 30'
PROJECT	14265-02

SHEET 2 OF 2

14265-02 SWP.dwg, TAB:POST

Xref D:\STAMPS\RAM.dwg